



2022

# Product catalogue

Armacell's innovative and safe thermal, acoustic and mechanical insulation solutions are key to a wide range of everyday applications adding value to people's lives around the world.

[www.armacell.com](http://www.armacell.com)



 **armacell**<sup>®</sup>  
MAKING A DIFFERENCE AROUND THE WORLD



# ABOUT ARMACELL

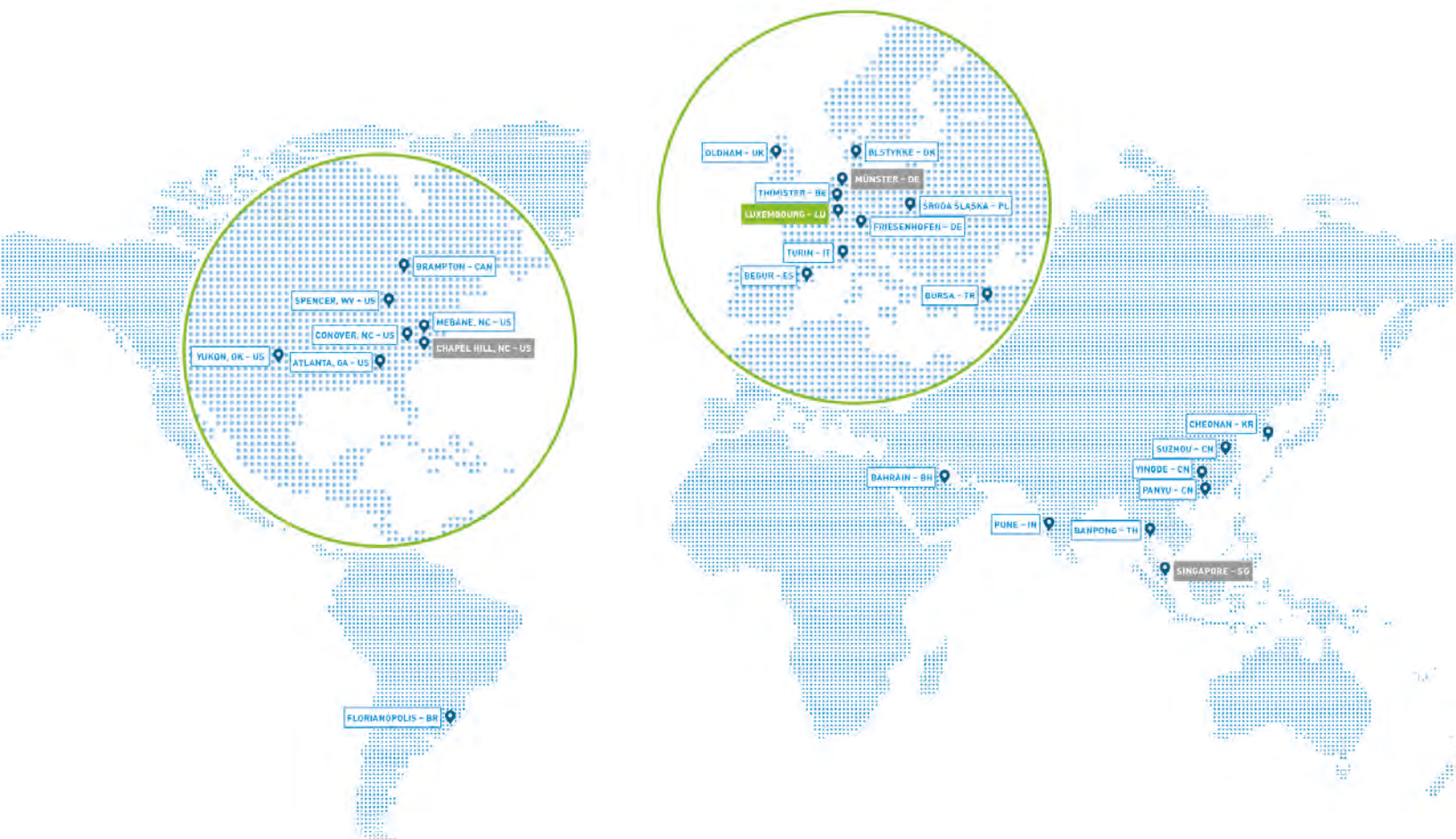
As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With 3,000 employees and 23 production plants in 15 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology. For more information, please visit: [www.armacell.com](http://www.armacell.com).  
For product information, please visit: [www.armacell.eu](http://www.armacell.eu)



## REGIONAL HEADQUARTER

### Münster, Germany

The Armacell group of companies in Europe is headquartered in Münster, Germany. This location primarily manufactures insulation products based on synthetic rubber. In addition to the production facilities, the central warehouse is also located in Münster. The warehouse is not only utilised by Armacell GmbH, but for dispatching goods and materials to other European location as well.



# Advanced Insulation

## PIONEERING FLEXIBLE INSULATION

In 1954, the company invented Armaflex, the first flexible insulation product. In doing so, it established a new branch of industry – flexible technical insulation – that it has been shaping ever since.

Armaflex is now the world's best-known brand for flexible technical insulation, and the brand name has become eponymous in the building materials industry.



## ENERGY SAVING

Armacell insulation materials are among the few products that save more energy than is used for their production: ArmaFlex saves 140 times more energy than it takes to manufacture.

In light of rising energy prices, stricter energy conservation laws and the rapid pace of climate change, Armacell believes that the insulation of building equipment and industrial installations will play an even more important role in future.

## INNOVATIVE SOLUTIONS FOR SPECIFIC DEMANDS

In addition to conventional thermal insulation materials to protect against heat and cold, the company today offers a wide range of covering systems, fire-protection and noise-control solutions, pre-insulated pipes, special insulation systems for applications in industry and the accessories to match.

## TECHNOLOGY LEADER

In recent years, Armacell has developed new insulation systems for low-smoke products and the oil & gas industry – a key growth market for the Group – that are setting new standards in the industry. Being a technology leader in flexible technical insulation materials, Armacell holds more than 200 active patents worldwide.





## Market Segments

### REFRIGERATION AND CHILLED WATER SERVICES

Refrigeration and cold water services operating at low temperatures leads to the formation of condensation which can cause problems with corrosion, mould growth and subsequently reduce the efficiency and service life of equipment if un-insulated or a product without an integral water vapour barrier is used. Closed cell Armaflex materials prevent moisture ingress with a high water vapour diffusion resistance value of up to 10,000 ( $\mu$  value).

### HEATING AND PLUMBING

The insulation of central heating pipework can reduce heat losses by as much as 87 % and make a significant contribution to improving boiler efficiencies. The insulation of cold water pipes is also important to protect against pipes freezing in sub zero temperatures.

Armacell has also developed pre-insulated UV resistant and high temperature insulation ideal for solar hot water systems and for insulating ground source heat pump pipes to maximise efficiency.

### MANUFACTURING INDUSTRIES

Process industry equipment including pipework, ducts, vessels, valves and flanges should be insulated to help ensure that steam, hot water, hot gasses or cold liquids and gases are delivered at controlled levels.

Elastomeric thermal and acoustic insulation systems are suitable for both high and low temperature process applications and easy to fabricate Armaflex sheet or tubes can be used to minimise heat loss/gain, improve process efficiencies, control condensation and provide mechanical impact and personnel protection.

### OIL AND GAS

One of the greatest challenges for insulation of marine, offshore and heavy industrial environments is the issue of Corrosion Under Insulation which causes pipe and metal cladding systems to rust and decay, resulting in expensive production stoppages and maintenance schedules.

Closed cell insulation and non-metallic covering systems provide an excellent alternative for thermal and acoustic insulation to protect against mechanical impact, chemicals and salt water. Pre-fabricated fittings are also available to cut down on-site installation times in hazardous and process critical environments.

### HEATING, VENTILATION AND AIR CONDITIONING

Insulation is an essential part of ducted heating, ventilation and air-conditioning systems, with the large surface areas causing significant heat losses/gains and problems with condensation, mould growth and poor indoor air quality.

Armaflex products are dust and fibre free and come with in-built Microban anti-microbial protection for additional safe guarding against mould and bacteria.





## Technical Considerations

The following technical considerations should be taken into account when specifying thermal and acoustic insulation products for HVAC-R, process and industrial pipe and ductwork systems:

### THERMAL CONDUCTIVITY ( $\lambda$ VALUE)

Thermal conductivity, stated in  $W/(m \cdot K)$ , is the property of a material's ability to conduct heat, measured across a  $1 \text{ m}^3$  block. For example, a material with a high thermal conductivity such as copper has a value of appr.  $400 \text{ W}/(m \cdot K)$  compared to a low thermal conductivity material such as AF/Armaflex at  $0.033 \text{ W}/(m \cdot K)$  at  $0 \text{ }^\circ\text{C}$ .

### ENERGY SAVING

The rate of heat flow from a pipe is largely governed by the differential to the ambient temperature, and heat losses can be considerable. The insulation of building equipment and industrial installations is one of the single most effective measures for improving energy efficiency and prolonging the lifespan of equipment.

### PIPE FREEZING

Since water services are often located outside or in unheated areas where ambient temperatures may drop below  $0 \text{ }^\circ\text{C}$ , the water can freeze and expand, causing pipes to burst. For this reason water supply regulations specify pipe insulation to reduce the risk of pipe freezing.

### SURFACE EMISSIVITY

The emissivity of a material is the relative ability of its surface to emit energy by radiation compared to energy radiated by a black body at the same temperature.

The more reflective a material, the less energy it radiates. Non-metallic silver coverings such as Arma-Chek Silver for example can be used either outdoors to prevent heat gain on cold applications or to reduce heat losses from warm applications.

### INDOOR AIR QUALITY

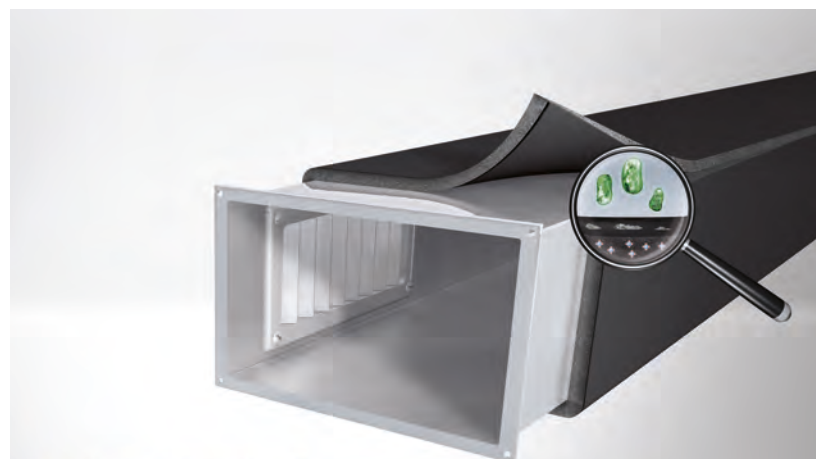
Air pollutants such as man-made volatile organic chemicals, industrial fibres, acidic particles of dust, and spores of mould and bacteria can all contribute to building related symptoms.

The specification of Armaflex dust and fibre free insulation systems with added Microban® anti-microbial protection helps minimise the impact on indoor air quality.

## CONDENSATION CONTROL

Where pipework and services operate at below-ambient temperature water vapour condenses on the surface. If insulation becomes wet it loses thermal performance, leading to colder surface temperatures, condensation and corrosion issues.

Closed cell AF/Armaflex products provide an integral water vapour diffusion barrier with a  $\mu$  value of  $\geq 10,000$ .



# Building Regulations

A number of regulations govern the specification and application of building services insulation materials in the member states.



## ENERGY PERFORMANCE

The new European Directive on the Energy Performance of Buildings of 16 December 2002 is intended to harmonize approaches towards reduction of the energy consumption in new and existing buildings throughout Europe. The main focus is on establishing energy certification for buildings. Additionally, in the case of new buildings, member states must ensure before building work begins that they have taken into account all technical, ecological and economic factors concerning the use of alternative systems such as e.g. renewable energy sources.



## CE MARKING

CE marking became a mandatory requirement for thermal insulation construction products governed by a European harmonized standard (hEN) in August 2012.

The harmonized standards determine the required characteristics and obligatory properties, including fire behaviour (Euroclasses), dimensions and tolerances, thermal conductivity, dimensional stability and durability characteristics. Once a product has been tested to meet the required properties a designation code is printed on the product label to display the specific technical properties required by the hEN.



## EUROCLASS FIRE RATINGS

In addition to British Fire Classes, Euroclasses are now also listed for Reaction to Fire Performance, ranging from A1 to F with additional criteria showing smoke intensity levels (s1 to s3) and burning droplets (d0 to d2).



## Environmental product declarations (EPDs) for Armaflex products

As the first manufacturer of flexible technical insulation materials, Armacell publishes environmental product declarations which are based on an independent life cycle assessment (LCA). Comparing the primary energy input identified in the LCA with the energy saving achieved shows that Armaflex insulation materials save 140 times more energy than is needed for their manufacturing, transport and disposal.



Environmental product declarations (EPDs) are becoming more and more important in the construction industry: they provide a transparent, independent and reproducible analysis of the environmental impacts of construction products and give detailed information with sound data and figures. As a 'sustainability passport' EPDs form the basis for designing green buildings in accordance with certification schemes such as LEED, BREEAM or DGNB.

All information about the Armacell environmental product declarations as well as the special fact sheets on BREEAM, LEED and DGNB for Armaflex products can be viewed and downloaded at [www.armacell.com/epd](http://www.armacell.com/epd)



## ARMAPLUS - ADDED RELIABILITY

Did you know that as an insulator you can be certified by Armacell? Do you already use our technical advice service for help with all your questions about insulation? How do you calculate the insulation thicknesses needed? It's high time you got to know how we can support you in your daily work.



## TECHNICAL ADVICE AND SUPPORT ON SITE

Do you need support for an insulation project? Whether you prefer advice at your company or directly on the building site, Armacell helps you to plan and realize your projects. Get in touch with us! Call us or contact the sales representative for your area. We're happy to help you and can assure you that no technical question will remain unanswered.

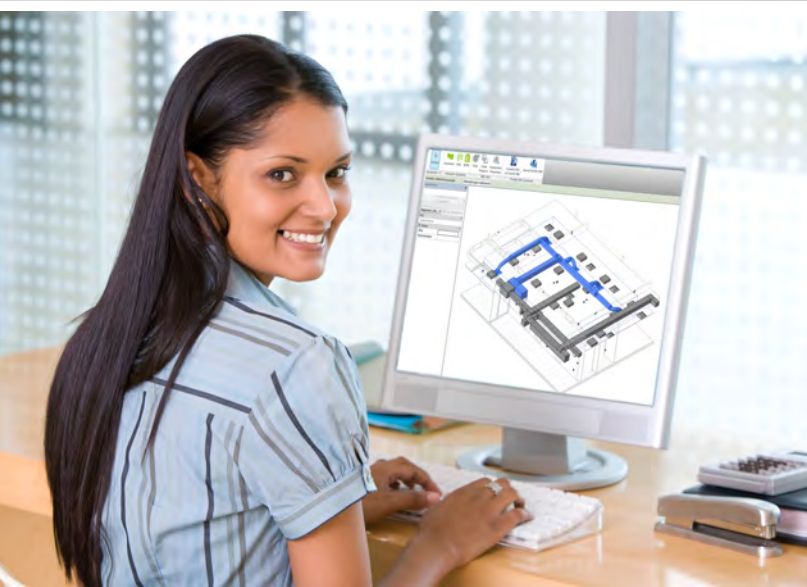
Do you have questions outside office hours? On our website [www.armacell.com](http://www.armacell.com) you will find a wealth of information and support. Have a look!



## ARMWIN - PROFESSIONAL INSULATION THICKNESS CALCULATOR

With the new ArmWin version you cannot only determine the insulation thickness needed to prevent condensation, but also carry out all the common technical calculations in refrigeration/air-conditioning and heating/plumbing applications – even on the building site, thanks to the app. The powerful software can also be downloaded to your computer and is available as an app for Apple, Android and BlackBerry.

The program can be found here: [Armwin.armacell.com](http://Armwin.armacell.com)



## ARMACELL BIM PLUG-IN

The future of construction is digital. Even though many architects and specifiers are still sceptical about this development, the digitization of the construction industry is making great strides. Because buildings can be planned completely digitally from design to commissioning, maintenance and demolition, 'Building 4.0' allows greater planning security, process optimization, efficiency and sustainability. In the field of technical insulation Armacell is a BIM pioneer and now offers a plug-in allowing technical insulation materials for building service equipment to be planned digitally.





## Armacell application services

"We are providers of solutions for insulation technology. This includes not only high-quality, innovative products, but also knowledge on how to use our systems properly. Because only correctly calculated and neatly installed insulation systems guarantee long-term protection against energy losses and condensation."

### Georgios Eleftheriadis

Armacell Manager Technical Marketing EMEA

## TRAINING COURSES

For more than 30 years, we have been offering application training to ensure quality and reliability in the installation of its products. Throughout the world, several thousand insulators attend the Armacell training courses every year. At many facilities we have set up special training centres. In addition, Armacell contributes to initial and further training through a wide range of courses and also provides valuable on-site support for installers' day-to-day work. A further building block in our decades of commitment to application training in the insulation sector is the new Training Passport. To confirm that the participant has successfully completed the practical seminars, it is stamped and signed by the Armacell application specialist.

## APPLICATION MANUALS

The Armaflex Application Manual and video clips show just how easy it is to install Armaflex. The brochure is available in a handy A5 format, which is ideal for use on the building site. It provides basic advice on professional installation and describes in clear step-by-step instructions how to prepare and apply the flexible insulation material. The use of the new Armacell materials, such as self-adhesive Armaflex Ultima tubes, is also included.

Application manuals are available for Arma-Chek, ArmaComfort and Tubolit products as well.

## INSTALLATION VIDEOS

The application guides are supplemented by short video clips presenting the key installation techniques. They are organized in the same way as the application manual and can be used either together with this or on their own. The clips were deliberately produced without explanatory texts to avoid language barriers and allow them to be used around the world. The application videos and other clips from Armacell can be found at [www.armacell.com/videos](http://www.armacell.com/videos) and on the Armacell channel on the YouTube platform. Mobile devices such as tablet PCs and smartphones allow installers to check directly on the building site if uncertainties arise.







AF/ARMAFLEX EVO

INSTALL IT. TRUST IT.

A photograph of two men in a workshop setting. The man on the left, wearing glasses and a light blue polo shirt, is holding a roll of dark grey ArmaFlex insulation and gesturing with his other hand as if explaining something. The man on the right, wearing a blue denim shirt, is looking at the roll with interest. In the background, there is a workbench with various tools and a container of ArmaFlex adhesive.

The new  
AF/ArmaFlex  
generation

- Enjoy extended guarantee up to 10 years
- Antimicrobial protection using MICROBAN® technology
- Less smoke emission without sacrificing insulation properties



## Technical Data - AF/ArmaFlex Evo

Brief description	Flexible elastomeric foam with improved fire retardant properties, low smoke generation, closed-cell insulation material structure and built-in Microban® antimicrobial protection. For use in HVAC, refrigeration and process equipment application.
Material type	Elastomeric foam based on synthetic rubber. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	black
Material Special Information	Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for pipes, air ducts, vessels (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration and process equipment to prevent condensation and save energy. The material must be secured by applying ArmaFlex 525.
Special Features	Increasing insulation wall thicknesses for tubes ensures that the surface temperature is maintained as the pipe diameter is increased.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 110 °C min. service temperature <sup>1</sup> -50 °C	(+ 85 °C if sheet or tape is glued to the object with its whole surface.) EU 7431	Tested acc. to EN 14706, EN 14707 and EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ +/-0 °C $\lambda \leq 0,033$	$\lambda =$ [33 + 0,1 · $\vartheta_m$ + 0,0008 · $\vartheta_m^2$ ]/1000 W/(m · K)	EU 7431 Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
	Tubes (AF-EVO-1 to AF-EVO-4)	[36 + 0,1 · $\vartheta_m$ + 0,0008 · $\vartheta_m^2$ ]/1000	
	Tubes (AF-EVO-5 to AF-EVO-6)	[36 + 0,1 · $\vartheta_m$ + 0,0008 · $\vartheta_m^2$ ]/1000	
	Sheets 3 - 32 mm, Tape	[36 + 0,1 · $\vartheta_m$ + 0,0008 · $\vartheta_m^2$ ]/1000	
	Sheets > 32 mm - 50 mm	[37 + 0,1 · $\vartheta_m$ + 0,0008 · $\vartheta_m^2$ ]/1000	
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Tubes (AF-EVO-1 to AF-EVO-4) $\mu$	$\geq$ 10.000	EU 7431 Tested acc. to EN 12086 and EN 13469
	Tubes (AF-EVO-5 to AF-EVO-6) $\mu$	$\geq$ 7.000	
	Sheets 3-50 mm, Tape $\mu$	$\geq$ 7.000	
<b>Fire performance</b>			
Reaction to fire	Tubes Sheets, Tape Tubes / sheets with Armaflex AF	B <sub>L</sub> -s2, d0 B-s2,d0 B <sub>L</sub> -s2,d0	EU 7431 Classified acc. to EN 13501-1 Tested acc. to EN 13823 EN ISO 11925-2
Other Fire Class	UL - approved	V-0, 5 VA	EU 7558 Tested according to UL94, IEC 60695 and Can/CSA-C.22.2 No0.17., UL 746C
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Fire resistance of structural element	EI 15 - EI 90		EU 5584 EU 7431 Classified acc. to EN 13501-2 Tested acc. to EN 1366-3
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 7431 Tested acc. to EN 822, EN 823, EN 13467
UV resistance <sup>2</sup>	Protection against UV-radiation is necessary.		TB 142
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets, self-adhesive tubes: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. If Armaflex is applied under UV-radiation the material must be protected within 3 days with a covering.

## Technical Data - AF/ArmaFlex Evo

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels.



# AF/ArmaFlex Evo tubes



Length 2,0 m, Color black

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 7,0 mm - 10,0 mm			AF-2 insulation thickness 9,5 mm - 16,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	7,0	AF-EVO-1-006	360	9,5	AF-EVO-2-006	288
8	9,0 - 10,5	7,0	AF-EVO-1-008 ●	310	10,0	AF-EVO-2-008	240
10	11,0 - 12,5	7,5	AF-EVO-1-010	300	11,0	AF-EVO-2-010	170
12	13,0 - 14,5	7,5	AF-EVO-1-012	234	11,0	AF-EVO-2-012	168
15	16,0 - 17,5	8,0	AF-EVO-1-015	192	11,5	AF-EVO-2-015	130
18	19,0 - 20,5	8,0	AF-EVO-1-018	140	11,5	AF-EVO-2-018	120
22	23,0 - 24,5	8,5	AF-EVO-1-022	132	12,0	AF-EVO-2-022	100
25	26,0 - 27,5	8,5	AF-EVO-1-025	108	12,5	AF-EVO-2-025	88
28	29,0 - 30,5	8,5	AF-EVO-1-028	100	12,5	AF-EVO-2-028	84
30	31,0 - 33,0	9,0	AF-EVO-1-030 ●	96	12,5	AF-EVO-2-030 ●	72
32	33,0 - 35,0	9,0	AF-EVO-1-032	84	13,0	AF-EVO-2-032	64
35	36,0 - 38,0	9,0	AF-EVO-1-035	76	13,0	AF-EVO-2-035	62
38	39,0 - 41,0	9,0	AF-EVO-1-038 ●	70	-	-	-
40	41,0 - 43,0	-	-	-	13,5	AF-EVO-2-040	44
42	43,5 - 45,5	9,0	AF-EVO-1-042	60	13,5	AF-EVO-2-042	48
45	46,0 - 47,5	9,0	AF-EVO-1-045 ●	56	-	-	-
48	49,5 - 51,5	9,0	AF-EVO-1-048	50	13,5	AF-EVO-2-048	44
50	51,0 - 53,0	-	-	-	13,5	AF-EVO-2-050	32
54	55,0 - 57,0	9,0	AF-EVO-1-054	48	13,5	AF-EVO-2-054	36
57	58,0 - 60,0	9,0	AF-EVO-1-057 ●	40	14,0	AF-EVO-2-057 ●	34
60	61,5 - 63,5	9,0	AF-EVO-1-060	36	14,0	AF-EVO-2-060	32
64	65,0 - 67,5	9,5	AF-EVO-1-064	32	14,0	AF-EVO-2-064	30
70	71,0 - 73,5	9,5	AF-EVO-1-070	32	14,0	AF-EVO-2-070	28
76	77,0 - 79,5	9,5	AF-EVO-1-076	28	14,0	AF-EVO-2-076	28
80	81,0 - 84,0	9,5	AF-EVO-1-080	24	14,5	AF-EVO-2-080	24
89	90,5 - 93,0	9,5	AF-EVO-1-089	22	14,5	AF-EVO-2-089	22
102	105,0 - 108,0	9,5	AF-EVO-1-102	16	14,5	AF-EVO-2-102	18
108	109,5 - 113,0	9,5	AF-EVO-1-108	16	14,5	AF-EVO-2-108	18
110	112,0 - 116,0	9,5	AF-EVO-1-110	16	15,0	AF-EVO-2-110 ●	16
114	116,0 - 120,0	9,5	AF-EVO-1-114	16	15,0	AF-EVO-2-114	16
125	127,0 - 131,0	9,5	AF-EVO-1-125	12	15,0	AF-EVO-2-125	12
133	135,0 - 139,0	-	-	-	15,5	AF-EVO-2-133	12
140	142,0 - 146,0	10,0	AF-EVO-1-140	12	15,5	AF-EVO-2-140	8
160	162,0 - 166,0	10,0	AF-EVO-1-160	8	16,0	AF-EVO-2-160	8

# AF/ArmaFlex Evo tubes



Length 2,0 m, Color black

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-3 insulation thickness 12,5 mm - 19,0 mm			AF-4 insulation thickness 15,5 mm - 25,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	-	-	-	15,5	AF-EVO-4-006	120
10	11,0 - 12,5	12,5	AF-EVO-3-010	156	15,5	AF-EVO-4-010	110
12	13,0 - 14,5	13,0	AF-EVO-3-012	144	16,0	AF-EVO-4-012	100
15	16,0 - 17,5	14,0	AF-EVO-3-015	108	17,0	AF-EVO-4-015	88
18	19,0 - 20,5	14,0	AF-EVO-3-018	96	17,5	AF-EVO-4-018	70
22	23,0 - 24,5	14,5	AF-EVO-3-022	84	18,0	AF-EVO-4-022	60
25	26,0 - 27,5	-	-	-	18,5	AF-EVO-4-025	56
28	29,0 - 30,5	15,5	AF-EVO-3-028	64	19,0	AF-EVO-4-028	48
30	31,0 - 33,0	-	-	-	19,0	AF-EVO-4-030 ●	40
32	33,0 - 35,0	-	-	-	19,5	AF-EVO-4-032	40
35	36,0 - 38,0	16,0	AF-EVO-3-035	46	19,5	AF-EVO-4-035	36
40	41,0 - 43,0	-	-	-	20,5	AF-EVO-4-040	32
42	43,5 - 45,5	16,5	AF-EVO-3-042	40	20,5	AF-EVO-4-042	32
45	46,0 - 47,5	-	-	-	20,5	AF-EVO-4-045 ●	28
48	49,5 - 51,5	16,5	AF-EVO-3-048	32	21,0	AF-EVO-4-048	24
50	51,0 - 53,0	-	-	-	21,0	AF-EVO-4-050 ●	24
54	55,0 - 57,0	17,0	AF-EVO-3-054	28	21,0	AF-EVO-4-054	24
57	58,0 - 60,0	-	-	-	21,5	AF-EVO-4-057 ●	20
60	61,5 - 63,5	17,0	AF-EVO-3-060	24	21,5	AF-EVO-4-060	20
64	65,0 - 67,5	17,0	AF-EVO-3-064	20	21,5	AF-EVO-4-064	18
70	71,0 - 73,5	17,5	AF-EVO-3-070	18	22,0	AF-EVO-4-070	16
76	77,0 - 79,5	17,5	AF-EVO-3-076	16	22,0	AF-EVO-4-076	16
80	81,0 - 84,0	-	-	-	22,5	AF-EVO-4-080	16
89	90,5 - 93,0	18,0	AF-EVO-3-089	16	22,5	AF-EVO-4-089	12
102	105,0 - 108,0	-	-	-	23,0	AF-EVO-4-102	10
108	109,5 - 113,0	18,0	AF-EVO-3-108	12	23,0	AF-EVO-4-108	10
110	112,0 - 116,0	18,0	AF-EVO-3-110	12	23,0	AF-EVO-4-110	10
114	116,0 - 120,0	18,5	AF-EVO-3-114	12	23,5	AF-EVO-4-114	10
125	127,0 - 131,0	18,5	AF-EVO-3-125 ●	12	23,5	AF-EVO-4-125 ●	8
133	135,0 - 139,0	19,0	AF-EVO-3-133	8	24,0	AF-EVO-4-133	6
140	142,0 - 146,0	19,0	AF-EVO-3-140	8	24,5	AF-EVO-4-140	6
160	162,0 - 166,0	19,0	AF-EVO-3-160	6	25,0	AF-EVO-4-160	6
168	170,0 - 174,0	-	-	-	25,0	AF-EVO-4-168	4



## AF/ArmaFlex Evo tubes



Length 2,0 m, Color black

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-5 insulation thickness 25,0 mm - 32,0 mm			AF-6 insulation thickness 32,0 mm - 45,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
10	11,0 - 12,5	-	-	-	32,0	AF-EVO-6-010	40
12	13,0 - 14,5	-	-	-	32,0	AF-EVO-6-012	36
15	16,0 - 17,5	-	-	-	32,0	AF-EVO-6-015	32
18	19,0 - 20,5	25,0	AF-EVO-5-018	42	32,0	AF-EVO-6-018	32
22	23,0 - 24,5	25,0	AF-EVO-5-022	36	33,5	AF-EVO-6-022	28
25	26,0 - 27,5	25,0	AF-EVO-5-025 ●	40	-	-	-
28	29,0 - 30,5	25,0	AF-EVO-5-028	36	35,0	AF-EVO-6-028	24
30	31,0 - 33,0	26,0	AF-EVO-5-030 ●	32	-	-	-
32	33,0 - 35,0	26,0	AF-EVO-5-032 ●	24	-	-	-
35	36,0 - 38,0	27,0	AF-EVO-5-035	24	35,0	AF-EVO-6-035	18
42	41,0 - 43,0	27,0	AF-EVO-5-042	22	36,5	AF-EVO-6-042	16
48	49,5 - 51,5	27,5	AF-EVO-5-048	16	37,5	AF-EVO-6-048	12
54	55,0 - 57,0	28,5	AF-EVO-5-054	16	38,0	AF-EVO-6-054	12
57	58,0 - 60,0	-	-	-	38,5	AF-EVO-6-057 ●	12
60	61,5 - 63,5	29,0	AF-EVO-5-060	12	39,0	AF-EVO-6-060	10
64	65,0 - 67,5	29,0	AF-EVO-5-064 ●	12	39,5	AF-EVO-6-064	10
70	71,0 - 73,5	29,5	AF-EVO-5-070 ●	12	40,0	AF-EVO-6-070	8
76	77,0 - 79,5	30,0	AF-EVO-5-076	10	40,5	AF-EVO-6-076	8
89	90,5 - 93,0	30,5	AF-EVO-5-089	8	41,5	AF-EVO-6-089	6
102	105,0 - 108,0	-	-	-	42,5	AF-EVO-6-102 ●	6
108	109,5 - 113,0	31,0	AF-EVO-5-108	6	42,5	AF-EVO-6-108	4
114	112,0 - 116,0	31,5	AF-EVO-5-114	6	43,0	AF-EVO-6-114	4
125	127,0 - 131,0	31,5	AF-EVO-5-125	6	44,0	AF-EVO-6-125	4
133	135,0 - 139,0	-	-	-	44,0	AF-EVO-6-133 ●	4
140	142,0 - 146,0	32,0	AF-EVO-5-140	6	44,5	AF-EVO-6-140 ●	4
160	162,0 - 166,0	-	-	-	45,0	AF-EVO-6-160 ●	4
168	170,0 - 174,0	32,0	AF-EVO-5-168	4	45,0	AF-EVO-6-168 ●	4

Length tolerance for tubes ± 1,5 %

Thickness tolerance  
 AF-1, AF-2: ± 1,0 mm  
 AF-3, AF-4: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex Evo tubes self-adhesive



Length 2,0 m, tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 8,0 mm - 9,5 mm			AF-2 insulation thickness 11,5 mm - 14,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
12	13,0 - 14,5	7,5	AF-EVO-1-012-A ○	234	11,0	AF-EVO-2-012-A ○	168
15	16,0 - 17,5	8,0	AF-EVO-1-015-A ○	192	11,5	AF-EVO-2-015-A ○	130
18	19,0 - 20,5	8,0	AF-EVO-1-018-A	140	11,5	AF-EVO-2-018-A	120
22	23,0 - 24,5	8,5	AF-EVO-1-022-A	132	12,0	AF-EVO-2-022-A	100
28	29,0 - 30,5	8,5	AF-EVO-1-028-A	100	12,5	AF-EVO-2-028-A	84
30	31,0 - 33,0	9,0	AF-EVO-1-030-A	96	-	-	-
35	36,0 - 38,0	9,0	AF-EVO-1-035-A	76	13,0	AF-EVO-2-035-A	62
42	43,5 - 45,5	9,0	AF-EVO-1-042-A	60	13,5	AF-EVO-2-042-A	48
48	49,5 - 51,5	9,0	AF-EVO-1-048-A	50	13,5	AF-EVO-2-048-A	44
54	55,0 - 57,0	9,0	AF-EVO-1-054-A	48	13,5	AF-EVO-2-054-A	36
60	61,5 - 63,5	9,0	AF-EVO-1-060-A	36	14,0	AF-EVO-2-060-A	32
64	65,0 - 67,5	-	-	-	14,0	AF-EVO-2-064-A	30
70	71,0 - 73,5	-	-	-	14,0	AF-EVO-2-070-A	28
76	77,0 - 79,5	9,5	AF-EVO-1-076-A	28	14,0	AF-EVO-2-076-A	28
89	90,5 - 93,0	9,5	AF-EVO-1-089-A ●	22	14,5	AF-EVO-2-089-A	22

## AF/ArmaFlex Evo tubes self-adhesive



Length 2,0 m, tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-3 insulation thickness 13,5 mm - 17,5 mm			AF-4 insulation thickness 17,0 mm - 22,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	16,0 - 17,5	14,0	AF-EVO-3-015-A	108	17,0	AF-EVO-4-015-A	88
18	19,0 - 20,5	14,0	AF-EVO-3-018-A	96	17,5	AF-EVO-4-018-A	70
22	23,0 - 24,5	14,5	AF-EVO-3-022-A	84	18,0	AF-EVO-4-022-A	60
28	29,0 - 30,5	15,5	AF-EVO-3-028-A	64	19,0	AF-EVO-4-028-A	48
35	36,0 - 38,0	16,0	AF-EVO-3-035-A	46	19,5	AF-EVO-4-035-A	36
42	43,5 - 45,5	16,5	AF-EVO-3-042-A	40	20,5	AF-EVO-4-042-A	32
48	49,5 - 51,5	16,5	AF-EVO-3-048-A	32	21,0	AF-EVO-4-048-A	24
54	55,0 - 57,0	17,0	AF-EVO-3-054-A	28	21,0	AF-EVO-4-054-A	24
60	61,5 - 63,5	17,0	AF-EVO-3-060-A	24	21,5	AF-EVO-4-060-A	20
64	65,0 - 67,5	-	-	-	21,5	AF-EVO-4-064-A •	18
70	71,0 - 73,5	-	-	-	22,0	AF-EVO-4-070-A	16
76	77,0 - 79,5	17,5	AF-EVO-3-076-A	16	22,0	AF-EVO-4-076-A	16
89	90,5 - 93,0	18,0	AF-EVO-3-089-A	16	22,5	AF-EVO-4-089-A	12

Length tolerance for tubes ± 1,5 %

Thickness tolerance  
 AF-1, AF-2: ±1,0 mm  
 AF-3, AF-4: ±1,5 mm

○ In the case of this item the self-adhesive seam is achieved with a radial cut surface.

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex Evo tubes endless



Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 7,0 mm - 8,5 mm			AF-2 insulation thickness 9,5 mm - 12,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	7,0	AF-EVO-1-006/E	90	9,5	AF-EVO-2-006/E	60
8	9,0 - 10,5	7,0	AF-EVO-1-008/E	80	10,0	AF-EVO-2-008/E	55
10	11,0 - 12,5	7,5	AF-EVO-1-010/E	60	11,0	AF-EVO-2-010/E	35
12	13,0 - 14,5	7,5	AF-EVO-1-012/E	50	11,0	AF-EVO-2-012/E	32
15	16,0 - 17,5	8,0	AF-EVO-1-015/E	40	11,5	AF-EVO-2-015/E	32
18	19,0 - 20,5	8,0	AF-EVO-1-018/E	35	11,5	AF-EVO-2-018/E	30
22	23,0 - 24,5	8,5	AF-EVO-1-022/E	30	12,0	AF-EVO-2-022/E	26
28	29,0 - 30,5	8,5	AF-EVO-1-028/E	28	12,5	AF-EVO-2-028/E	20

Length tolerance for tubes ± 1,5 %

Thickness tolerance  
 ≤ 6 mm: ±1,0 mm  
 7 - 19 mm: ±1,5 mm  
 > 19 mm: ±2,0 mm

## AF/ArmaFlex Evo sheets



Length 2,0 , Width 0,5 , Color black

Sheets insulation thickness		
Code	Insulation thickness [mm]	m <sup>2</sup> /carton
AF-EVO-10MM	10,0	13
AF-EVO-13MM	13,0	9
AF-EVO-16MM	16,0	8
AF-EVO-19MM	19,0	7
AF-EVO-25MM	25,0	5
AF-EVO-32MM	32,0	4
AF-EVO-50MM	50,0	3

Length tolerance for sheets ± 1,5 %

Thickness tolerance for sheets  
 10 - 19 mm: ±1,5 mm  
 > 19 mm: ±2,0 mm

Remark  
 One 1m<sup>2</sup> sheet can be replaced by two 0,5 m<sup>2</sup> sheets.



## AF/ArmaFlex Evo sheets self-adhesive



Length 2,0 m, Width 0,5 m

Sheets self-adhesive insulation thickness		
Code	Insulation thickness [mm]	m <sup>2</sup> /carton
AF-EVO-10MM/A	10,0	13
AF-EVO-13MM/A	13,0	9
AF-EVO-19MM/A	19,0	7
AF-EVO-25MM/A	25,0	5
AF-EVO-32MM/A	32,0	4
AF-EVO-50MM/A	50,0	3

Length tolerance for sheets	±1,5 %
Thickness tolerance for sheets	10 -19 mm: ±1,5 mm >19 mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.

## AF/ArmaFlex Evo sheets endless



Width 1,0 m

Sheets endless insulation thickness			
Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
AF-EVO-03MM/E	3,0	30	30
AF-EVO-06MM/E	6,0	15	15
AF-EVO-10MM/E	10,0	10	10
AF-EVO-13MM/E	13,0	8	8
AF-EVO-16MM/E	16,0	7	7
AF-EVO-19MM/E	19,0	6	6
AF-EVO-25MM/E	25,0	4	4
AF-EVO-32MM/E	32,0	3	3

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	3 mm: +1,5 mm 6 mm: ±1,0 mm 7 -19 mm: ±1,5 mm > 19mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.

## AF/ArmaFlex Evo sheets endless self-adhesive



Width 1,0 m

Sheets endless self-adhesive insulation thickness			
Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
AF-EVO-03MM/EA	3,0	30	30
AF-EVO-06MM/EA	6,0	15	15
AF-EVO-10MM/EA	10,0	10	10
AF-EVO-13MM/EA	13,0	8	8
AF-EVO-16MM/EA	16,0	7	7
AF-EVO-19MM/EA	19,0	6	6
AF-EVO-25MM/EA	25,0	4	4
AF-EVO-32MM/EA	32,0	3	3

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	3 mm: +1,5 mm 6 mm: ±1,0 mm 7 -19 mm: ±1,5 mm > 19mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.

## AF/ArmaFlex Evo tapes self-adhesive



Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>AF-EVO-TAPE-MC</b>	50,0	15	3	12
<b>AF-EVO-TAPE-MC/6</b>	50,0	15	3	6

## AF/ArmaFlex Evo adhesive



Code	Article description	Pieces/carton
<b>ADH-525/0,5</b>	ArmaFlex 525 Glue 0,5 litre can	12
<b>ADH-525/1,0</b>	ArmaFlex 525 Glue 1,0 litre can	12
<b>ADH-525/2,5</b>	ArmaFlex 525 Glue 2,5 litre can	8





 armacell®

AF/ARMAFLEX

INSTALL IT. TRUST IT.



- Enjoy extended guarantee up to 10 years
- Antimicrobial protection using MICROBAN® technology
- Reliable condensation control and prevention of corrosion under insulation (CUI)







## \*10-YEAR SYSTEM WARRANTY

The Armaflex System Warranty is a partner scheme in which trained and certified insulation companies receive a warranty of up to ten years instead of the two-year warranty period.

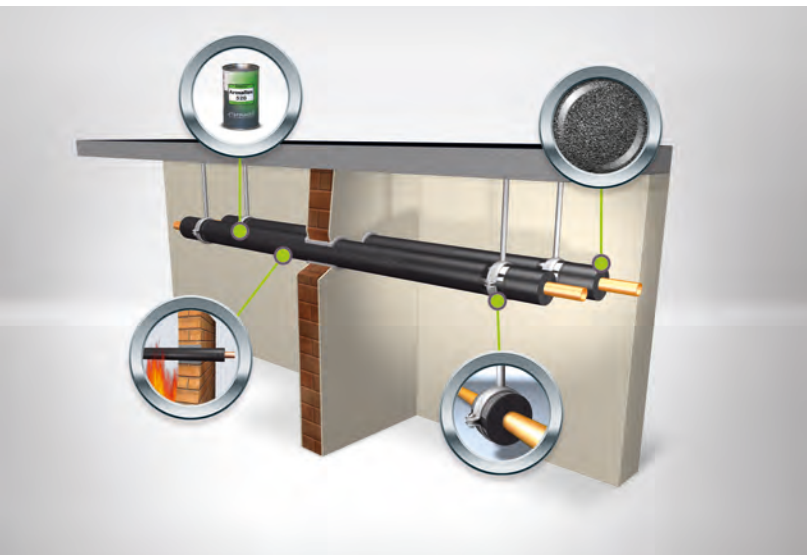
This concept, which is unique in the market, gives the certified companies a direct competitive advantage when submitting tenders. What's more, specifiers, trade partners and clients benefit from the seal of quality, too. For more information, please visit: <https://arma.link/systemwarranty>



## TRUSTED SINCE 50 YEARS

With a combination of internal and externally monitored technical values we offer consistently high-quality products. This is the result of 50 years experience and continual research and further development of the product properties which determine the quality. Since AF/Armaflex is distributed throughout Europe, it does not just comply with national standards and controls but we are also thinking ahead, preparing for the future European product and testing standards.

The combination of high  $\mu$ -value, low  $\lambda$ -value and the engineered wall thickness of AF/Armaflex not only ensures reliable protection against condensation, but also meets the most stringent energy-saving regulations, contributing to an optimal energy efficiency of the installation.



## COMPLETE SYSTEM

Armacell offers a complete carefully considered and coordinated system solution for any professional insulation challenge: AF/Armaflex standard, self-adhesive and endless tubes and sheets, tape and accessories. Armafix AF pipe supports to avoid thermal bridging, Armaflex Protect fire barrier as well as AF/Armaflex with Arma-Chek flexible covering systems. The wide range of specially developed accessories such as the new generation of adhesives and the Armaflex Toolbox for applying Armaflex insulation materials make installation even easier.



At [www.armacell.com](http://www.armacell.com) you will find in the Refrigeration & Air-Conditioning section under AF/Armaflex ready-made **specification texts** to download and use.

**ArmWin** is the technical calculation program of Armacell. This allows you to determine i.a. the correct insulation thickness to prevent condensation and to minimize energy losses.

**Application trainings:** We train insulation contractor and offer valuable assistance for your daily work. A successful participation in a training, we certify with one in the Industry recognized certificate.

All services around our products you will find at [www.armacell.com](http://www.armacell.com)

## AF/Armaflex

### TRIPLE SECURITY

AF/Armaflex is the professional flexible insulation for reliable continuous condensation control. The optimal combination of a very low thermal conductivity and extremely high resistance to water vapour transmission prevents long-term energy losses and water vapour ingress and reduces the risk of corrosion under insulation.



### AF/ARMAFLEX ACTIVE MICROBAN® ANTIMICROBIAL PROTECTION

An EPA (Environmental Protection Agency, US) survey indicates that conditioned areas are frequently breeding havens for microbes and contamination. Indoor air can be up to 10 times more polluted than outdoor air. Microbial pollution is a key element of indoor air pollution. Microbes, which can be found in and on HVAC systems, include stain and odor causing bacteria, mould and mildew. These microbes subsequently emit spores, cells, fragments and volatile organic compounds (VOC) into indoor air, thus possibly contributing to the well-known sick building syndrome. Mould and mildew additionally initiate the biological or chemical degradation of materials. AF/Armaflex is the first flexible insulation material equipped with MICROBAN® technology. When microbes come in contact with the insulation surface, MICROBAN® protection penetrates the cell wall of the microorganism, disabling its ability to function, grow and reproduce. Because the protection is built in during the manufacturing process, it will not wash off or wear away. This gives AF/Armaflex products an added level of protection against mould and mildew and is therefore the ideal long-term solution for insulating ventilation or air-conditioning equipment in public buildings such as schools, hospitals, elderly homes, offices and airports, as well as the mechanical systems in the pharmaceutical or food industries.





## AF/ArmaFlex fitting covers

The dust- and fibre-free AF/ArmaFlex is not only very pleasant to work with, it's also time- and cost-efficient. Installation is now even simpler and faster with the new prefabricated AF/ArmaFlex fitting covers. Whereas in the past installers often had to fabricate elbows and T-pieces from ArmaFlex tubes and sheets under time pressure and difficult conditions on the building site, they can now turn to prefabricated products. The fitting covers are not only much faster and easier to install, they also optimise material consumption by minimising waste.



### THE ADVANTAGES ARE CLEAR:

- Significant time savings (no prefabrication by hand, fewer tack-drying periods)
- Higher performance with the same installation time
- Reduction in the amount of adhesive used on the building site
- Greater reliability (less risk of application errors on the seams)
- Cost savings (billable services)

The fitting covers are perfectly coordinated with both the AF/ArmaFlex and Arma-Chek Silver range. Further time and cost-savings can be achieved with the factory-covered Arma-Chek Silver products.

### SIGNIFICANT TIME SAVINGS

As a case study carried out by Armacell shows, previously unused time-saving potential can be tapped by installing AF/ArmaFlex fitting covers. The study is based on a typical tender for low-temperature insulation work. It includes the insulation of a total of 1,241 m of pipework and 1,223 fittings, including 946 elbows and T-pieces. If AF/ArmaFlex fitting covers are used in this project, the assembly time can be reduced by up to 70 % compared to the traditional installation process. In this case that corresponds to a 40-hour working week.



### TREND TOWARDS INCREASED USE OF PRE-FABRICATED COMPONENTS

Today, employees are more in demand than ever in the construction industry and the insulation sector is particularly hard hit by the shortage of skilled workers. This trend will become even more pronounced in the future as the number of apprentices in the skilled trades continues to decrease. Therefore, industrially prefabricated components are becoming more and more attractive. Using ArmaFlex fitting covers allows skilled personnel to concentrate on more complex tasks – without compromising the quality and reliability of the application.



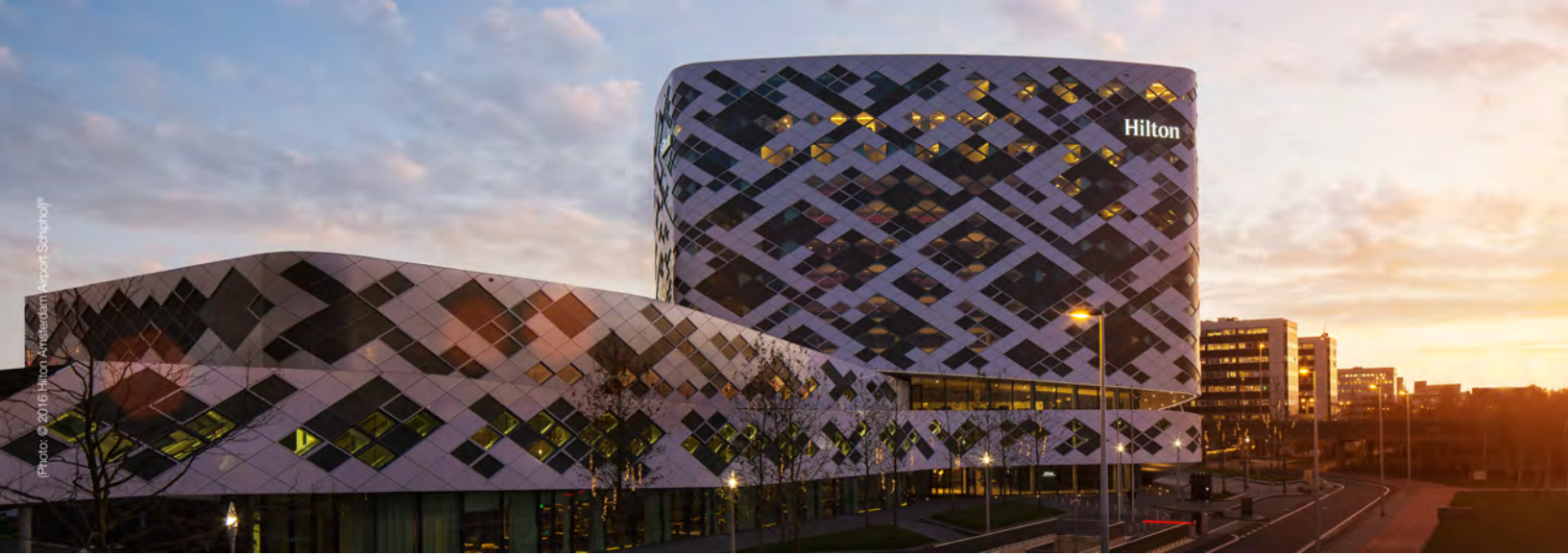


Photo © 2016 Hilton Amsterdam Airport Schiphol

## AF/Armaflex in the Hilton Schiphol Hotel

If the hotel industry awarded stars for the insulation concept, the new Hilton Amsterdam Airport Schiphol Hotel would certainly have deserved a fifth star. The impressive building complex relies on the tried-and-tested combination of AF/Armaflex and Armafix AF and the insulation work was carried out under the Armaflex System Warranty.



### CHALLENGE

When planning the hotel great importance was attached to the sustainability of the building. Energy consumption is 10 % lower than the Energy Performance Coefficient (EPC) legally required in the Netherlands. Consultant engineers Deerns achieved this feat by combining a wide range of energy-saving measures.

### SOLUTION

All in all, Unica Installatietechniek installed 31 km of pipework in the building complex, around half of which is dedicated to cooling the building. These pipes have feed temperatures of 10 °C and return temperatures of 18 °C. To protect the chilled-water pipes against condensation and energy losses, consultant engineers Deerns specified AF/Armaflex insulation material.

On the pipes and on other components in the plant rooms employees of the insulation contractor Riweltie BV installed tubes and sheets in insulation thicknesses of 16 and 19 mm. The outdoor air intake ducts were insulated with some 4,000 m<sup>2</sup> of AF/Armaflex sheet material in an insulation thickness of 25 mm.

**Hans de Klein**  
Technical Commercial Director at Riweltie BV insulation contractors

"We realized this project with the Armaflex System Warranty. When we use AF/Armaflex in combination with the Armafix AF pipe support we now receive a project-related warranty of 10 years. A great idea from Armacell."

## Technical Data - AF/ArmaFlex

Brief description	Highly-flexible, closed-cell insulation material with high water vapour diffusion resistance, low thermal conductivity and built-in Microban® antimicrobial protection.
Material type	Elastomeric foam based on synthetic rubber. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	black
Material Special Information	Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for pipes, air ducts, vessels (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration and process equipment to prevent condensation and save energy. Structure-borne noise reduction in service-water and waste-water installations.
Special Features	Increasing insulation wall thicknesses for tubes ensures that the surface temperature is maintained as the pipe diameter is increased.
Safety and Environment	Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20200219-IBB1-EN", Institut Bauen und Umwelt e.V. (IBU)
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test*1	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 110 °C min. service temperature <sup>1</sup> -50 °C	(+ 85 °C if sheet or tape is glued to the object with its whole surface.) EU 5661	Tested acc. to EN 14706, EN 14707 and EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ +/-0 °C $\lambda \leq 0,033$ Tubes (AF-1 to AF-4) $\lambda \leq 0,036$ Tubes (AF-5 to AF-6) $\lambda \leq 0,033$ Sheets, strips, tape (AF-03MM to AF-32MM) $\lambda \leq 0,036$ Sheets (AF-50MM)	$W/(m \cdot K)$ $[33 + 0,1 \cdot \vartheta_m + 0,0008 \cdot \vartheta_m^2]/1000$ $W/(m \cdot K)$ $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot \vartheta_m^2]/1000$ $W/(m \cdot K)$ $[33 + 0,1 \cdot \vartheta_m + 0,0008 \cdot \vartheta_m^2]/1000$ $W/(m \cdot K)$ $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot \vartheta_m^2]/1000$	EU 5661 Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Sheets (AF-03MM to AF-32MM) and Tubes (AF-1 to AF-4) Sheets (AF-50MM) and Tubes (AF-5 to AF-6)	$\mu \geq 10.000$ $\mu \geq 7.000$	EU 5661 Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>			
Reaction to fire	tubes sheets tape	B <sub>L</sub> -s3, d0 B-s3,d0 B-s3,d0	EU 5661 Classified acc. to EN 13501-1 Tested acc. to EN 13823 EN ISO 11925-2
Other Fire Class	UL - approved FM - approved Ship Building	V-0, 5 VB (sheets); V-0, 5 VA (tubes) 4924-Pipe and Duct Insulation low-flammable - 2010 FTP-Code	UL: EU 5837 FM: EU 5607 Ship Building: D2406, D 5555, EU 5474 UL: Tested according to UL94, IEC 60695 and Can/CSA-C.22.2 No0.17., UL 746C FM: Tested according to UBC26-3 Ship Building: Classified acc. to MED 96/98/EC MODULE D
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Fire resistance of structural element	EI 30 - EI 90		EU 5661 EU 5584 Classified acc. to EN 13501-2 Tested acc. to EN 1366-3
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	$\leq 28$ dB (A)		EU 7282 Tested acc. to EN ISO 3822-1
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 5661 Tested acc. to EN 822, EN 823, EN 13467



## Technical Data - AF/ArmaFlex

UV resistance <sup>2</sup>	Protection against UV-radiation is necessary.	TB 142	
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets, self-adhesive tubes, stripes: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).
Antimicrobial behaviour	In-built Microban® active antimicrobial protection: No fungal growth observed	D 5931	Tested acc. to EN ISO 846 (VDI 6022)

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. If Armaflex is applied under UV-radiation the material must be protected within 3 days with a covering.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.

# AF/ArmaFlex tubes



Length 2,0 m, Color black

Pipe max. Outside- Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 7,0 mm - 10,0 mm			AF-2 insulation thickness 9,5 mm - 16,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	7,0	AF-1-006	360	9,5	AF-2-006	288
8	9,0 - 10,5	7,0	AF-1-008 ●	310	10,0	AF-2-008	240
10	11,0 - 12,5	7,5	AF-1-010	300	11,0	AF-2-010	170
12	13,0 - 14,5	7,5	AF-1-012	234	11,0	AF-2-012	168
15	16,0 - 17,5	8,0	AF-1-015	192	11,5	AF-2-015	130
18	19,0 - 20,5	8,0	AF-1-018	140	11,5	AF-2-018	120
22	23,0 - 24,5	8,5	AF-1-022	132	12,0	AF-2-022	100
25	26,0 - 27,5	8,5	AF-1-025	108	12,5	AF-2-025	88
28	29,0 - 30,5	8,5	AF-1-028	100	12,5	AF-2-028	84
30	31,0 - 33,0	9,0	AF-1-030 ●	96	12,5	AF-2-030 ●	72
32	33,0 - 35,0	9,0	AF-1-032	84	13,0	AF-2-032	64
35	36,0 - 38,0	9,0	AF-1-035	76	13,0	AF-2-035	62
38	39,0 - 41,0	9,0	AF-1-038 ●	70	-	-	-
40	41,0 - 42,5	-	-	-	13,5	AF-2-040	44
42	43,5 - 45,5	9,0	AF-1-042	60	13,5	AF-2-042	48
45	46,0 - 47,5	9,0	AF-1-045 ●	56	-	-	-
48	49,5 - 51,5	9,0	AF-1-048	50	13,5	AF-2-048	44
50	51,0 - 52,5	-	-	-	13,5	AF-2-050	32
54	55,0 - 57,0	9,0	AF-1-054	48	13,5	AF-2-054	36
57	58,0 - 60,0	9,0	AF-1-057 ●	40	14,0	AF-2-057 ●	34
60	61,5 - 63,5	9,0	AF-1-060	36	14,0	AF-2-060	32
64	65,0 - 67,5	9,5	AF-1-064	32	14,0	AF-2-064	30
70	71,0 - 73,5	9,5	AF-1-070	32	14,0	AF-2-070	28
76	77,0 - 79,5	9,5	AF-1-076	28	14,0	AF-2-076	28
80	81,0 - 84,0	9,5	AF-1-080	24	14,5	AF-2-080	24
89	90,5 - 93,0	9,5	AF-1-089	22	14,5	AF-2-089	22
102	105,0 - 108,0	9,5	AF-1-102	16	14,5	AF-2-102	18
108	109,5 - 113,0	9,5	AF-1-108	16	14,5	AF-2-108	18
110	112,0 - 116,0	9,5	AF-1-110	16	15,0	AF-2-110 ●	16
114	116,0 - 120,0	9,5	AF-1-114	16	15,0	AF-2-114	16
125	127,0 - 131,0	9,5	AF-1-125	12	15,0	AF-2-125	12
133	135,0 - 139,0	-	-	-	15,5	AF-2-133	12
140	142,0 - 146,0	10,0	AF-1-140	12	15,5	AF-2-140	8
160	162,0 - 166,0	10,0	AF-1-160	8	16,0	AF-2-160	8

# AF/ArmaFlex tubes



Length 2,0 m, Color black

Pipe max. Outside- Ø [mm]	Inner Ø min/ max mm	AF-3 insulation thickness 12,5 mm - 19,0 mm			AF-4 insulation thickness 15,5 mm - 25,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	-	-	-	15,5	AF-4-006	120
10	11,0 - 12,5	12,5	AF-3-010	156	15,5	AF-4-010	110
12	13,0 - 14,5	13,0	AF-3-012	144	16,0	AF-4-012	100
15	16,0 - 17,5	14,0	AF-3-015	108	17,0	AF-4-015	88
18	19,0 - 20,5	14,0	AF-3-018	96	17,5	AF-4-018	70
22	23,0 - 24,5	14,5	AF-3-022	84	18,0	AF-4-022	60
25	26,0 - 27,5	-	-	-	18,5	AF-4-025	56
28	29,0 - 30,5	15,5	AF-3-028	64	19,0	AF-4-028	48
30	31,0 - 33,0	-	-	-	19,0	AF-4-030 ●	40
32	33,0 - 35,0	-	-	-	19,5	AF-4-032	40
35	36,0 - 38,0	16,0	AF-3-035	46	19,5	AF-4-035	36
40	41,0 - 42,5	-	-	-	20,5	AF-4-040	32
42	43,5 - 45,5	16,5	AF-3-042	40	20,5	AF-4-042	32
45	46,0 - 47,5	-	-	-	20,5	AF-4-045 ●	28
48	49,5 - 51,5	16,5	AF-3-048	32	21,0	AF-4-048	24
50	51,0 - 52,5	-	-	-	21,0	AF-4-050 ●	24
54	55,0 - 57,0	17,0	AF-3-054	28	21,0	AF-4-054	24
57	58,0 - 60,0	-	-	-	21,5	AF-4-057 ●	20
60	61,5 - 63,5	17,0	AF-3-060	24	21,5	AF-4-060	20
64	65,0 - 67,5	17,0	AF-3-064	20	21,5	AF-4-064	18
70	71,0 - 73,5	17,5	AF-3-070	18	22,0	AF-4-070	16
76	77,0 - 79,5	17,5	AF-3-076	16	22,0	AF-4-076	16
80	81,0 - 84,0	-	-	-	22,5	AF-4-080	16
89	90,5 - 93,0	18,0	AF-3-089	16	22,5	AF-4-089	12
102	105,0 - 108,0	-	-	-	23,0	AF-4-102	10
108	109,5 - 113,0	18,0	AF-3-108	12	23,0	AF-4-108	10
110	112,0 - 116,0	18,0	AF-3-110	12	23,0	AF-4-110	10
114	116,0 - 120,0	18,5	AF-3-114	12	23,5	AF-4-114	10
125	127,0 - 131,0	18,5	AF-3-125 ●	12	23,5	AF-4-125 ●	8
133	135,0 - 139,0	18,5	AF-3-133	8	24,0	AF-4-133	6
140	142,0 - 146,0	19,0	AF-3-140	8	24,5	AF-4-140	6
160	162,0 - 166,0	19,0	AF-3-160	6	25,0	AF-4-160	6
168	170,0 - 174,0	-	-	-	25,0	AF-4-168	4



## AF/ArmaFlex tubes



Length 2,0 m, Color black

Pipe max. Outside- Ø [mm]	Inner Ø min/ max mm	AF-5 insulation thickness 25,0 mm - 32,0 mm			AF-6 insulation thickness 32,0 mm - 45,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
10	11,0 - 12,5	-	-	-	32,0	AF-6-010	40
12	13,0 - 14,5	-	-	-	32,0	AF-6-012	36
15	16,0 - 17,5	-	-	-	32,0	AF-6-015	32
18	19,0 - 20,5	25,0	AF-5-018	42	32,0	AF-6-018	32
20	21,0 - 22,0	25,0	AF-5-020 ●	44	-	-	-
22	23,0 - 24,5	25,0	AF-5-022	36	33,5	AF-6-022	28
25	26,0 - 27,0	25,0	AF-5-025 ●	40	-	-	-
28	29,0 - 30,5	25,0	AF-5-028	36	35,0	AF-6-028	24
30	31,0 - 33,0	26,0	AF-5-030 ●	32	-	-	-
32	33,0 - 35,0	26,0	AF-5-032 ●	24	-	-	-
35	36,0 - 38,0	27,0	AF-5-035	24	35,0	AF-6-035	18
42	43,5 - 45,5	27,0	AF-5-042	22	36,5	AF-6-042	16
48	49,5 - 51,5	27,5	AF-5-048	16	37,5	AF-6-048	12
54	55,0 - 57,0	28,5	AF-5-054	16	38,0	AF-6-054	12
57	58,0 - 60,0	-	-	-	38,5	AF-6-057 ●	12
60	61,5 - 63,5	29,0	AF-5-060	12	39,0	AF-6-060	10
64	65,0 - 67,5	29,0	AF-5-064 ●	12	39,5	AF-6-064	10
70	71,0 - 73,5	29,5	AF-5-070 ●	12	40,0	AF-6-070	8
76	77,0 - 79,5	30,0	AF-5-076	10	40,5	AF-6-076	8
89	90,5 - 93,0	30,5	AF-5-089	8	41,5	AF-6-089	6
102	105,0 - 108,0	-	-	-	42,5	AF-6-102 ●	6
108	109,5 - 113,0	31,0	AF-5-108	6	42,5	AF-6-108	4
114	116,0 - 120,0	31,5	AF-5-114	6	43,0	AF-6-114	4
125	127,0 - 131,0	31,5	AF-5-125	6	44,0	AF-6-125	4
133	134,0 - 139,0	-	-	-	44,0	AF-6-133 ●	4
140	142,0 - 146,0	32,0	AF-5-140	6	44,5	AF-6-140 ●	4
160	162,0 - 166,0	-	-	-	45,0	AF-6-160 ●	4
168	170,0 - 174,0	32,0	AF-5-168	4	45,0	AF-6-168 ●	4

Length tolerance for tubes

± 1,5 %

Thickness tolerance

AF-1, AF-2: ± 1,0 mm  
AF-3, AF-4: ± 1,5 mm  
AF-5: ± 2,5 mm  
AF-6: ± 3,0 mm

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex tubes self-adhesive



Length 2,0 m, Color black, tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 8,0 mm - 9,5 mm			AF-2 insulation thickness 11,5 mm - 14,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
12	12,0 - 14,5	7,5	AF-1-012-A ○	234	11,0	AF-2-012-A ○	168
15	16,0 - 17,5	8,0	AF-1-015-A ○	192	11,5	AF-2-015-A ○	130
18	19,0 - 20,5	8,0	AF-1-018-A	140	11,5	AF-2-018-A	120
22	23,0 - 24,5	8,5	AF-1-022-A	132	12,0	AF-2-022-A	100
28	29,0 - 30,5	8,5	AF-1-028-A	100	12,5	AF-2-028-A	84
30	31,0 - 33,0	9,0	AF-1-030-A	96	12,5	AF-2-030-A ●	72
35	36,0 - 38,0	9,0	AF-1-035-A	76	13,0	AF-2-035-A	62
42	43,5 - 45,5	9,0	AF-1-042-A	60	13,5	AF-2-042-A	48
48	49,5 - 51,5	9,0	AF-1-048-A	50	13,5	AF-2-048-A	44
54	55,0 - 57,0	9,0	AF-1-054-A	48	13,5	AF-2-054-A	36
60	61,5 - 63,5	9,0	AF-1-060-A	36	14,0	AF-2-060-A	32
64	65,0 - 67,5	-	-	-	14,0	AF-2-064-A	30
70	71,0 - 73,5	-	-	-	14,0	AF-2-070-A	28
76	77,0 - 79,5	9,5	AF-1-076-A	28	14,0	AF-2-076-A	28
89	90,5 - 93,5	9,5	AF-1-089-A ●	22	14,5	AF-2-089-A	22

## AF/ArmaFlex tubes self-adhesive



Length 2,0 m, Color black, tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-3 insulation thickness 13,5 mm - 17,5 mm			AF-4 insulation thickness 17,0 mm - 22,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	16,0 - 17,5	13,5	AF-3-015-A	108	17,0	AF-4-015-A	88
18	19,0 - 20,5	14,0	AF-3-018-A	96	17,5	AF-4-018-A	70
22	23,0 - 24,5	14,5	AF-3-022-A	84	18,0	AF-4-022-A	60
28	29,0 - 30,5	15,5	AF-3-028-A	64	19,0	AF-4-028-A	48
35	36,0 - 38,0	16,0	AF-3-035-A	46	19,5	AF-4-035-A	36
42	43,5 - 45,5	16,5	AF-3-042-A	40	20,5	AF-4-042-A	32
48	49,5 - 51,5	16,5	AF-3-048-A	32	21,0	AF-4-048-A	24
54	55,0 - 57,0	17,0	AF-3-054-A	28	21,0	AF-4-054-A	24
60	61,5 - 63,5	17,5	AF-3-060-A	24	21,5	AF-4-060-A	20
64	65,0 - 67,5	-	-	-	21,5	AF-4-064-A •	18
70	70,0 - 73,5	-	-	-	22,0	AF-4-070-A	16
76	77,0 - 79,5	17,5	AF-3-076-A	16	22,0	AF-4-076-A	16
89	90,5 - 93,5	17,5	AF-3-089-A	16	22,5	AF-4-089-A	12

Length tolerance for tubes ± 1,5 %

Thickness tolerance  
 AF-1, AF-2: ±1,0 mm  
 AF-3, AF-4: ±1,5 mm

○ In the case of this item the self-adhesive seam is achieved with a radial cut surface.

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex tubes endless



Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-1 insulation thickness 7,0 mm - 8,5 mm			AF-2 insulation thickness 9,5 mm - 12,5 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
6	7,0 - 8,5	7,0	AF-1-006/E	90	9,5	AF-2-006/E	60
8	9,0 - 10,5	7,0	AF-1-008/E	80	10,0	AF-2-008/E	55
10	11,0 - 12,5	7,5	AF-1-010/E	60	11,0	AF-2-010/E	35
12	13,0 - 14,5	7,5	AF-1-012/E	50	11,0	AF-2-012/E	32
15	16,0 - 17,5	8,0	AF-1-015/E	40	11,5	AF-2-015/E	32
18	19,0 - 20,5	8,0	AF-1-018/E	35	11,5	AF-2-018/E	30
22	23,0 - 24,5	8,5	AF-1-022/E	30	12,0	AF-2-022/E	26
28	29,0 - 30,5	8,5	AF-1-028/E	28	12,5	AF-2-028/E	20

Length tolerance for tubes ± 1,5 %

Thickness tolerance  
 ≤ 6 mm: ±1,0 mm  
 7 - 19 mm: ±1,5 mm  
 > 19 mm: ±2,0 mm

## AF/ArmaFlex sheets



Length 2,0 m, Width 0,5 m, Color black

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
AF-10MM	10,0	13
AF-13MM	13,0	9
AF-16MM	16,0	8
AF-19MM	19,0	7
AF-25MM	25,0	5
AF-32MM	32,0	4
AF-50MM	50,0	3

Length tolerance for sheets ±1,5 %

Thickness tolerance for sheets  
 10 - 19 mm: ±1,5 mm  
 >19 mm: ±2,0 mm

Remark One 1m<sup>2</sup> sheet can be replaced by two 0,5 m<sup>2</sup> sheets.

## AF/ArmaFlex sheets self-adhesive



Length 2,0 m, Width 0,5 m, Color black

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
AF-10MM/A	10,0	13
AF-13MM/A	13,0	9
AF-19MM/A	19,0	7
AF-25MM/A	25,0	5
AF-32MM/A	32,0	4
AF-50MM/A	50,0	3

Length tolerance for sheets	±1,5 %
Thickness tolerance for sheets	10 -19 mm: ±1,5 mm >19 mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.

## AF/ArmaFlex sheets endless



Width 1,0 m, Color black

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
AF-03MM/E	3,0	30	30
AF-06MM/E	6,0	15	15
AF-10MM/E	10,0	10	10
AF-13MM/E	13,0	8	8
AF-16MM/E	16,0	7	7
AF-19MM/E	19,0	6	6
AF-25MM/E	25,0	4	4
AF-32MM/E	32,0	3	3
AF-50MM/E	50,0	5	5

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	3 mm: +1,5 mm 6 mm: ±1,0 mm 7 -19 mm: ±1,5 mm > 19 mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.

## AF/ArmaFlex sheets endless self-adhesive



Width 1,0 m, Color black

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
AF-03MM/EA	3,0	30	30
AF-06MM/EA	6,0	15	15
AF-10MM/EA	10,0	10	10
AF-13MM/EA	13,0	8	8
AF-16MM/EA	16,0	7	7
AF-19MM/EA	19,0	6	6
AF-25MM/EA	25,0	4	4
AF-32MM/EA	32,0	3	3
AF-50MM/EA	50,0	5	5

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	3 mm: +1,5 mm 6 mm: ±1,0 mm 7 -19 mm: ±1,5 mm > 19 mm: ±2,0 mm
Remark	One 1m <sup>2</sup> sheet can be replaced by two 0,5 m <sup>2</sup> sheets.



## AF/ArmaFlex stripes self-adhesive



Color black

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
AF-10MM/E-S100	100,0	10	10	10
AF-10MM/E-S50	50,0	10	10	20
AF-13MM/E-S100	100,0	8	13	10
AF-13MM/E-S50 ●	50,0	8	13	20
AF-19MM/E-S100	100,0	6	19	10
AF-19MM/E-S50	50,0	6	19	20
AF-19MM/E-S75 ●	75,0	6	19	13

Thickness tolerance for sheets 10 -19 mm: ±1,5 mm

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex elbows pre-fabricated



Color black, Elastomeric pre-fabricated elbows

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness				AF-4 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
15	AF-2-015-C90 ●	11,5	3 segment	3	AF-4-015-C90 ●	17	3 segment	3
18	AF-2-018-C90 ●	11,5	3 segment	3	AF-4-018-C90 ●	17,5	3 segment	3
22	AF-2-022-C90 ●	12	3 segment	3	AF-4-022-C90 ●	18	3 segment	3
28	AF-2-028-C90 ●	12,5	3 segment	3	AF-4-028-C90 ●	19	3 segment	3
35	AF-2-035-C90 ●	13,0	3 segment	3	AF-4-035-C90 ●	19,5	3 segment	3
42	AF-2-042-C90 ●	13,5	3 segment	3	AF-4-042-C90 ●	20,5	4 segment	3
48	AF-2-048-C90 ●	13,5	3 segment	3	AF-4-048-C90 ●	21	4 segment	3
54	AF-2-054-C90 ●	13,5	3 segment	3	AF-4-054-C90 ●	21	4 segment	3
60	AF-2-060-C90 ●	14	3 segment	3	AF-4-060-C90 ●	21,5	4 segment	3
64	AF-2-064-C90 ●	14	4 segment	3	AF-4-064-C90 ●	21,5	4 segment	3
76	AF-2-076-C90 ●	14	4 segment	3	AF-4-076-C90 ●	22	4 segment	3
89	AF-2-089-C90 ●	14,5	4 segment	3	AF-4-089-C90 ●	22,5	4 segment	3
114	AF-2-114-C90 ●	15	4 segment	3	AF-4-114-C90 ●	23,5	4 segment	3
140	-	-	-	-	AF-4-140-C90 ●	24,5	4 segment	3
168	-	-	-	-	AF-4-168-C90 ●	25	4 segment	3

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness				AF-6 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
18	AF-5-018-C90 ●	25	3 segment	3	AF-6-018-C90 ●	32	3 segment	3
22	AF-5-022-C90 ●	25	3 segment	3	AF-6-022-C90 ●	33,5	3 segment	3
28	AF-5-028-C90 ●	25	4 segment	3	AF-6-028-C90 ●	35	4 segment	3
35	AF-5-035-C90 ●	27	4 segment	3	AF-6-035-C90 ●	35	4 segment	3
42	AF-5-042-C90 ●	27	4 segment	3	AF-6-042-C90 ●	36,5	4 segment	3
48	AF-5-048-C90 ●	27,5	4 segment	3	AF-6-048-C90 ●	37,5	4 segment	3
54	AF-5-054-C90 ●	28,5	4 segment	3	AF-6-054-C90 ●	38	4 segment	3
60	AF-5-060-C90 ●	29	4 segment	3	-	-	-	-
64	AF-5-064-C90 ●	29	4 segment	3	AF-6-064-C90 ●	39,5	4 segment	3
76	AF-5-076-C90 ●	30	4 segment	3	AF-6-076-C90 ●	40,5	4 segment	3
89	AF-5-089-C90 ●	30,5	4 segment	3	AF-6-089-C90 ●	41,5	4 segment	3
102	-	-	-	-	AF-6-102-C90 ●	42,5	4 segment	3
114	AF-5-114-C90 ●	31,5	4 segment	3	AF-6-114-C90 ●	43	4 segment	3
168	-	-	-	-	AF-6-168-C90 ●	45	4 segment	3

**Thickness tolerance**  
 AF-1, AF-2: ± 1,0 mm  
 AF-3, AF-4: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

**Remark** Other items can be produced make to order.

● Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex t-pieces pre-fabricated



Color black, Elastomeric pre-fabricated T-pieces

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness				AF-4 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
15	AF-2-015-T90 ●	11,5	2 segment	3	AF-4-015-T90 ●	17	2 segment	3
18	AF-2-018-T90 ●	11,5	2 segment	3	AF-4-018-T90 ●	17,5	2 segment	3
22	AF-2-022-T90 ●	12	2 segment	3	AF-4-022-T90 ●	18	2 segment	3
28	AF-2-028-T90 ●	12,5	2 segment	3	AF-4-028-T90 ●	19	2 segment	3
35	AF-2-035-T90 ●	13	2 segment	3	AF-4-035-T90 ●	19,5	2 segment	3
42	AF-2-042-T90 ●	13,5	2 segment	3	AF-4-042-T90 ●	20	2 segment	3
48	AF-2-048-T90 ●	13,5	2 segment	3	AF-4-048-T90 ●	21	2 segment	3
54	AF-2-054-T90 ●	13,5	2 segment	3	AF-4-054-T90 ●	21	2 segment	3
60	AF-2-060-T90 ●	14	2 segment	3	AF-4-060-T90 ●	21,5	2 segment	3
64	AF-2-064-T90 ●	14	2 segment	3	AF-4-064-T90 ●	21,5	2 segment	3
76	AF-2-076-T90 ●	14	2 segment	3	AF-4-076-T90 ●	22	2 segment	3
89	AF-2-089-T90 ●	14,5	2 segment	3	AF-4-089-T90 ●	22,5	2 segment	3

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness				AF-6 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
18	AF-5-018-T90 ●	25	2 segment	3	AF-6-018-T90 ●	32	2 segment	3
22	AF-5-022-T90 ●	25	2 segment	3	AF-6-022-T90 ●	33,5	2 segment	3
28	AF-5-028-T90 ●	25	2 segment	3	AF-6-028-T90 ●	35	2 segment	3
35	AF-5-035-T90 ●	27	2 segment	3	AF-6-035-T90 ●	35	2 segment	3
42	AF-5-042-T90 ●	27	2 segment	3	-	-	-	-
48	AF-5-048-T90 ●	27,5	2 segment	3	-	-	-	-
54	AF-5-054-T90 ●	28,5	2 segment	3	AF-6-054-T90 ●	38	2 segment	3
60	AF-5-060-T90 ●	29	2 segment	3	-	-	-	-
64	AF-5-064-T90 ●	29	2 segment	3	AF-6-064-T90 ●	39,5	2 segment	3
76	AF-5-076-T90 ●	30	2 segment	3	-	-	-	-
89	AF-5-089-T90 ●	30,5	2 segment	3	AF-6-089-T90 ●	41,5	2 segment	3

### Thickness tolerance

AF-1, AF-2: ± 1,0 mm  
 AF-3, AF-4: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

### Remark

Other items can be produced make to order.

- Item not in stock. Delivery on request. [MTO]

## AF/ArmaFlex tapes self-adhesive



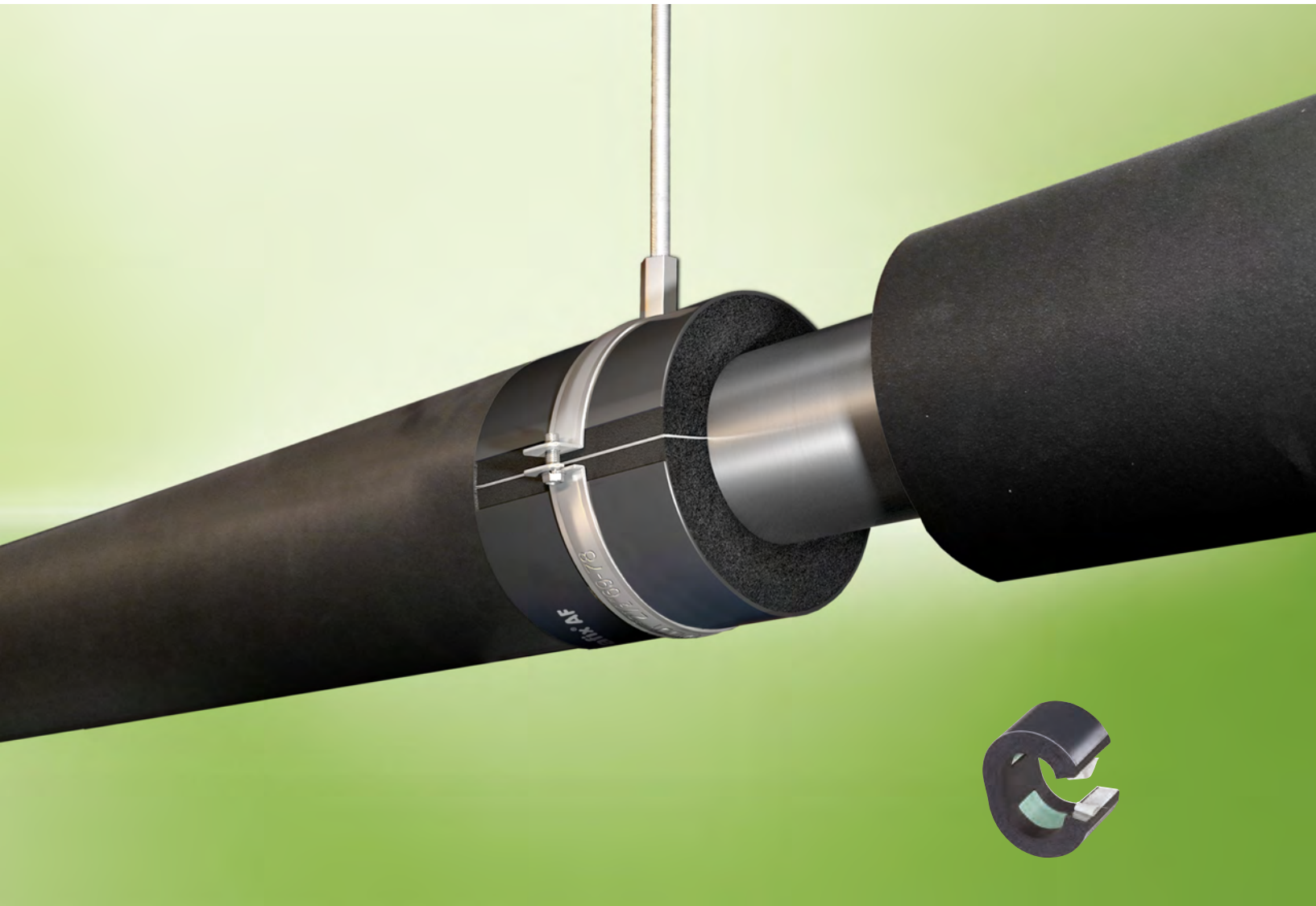
Color black

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
AF-TAPE-MC	50,0	15	3	12
AF-TAPE-MC/6	50,0	15	3	6



ARMAFIX AF

INSTALL IT. TRUST IT.



- Extended warranty with ArmaFlex
- Flexible for several sizes
- High quality standard



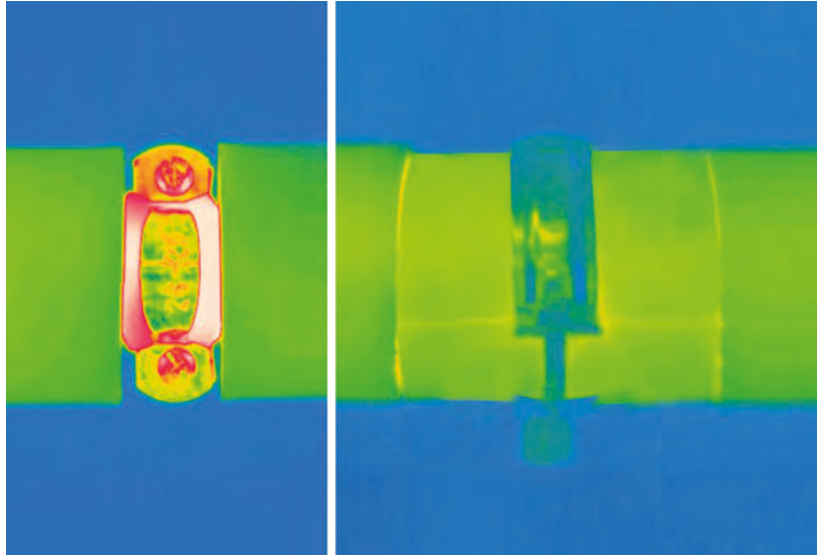
## ARMAFIX AF

Pipe brackets represent a potential weak point in insulation work. If the pipe is not thermally isolated from the pipe bracket, thermal bridges occur and condensation can form. On the one hand, this leads to increased energy losses and, on the other hand, the risk of corrosion and the danger of expensive secondary damage rise. To prevent thermal bridges, direct contact between the pipe and its bracket should be avoided. Armafix AF pipe supports, in combination with AF/Armaflex are the key for a perfectly enclosed insulation system on refrigeration installations.

### STRENGTHENING THE WEAKEST LINK IN THE CHAIN

AF/Armafix thermally isolates the pipe and bracket from each other. Installed together with AF/Armaflex tubes or sheets it guarantees an insulation system that provides long-term reliability in cold applications.

Armafix AF pipe supports are load bearing PET segments embedded in AF/Armaflex closed cell insulation material, with two outer shells made of aluminium sheeting. With its built-in water vapour barrier and self-adhesive secure joint on both sides, thermal bridging and condensation are prevented to ensure energy is not lost at fixings points. Armafix has a quick and easy three step installation process to achieve a professional result whilst also saving time and money.



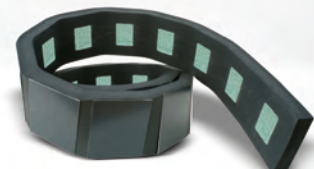
### COMBI-PACK

The Armafix AF pipe supports are also available in practical combination packs. These packs include our pipe supports with matching clamps.



### DUCT SUPPORT

Armafix AF duct support are specially constructed to carry and thermally decouple duct work and stabilizing under metal cladding for vessels. With a length of 2 meter, it is Armacell`s insulation product tailored for duct sizes.



## Technical Data - ArmaFix AF

Brief description	Pipe and duct support for refrigeration and air-conditioning installations to prevent condensation at fixing points. Thermally non-interacting single piece, with 2 ArmaFORM PET foam sections and with self-adhesive closure. All dimensions are matching the AF/Armaflex tube/sheet range.
Material type	PET- foam bearing segments, embedded in and glued to AF/Armaflex elastomeric foam material. Outside bearing shells made of painted aluminium sheeting 0.8mm thick, which simultaneously serves as a vapour barrier for the PET bearing segments.
Colour	dark grey
Material Special Information	Traces of silicon can be found on protection paper/foil used to protect self-adhesive closures. Please contact our customer service for details.
Applications	Thermally non-interacting mounting aid for tubes/sheets in refrigeration and air-conditioning applications, which are to be insulated with AF/Armaflex.
Remarks	When used in installations with intermittent temperatures, thermal length extensions may cause inherent pressure in the installation; this needs to be considered in the overall insulation construction.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 110 °C	Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature <sup>1</sup>	- 50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	Same as AF/Armaflex.		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
	Same as AF/Armaflex Evo tubes		
	Same as AF/ArmaFlex Evo sheets ≤ 32 mm		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Same as AF/Armaflex.		Tested acc. to EN 12086 and EN 13469
	Same as AF/Armaflex Evo		
<b>Fire performance</b>			
Reaction to fire	Euroclass	E	Classified acc. to EN 13501-1 Tested acc. to EN 13823 EN ISO 11925-2
	Entire System with AF/Armaflex	B / B <sub>L</sub> -s3, d0	
	Entire System with AF/Armaflex Evo	B / B <sub>L</sub> -s2, d0	
Practical Fire Behaviour	Self extinguishing, does not drip, does not spread flames.		
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	in comb. with AF/Armaflex	≤ 28 dB	EU 7282 EU 7283
	in comb. with SH/Armaflex	≤ 27 dB	
Density	95 - 105 kg/m <sup>3</sup> (pipe bearing segments)		
Storage & Shelf life	Products with self adhesive closures to be installed within 3 year.		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

<sup>1</sup> Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - Armafix Clamps

Brief description	Pipe clamp with a quick release and a combination nut for mounting.
Material type	Steel with an electrolytic zinc coating which protects the clamp from the corrosion.
Colour	silver
Material Special Information	The clamps are supplied with a nut for fixing.
Applications	Where thermal bridging should be avoided in refrigeration and air-conditioning installations, which are intended to be insulated with appropriate Armaflex type and Armafix pipe-hanger.

Property	Value/Assessment
<b>Fire performance</b>	
Other	No insulation layer in clamp / pipe fastener to affect fire performance of the clamp itself.
<b>Other technical features</b>	
Screw connections	M 8 / M 10 combination nut
Tension screws	M 6 and M 8
Clamp	Width 20 to 30 mm; Thickness 1,5 to 3,0 mm

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.



# ArmaFix AF pipe supports combi pack



Pipe support and suitable clamp. Especially designed for use with AF/Armaflex.

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness 11,0 mm - 14,5 mm			AF-4 (AF-3)* insulation thickness 15,5 mm - 22,5 mm		
	Max. permissible distance [m]	Code	Pieces/carton	Max. permissible distance [m]	Code	Pieces/carton
10	2,00	FX-2-10/12K	32	2,00	FX-4(3)-10/12K	26
12	2,00	FX-2-10/12K	32	2,00	FX-4(3)-10/12K	26
15	2,00	FX-2-15/18K	24	2,00	FX-4(3)-15/18K	24
18	2,00	FX-2-15/18K	24	2,00	FX-4(3)-15/18K	24
22	2,75	FX-2-22/25K	24	2,75	FX-4(3)-22/25K	12
25	2,75	FX-2-22/25K	24	2,75	FX-4(3)-22/25K	12
28	3,00	FX-2-28/30K	16	3,00	FX-4(3)-28/30K	12
30	3,00	FX-2-28/30K	16	3,00	FX-4(3)-28/30K	12
35	3,50	FX-2-35/38K	12	3,50	FX-4(3)-35/38K	12
38	3,50	FX-2-35/38K	12	3,50	FX-4(3)-35/38K	12
42	3,75	FX-2-42/45K	12	3,75	FX-4(3)-42/45K	12
45	3,75	FX-2-42/45K	12	3,75	FX-4(3)-42/45K	12
48	4,25	FX-2-48K	12	4,25	FX-4(3)-48K	12
54	4,25	FX-2-54/57K	12	4,25	FX-4(3)-54/57K	16
57	4,25	FX-2-54/57K	12	4,25	FX-4(3)-54/57K	16
60	4,75	FX-2-60/64K	10	4,75	FX-4(3)-60/64K	12
64	4,75	FX-2-60/64K	10	4,75	FX-4(3)-60/64K	12
70	4,75	FX-2-70K	16	4,75	FX-4(3)-70K	12
76	5,50	FX-2-76/80K	12	5,50	FX-4(3)-76/80K	18
80	5,50	FX-2-76/80K	12	5,50	FX-4(3)-76/80K	18
89	6,00	FX-2-89K	8	6,00	FX-4(3)-89K	14

Pipe max. Outside-Ø [mm]	AF-6 insulation thickness 32,0 mm - 45,0 mm					
	Max. permissible distance [m]	Code	Pieces/carton			
15	2,00	FX-6-15/18K	20	-	-	-
18	2,00	FX-6-15/18K	20	-	-	-
22	2,75	FX-6-22/25K	18	-	-	-
25	2,75	FX-6-22/25K	18	-	-	-
28	3,00	FX-6-28/30K	12	-	-	-
30	3,00	FX-6-28/30K	12	-	-	-
35	3,50	FX-6-35/38K	12	-	-	-
38	3,50	FX-6-35/38K	12	-	-	-
42	3,75	FX-6-42/45K	12	-	-	-
45	3,75	FX-6-42/45K	12	-	-	-
48	4,25	FX-6-48K	12	-	-	-
54	4,25	FX-6-54/57K	8	-	-	-
57	4,25	FX-6-54/57K	8	-	-	-
60	4,75	FX-6-60/64K	10	-	-	-
64	4,75	FX-6-60/64K	10	-	-	-
70	4,75	FX-6-70K	9	-	-	-
76	5,50	FX-6-76/80K	6	-	-	-
80	5,50	FX-6-76/80K	6	-	-	-
89	6,00	FX-6-89K	4	-	-	-

<b>Remark</b>	Pipe supports for plastic and stainless steel pipes available on request.
<b>Technical properties</b>	*suitable for application with tubes of insulation thickness AF-3 and AF-4
<b>Regulations</b>	(1) according to DIN 1988

# ArmaFix AF pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	AF-2 insulation thickness 9,5 mm - 16,0 mm				Clamps AF-2	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	FX-2-10/12	34	45	32	PCX 025/030	25
12	10	2,00	FX-2-10/12	36	45	32	PCX 025/030	25
15	15	2,00	FX-2-15/18	40	45	32	PCX 033/037	25
18	15	2,00	FX-2-15/18	43	45	32	PCX 033/037	25
22	22	2,75	FX-2-22/25	47	45	32	PCX 042/046	25
25	22	2,75	FX-2-22/25	50	45	32	PCX 042/046	25
28	28	3,00	FX-2-28/30	53	45	32	PCX 047/052	25
30	28	3,00	FX-2-28/30	56	45	32	PCX 047/052	25
35	35	3,50	FX-2-35/38	61	50	28	PCX 054/058	25
38	35	3,50	FX-2-35/38	65	50	28	PCX 054/058	25
42	42	3,75	FX-2-42/45	69	50	28	PCX 063/068	25
45	42	3,75	FX-2-42/45	72	50	28	PCX 063/068	25
48	48	4,25	FX-2-48	76	55	28	PCX 068/073	10
54	54	4,25	FX-2-54/57	82	55	28	PCX 072/080	10
57	54	4,25	FX-2-54/57	85	55	28	PCX 072/080	10
60	60	4,75	FX-2-60/64	89	65	24	PCX 082/085	10
64	60	4,75	FX-2-60/64	92	65	24	PCX 082/085	10
70	70	4,75	FX-2-70	98	65	24	PCX 092/099	10
76	76	5,50	FX-2-76/80	105	75	20	PCX 099/103	10
80	76	5,50	FX-2-76/80	109	75	20	PCX 099/103	10
89	89	6,00	FX-2-89	118	95	16	PCX 112/118	10
102	102	6,00	FX-2-102/108	134	95	16	PCX 133/137	10
108	102	6,00	FX-2-102/108	141	95	16	PCX 133/137	10
114	114	6,00	FX-2-110/114	144	115	12	PCX 137/142	10
125	125	6,00	FX-2-125	158	115	12	PCX 145/152	10
133	133	6,00	FX-2-133/140	165	115	12	PCX 159/164	10
140	133	6,00	FX-2-133/140	172	115	12	PCX 159/164	10
160	160	6,00	FX-2-160	193	115	9	PCX 190	10
165	-	6,00	FX-2-165/168 <sup>1</sup>	198	125	9	PCX 199	10
168	-	6,00	FX-2-165/168 <sup>1</sup>	201	125	9	PCX 199	10

# ArmaFix AF pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	AF-4 (AF-3)* insulation thickness 15,5 mm - 25,0 mm				Clamps AF-4 (AF-3)*	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	FX-4(3)-10/12	46	55	28	PCX 042/046	25
12	10	2,00	FX-4(3)-10/12	48	55	28	PCX 042/046	25
15	15	2,00	FX-4(3)-15/18	52	55	28	PCX 042/046	25
18	15	2,00	FX-4(3)-15/18	55	55	28	PCX 042/046	25
22	22	2,75	FX-4(3)-22/25	60	55	28	PCX 054/058	25
25	22	2,75	FX-4(3)-22/25	64	55	28	PCX 054/058	25
28	28	3,00	FX-4(3)-28/30	66	55	28	PCX 063/068	25
30	28	3,00	FX-4(3)-28/30	70	55	28	PCX 063/068	25
35	35	3,50	FX-4(3)-35/38	74	65	24	PCX 068/073	10
38	35	3,50	FX-4(3)-35/38	79	65	24	PCX 068/073	10
42	42	3,75	FX-4(3)-42/45	85	65	24	PCX 072/080	10
45	42	3,75	FX-4(3)-42/45	88	65	24	PCX 072/080	10
48	48	4,25	FX-4(3)-48	91	65	24	PCX 082/085	10
54	54	4,25	FX-4(3)-54/57	98	65	24	PCX 088/092	10
57	54	4,25	FX-4(3)-54/57	101	65	24	PCX 088/092	10
60	60	4,75	FX-4(3)-60/64	105	75	20	PCX 099/103	10
64	60	4,75	FX-4(3)-60/64	109	75	20	PCX 099/103	10
70	70	4,75	FX-4(3)-70	116	75	20	PCX 108/112	10
76	76	5,50	FX-4(3)-76/80	122	85	16	PCX 112/118	10
80	76	5,50	FX-4(3)-76/80	127	85	16	PCX 112/118	10
89	89	6,00	FX-4(3)-89	136	100	12	PCX 133/137	10
102	102	6,00	FX-4(3)-102/108	149	100	12	PCX 137/142	10
108	102	6,00	FX-4(3)-102/108	156	100	12	PCX 137/142	10
114	114	6,00	FX-4(3)-110/114	162	115	12	PCX 145/152	10
125	125	6,00	FX-4(3)-125	173	115	12	PCX 168/173	10
133	133	6,00	FX-4(3)-133/140	183	115	12	PCX 190	10
140	133	6,00	FX-4(3)-133/140	189	115	12	PCX 190	10
160	160	6,00	FX-4(3)-160	210	115	6	PCX 206	10
165	-	6,00	FX-4(3)-165/168 <sup>1</sup>	216	125	6	PCX 222	10
168	-	6,00	FX-4(3)-165/168 <sup>1</sup>	219	125	6	PCX 222	10
204	-	6,00	FX-4(3)-204 <sup>1</sup>	255	170	4	-	-
216	-	6,00	FX-4(3)-216/219 <sup>1</sup>	267	170	4	-	-
219	-	6,00	FX-4(3)-216/219 <sup>1</sup>	270	170	4	-	-
254	-	6,00	FX-4(3)-254 ● <sup>1</sup>	305	170	3	-	-
267	-	6,00	FX-4(3)-267/273 ●	318	170	3	-	-
273	-	6,00	FX-4(3)-267/273 ●	324	170	3	-	-
306	-	6,00	FX-4(3)-306 ● <sup>1</sup>	357	215	1	-	-
324	-	4,50	FX-4(3)-324 ●	375	215	1	-	-
356	-	4,20	FX-4(3)-356 ● <sup>1</sup>	407	215	6	-	-
406	-	4,20	FX-4(3)-406 <sup>1</sup>	457	215	6	-	-
475	-	3,70	FX-4(3)-457 ● <sup>1</sup>	508	215	4	-	-
508	-	3,40	FX-4(3)-508 ● <sup>1</sup>	559	215	4	-	-
610	-	2,90	FX-4(3)-610 ● <sup>1</sup>	661	215	2	-	-



## ArmaFix AF pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	AF-6 insulation thickness 32,0 mm - 45,0 mm				Clamps AF-6	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	FX-6-10/12	68	75	20	PCX 063/068	25
12	10	2,00	FX-6-10/12	71	75	20	PCX 063/068	25
15	15	2,00	FX-6-15/18	74	75	20	PCX 068/073	10
18	15	2,00	FX-6-15/18	77	75	20	PCX 068/073	10
22	22	2,75	FX-6-22/25	80	75	20	PCX 072/080	10
25	22	2,75	FX-6-22/25	84	75	20	PCX 072/080	10
28	28	3,00	FX-6-28/30	91	75	20	PCX 082/085	10
30	28	3,00	FX-6-28/30	95	75	20	PCX 082/085	10
35	35	3,50	FX-6-35/38	104	85	16	PCX 099/103	10
38	35	3,50	FX-6-35/38	109	85	16	PCX 099/103	10
42	42	3,75	FX-6-42/45	113	85	16	PCX 099/103	10
45	42	3,75	FX-6-42/45	116	85	16	PCX 099/103	10
48	48	4,25	FX-6-48	119	85	16	PCX 112/118	10
54	54	4,25	FX-6-54/57	126	85	16	PCX 112/118	10
57	54	4,25	FX-6-54/57	129	85	16	PCX 112/118	10
60	60	4,75	FX-6-60/64	134	100	12	PCX 133/137	10
64	60	4,75	FX-6-60/64	137	100	12	PCX 133/137	10
70	70	4,75	FX-6-70	144	100	12	PCX 137/142	10
76	76	5,50	FX-6-76/80	152	115	12	PCX 137/142	10
80	76	5,50	FX-6-76/80	156	115	12	PCX 137/142	10
89	89	6,00	FX-6-89	167	125	12	PCX 159/164	10
102	102	6,00	FX-6-102/108	179	125	12	PCX 190	10
108	102	6,00	FX-6-102/108	188	125	12	PCX 190	10
114	114	6,00	FX-6-110/114	196	145	12	PCX 199	10
125	125	6,00	FX-6-125	207	145	12	PCX 206	10
133	133	6,00	FX-6-133/140	219	145	8	PCX 231	10
140	133	6,00	FX-6-133/140	225	145	8	PCX 231	10
160	160	6,00	FX-6-160	248	145	6	PCX 249	10
165	-	6,00	FX-6-165/168	254	165	5	PCX 259	10
168	-	6,00	FX-6-165/168	257	165	5	PCX 259	10
204	-	6,00	FX-6-204 <sup>1</sup>	305	215	3	-	-
216	-	6,00	FX-6-216/219 • <sup>1</sup>	317	215	1	-	-
219	-	6,00	FX-6-216/219 • <sup>1</sup>	320	215	1	-	-
254	-	6,00	FX-6-254 • <sup>1</sup>	355	215	1	-	-
267	-	6,00	FX-6-267/273 • <sup>1</sup>	368	215	1	-	-
273	-	6,00	FX-6-267/273 • <sup>1</sup>	374	215	1	-	-
306	-	6,00	FX-6-306 • <sup>1</sup>	407	215	6	-	-
324	-	4,50	FX-6-324 • <sup>1</sup>	425	215	6	-	-
356	-	4,20	FX-6-356 • <sup>1</sup>	457	215	6	-	-
406	-	4,20	FX-6-406 • <sup>1</sup>	507	215	2	-	-
457	-	3,70	FX-6-457 • <sup>1</sup>	558	215	2	-	-
508	-	3,40	FX-6-508 • <sup>1</sup>	609	215	2	-	-
610	-	2,90	FX-6-610 • <sup>1</sup>	711	215	2	-	-

**Remark** Pipe supports for plastic and stainless steel pipes available on request.  
outer Ø = installation Ø

**Technical properties** Pipe supports AF-4 (AF-3) are suitable for applications with tubes of insulation thickness AF-3 and AF-4

**Regulations** max. permissible distance m according to DIN 1988

• Item not in stock. Delivery on request. [MTO]

<sup>1</sup> Sheets

## ArmaFix AF duct supports



Code	Insulation thickness [mm]	Width [mm]	Length [m]	Pieces/carton
AS-13 MM	13,0	100,0	2	7
AS-19 MM	19,0	100,0	2	5
AS-25 MM	25,0	100,0	2	4
AS-32 MM •	32,0	100,0	2	3
AS-50 MM •	50,0	100,0	2	2

• Item not in stock. Delivery on request. [MTO]

## Armafix Clamps clamps



Clamps	
Code	Pieces/carton
PCX 025/030	25
PCX 033/037	25
PCX 038/041	25
PCX 042/046	25
PCX 047/052	25
PCX 054/058	25
PCX 059/063	25
PCX 063/068	25
PCX 068/073	10
PCX 072/080	10
PCX 082/085	10
PCX 088/092	10
PCX 092/099	10
PCX 099/103	10
PCX 108/112	10
PCX 112/118	10
PCX 125/130	10
PCX 133/137	10
PCX 137/142	10
PCX 145/152	10
PCX 159/164	10
PCX 164/169	10
PCX 168/173	10
PCX 190	10
PCX 199	10
PCX 206	10
PCX 222	10
PCX 231 •	10
PCX 249 •	10
PCX 259	10

• Item not in stock. Delivery on request. [MTO]

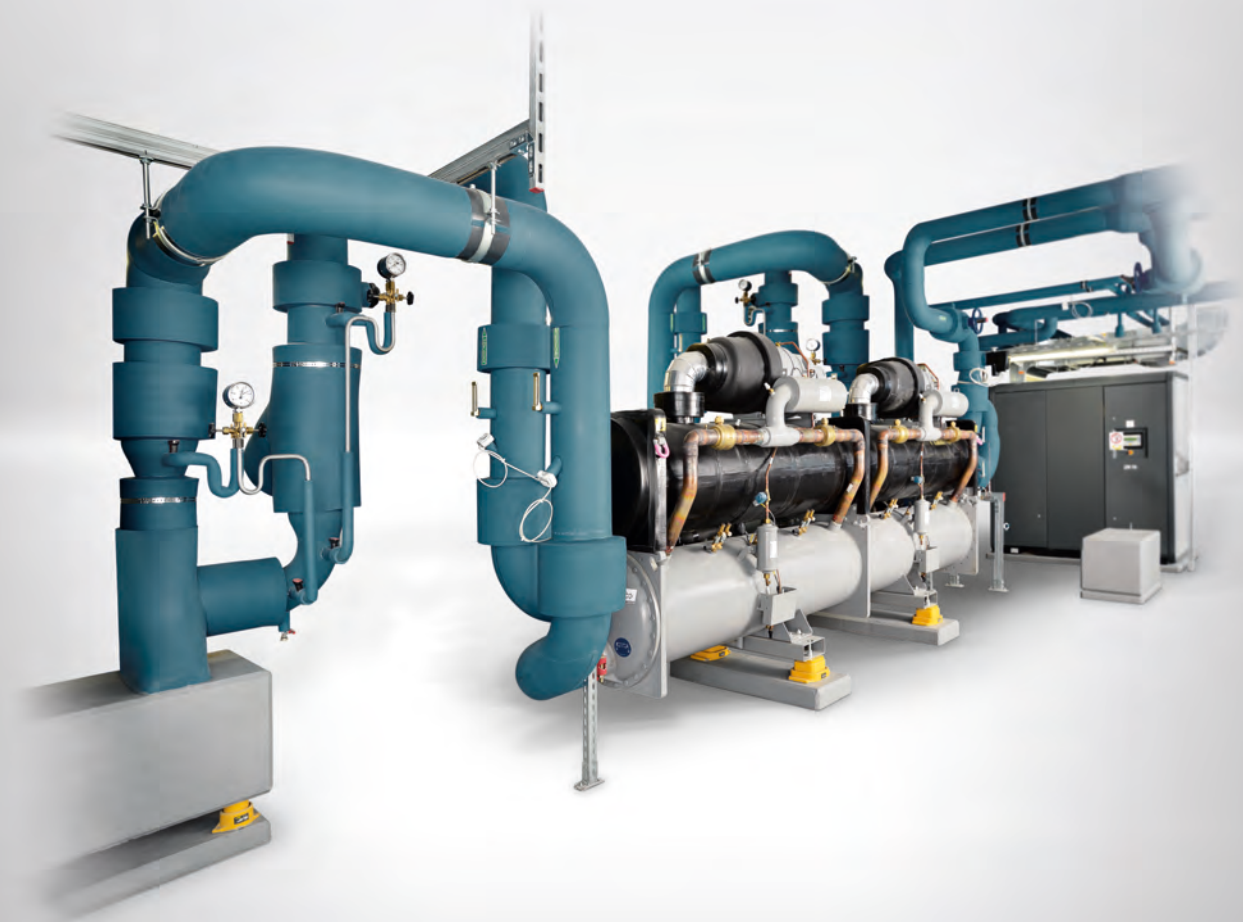




 armacell®

ARMAFLEX ULTIMA

INSTALL IT. TRUST IT.



- The best flexible insulation with low smoke density in case of fire
- Meets the requirements for sustainable construction
- Complete system integration with adhesives and insulated pipe hangers

**EPD**  
Environmental Product Declaration



**BUREAU  
VERITAS**



**APPROVED**



## ARMAFLEX ULTIMA

With Armaflex Ultima Armacell has set a new safety standard in technical insulation. Based on the patented Armaprene technology, Armaflex Ultima is the first flexible technical insulation material in the world with fire class B<sub>L</sub>-s1, d0.

- Tubes with an insulation thickness of 32 mm
- Sheets with an insulation thickness of 32 mm
- Armaflex SF Cleaner

European  
patent

No. 2 261 305

**PATENTED**



## SOLVENT-FREE ACCESSORIES FOR A SUSTAINABLE INSULATION SYSTEM

Besides Armaflex Ultima 700 adhesive, Armacell provides a solvent-free product. **Armaflex Ultima SF990** meets the higher requirements of green building schemes regarding environmental and health aspects of the building products used. A completely new addition to the range of accessories is a solvent-free cleaner: the **Armaflex SF cleaner** can be used to clean soiled surfaces of technical installations and also the surface of insulation materials. The cleaner is supplied in a practical spray bottle so that it can be applied sparingly and precisely.





## 1 - NEW SAFETY STANDARD IN TECHNICAL INSULATION

95 % of fire fatalities occur due to smoke inhalation. In a fire, low smoke density can be a matter of life or death for those trapped. With the innovative Armaprene technology Armacell has been able to resolve the conflict of objectives between high flame resistance and minimal smoke development. Armaflex Ultima is the only elastomeric product in the market to achieve the fire class B<sub>L</sub>-s1, d0. In comparison to a standard product, the flame-resistant insulation material exhibits 10 times less smoke development.



## 2 - THE FUTURE BELONGS TO SUSTAINABLE CONSTRUCTION

Today Armacell is the only manufacturer of flexible technical insulation materials to publish environmental product declarations based on an independent life cycle assessment (LCA). Environmental product declarations (EPDs) provide a transparent, independent and reproducible analysis of the environmental impacts of construction products and give detailed information with sound data and figures. As a "sustainability passport" EPDs form the basis for designing green buildings in accordance with certification schemes such as LEED, BREEAM, HQE or DGNB.

## 3 - JÜRGEN SAALFELD, INSULATOR, SCHMENGLER DÄMMTECHNIK GMBH, GERMANY

"We used Armaflex Ultima for the first time on cold installations in Yara's German distribution centre. In a fire, Armaflex Ultima develops 10 times less smoke than traditional flexible insulation materials, making it the safest insulation product for cold applications. The new material is slightly darker than the first Ultima generation. The foam is very flexible, but it is firmer than other rubber insulation materials and keeps its shape very well. The product can be cut and glued very easily and neatly."



## Technical Data - ArmaFlex Ultima

Brief description	Flexible elastomeric foam on the basis of patented synthetic rubber composition with improved fire retardant properties, low smoke generation and a closed-cell material structure. For use in HVAC, refrigeration and process equipment applications.
Material type	Elastomeric foam based rubber; Manufactured with Armaprene® Patented Technology US Patent no. 8,163,811, EU patent no. 2 261 305. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	dark blue
Material Special Information	Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection of pipes, air ducts, vessels (incl. elbows, fittings, flanges etc.) to prevent condensation and save energy. Self-adhesive tubes shall additionally be secured by applying ArmaFlex Ultima Tape.
Special Features	Low smoke performance
Safety and Environment	Meets the requirements for sustainable construction in combination with ArmaFlex Ultima SF990 adhesive such as LEED. Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20200218-IBB1-EN", Institut Bauen und Umwelt e.V. (IBU)
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark	
<b>Temperature Range</b>				
Temperature Range	max. service temperature	+110 °C (+ 85 °C if sheet or tape is glued to the object with its whole surface.)	EU 5846 Tested acc. to EN 14706 EN 14707 and EN 14304	
	min. service temperature <sup>1</sup>	-50 °C (-200 °C)		
<b>Thermal Conductivity</b>				
Thermal Conductivity	$\vartheta_m$ ±0 °C	$\lambda =$	EU 5846 Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497	
	$\lambda \leq 0,040$	W/(m · K)		$> 0$ °C: $[40 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$
				$\leq 0$ °C: $[41,25 + 0,1 \cdot \vartheta_m - (\vartheta_m+50)^2 \cdot 0,0005]/1000$
<b>Water vapour diffusion resistance</b>				
Water vapour diffusion resistance	$\mu$	$\geq 7,000$	EU 5846 Tested acc. to EN 12086 EN 13469	
<b>Fire performance</b>				
Reaction to fire	Tubes, Tubes self-adhesive, open tubes (up to 300 min insulated $\varnothing_a$ )	B <sub>L</sub> -s1,d0	EU 5846 Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2	
	Sheets, sheets self-adhesive	B-s2,d0		
	Tape	B-s1,d0		
Other Fire Class	Ship Building	low-flammable - 2010 FTP Code	D 5243 D 5555 EU 5954 Classified acc. to MED 96/98/EC MODULE D Tested acc. to IMO Resolution	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames; low smoke density			
Fire resistance of structural element	EI 30 - EI 120		EU 5846 EU 5584 Classified acc. to EN 13501-2 Tested acc. to EN 1366-3	
Other	FM-approved		D 5192 FM: Tested according to UBC26-3, Class No.4924	
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 5846 Tested according to EN 822, EN 823 EN 13467	
UV resistance <sup>2</sup>	Protection against UV-radiation is necessary.		TB 142	
Storage & Shelf life	self-adhesive tubes, self-adhesive sheets, self-adhesive tape: 1 year Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).			
Antimicrobial behaviour	No fungal growth observed		EU 5961 Tested acc. to EN ISO 846 (VDI 6022)	

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. If Armaflex is applied under UV-radiation the material must be protected within 3 days with a covering.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.

# ArmaFlex Ultima tubes



Length 2,0 m, Color blue, B<sub>L</sub>-s1,d0

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
6	-	-	UD-13X006	164
10	-	-	UD-13X010	140
12	UD-09X012 ●	192	UD-13X012	130
15	UD-09X015	180	UD-13X015	112
18	UD-09X018	150	UD-13X018	98
22	UD-09X022	124	UD-13X022	88
28	UD-09X028	96	UD-13X028	64
35	UD-09X035	70	UD-13X035	56
42	UD-09X042	56	UD-13X042	48
48	UD-09X048	52	UD-13X048	40
54	UD-09X054	42	UD-13X054	36
60	UD-09X060	40	UD-13X060	28
64	UD-09X064 ●	28	UD-13X064 ●	26
76	UD-09X076	32	UD-13X076	24
89	UD-09X089	24	UD-13X089	18

Pipe max. Outside-Ø [mm]	19,0 mm insulation thickness		25,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
10	UD-19X010	92	-	-
12	UD-19X012	84	-	-
15	UD-19X015	64	-	-
18	UD-19X018	58	UD-25X018	46
22	UD-19X022	56	UD-25X022	36
28	UD-19X028	40	UD-25X028	36
35	UD-19X035	40	UD-25X035	28
42	UD-19X042	24	UD-25X042	24
48	UD-19X048	24	UD-25X048	20
54	UD-19X054	24	UD-25X054	18
60	UD-19X060	16	UD-25X060	18
64	UD-19X064	16	UD-25X064	16
76	UD-19X076	16	UD-25X076	12
89	UD-19X089	16	UD-25X089	12

Pipe max. Outside-Ø [mm]	32,0 mm insulation thickness			
	Code	m/carton		
15	UD-32X015 ●	32	-	-
18	UD-32X018 ●	32	-	-
20	UD-32X020 ●	24	-	-
22	UD-32X022 ●	24	-	-
28	UD-32X028 ●	24	-	-
35	UD-32X035 ●	18	-	-
42	UD-32X042	16	-	-
48	UD-32X048	12	-	-
54	UD-32X054	12	-	-
60	UD-32X060	10	-	-
64	UD-32X064 ●	10	-	-
76	UD-32X076	10	-	-
89	UD-32X089	8	-	-

**Length tolerance for tubes**

± 1,5 %

**Thickness tolerance**

9 mm, 13 mm : ±1,5 mm

19 mm, 25 mm, 32 mm : ±2,5 mm

**Remark**

Up to 10% of the carton contents can also be delivered with tubes in 1 m length.  
For carton contents below 20 m a single 2 m tube can be replaced by two 1 m tubes.

● Item not in stock. Delivery on request. [MTO]

## ArmaFlex Ultima open tubes

Color blue, Open tube: for pipe diameter from 89 to 300 mm including insulation - B<sub>L</sub>-s1,d0

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
UD-09X300 ●	9,0	10
UD-13X300	13,0	8
UD-19X300	19,0	5
UD-25X300	25,0	4
UD-32X300 ●	32,0	3

### Thickness tolerance

9 mm - 19 mm : ±1,5 mm  
25 mm - 32 mm : ±2,0 mm

● Item not in stock. Delivery on request. [MTO]

## ArmaFlex Ultima tubes self-adhesive



Length 2,0 m, Color blue, B<sub>L</sub>-s1,d0

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	UD-09X015-A ●	180	UD-13X015-A ●	112
18	UD-09X018-A ●	150	UD-13X018-A ●	98
22	UD-09X022-A ●	124	UD-13X022-A ●	88
28	UD-09X028-A ●	96	UD-13X028-A ●	64
35	UD-09X035-A ●	70	UD-13X035-A ●	56
42	UD-09X042-A ●	56	UD-13X042-A ●	48
48	UD-09X048-A ●	52	UD-13X048-A ●	40
54	UD-09X054-A ●	42	UD-13X054-A ●	36
60	UD-09X060-A ●	40	UD-13X060-A ●	28
76	UD-09X076-A ●	32	UD-13X076-A ●	24
89	UD-09X089-A ●	24	UD-13X089-A ●	18

Pipe max. Outside-Ø [mm]	19,0 mm insulation thickness		25,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	UD-19X015-A ●	64	-	-
18	UD-19X018-A ●	58	UD-25X018-A ●	46
22	UD-19X022-A ●	56	UD-25X022-A ●	36
28	UD-19X028-A ●	40	UD-25X028-A ●	36
35	UD-19X035-A ●	40	UD-25X035-A ●	28
42	UD-19X042-A ●	24	UD-25X042-A ●	24
48	UD-19X048-A ●	24	UD-25X048-A ●	20
54	UD-19X054-A ●	24	UD-25X054-A ●	18
60	UD-19X060-A ●	16	UD-25X060-A ●	18
76	UD-19X076-A ●	16	UD-25X076-A ●	12
89	UD-19X089-A ●	16	UD-25X089-A ●	12

### Length tolerance for tubes

± 1,5 %

### Thickness tolerance

9 mm, 13 mm : ±1,5 mm  
19 mm, 25 mm : ±2,5 mm

● Item not in stock. Delivery on request. [MTO]

## ArmaFlex Ultima sheets endless



Width 1,0 m, Color blue, B-s2,d0

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
UD-06-99/E	6,0	15	15
UD-09-99/E	9,0	10	10
UD-13-99/E	13,0	8	8
UD-19-99/E	19,0	5	5
UD-25-99/E	25,0	4	4
UD-32-99/E •	32,0	3	3

Length tolerance for sheets	±1,5 %
Thickness tolerance for sheets	6 mm : ±1,0 mm 9 mm - 19 mm : ±1,5 mm 25 mm - 32 mm : ±2,0 mm

• Item not in stock. Delivery on request. [MTO]

## ArmaFlex Ultima sheets endless self-adhesive



Width 1,0 m, Color blue, B-s2,d0

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
UD-06-99/EA	6,0	15	15
UD-09-99/EA	9,0	10	10
UD-13-99/EA	13,0	8	8
UD-19-99/EA	19,0	5	5
UD-25-99/EA	25,0	4	4
UD-32-99/EA •	32,0	3	3

Length tolerance for sheets	±1,5 %
Thickness tolerance for sheets	6 mm : ±1,0 mm 9 mm - 19 mm : ±1,5 mm 25 mm - 32 mm : ±2,0 mm

• Item not in stock. Delivery on request. [MTO]

## ArmaFlex Ultima tapes self-adhesive



Color blue, B-s1,d0

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
UD-TAPE	50,0	15	3	12

## ArmaFlex Ultima adhesive



Code	Article description	Pieces/carton
AHU-700/1,0	Armaflex Ultima Adhesive 700, 1 liter cans	12
AHU-SF990/0,8	Armaflex Ultima Adhesive SF990, 0,8 liter cans	12

## ArmaFlex Ultima cleaner



Code	Article description	Pieces/carton
SF-CLEANER/1,0	Solvent-free cleaner for use with Armaflex	6

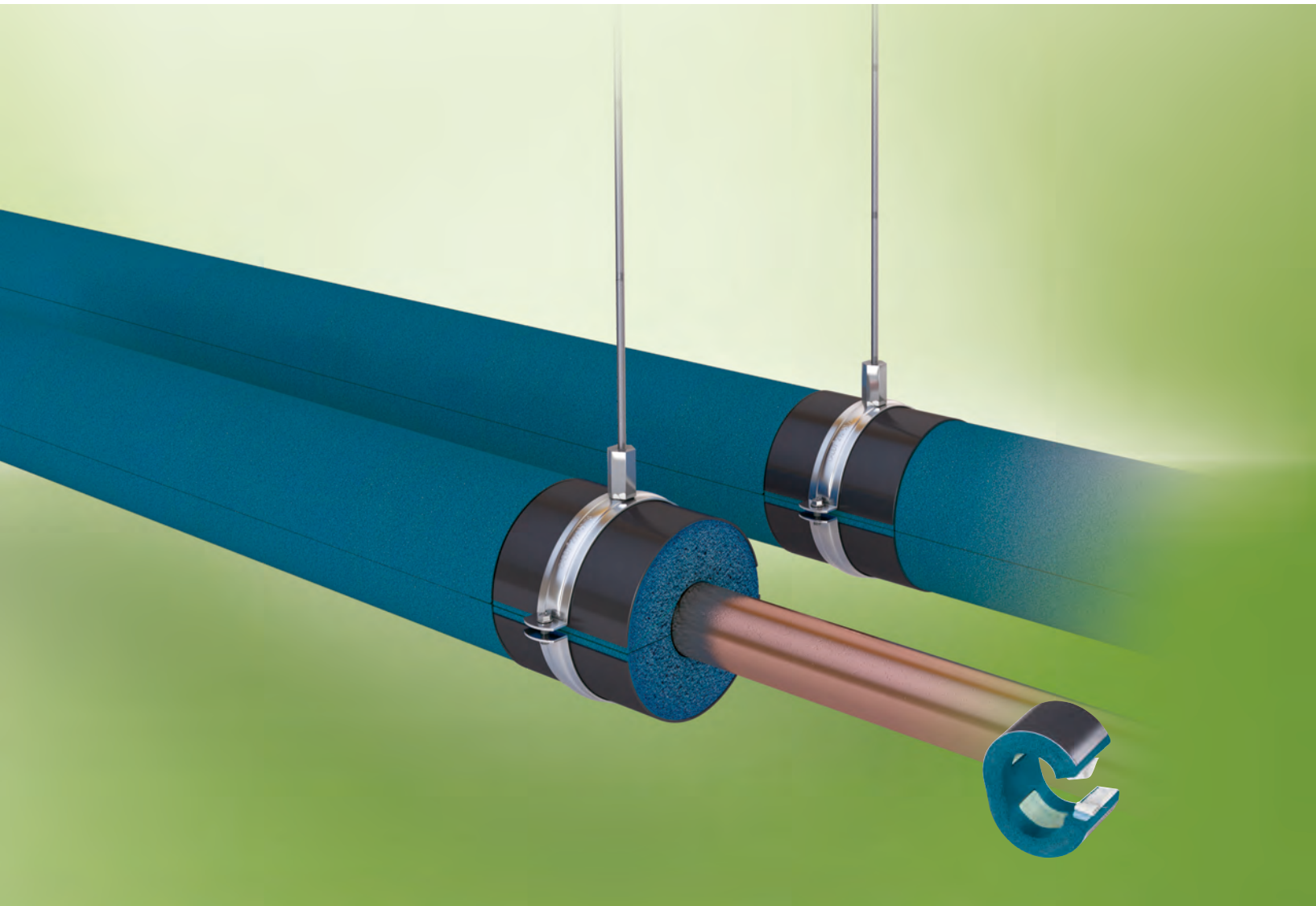






ARMAFIX ULTIMA

INSTALL IT. TRUST IT.



- Fully certified B-s1-d0 system solution
- Stops water transmission
- High quality standard

## Technical Data - ArmaFix Ultima

Brief description	Pipe and duct support for refrigeration and air-conditioning installations to prevent condensation at fixing points. Thermally non-interacting single piece, with 2 ArmaFORM PET-foam sections and with self-adhesive closure. All dimensions are matching the Armaflex Ultima tube/sheet range.
Material type	PET-foam bearing segments, embedded in and glued to Armaflex Ultima elastomeric foam material. Outside bearing shells made of painted aluminium sheeting 0.8mm thick, which simultaneously serves as a vapour barrier for the PET bearing segments.
Colour	Blue
Material Special Information	Traces of silicon can be found on protection paper/foil used to protect self-adhesive closures. Please contact our customer service for details.
Applications	Thermally non-interacting mounting aid for tubes/sheets in refrigeration and air-conditioning applications, which are to be insulated with Armaflex Ultima.
Remarks	When used in installations with intermittent temperatures, thermal length extensions may cause inherent pressure in the installation; this needs to be considered in the overall insulation construction.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range <sup>1</sup>	max. service temperature + 110 °C	Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature -50 °C	
<b>Thermal Conductivity</b>		
Thermal Conductivity	Same as Armaflex Ultima	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>		
Water vapour diffusion resistance	Same as Armaflex Ultima	Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>		
Reaction to fire	Euroclass E	Classified acc. to EN 13501-1 Tested acc. to DIN EN 13823 DIN EN ISO 11925-2
	Entire system with Armaflex Ultima tubes B <sub>L</sub> -s1, d0	
	Entire system with Armaflex Ultima sheets B-s2,d0	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames	
<b>Acoustic Performance</b>		
Reduction of structure-borne sound transmission	According to used insulation layer in clamp / pipe fastener	According to DIN 4109
Density	95 - 105 kg/m <sup>3</sup> (pipe bearing segments)	
Storage & Shelf life	Products with self adhesive closures to be installed within 3 year.	Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - Armafix Clamps

Brief description	Pipe clamp with a quick release and a combination nut for mounting.
Material type	Steel with an electrolytic zinc coating which protects the clamp from the corrosion.
Colour	silver
Material Special Information	The clamps are supplied with a nut for fixing.
Applications	Where thermal bridging should be avoided in refrigeration and air-conditioning installations, which are intended to be insulated with appropriate Armaflex type and Armafix pipe-hanger.

Property	Value/Assessment
Fire performance	
Other	No insulation layer in clamp / pipe fastener to affect fire performance of the clamp itself.
Other technical features	
Screw connections	M 8 / M 10 combination nut
Tension screws	M 6 and M 8
Clamp	Width 20 to 30 mm; Thickness 1,5 to 3,0 mm

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.



## ArmaFix Ultima pipe supports and clamps



Pipe max. Outside-Ø [mm]	Max. permissible distance [m]	13,0 mm insulation thickness		Clamps 13,0 mm	
		Code	Pieces/carton	Code	Pieces/carton
10	2,00	UDP13(9)-10/12	32	PCX 025/030	25
12	2,00	UDP13(9)-10/12	32	PCX 025/030	25
15	2,00	UDP13(9)-15/18	32	PCX 033/037	25
18	2,00	UDP13(9)-15/18	32	PCX 033/037	25
22	2,75	UDP13(9)-22/25	32	PCX 042/046	25
25	2,75	UDP13(9)-22/25	32	PCX 042/046	25
28	3,00	UDP13(9)-28/30	32	PCX 047/052	25
30	3,00	UDP13(9)-28/30	32	PCX 047/052	25
35	3,50	UDP13(9)-35/38	28	PCX 054/058	25
38	3,50	UDP13(9)-35/38	28	PCX 054/058	25
42	3,75	UDP13(9)-42/45	28	PCX 063/068	25
45	3,75	UDP13(9)-42/45	28	PCX 063/068	25
48	4,25	UDP13(9)-48	28	PCX 068/073	10
54	4,25	UDP13(9)-54/57	28	PCX 068/073	10
57	4,25	UDP13(9)-54/57	28	PCX 068/073	10
60	4,75	UDP13(9)-60/64	24	PCX 082/085	10
64	4,75	UDP13(9)-60/64	24	PCX 082/085	10
76	5,50	UDP13(9)-76/80	20	PCX 092/099	10
80	5,50	UDP13(9)-76/80	20	PCX 092/099	10
89	6,00	UDP13(9)-89 ●	16	PCX 108/112	10
102	6,00	UDP13(9)-102/108 ●	16	PCX 125/130	10
108	6,00	UDP13(9)-102/108 ●	16	PCX 125/130	10
110	6,00	UDP13(9)-110/114 ●	12	PCX 133/137	10
114	6,00	UDP13(9)-110/114 ●	12	PCX 133/137	10
125	6,00	UDP13(9)-125 ●	12	PCX 145/152	10
133	6,00	UDP13(9)-133/140 ●	12	-	-
140	6,00	UDP13(9)-133/140 ●	12	-	-
160	6,00	UDP13(9)-160 ●	9	PCX 190	10
165	6,00	UDP13(9)-165/168 ●	9	PCX 199	10
168	6,00	UDP13(9)-165/168 ●	9	PCX 199	10

# ArmaFix Ultima pipe supports and clamps



Pipe max. Outside-Ø [mm]	Max. permissible distance [m]	19,0 mm insulation thickness		Clamps 19,0 mm	
		Code	Pieces/carton	Code	Pieces/carton
10	2,00	UDP19-10/12	28	PCX 038/041	25
12	2,00	UDP19-10/12	28	PCX 038/041	25
15	2,00	UDP19-15/18	28	PCX 047/052	25
18	2,00	UDP19-15/18	28	PCX 047/052	25
22	2,75	UDP19-22/25	28	PCX 054/058	25
25	2,75	UDP19-22/25	28	PCX 054/058	25
28	3,00	UDP19-28/30	28	PCX 059/063	25
30	3,00	UDP19-28/30	28	PCX 059/063	25
35	3,50	UDP19-35/38	24	PCX 063/068	25
38	3,50	UDP19-35/38	24	PCX 063/068	25
42	3,75	UDP19-42/45	24	PCX 068/073	10
45	3,75	UDP19-42/45	24	PCX 068/073	10
48	4,25	UDP19-48 ●	24	PCX 072/080	10
54	4,25	UDP19-54/57	24	PCX 082/085	10
57	4,25	UDP19-54/57	24	PCX 082/085	10
60	4,75	UDP19-60/64	20	PCX 088/092	10
64	4,75	UDP19-60/64	20	PCX 088/092	10
76	5,50	UDP19-76/80	16	PCX 099/103	10
80	5,50	UDP19-76/80	16	PCX 099/103	10
89	6,00	UDP19-89	12	PCX 112/118	10
102	6,00	UDP19-102/108 ●	12	PCX 133/137	10
108	6,00	UDP19-102/108 ●	12	PCX 133/137	10
110	6,00	UDP19-110/114 ●	12	PCX 137/142	10
114	6,00	UDP19-110/114 ●	12	PCX 137/142	10
133	6,00	UDP19-133/140 ●	12	PCX 164/169	10
140	6,00	UDP19-133/140 ●	12	PCX 164/169	10
165	6,00	UDP19-165/168 ●	6	PCX 206	10
168	6,00	UDP19-165/168 ●	6	PCX 206	10
180	6,00	UDP19-180 ●	4	-	-
204	6,00	UDP19-204 ●	4	-	-
216	6,00	UDP19-216/219 ●	4	-	-
219	6,00	UDP19-216/219 ●	4	-	-
254	6,00	UDP19-254 ●	3	-	-
267	6,00	UDP19-267/273 ●	3	-	-
273	6,00	UDP19-267/273 ●	3	-	-
356	4,20	UDP19-356 ●	1	-	-

## ArmaFix Ultima pipe supports and clamps



Pipe max. Outside-Ø [mm]	Max. permissible distance [m]	25,0 mm insulation thickness		Clamps 25,0 mm	
		Code	Pieces/carton	Code	Pieces/carton
15	2,00	UDP25-15/18	28	PCX 059/063	25
18	2,00	UDP25-15/18	28	PCX 059/063	25
22	2,75	UDP25-22/25	28	PCX 063/068	25
25	2,75	UDP25-22/25	28	PCX 063/068	25
28	3,00	UDP25-28/30	28	PCX 068/073	10
30	3,00	UDP25-28/30	28	PCX 068/073	10
35	3,50	UDP25-35/38	24	PCX 072/080	10
38	3,50	UDP25-35/38	24	PCX 072/080	10
42	3,75	UDP25-42/45	24	PCX 082/085	10
45	3,75	UDP25-42/45	24	PCX 082/085	10
48	4,25	UDP25-48 ●	24	PCX 088/092	10
54	4,25	UDP25-54/57 ●	24	PCX 092/099	10
57	4,25	UDP25-54/57 ●	24	PCX 092/099	10
60	4,75	UDP25-60/64 ●	20	PCX 099/103	10
64	4,75	UDP25-60/64 ●	20	PCX 099/103	10
76	5,50	UDP25-76/80	16	PCX 112/118	10
80	5,50	UDP25-76/80	16	PCX 112/118	10
89	6,00	UDP25-89	12	PCX 137/142	10
133	6,00	UDP25-133/140 ●	12	PCX 190	10
140	6,00	UDP25-133/140 ●	12	PCX 190	10
160	6,00	UDP25-160 ●	6	PCX 206	10
165	6,00	UDP25-165/168 ●	6	PCX 222	10
168	6,00	UDP25-165/168 ●	6	PCX 222	10
204	6,00	UDP25-204 ●	1	-	-
216	6,00	UDP25-216/219 ●	4	-	-
219	6,00	UDP25-216/219 ●	4	-	-
254	6,00	UDP25-254 ●	3	-	-
267	6,00	UDP25-267/273 ●	3	-	-
273	6,00	UDP25-267/273 ●	3	-	-
306	6,00	UDP25-306 ●	1	-	-
324	4,20	UDP25-324 ●	1	-	-
356	4,20	UDP25-356 ●	3	-	-
406	4,20	UDP25-406 ●	3	-	-
457	3,70	UDP25-457 ●	4	-	-

● Item not in stock. Delivery on request. [MTO]

## ArmaFix Ultima duct supports



Code	Insulation thickness [mm]	Width [mm]	Length [m]	Pieces/carton
AS-DB-19 MM	19,0	100,0	2	5
AS-DB-25 MM	25,0	100,0	2	5

## Armafix Clamps clamps



Clamps	
Code	Pieces/carton
PCX 025/030	25
PCX 033/037	25
PCX 038/041	25
PCX 042/046	25
PCX 047/052	25
PCX 054/058	25
PCX 059/063	25
PCX 063/068	25
PCX 068/073	10
PCX 072/080	10
PCX 082/085	10
PCX 088/092	10
PCX 092/099	10
PCX 099/103	10
PCX 108/112	10
PCX 112/118	10
PCX 125/130	10
PCX 133/137	10
PCX 137/142	10
PCX 145/152	10
PCX 159/164	10
PCX 164/169	10
PCX 168/173	10
PCX 190	10
PCX 199	10
PCX 206	10
PCX 222	10
PCX 231 ●	10
PCX 249 ●	10
PCX 259	10

● Item not in stock. Delivery on request. [MTO]





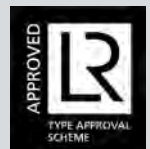


NH/ARMAFLEX

INSTALL IT. TRUST IT



- Protects assets and people
- Full system available
- IMO compliant





# NH/Armaflex in the new data centre of Comarch AG

## DRESDEN, GERMANY

One of the most secure data centres in Central Germany and the heart of the German headquarters of Polish IT company Comarch was constructed in just under twelve months with an investment of 12 million euros.



## CHALLENGE

A consistently low temperature must be guaranteed in order to protect the sensitive electronics in the data centre of Comarch AG in Dresden against overheating and failure. To air-condition the computer centre two water chillers with a cooling capacity of 550 kW each were installed. These cool four cold water storage units with a total water volume of 24,000 litres. The double-redundant system was constructed with pipes up to DN 300. The cooling requirement in data centres is enormous: if the worst comes to the worst, it can account for more than a third of energy consumption.

## SOLUTION

The main parameter for increasing energy efficiency in refrigeration applications is the insulation. Because optimal insulation can significantly reduce energy losses. Therefore, AF/Armaflex was used to insulate the refrigeration plant and cooling-water lines as well as the ventilation plant and air ducts in Comarch's new building. The closed-cell insulation material has low thermal conductivity and high resistance to water-vapour transmission. It provides plant components with long-term protection against condensation and energy losses. The halogen-free NH/Armaflex was installed on the pipes in the data centre. In the event of a fire the product minimizes the risk of consequential damage which can cost many times more than the original fire damage. In a fire NH/Armaflex does not release corrosive gases which could form aggressive acids in combination with the water used for fighting the fire. Parts of the insulated systems were then clad with Okabell sheets.

## Jörg Uhlig, Owner of Uhlig-Isolierung (Lübben):

"The servers in the new data centre emit a lot of heat and must be cooled continuously. Correctly calculated insulation ensures that the required line temperature is maintained as long as possible and the refrigeration machine does not need to start up so often to lower it. With AF/Armaflex it's possible to reduce the energy costs. What's more the highly flexible material is very easy to install."

## Technical Data - NH/ArmaFlex

Brief description	Halogen free, flexible closed-cell insulation material with certification for use in railway wagons and special building types.
Material type	Elastomeric foam based on synthetic rubber. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	dark grey / anthracite
Applications	Insulation / protection for pipes, air ducts, vessels (incl. Elbows, fittings, flanges etc.) of air-conditioning / refrigeration, ventilation and process equipment to prevent condensation and save energy.
Special Features	Without halogens (chloride, bromide) acc. to DIN / VDE 0472, part 815. Fulfils DIN 1988 Parts 200.
Safety and Environment	Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20150106-IBB1-DE", Institut Bauen und Umwelt e.V. (IBU)
Assembly	When installing NH/Armaflex sheets and tubes use special application advice available from Technical Department .
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment			Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>					
Temperature Range	max. service temperature	+110 °C	(+85 °C if sheet or tape is glued to the object with its whole surface.)	EU 5664	Tested according to EN 14706 EN 14707 EN 14304
	min. service temperature <sup>1</sup>	-50 °C			
<b>Thermal Conductivity</b>					
Thermal Conductivity	$\vartheta_m$	+/-0	°C	EU 5664	Declared acc. to EN ISO 13787 Tested according to EN 12667 EN ISO 8497
	$\lambda$	≤ 0,040	W/(m · K)		
<b>Water vapour diffusion resistance</b>					
Water vapour diffusion resistance	$\mu$	≥	2.000	EU 5664	Tested according to EN 12086 EN 13469
<b>Fire performance</b>					
Reaction to fire	tubes, open tubes		D <sub>L</sub> -s2, d0	EU 5664	Classified acc. to EN 13501-1 Tested according to EN 13823 and EN ISO 11925-2
	sheets, tape		E		
Other Fire Class	UL approved		HF-1	D 5837	UL: Tested acc. to UL94, IEC 60695 and Can/CSA-C.22.2 No.0.17., UL 746C
	Russian Fire Certificate		G1, V2, D3, T2	RUS 7036	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames				
Dimensions and tolerances	In accordance with EN 14304, table 1			EU 5664	Tested acc. to EN 822, EN 823, EN 13467
Chemical behaviour	Resistant against commonly used building materials like concrete, lime, gypsum, cement.				
UV resistance <sup>2</sup>	Protection against UV-radiation is necessary.			TB 142	
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets, self-adhesive tubes: 1 year				Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).
AGI Designation Code	tubes	36.12.04.07.01			
	sheets	36.07.04.07.01			

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. If Armaflex is applied under UV-radiation the material must be protected within 3 days with a covering.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. For outside use, Armaflex should be protected with a suitable outer covering within 3 days of installation.



# NH/ArmaFlex tubes



Length 2,0 m

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
10	NH-09X010	266	NH-13X010	156
12	NH-09X012	200	NH-13X012	162
15	NH-09X015	192	NH-13X015	120
18	NH-09X018	166	NH-13X018	112
22	NH-09X022	136	NH-13X022	98
28	NH-09X028	98	NH-13X028	78
35	NH-09X035	76	NH-13X035	56
42	NH-09X042	60	NH-13X042	48
48	NH-09X048	50	NH-13X048	40
54	-	-	NH-13X054	34
60	-	-	NH-13X060	32
76	-	-	NH-13X076	22
89	-	-	NH-13X089	18

Pipe max. Outside-Ø [mm]	19,0 mm insulation thickness		25,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	NH-19X015	78	NH-25X015	40
18	NH-19X018	60	NH-25X018	40
22	NH-19X022	56	NH-25X022	40
28	NH-19X028	48	NH-25X028	32
35	NH-19X035	36	NH-25X035	24
42	NH-19X042	32	NH-25X042	22
48	NH-19X048	24	NH-25X048	18
54	NH-19X054	24	NH-25X054	16
60	NH-19X060	18	NH-25X060	12
76	NH-19X076	12	NH-25X076	10
89	NH-19X089	12	NH-25X089	8
114	NH-19X114	8	NH-25X114	6
125	-	-	NH-25X125 ●	4

Pipe max. Outside-Ø [mm]	32,0 mm insulation thickness			
	Code	m/carton		
15	NH-32X015	32	-	-
18	NH-32X018	28	-	-
22	NH-32X022	24	-	-
28	NH-32X028	24	-	-
35	NH-32X035	22	-	-
42	NH-32X042	16	-	-
48	NH-32X048	12	-	-
54	NH-32X054	12	-	-
60	NH-32X060	10	-	-
76	NH-32X076	8	-	-
89	NH-32X089	6	-	-
114	NH-32X114	4	-	-
140	NH-32X140	4	-	-

Length tolerance for tubes

± 1,5 %

Thickness tolerance

3 - 6 mm ± 1,0 mm  
9 - 13 mm ± 1,5 mm  
>19 mm ± 2,5 mm

● Item not in stock. Delivery on request. [MTO]

## NH/ArmaFlex tubes self-adhesive



Pipe max. Outside-Ø [mm]	13,0 mm insulation thickness		19,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	NH-13X015-A ●	120	NH-19X015-A ●	78
18	NH-13X018-A ●	112	NH-19X018-A ●	60
22	NH-13X022-A ●	98	NH-19X022-A ●	56
28	NH-13X028-A ●	78	NH-19X028-A ●	48
35	NH-13X035-A ●	56	NH-19X035-A ●	36
42	NH-13X042-A ●	48	NH-19X042-A ●	32
48	NH-13X048-A ●	40	NH-19X048-A ●	24
54	NH-13X054-A ●	34	NH-19X054-A ●	24
60	NH-13X060-A ●	32	NH-19X060-A ●	18
76	-	-	NH-19X076-A ●	12
89	-	-	NH-19X089-A ●	12

Length tolerance for tubes ± 1,5 %  
 Thickness tolerance  
 9 - 13 mm ± 1,5 mm  
 >19 mm ± 2,5 mm

● Item not in stock. Delivery on request. [MTO]

## NH/ArmaFlex sheets endless



Width 1,0 m

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
NH-03-99/E	3,0	30	30
NH-06-99/E	6,0	15	15
NH-10-99/E	10,0	10	10
NH-13-99/E	13,0	8	8
NH-19-99/E	19,0	6	6
NH-25-99/E	25,0	4	4
NH-32-99/E	32,0	3	3

Length tolerance for sheets ± 1,5 %  
 Thickness tolerance for sheets  
 3-6 mm ± 1,0 mm  
 10-19 mm ± 1,5 mm  
 25-32 mm ± 2,0 mm

## NH/ArmaFlex sheets endless self-adhesive



Width 1,0 m

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
NH-03-99/EA	3,0	30	30
NH-06-99/EA	6,0	15	15
NH-10-99/EA	10,0	10	10
NH-13-99/EA	13,0	8	8
NH-19-99/EA	19,0	6	6
NH-25-99/EA	25,0	4	4
NH-32-99/EA	32,0	3	3

Length tolerance for sheets ± 1,5 %  
 Thickness tolerance for sheets  
 3-6 mm ± 1,0 mm  
 10-19 mm ± 1,5 mm  
 25-32 mm ± 2,0 mm

## NH/ArmaFlex tapes self-adhesive



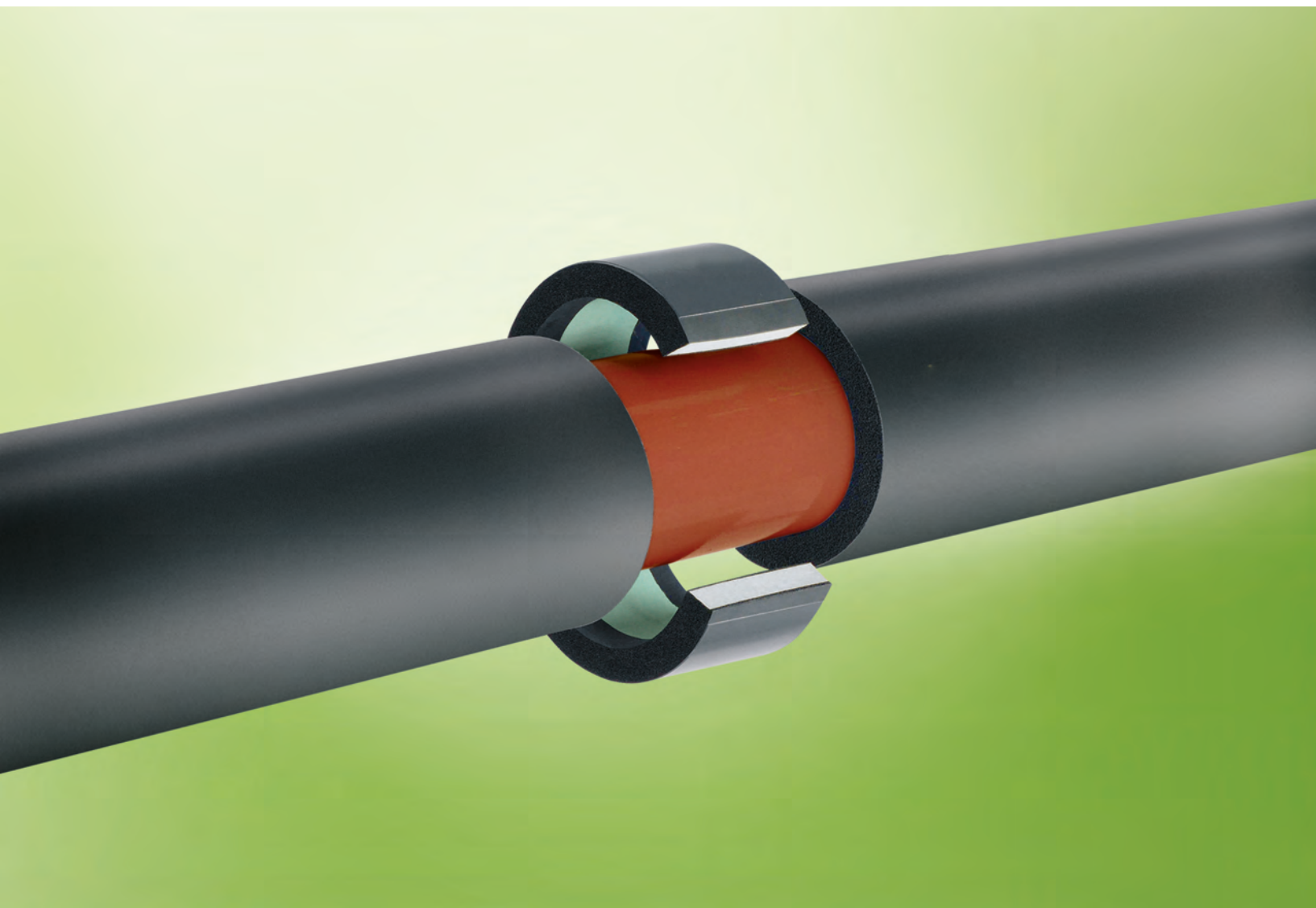
Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
NH-TAPE	50,0	15	3	12





ARMAFIX NH

INSTALL IT. TRUST IT.



- Halogen-free system
- High quality
- In combination IMO certified





## Technical Data - Armafix NH

Brief description	Pipe support for refrigeration and air-conditioning installations to prevent condensation at fixing points. Thermally non-interacting single piece, with 2 ArmaFORM PET-foam sections and self-adhesive closure. All dimensions are matching the NH/Armaflex range.
Material type	PET-foam bearing segments, embedded in and glued to NH/Armaflex elastomeric foam material. Outside bearing shells made of painted aluminium sheeting 0.8mm thick, which simultaneously serves as a vapour barrier for the PET bearing segments.
Colour	dark grey
Material Special Information	Traces of silicon can be found on protection paper/foil used to protect self-adhesive closures.
Applications	Thermally non-interacting mounting aid for tubes/sheets in refrigeration and air-conditioning applications, which are to be insulated with NH/Armaflex.
Remarks	When used in installations with intermittent temperatures, thermal length extensions may cause inherent pressure in the installation; this needs to be considered in the overall insulation construction.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range <sup>1</sup>	max. service temperature	+ 110 °C
	min. service temperature	-50 °C
<b>Thermal Conductivity</b>		
Thermal Conductivity	Same as NH/Armaflex.	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>		
Water vapour diffusion resistance	Same as NH/Armaflex.	Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>		
Reaction to fire	Euroclass	E
	Entire System with NH/Armaflex tubes	D <sub>L</sub> -s2, d0
Practical Fire Behaviour	Self extinguishing, does not drip, does not spread flames.	
<b>Acoustic Performance</b>		
Reduction of structure-borne sound transmission	According to used insulation layer in clamp / pipe fastener	According to DIN 4109
Density	95 - 105 kg/m <sup>3</sup> (pipe bearing segments)	
Storage & Shelf life	Products with self adhesive closures to be installed within 3 year.	Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - Armafix Clamps

Brief description	Pipe clamp with a quick release and a combination nut for mounting.
Material type	Steel with an electrolytic zinc coating which protects the clamp from the corrosion.
Colour	silver
Material Special Information	The clamps are supplied with a nut for fixing.
Applications	Where thermal bridging should be avoided in refrigeration and air-conditioning installations, which are intended to be insulated with appropriate Armaflex type and Armafix pipe-hanger.

Property	Value/Assessment
Fire performance	
Other	No insulation layer in clamp / pipe fastener to affect fire performance of the clamp itself.
Other technical features	
Screw connections	M 8 / M 10 combination nut
Tension screws	M 6 and M 8
Clamp	Width 20 to 30 mm; Thickness 1,5 to 3,0 mm

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Armafix NH pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	13,0 mm insulation thickness				Clamps 13,0 mm	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	PHN-13-10/12 ●	34	50	32	PCX 025/030	25
12	10	2,00	PHN-13-10/12 ●	34	50	32	PCX 025/030	25
15	15	2,00	PHN-13-15/18 ●	39	50	32	PCX 033/037	25
18	15	2,00	PHN-13-15/18 ●	39	50	32	PCX 033/037	25
22	22	2,75	PHN-13-22/25 ●	45	50	32	PCX 042/046	25
25	22	2,75	PHN-13-22/25 ●	45	50	32	PCX 042/046	25
28	28	3,00	PHN-13-28/30 ●	50	50	32	PCX 047/052	25
30	28	3,00	PHN-13-28/30 ●	50	50	32	PCX 047/052	25
32	30	3,50	PHN-13-32 ●	54	50	28	PCX 047/052	25
35	35	3,50	PHN-13-35/38 ●	58	55	28	PCX 054/058	25
38	35	3,50	PHN-13-35/38 ●	58	55	28	PCX 054/058	25
40	-	3,75	PHN-13-40 ●	62	55	28	PCX 059/063	25
42	42	3,75	PHN-13-42/45 ●	66	55	28	PCX 063/068	25
45	42	3,75	PHN-13-42/45 ●	66	55	28	PCX 063/068	25
48	48	4,25	PHN-13-48 ●	72	60	28	PCX 068/073	10
54	54	4,25	PHN-13-54/57 ●	78	60	28	PCX 068/073	10
57	54	4,25	PHN-13-54/57 ●	78	60	28	PCX 068/073	10
60	60	4,75	PHN-13-60/64 ●	84	70	24	PCX 082/085	10
64	60	4,75	PHN-13-60/64 ●	84	70	24	PCX 082/085	10
76	76	5,50	PHN-13-76/80 ●	99	80	20	PCX 092/099	10
80	76	5,50	PHN-13-76/80 ●	99	80	20	PCX 092/099	10
89	89	6,00	PHN-13-89 ●	112	100	16	PCX 108/112	10
102	-	6,00	PHN-13-102/108 ● <sup>1</sup>	125	100	16	PCX 125/130	10
108	-	6,00	PHN-13-102/108 ● <sup>1</sup>	125	100	16	PCX 125/130	10
114	-	6,00	PHN-13-110/114 ● <sup>1</sup>	133	120	12	PCX 133/137	10
125	-	6,00	PHN-13-125 ● <sup>1</sup>	148	120	12	PCX 145/152	10
133	-	6,00	PHN-13-133/140 ● <sup>1</sup>	156	120	12	-	-
140	-	6,00	PHN-13-133/140 ● <sup>1</sup>	156	120	12	-	-

## Armafix NH pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	19,0 mm insulation thickness				Clamps 19,0 mm	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	PHN-19-10/12 ●	45	60	28	PCX 038/041	25
12	10	2,00	PHN-19-10/12 ●	45	60	28	PCX 038/041	25
15	15	2,00	PHN-19-15/18 ●	50	60	28	PCX 047/052	25
18	15	2,00	PHN-19-15/18 ●	50	60	28	PCX 047/052	25
20	18	2,75	PHN-19-20 ●	53	60	28	PCX 047/052	25
22	22	2,75	PHN-19-22/25 ●	56	60	28	PCX 054/058	25
25	22	2,75	PHN-19-22/25 ●	56	60	28	PCX 054/058	25
25	-	3,00	PHN-19-26 ●		60	28	PCX 059/063	25
28	28	3,00	PHN-19-28/30 ●	61	60	28	PCX 059/063	25
30	28	3,00	PHN-19-28/30 ●	61	60	28	PCX 059/063	25
32	30	3,50	PHN-19-32 ●	65	60	28	PCX 059/063	25
35	35	3,50	PHN-19-35/38 ●	69	70	24	PCX 063/068	25
38	35	3,50	PHN-19-35/38 ●	69	70	24	PCX 063/068	25
40	-	3,75	PHN-19-40 ●	73	70	24	PCX 068/073	10
42	42	3,75	PHN-19-42/45 ●	77	70	24	PCX 068/073	10
45	42	3,75	PHN-19-42/45 ●	77	70	24	PCX 068/073	10
48	48	4,25	PHN-19-48 ●	83	70	24	PCX 072/080	10
54	54	4,25	PHN-19-54/57 ●	89	70	24	PCX 082/085	10
57	54	4,25	PHN-19-54/57 ●	89	70	24	PCX 082/085	10
60	60	4,75	PHN-19-60/64 ●	95	80	20	PCX 088/092	10
64	60	4,75	PHN-19-60/64 ●	95	80	20	PCX 088/092	10
76	76	5,50	PHN-19-76/80 ●	110	90	16	PCX 099/103	10
80	76	5,50	PHN-19-76/80 ●	110	90	16	PCX 099/103	10
89	89	6,00	PHN-19-89 ●	123	105	12	PCX 112/118	10
102	-	6,00	PHN-19-102/108 ● <sup>1</sup>	136	105	12	PCX 133/137	10
108	-	6,00	PHN-19-102/108 ● <sup>1</sup>	136	105	12	PCX 133/137	10
114	-	6,00	PHN-19-110/114 ● <sup>1</sup>	144	120	12	PCX 137/142	10
125	-	6,00	PHN-19-125 ● <sup>1</sup>	159	120	12	PCX 164/169	10
133	-	6,00	PHN-19-133/140 ● <sup>1</sup>	167	120	12	PCX 164/169	10
140	-	6,00	PHN-19-133/140 ● <sup>1</sup>	167	120	12	PCX 164/169	10
160	-	6,00	PHN-19-160 ● <sup>1</sup>	193	120	6	PCX 206	10
165	-	6,00	PHN-19-165/168 ● <sup>1</sup>	199	130	6	PCX 206	10
168	-	6,00	PHN-19-165/168 ● <sup>1</sup>	199	130	6	PCX 206	10
216	-	6,00	PHN-19-216/219 ● <sup>1</sup>	252	170	4	-	-
219	-	6,00	PHN-19-216/219 ● <sup>1</sup>	252	170	4	-	-



# Armafix NH pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	25,0 mm insulation thickness				Clamps 25,0 mm	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
15	13.5	2,00	PHN-25-14 ●	61	60	28	PCX 054/058	25
15	15	2,00	PHN-25-15/18	63	60	28	PCX 059/063	25
18	15	2,00	PHN-25-15/18	63	60	28	PCX 059/063	25
20	18	2,75	PHN-25-20 ●	66	60	28	PCX 063/068	25
22	22	2,75	PHN-25-22/25 ●	69	60	28	PCX 063/068	25
25	22	2,75	PHN-25-22/25 ●	69	60	28	PCX 063/068	25
25	-	3,00	PHN-25-26 ●		60	28	PCX 068/073	10
28	28	3,00	PHN-25-28/30 ●	74	60	28	PCX 068/073	10
30	28	3,00	PHN-25-28/30 ●	74	60	28	PCX 068/073	10
32	30	3,50	PHN-25-32 ●	78	60	24	PCX 068/073	10
35	35	3,50	PHN-25-35/38 ●	81	70	24	PCX 072/080	10
38	35	3,50	PHN-25-35/38 ●	81	70	24	PCX 072/080	10
40	38	3,75	PHN-25-40 ●	86	70	24	PCX 082/085	10
42	42	3,75	PHN-25-42/45 ●	90	70	24	PCX 082/085	10
45	42	3,75	PHN-25-42/45 ●	90	70	24	PCX 082/085	10
48	48	4,25	PHN-25-48 ●	96	70	24	PCX 088/092	10
54	54	4,25	PHN-25-54/57 ●	102	70	24	PCX 092/099	10
57	54	4,25	PHN-25-54/57 ●	102	70	24	PCX 092/099	10
60	60	4,75	PHN-25-60/64 ●	108	80	20	PCX 099/103	10
64	60	4,75	PHN-25-60/64 ●	108	80	20	PCX 099/103	10
76	76	5,50	PHN-25-76/80 ●	123	90	16	PCX 112/118	10
80	76	5,50	PHN-25-76/80 ●	123	90	16	PCX 112/118	10
89	89	6,00	PHN-25-89 ●	136	105	12	PCX 137/142	10
102	-	6,00	PHN-25-102/108 ● <sup>1</sup>	149	105	12	PCX 137/142	10
108	-	6,00	PHN-25-102/108 ● <sup>1</sup>	149	105	12	PCX 137/142	10
114	-	6,00	PHN-25-110/114 ● <sup>1</sup>	157	120	12	PCX 159/164	10
125	-	6,00	PHN-25-125 ● <sup>1</sup>	172	120	12	PCX 164/169	10
133	-	6,00	PHN-25-133/140 ● <sup>1</sup>	180	120	12	PCX 190	10
140	-	6,00	PHN-25-133/140 ● <sup>1</sup>	180	120	12	PCX 190	10
160	-	6,00	PHN-25-160 ● <sup>1</sup>	206	120	6	PCX 206	10
165	-	6,00	PHN-25-165/168 ● <sup>1</sup>	212	130	6	PCX 222	10
168	-	6,00	PHN-25-165/168 ● <sup>1</sup>	212	130	6	PCX 222	10
204	-	6,00	PHN-25-204 ● <sup>1</sup>	250	170	4	-	-
216	-	6,00	PHN-25-216/219 ● <sup>1</sup>	265	170	4	-	-
219	-	6,00	PHN-25-216/219 ● <sup>1</sup>	265	170	4	-	-
254	-	6,00	PHN-25-254 ● <sup>1</sup>	296	170	3	-	-
267	-	6,00	PHN-25-267/273 ● <sup>1</sup>	313	170	3	-	-
273	-	6,00	PHN-25-267/273 ● <sup>1</sup>	313	170	3	-	-
306	-	6,00	PHN-25-306 ● <sup>1</sup>	351	215	1	-	-
406	-	4,20	PHN-25-406 ● <sup>2,1</sup>	445	215	6	-	-

## Armafix NH pipe supports and clamps



Pipe max. Outside-Ø [mm]	Armaflex tube nom. Ø [mm]	Max. permissible distance [m]	32,0 mm insulation thickness				Clamps 32,0 mm	
			Code	Outer- Ø [mm]	Length [mm]	Pieces/carton	Code	Pieces/carton
10	10	2,00	PHN-32-10/12 ●	75	90	20	-	-
12	10	2,00	PHN-32-10/12 ●	75	90	20	-	-
15	15	2,00	PHN-32-15/18 ●	81	90	20	PCX 068/073	10
18	15	2,00	PHN-32-15/18 ●	81	90	20	PCX 068/073	10
22	22	2,75	PHN-32-22/25 ●	88	90	20	PCX 072/080	10
25	22	2,75	PHN-32-22/25 ●	88	90	20	PCX 072/080	10
28	28	3,00	PHN-32-28/30 ●	93	90	20	PCX 082/085	10
30	28	3,00	PHN-32-28/30 ●	93	90	20	PCX 082/085	10
35	35	3,50	PHN-32-35/38 ●	101	90	16	PCX 088/092	10
38	35	3,50	PHN-32-35/38 ●	101	90	16	PCX 088/092	10
42	42	3,75	PHN-32-42/45 ●	108	90	16	PCX 092/099	10
45	42	3,75	PHN-32-42/45 ●	108	90	16	PCX 092/099	10
60	60	4,75	PHN-32-60/64 ●	127	105	12	PCX 112/118	10
64	60	4,75	PHN-32-60/64 ●	127	105	12	PCX 112/118	10
76	76	5,50	PHN-32-76/80 ●	143	120	12	PCX 133/137	10
80	76	5,50	PHN-32-76/80 ●	143	120	12	PCX 133/137	10
89	89	6,00	PHN-32-89 ●	152	130	12	PCX 137/142	10
110		6,00	PHN-32-110/114 ●	177	150	12	PCX 168/173	10
114		6,00	PHN-32-110/114 ●	177	150	12	PCX 168/173	10
133		6,00	PHN-32-133/140 ●	203	150	8	PCX 199	10
140		6,00	PHN-32-133/140 ●	203	150	8	PCX 199	10
165		6,00	PHN-32-165/168 ●	231	170	5	PCX 231	10
168		6,00	PHN-32-165/168 ●	231	170	5	PCX 231	10

**Remark** Armafix NH are no stock items. Delivery time on request.  
outer Ø = installation Ø

**Technical properties** Other sizes likewise on request. Starting from Ø 165,1 mm two-piece execution possible. PH measurements are approx. Measurements.

● Item not in stock. Delivery on request. [MTO]

<sup>1</sup> Sheets

<sup>2</sup> Pieces/carton on request



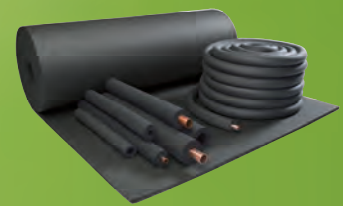
Clamps	
Code	Pieces/carton
PCX 025/030	25
PCX 033/037	25
PCX 038/041	25
PCX 042/046	25
PCX 047/052	25
PCX 054/058	25
PCX 059/063	25
PCX 063/068	25
PCX 068/073	10
PCX 072/080	10
PCX 082/085	10
PCX 088/092	10
PCX 092/099	10
PCX 099/103	10
PCX 108/112	10
PCX 112/118	10
PCX 125/130	10
PCX 133/137	10
PCX 137/142	10
PCX 145/152	10
PCX 159/164	10
PCX 164/169	10
PCX 168/173	10
PCX 190	10
PCX 199	10
PCX 206	10
PCX 222	10
PCX 231 •	10
PCX 249 •	10
PCX 259	10

• Item not in stock. Delivery on request. [MTO]



HT/ARMAFLEX

INSTALL IT. TRUST IT.



- Professional solution for hot applications up to + 150 °C
- UL approved
- System approach with fit-for-purpose HT625 adhesive

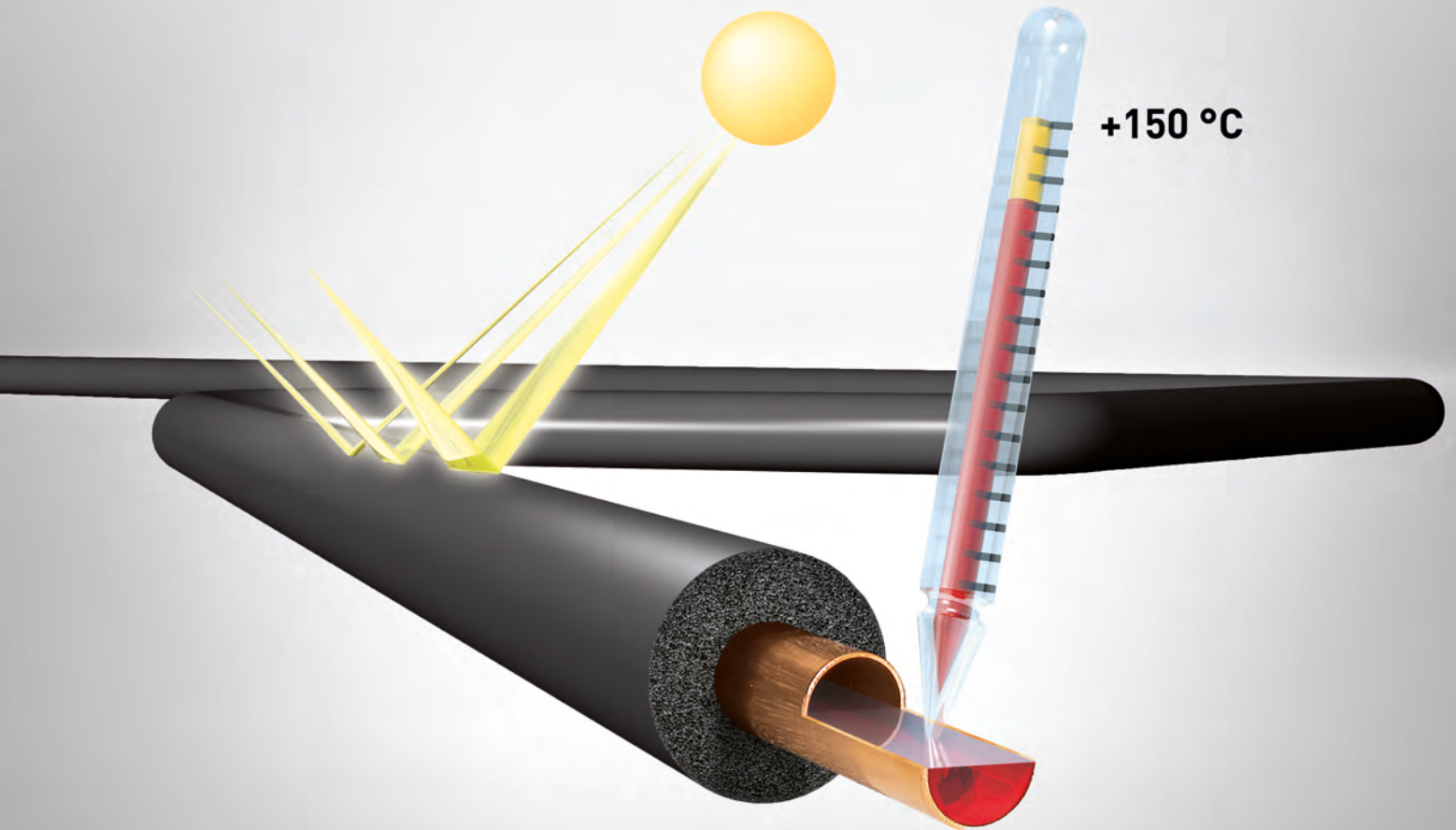




# HT/Armaflex®

## THE EXPERT FOR HIGH TEMPERATURE

HT/Armaflex® is a flexible elastomer insulation material with exceptional resistance to UV radiation and high temperatures. Its closed cell structure and low thermal conductivity keep water vapour from diffusing in and reduce energy losses, protecting and optimising the efficiency and life time expectancy of the installation. While remaining flexible at application temperatures of up to 150 °C, HT/Armaflex® is dust and fibre free and easy to install without special tools. The product does not need additional jacketing, does not degrade in sunlight and withstands incidental oil contact.



Thanks to the thermal properties of the insulation, the heat flow from pipelines insulated with HT/Armaflex® is kept at its utmost minimum. The evenly spread, homogenous and longterm stable closed cell structure prevents heat flow on the way of convection, ensuring very low thermal conductivity of the insulation material. This to keep the outer surface temperature at a low level and prevents unnecessary heat losses. Because of the flexibility of HT/Armaflex®, the huge temperature gradient of the thickness of insulation does not result in any internal stress.



## Technical Data - HT/Armaflex

Brief description	Highly flexible, closed cell insulation material based on extruded elastomer foam with resistance to UV radiation.
Material type	Synthetic EPDM rubber based foam. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	black
Applications	Thermal insulation of pipes, vessels and ducts in: solar collectors (including outdoors), motor vehicles, hot gas lines and steam and dual temperature lines.
Special Features	Resistant to UV radiation.
Safety and Environment	Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20150108-IBB1-DE", Institut Bauen und Umwelt e.V. (IBU).
Assembly	The Armaflex® installation manual and the Technical Bulletin No. 71 should be consulted before assembly.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a> .

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range <sup>1</sup>	max. service temperature <sup>2</sup> + 150 °C (+ 85 °C for tapes) min. service temperature -50 °C	EU 5666	Tested according to: EN 14706 EN 14707 EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 °C $\lambda =$	EU 5316	Declared acc. to EN ISO 13787 Tested according to EN 12667 EN ISO 8497
tubes	$\lambda \leq 0,042$ W/(m · K) $[36,92 + 0,125 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 30)^2]/1000$		
sheets, tape	$\lambda \leq 0,045$ W/(m · K) $[39,92 + 0,125 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 30)^2]/1000$		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	tubes $\mu \geq 4.000$ sheets,tape $\mu \geq 3.000$	EU 5316	Tested according to EN 12086 EN 13469
<b>Fire performance</b>			
Reaction to fire	Euroclass (tubes) D <sub>L</sub> -s3, d0 Euroclass (sheets, tape) D-s3, d0	EU 5316	Classified acc. to EN 13501-1 Tested according to EN 13823 and EN ISO 11925-2
Other Fire Class	UL -approved V-0 British Standard Class 1	EU 5837 GB 5904	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Dimensions and tolerances	In accordance with EN 14304, table 1	EU 5316	Tested acc. to EN 822, EN 823, EN 13467
UV resistance <sup>3</sup>	High	TB 142,	Tested according to EN ISO 4892-1
Storage & Shelf life	Tape, self-adhesive: 1 year Can be stored in dry, clean rooms at normal relative humidity (50 % to 70 %) and ambient temperature (0 ° C - 35 °C)		
AGI Designation Code	Tubes 36.12.05.09.02 Sheets 36.07.05.09.02		

1. For temperatures above +125 °C or below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. At high service temperatures a certain hardening process may start on the inner surface of the material. Investigations have shown that these changes have no impact on the good physical and fire protection properties of the material, provided the material is installed in a correct way with all its joints properly sealed. For specific applications please consult our technical service.

3. With outdoor applications, in certain circumstances the material may experience a discoloration of the surface and some minor surface cracks will appear. The visual appearance however has no influence on the physical properties of the material, such as thermal conductivity and behaviour in case of fire.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex HT625 adhesive must be used to guarantee proper installation. For temperatures below -50 °C or above +150 °C, please consult our Customer Service Center for further information.

## HT/Armaflex tubes



Length 2,0 m

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	10,0 mm insulation thickness		13,0 mm insulation thickness	
		Code	m/carton	Code	m/carton
10	11,5 - 13,0	HT-10X010	192	HT-13X010	140
12	13,5 - 15,0	HT-10X012	172	HT-13X012	130
15	16,5 - 18,0	HT-10X015	144	HT-13X015	112
18	19,5 - 21,0	HT-10X018	130	HT-13X018	98
22	23,5 - 25,0	HT-10X022	108	HT-13X022	84
28	29,5 - 31,0	HT-10X028	82	HT-13X028	64
35	36,5 - 38,5	HT-10X035	60	HT-13X035	50
42	44,0 - 46,0	HT-10X042	50	HT-13X042	40
48	50,0 - 52,0	-	-	HT-13X048	32
54	55,5 - 57,5	-	-	HT-13X054	32
60	62,0 - 64,0	-	-	HT-13X060	28
76	77,5 - 80,0	-	-	HT-13X076	24
89	91,0 - 94,0	-	-	HT-13X089	18

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	19,0 mm insulation thickness		25,0 mm insulation thickness	
		Code	m/carton	Code	m/carton
12	13,5 - 15,0	HT-19X012	80	-	-
15	16,5 - 18,0	HT-19X015	64	HT-25X015	40
18	19,5 - 21,0	HT-19X018	58	HT-25X018	36
22	23,5 - 25,0	HT-19X022	50	HT-25X022	36
28	29,5 - 31,0	HT-19X028	48	HT-25X028	32
35	36,5 - 38,5	HT-19X035	32	HT-25X035	24
42	44,0 - 46,0	HT-19X042	24	HT-25X042	20
48	50,0 - 52,0	HT-19X048	22	HT-25X048	16
54	55,5 - 57,5	HT-19X054	18	HT-25X054	16
60	62,0 - 64,0	HT-19X060	16	HT-25X060	16
76	77,5 - 80,0	HT-19X076	18	HT-25X076	12
89	91,0 - 94,0	HT-19X089	16	HT-25X089	12

Length tolerance for tubes	± 1,5 %
Thickness tolerance	10 - 13 mm ± 1,5 mm
	19 - 25 mm ± 2,5 mm

## HT/Armaflex tubes endless



Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	13,0 mm insulation thickness		19,0 mm insulation thickness	
		Code	m/carton	Code	m/carton
15	16,5 - 18,0	HT-13X015/E	26	HT-19X015/E	16
18	19,5 - 21,0	HT-13X018/E	22	HT-19X018/E	14
22	23,5 - 25,0	HT-13X022/E	18	HT-19X022/E	12

Length tolerance for tubes	± 1,5 %
Thickness tolerance	10 - 13 mm ± 1,5 mm
	19 - 25 mm ± 2,5 mm

## HT/Armaflex sheets endless



Width 1,0 m, Skin on both sides

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
HT-10-99/E	10,0	10	10
HT-13-99/E	13,0	8	8
HT-19-99/E	19,0	6	6
HT-25-99/E	25,0	4	4
HT-32-99/E •	32,0	3	3

Length tolerance for sheets

± 1,5 %

Thickness tolerance for sheets

10 - 19 mm ± 1,5 mm

25 - 32 mm ± 2,0 mm

• Item not in stock. Delivery on request. [MTO]

## HT/Armaflex tapes self-adhesive



Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
HT-TAPE	50,0	15	3	12

## HT/Armaflex accessories



Code	Article description	Pieces/carton
ADH-HT625/0,25	Armaflex HT625 one-component adhesive, 0,25 litre cans (with brush)	40
ADH-HT625/0,5	Armaflex HT625 one-component adhesive, 0,5 litre cans	12
ADH-HT625/1,0	Armaflex® HT625 one-component adhesive, 1,0 litre cans	12
CLEANER/1,0	Special cleaner for use with Armaflex® Adhesive 520 and Armaflex® Adhesive HT625.	4

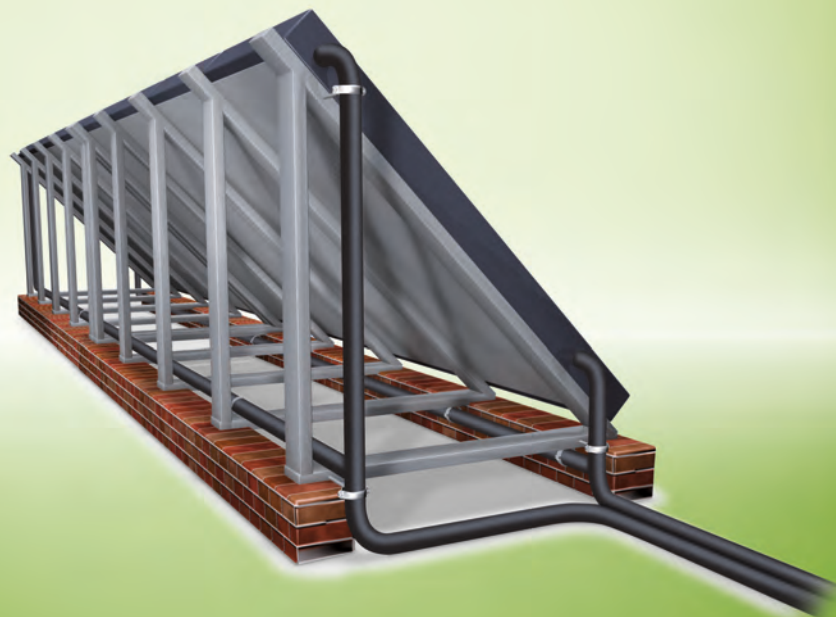






HT/ARMAFLEX S

INSTALL IT. TRUST IT.



- Strong UV/weathering resistance
- Built to endure: Strong performance for outdoor installations
- Wide operation-temperature range (-50 °C / + 150 °C)

## Technical Data - HT/Armaflex S

Brief description	Highly flexible, closed cell insulation material based on extruded elastomer foam, covered with a polyolefin- copolymer coating. Especially designed for outside- and high temperature applications of up to +150 °C.
Material type	Insulation: Synthetic EPDM rubber based foam. Factory made flexible elastomeric foam (FEF) according to EN 14304. Facing: polyolefin- copolymer coating.
Colour	white / black (facing)
Applications	Thermal insulation for pipework in: solar collectors including outdoors, motor vehicles, hot gas lines and steam and dual temperature lines.
Special Features	Resistant to UV radiation.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range <sup>1</sup>	max. service temperature	+ 150 °C (+ 85 °C for tapes)	EU 5768 Tested according to: EN 14706 EN 14707 EN 14304
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 °C	$\lambda =$	EU 5786 Declared according to EN ISO 13787 Tested according to EN ISO 8497
	tubes $\lambda \leq 0,042$	W/(m · K) $[36,92 + 0,125 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 30)^2]/1000$	
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu$	$\geq$ 4.000	EU 5768 Tested according to EN 13469
<b>Fire performance</b>			
Reaction to fire	Euroclass	E	EU 5768 Classified acc. to EN 13501-1 Tested according to EN ISO 11925-2
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 5768 Tested acc. to EN 822, EN 823, EN 13467
UV resistance	Very Good		TB 142, D5793 Tested according to EN ISO 4892-2 (Xenon-test)

1. For temperatures above +125 °C or below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. With outdoor applications, in certain circumstances the material may experience a discoloration of the surface and some minor surface cracks will appear. The visual appearance however has no influence on the physical properties of the material, such as thermal conductivity and behaviour in case of fire.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex HT625 adhesive must be used to guarantee proper installation. For temperatures below -50 °C or above +150 °C, please consult our Customer Service Center for further information.

## HT/Armaflex S tubes



Length 2,0 m

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	13,0 mm [white] insulation thickness		13,0 mm [black] insulation thickness	
		Code	m/carton	Code	m/carton
12	13,5 - 15,0	HT-13X012-SWH	130	-	-
15	16,5 - 18,0	HT-13X015-SWH	112	HT-13X015-SBK	112
18	19,5 - 21,0	HT-13X018-SWH	98	HT-13X018-SBK	98
22	23,5 - 25,0	HT-13X022-SWH	84	HT-13X022-SBK	84
28	29,5 - 31,0	HT-13X028-SWH	64	HT-13X028-SBK	64

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	20,0 mm [white] insulation thickness		20,0 mm [black] insulation thickness	
		Code	m/carton	Code	m/carton
12	13,5 - 15,0	HT-20X012-SWH	70	-	-
15	16,5 - 18,0	HT-20X015-SWH	64	HT-20X015-SBK	64
18	19,5 - 21,0	HT-20X018-SWH	58	HT-20X018-SBK	58
22	23,5 - 25,0	HT-20X022-SWH	50	HT-20X022-SBK	50
28	29,5 - 31,0	HT-20X028-SWH	40	HT-20X028-SBK	40
35	36,5 - 38,5	HT-20X035-SWH	32	HT-20X035-SBK	32
42	44,0 - 46,0	HT-20X042-SWH	24	HT-20X042-SBK	24

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	32,0 mm [white] insulation thickness		32,0 mm [black] insulation thickness	
		Code	m/carton	Code	m/carton
15	16,5 - 18,0	HT-32X015-SWH	36	-	-
18	19,5 - 21,0	HT-32X018-SWH	30	HT-32X018-SBK	30
22	23,5 - 25,0	HT-32X022-SWH	28	HT-32X022-SBK	28
28	29,5 - 31,0	HT-32X028-SWH	24	HT-32X028-SBK	24
35	36,5 - 38,5	HT-32X035-SWH	22	HT-32X035-SBK	22
42	44,0 - 46,0	HT-32X042-SWH	18	HT-32X042-SBK	18
48	50,0 - 56,0	HT-32X048-SWH	16	-	-
54	56,0 - 59,0	HT-32X054-SWH	16	-	-
64	66,0 - 69,0	HT-32X064-SWH	12	-	-

<b>Length tolerance for tubes</b>	± 1,5%
<b>Thickness tolerance</b>	10 - 13 mm ± 1,5 mm
	19 - 25 mm ± 2,5 mm
	32 mm ± 3,0 mm

## HT/Armaflex S tapes self-adhesive



Code	Colour	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
TAPE-PE-FE902	white	50,0	25	0.23	30
TAPE-PE-FE904	black	50,0	25	0.23	30







HT/ARMAFLEX INDUSTRIAL

HIGH DENSITY INDUSTRIAL GRADE FEF  
INSULATION FOR ELEVATED  
TEMPERATURES



- Enhanced temperature capability
- Built-in water vapour barrier reduces risk of corrosion under insulation (CUI)
- Retains its physical characteristics throughout its service life
- Low maintenance and repair costs
  
- Low leachable chloride content (< 30 ppm) to minimise stress corrosion cracking (SCC)
- High density and mechanically robust for superior stability
- Low thermal conductivity to minimise energy losses

## Technical Data - HT/Armaflex Industrial [ES]

Brief description	HT/Armaflex® Industrial is a flexible, high density and mechanically robust, closed cell thermal insulation material based on extruded elastomeric foam. The product has been specially developed to provide enhanced thermal resistance of the insulation systems with its low thermal conductivity.
Material type	Synthetic EPDM rubber based foam. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	Black
Material Special Information	HT/Armaflex® Industrial is resistant to elevated operating temperatures. The product is suitable for use in multi-layer applications including Arma-Sound Industrial Systems.
Product Range	Tubes, 13, 19 and 25 mm thickness, for pipe outer diameters ranging from 15 to 89 mm (1/4" to 3" NB). Sheets in rolls, 10, 13, 19 and 25 mm thickness.
Applications	Thermal insulation / protection of pipes, vessels and ducts (incl. elbows, fittings, flanges etc.) in offshore, industrial (typically oil & gas) and process equipment facilities. HT/Armaflex® Industrial is also used as a component of Arma-Sound Industrial Systems to provide acoustic insulation on industrial pipework and vessels ensuring reduction of sound transmission.
Assembly	For industrial applications it is recommended to consult the relevant Armacell installation instructions and application manuals. Please consult our Customer Service Centre.

Property	Value/Assessment							Special Remark	
<b>Temperature Range</b>									
Temperature Range <sup>1</sup>	max. service temperature						+ 125 °C / +257 °F	Tested according to EN 14706, EN 14707 and EN 14304	
	min. service temperature						- 50 °C / -58 °F		
<b>Thermal Conductivity</b>									
Thermal Conductivity	sheets & tubes	$\rho_m$	-50 °C	0 °C	+50 °C	+100 °C	+125 °C	$\lambda_d(\theta_m)=0,04028+1,25 \times 10^{-4} \times \theta_m+8 \times 10^{-7} \times (\theta_m-30)^2$ , where $\theta_m$ is mean temperature in °C	Declared according to EN ISO 13787 Tested according to EN 12667 and EN ISO 8497 (Equivalent methods ASTM C177 and C518)
			$\lambda$	≤ 0,039	0,041	0,047	0,057	0,063	
<b>Water vapour diffusion resistance</b>									
Water vapour diffusion resistance	Tubes		$\mu$				≥	4.000	Tested according to EN 12086 EN 13469 (equivalent method ASTM E96)
	Sheets		$\mu$				≥	3.000	
<b>Fire performance</b>									
Reaction to fire	Euroclass (tubes)						D <sub>L</sub> -s3,d0	Classified according to EN 13501-1 Tested according to EN 13823 and EN ISO 11925-2	
	Euroclass (sheets)						D-s3, d0		
Other Fire Class <sup>2</sup>	ASTM E84						Class A (< 25 flame spread index)		
	BS 476 pt 7						Class 1		
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames.								
Density	Sheets: 70 - 85 kg/m <sup>3</sup> Tubes: 60 - 75 kg/m <sup>3</sup>								Tested according to ISO 845 ASTM D 1622
Dimensions and tolerances <sup>3</sup>	In accordance with EN 14304, table 1							Tested according to EN 822, EN 823, EN 13467	
UV resistance	In all industrial applications the outer layer of the material must be protected with an adequate covering like Arma-Chek R, metal jacketing or preformed UV-cured GRP (Glass-Reinforced Plastic) cladding. For further information please consult our Customer Service Centre.								
Tear strength	≥ 0.4 kN/m							Tested according to ISO 34-1 (Angle test piece with a nick.)	
Health aspects	Neutral, MSDS available on request.								
Storage & Shelf life	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight. max. shelf (storage) life: 3 years								
Compression deflection	> 15 kPa							Tested according to ISO 6916-1	
Acoustic insertion loss	When used as part of a system HT/Armaflex® Industrial complies to ISO 15665 Classes A to C and Shell DEP 31.46.00.31-Gen Class D.							Tested according to ISO 3741 (equivalent method ASTM E1222) Classified according to ISO 15665	
Leachable (water-soluble)chlorides	≤ 30 ppm (mg/kg or µg/g)							Tested according to EN 13468 and ASTM C871	

## Technical Data - HT/Armaflex Industrial [ES]

pH Value <sup>2</sup>	7 - 9	Tested according to ISO 10523
Stress corrosion cracking <sup>2</sup>	No cracks under magnifying glass on test coupons after evening, cleaning and rebending.	Tested according to ASTM C692
Water absorption <sup>2</sup>	≤ 0.1% by volume (total submersion for 2 hours)	Tested according to ASTM C209
Closed cell content	≥ 90 % declared on the basis of the water absorption test	
Vacuum water absorption	≤ 4 % by mass total submersion for 2 x 180 seconds, vacuum pressure 17.2 kPa	Tested according to ASTM D1056
Application conditions*	Ambient temperature: +5 °C to +35 °C Max. relative humidity: 80%	

1. For temperatures above +125 °C or below -50 °C please contact our Customer Service Center to request for the corresponding technical information.
2. Based on single test results. Can be used for information / reference only
3. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Please consult our Customer Service Center before insulating stainless steels. Armaflex HT625 adhesive must be used to guarantee proper installation. Installation instructions are available in our Armaflex installation manual. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification.



## HT/Armaflex Industrial [ES] tubes



Length 2,0 m, Color black

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	13,0 mm insulation thickness		19,0 mm insulation thickness	
		Code	m/carton	Code	m/carton
18	19,5 - 21,0	HTI-13X018 ●	98	HTI-19X018	58
22	23,5 - 25,0	HTI-13X022 ●	84	HTI-19X022	50
28	29,5 - 31,5	HTI-13X028 ●	64	HTI-19X028	48
35	36,5 - 38,5	HTI-13X035 ●	50	HTI-19X035	32
42	44,0 - 46,0	HTI-13X042 ●	40	HTI-19X042	24
48	50,0 - 52,0	HTI-13X048 ●	32	HTI-19X048	22
54	56,0 - 58,0	HTI-13X054 ●	32	HTI-19X054	18
60	62,0 - 64,0	HTI-13X060 ●	28	HTI-19X060	16
76	78,0 - 80,0	HTI-13X076 ●	24	HTI-19X076	18
89	91,0 - 94,0	HTI-13X089 ●	18	HTI-19X089	16

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	25,0 mm insulation thickness			
		Code	m/carton		
15	16,5 - 18,0	HTI-25X015 ●	50	-	-
22	23,5 - 25,0	HTI-25X022 ●	36	-	-
28	29,5 - 31,0	HTI-25X028 ●	32	-	-
35	36,5 - 38,5	HTI-25X035 ●	24	-	-
42	44,0 - 46,0	HTI-25X042 ●	24	-	-
48	50,0 - 52,0	HTI-25X048 ●	20	-	-
54	56,0 - 58,0	HTI-25X054 ●	16	-	-
60	62,0 - 64,0	HTI-25X060 ●	18	-	-
76	77,5 - 80,0	HTI-25X076 ●	12	-	-
89	91,0 - 94,0	HTI-25X089 ●	12	-	-

**Length tolerance for tubes**

± 1,5 %

**Thickness tolerance**

13 mm ± 1,5 mm  
19 - 25 mm ± 2,5 mm

**Remark**

Further dimensions and insulation thicknesses on request

- Item not in stock. Delivery on request. [MTO]

## HT/Armaflex Industrial [ES] sheets endless



Width 1,0 m, Color black

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
HTI-10-99/E ●	10,0	10	10
HTI-13-99/E ●	13,0	8	8
HTI-19-99/E ●	19,0	6	6
HTI-25-99/3,5	25,0	3,5	3,5

**Length tolerance for sheets**

± 1,5 %

**Thickness tolerance for sheets**

10 - 19 mm ± 1,5 mm  
25 mm + 2,0 mm

- Item not in stock. Delivery on request. [MTO]

## HT/Armaflex Industrial [ES] accessories



Code	Article description	Pieces/carton
ADH-HT625/1,0	Armaflex® HT625 one-component adhesive, 1,0 litre cans	12
CLEANER/1,0	Special cleaner for use with Armaflex® Adhesive 520 and Armaflex® Adhesive HT625.	4
HT-TAPE	HT/Armaflex tape self-seal (15 m x 50 mm x 3 mm), black (suitable for the application on HT/Armaflex)	12

 armacell®

SH/ARMAFLEX

INSTALL IT. TRUST IT.



- Expert solution for heating and plumbing
- With patented Microban® technology
- Fast return on investment

- Outstanding energy saving
- Range meets energy regulations



## SH/ARMAFLEX ACTIVE MICROBAN® ANTIMICROBIAL PROTECTION

When microbes come in contact with the insulation surface, MICROBAN® protection penetrates the cell wall of the microorganism, disabling its ability to function, grow and reproduce. Because the protection is built in during the manufacturing process, it will not wash off or wear away. This gives products with MICROBAN® technology an added level of protection against mould and mildew, thus positively contributing to the indoor air quality of the surrounding ambients. Insulation material equipped with MICROBAN® is therefore the ideal long-term solution for sanitary and heating systems in public buildings such as schools, hospitals, elderly homes, offices and airports.

PROTECTION THAT LIVES ON  
**MICROBAN®**

## ENERGY SAVINGS

Since the European Energy Performance of Buildings Directive (EPBD), the requirements of energy efficiency for both new and refurbished buildings increased. With this, the energy consumption levels became more visible and transparent to owners, tenants and users through a building certification, as an indispensable part of the building documentation. Correct insulation of heating and sanitary pipes is critical for the optimum energy performance of a building - which is ensured by the use of the SH/Armaflex range.

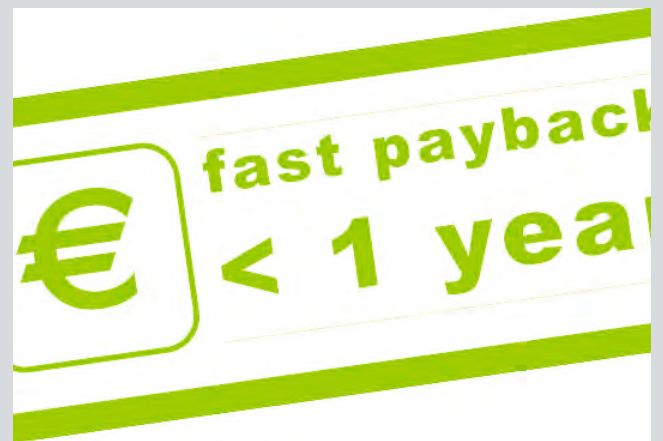


## INVESTMENT PAYBACK

The static amortisation of the initial costs by using SH/Armaflex 25 mm is less than one year.

- compared to initial situation of noninsulated pipes
- domestic hot water and heating (70/55 °C)
- pipe lines located in unheated area
- fuel costs 0,55 € / liter

**Payback time in less than 6 months!**



## COMPLETE SYSTEM

Armacell offers a complete carefully considered and coordinated system solution for any professional insulation challenge: SH/Armaflex standard, self-adhesive and endless tubes and sheets, tape and accessories. Armafix X pipe supports to avoid thermal bridging, Armaflex Protect fire barrier as well as Armaprotect 1000 firestop filler.

The wide range of specially developed accessories such as the new generation of adhesives and the Armaflex Toolbox for applying Armaflex insulation materials make installation even easier.



## Technical Data - SH/ArmaFlex

Brief description	Highly flexible closed-cell extruded insulation material with low thermal conductivity to minimise energy losses on heating and plumbing installations.
Material type	Elastomeric foam based on synthetic rubber. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	grey
Material Special Information	Self-adhesive coating: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection of pipes (heating, domestic hot and cold water, sewage water, drain water) and other heating and plumbing installations to optimally prevent heat losses and save energy.
Special Features	SH/Armaflex is a closed cell insulation material for heating and plumbing systems. Its water vapour diffusion resistance value is sufficient to comply with the condensation control requirements for these applications and especially for cold water pipelines.
Safety and Environment	Meets the requirements for sustainable construction in combination with ArmaFlex SF990 adhesive such as LEED. Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20200221-IBB1-EN", Institut Bauen und Umwelt e.V. (IBU)
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature <sup>1</sup> +110 °C  min. service temperature as usual in heating and plumbing systems	(+85 °C If sheet or tape is glued to the object with all over surface coverage.)  EU 5662	Tested acc. to EN 14706, EN 14707 and EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 °C  tubes SH-10x12 up to SH-10x60 $\lambda \leq 0,036$  all other tubes $\lambda \leq 0,040$  sheets $\lambda \leq 0,040$	$\lambda =$  $[32 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$  $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$  $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$	EU 5662  Declared acc. to EN ISO 13787 Tested acc. to EN 12667 and EN ISO 8497
<b>Fire performance</b>			
Reaction to fire	tubes up to 45 mm tubes > 45 mm sheets 10 mm sheets 20 mm tape	B <sub>L</sub> -s3, d0 C <sub>L</sub> -s3, d0 C-s3, d0 D-s3, d0 B-s3, d0	EU 5662  Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2
Other Fire Class	FM-approved up to 45 mm	4924-Pipe and Duct Insulation	D 5607  Tested according to UBC26-3
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Fire resistance of structural element	EI 30 - EI 90		EU 5662 EU 5584  Classified acc. to EN 13501-2 Tested acc. to EN 1366-3
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	$\leq 27$ dB (A)		EU 7283  Tested acc. to EN ISO 3822-1
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 5662  Tested acc. to EN 822, EN 823, EN 13467
UV resistance <sup>2</sup>	Protection against UV-radiation is necessary.		TB 142
Storage & Shelf life	Tapes and tubes, self-adhesive: 1 year Can be stored in dry, clean rooms at normal relative humidity (50 % to 70 %) and ambient temperature (0 °C - 35 °C)		
Antimicrobial behaviour	In-built Microban® active antimicrobial protection: No fungal growth observed		D 5932  Tested acc. to EN ISO 846 (VDI 6022)

1. Shall the insulation be glued with its whole surface directly onto the object and the surface temperature of the object exceeds +85 °C, (a base layer of) HT/Armaflex substrate should be used.

2. If Armaflex is applied under UV-radiation the material must be protected within 3 days with a covering.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels.



# Gesetzliche Anforderungen gemäß GebäudeEnergieGesetz (GEG)

	Anwendungsbereich A gemäß GEG 100%	Anwendungsbereich B gemäß GEG 50%	Anwendungsbereich C gemäß GEG im Fußbodenbau	Anwendungsbereich D Leitungen ohne besondere Anforderungen gemäß GEG bzw. nach DIN 1988, Teil200
Heizung <sup>1)</sup>	Leitungen in unbeheizten Räumen und Kellerräumen. Im Fußboden verlegte Leitungen, auch HK-Anschlussleitungen gegen Erdreich/unbeheizte Räume. Leitungen in Außenwänden, in Bauteilen zwischen unbeheizten und beheizten Räumen, in Schächten und Kanälen Verteilungsleitungen zur Versorgung mehrerer Parteien.	Leitungen in Bauteilen, zwischen beheizten Räumen verschiedener Nutzer, Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, an zentralen Leitungsverteilern	Im Fußbodenbereich verlegte Leitungen, zwischen beheizten Räumen verschiedener Nutzer.	Heizungsleitungen in beheizten Räumen oder in Bauteilen zwischen beheizten Räumen eines Nutzers und absperrbar, ohne besondere Anforderungen <sup>2)</sup>
Sanitär <sup>1)</sup> (Warmwasser)	Warmwasserleitungen	Armaturen von Rohrnetzverteilern		Warmwasserleitungen bis zu einer Länge von 4 m ohne Zirkulation/Begleitheizung (Stichleitungen)
Sanitär (Kaltwasser)	Anwendungsbereich A <sup>3)</sup>  - Rohrleitungen verlegt, z. B. in Technikzentralen oder Medienkanälen und Schächten mit Wärmelasten und Umgebungstemperaturen $\geq 25 \text{ }^\circ\text{C}$		- Rohrleitungen frei verlegt in nicht beheizten Räumen, Umgebungstemperatur $\leq 20 \text{ }^\circ\text{C}$ (nur Tauwasserschutz)  - Rohrleitungen verlegt in Rohrschächten, Bodenkanälen und abgehängten Decken, Umgebungstemperatur $\leq 25 \text{ }^\circ\text{C}$  - Stockwerksleitungen und Einzelzuleitungen in Vorwandinstallationen  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau (auch neben nichtzirkulierenden Trinkwasserleitungen warm)  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau neben warmgehenden zirkulierenden Rohrleitungen	

<sup>1)</sup> Wärmeverteilungs- und Warmwasserleitungen, die direkt an Außenluft angrenzend verlegt sind, sind mit 200 % Dämmung zu versehen.

<sup>2)</sup> Selbst wenn in bestimmten Fällen aus Gesichtspunkten der Energieeinsparung keine Anforderungen an die Dämmung gestellt werden, müssen aber Leitungen in Bauteilen (z.B. im Estrich oder unter Putz) aus folgenden Gründen gedämmt werden: Korrosionsschutz, Vermeidung von Knack- und Fließgeräuschen (Körperschalldämmung), Verringerung der Wärmebelastung des umgebenden Mauerwerkes, o. ä. Bei nicht zirkulierenden Warmwasserleitungen stellt diese Mindestdämmung außerdem sicher, dass das Wasser bei Zapfbeginn durch angrenzende Bauteile nicht unnötig abgekühlt wird.

<sup>3)</sup> Anwendungsbereich B gilt nur bei Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, bei zentralen Leitungsnetzverteilern

## SH/ArmaFlex tubes [additional table to display with itemgroups of local regulations]



Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	[DE] Field of application C + D according to EnEV			[DE] Field of application B according to EnEV		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
12	13,0 - 14,5	11,0	SH-10X012	180	11,0	SH-10X012	180
15	16,0 - 17,5	11,0	SH-10X015	150	11,0	SH-10X015	150
18	19,0 - 20,5	11,0	SH-10X018	130	11,0	SH-10X018	130
20	21,0 - 22,5	11,0	SH-10X020	100	11,0	SH-10X020	100
22	23,0 - 24,5	11,0	SH-10X022	100	11,0	SH-10X022	100
25	26,0 - 27,5	11,0	SH-10X025	80	11,0	SH-10X025	80
28	29,0 - 30,5	11,0	SH-10X028 <sup>1</sup>	80	19,0	SH-19X028 <sup>2</sup>	48
32	33,0 - 35,0	10,0	SH-10X032	70	19,0	SH-19X032	32
35	36,0 - 38,0	10,0	SH-10X035	70	19,0	SH-19X035	40
40	41,0 - 42,5	10,0	SH-10X040 ●	60	-	-	-
42	43,5 - 45,5	10,0	SH-10X042	60	24,0	SH-24X042	24
48	49,5 - 51,5	10,0	SH-10X048	50	26,0	SH-24X048	24
50	51,0 - 52,5	10,0	SH-10X050	44	-	-	-
54	55,0 - 57,0	10,0	SH-10X054	44	31,0	SH-32X054	12
60	61,5 - 63,5	10,0	SH-10X060	40	32,0	SH-34X060	10
64	65,0 - 67,5	9,0	SH-09X064	36	-	-	-
76	77,0 - 79,5	9,0	SH-09X076	28	44,0	SH-44X076	8
89	90,5 - 93,5	9,0	SH-09X089	24	-	-	-
108	109,5 - 113,0	9,0	SH-09X108	20	-	-	-
114	116,0 - 120,0	9,0	SH-09X114	20	-	-	-

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	[DE] Field of application A according to EnEV					
		Insulation thickness [mm]	Code	m/carton			
15	16,0 - 17,5	27,0	SH-24X015	36	-	-	-
18	19,0 - 20,5	26,0	SH-24X018	36	-	-	-
20	21,0 - 22,5	26,0	SH-24X020 ●	36	-	-	-
22	23,0 - 24,5	26,0	SH-24X022	36	-	-	-
25	26,0 - 27,5	25,0	SH-24X025 ●	32	-	-	-
28	29,0 - 30,5	25,0	SH-24X028 <sup>3</sup>	32	-	-	-
28	29,0 - 30,5	39,0	SH-36X028	18	-	-	-
35	36,0 - 38,0	38,0	SH-36X035	16	-	-	-
42	43,5 - 45,5	50,0	SH-46X042	8	-	-	-
48	49,5 - 51,5	53,0	SH-46X048	8	-	-	-

● Item not in stock. Delivery on request. [MTO]

<sup>1</sup> Only for steel pipe

<sup>2</sup> Only for copper pipes

<sup>3</sup> For steel pipes

## SH/ArmaFlex tubes self-adhesive



Length 2,0 m, with tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	[DE] Field of application C + D according to EnEV			[DE] Field of application B according to EnEV		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
12	13,0 - 14,5	11,0	SH-10X012-A	180	11,0	SH-10X012-A	180
15	16,0 - 17,5	11,0	SH-10X015-A	150	11,0	SH-10X015-A	150
18	19,0 - 20,5	11,0	SH-10X018-A	130	11,0	SH-10X018-A	130
20	21,0 - 22,5	11,0	SH-10X020-A ●	100	11,0	SH-10X020-A ●	100
22	23,0 - 24,5	11,0	SH-10X022-A	100	11,0	SH-10X022-A	100
25	26,0 - 27,5	11,0	SH-10X025-A ●	80	11,0	SH-10X025-A ●	80
28	29,0 - 30,5	11,0	SH-10X028-A	80	19,0	SH-19X028-A	48
32	33,0 - 35,0	10,0	SH-10X032-A	70	19,0	SH-19X032-A ●	32
35	36,0 - 38,0	10,0	SH-10X035-A	70	19,0	SH-19X035-A	40
40	41,0 - 42,5	10,0	SH-10X040-A ●	60	-	-	-
42	43,5 - 45,5	10,0	SH-10X042-A	60	24,0	SH-24X042-A	24
48	49,5 - 51,5	10,0	SH-10X048-A	50	26,0	SH-24X048-A ●	24
50	51,0 - 52,5	10,0	SH-10X050-A ●	44	-	-	-
54	55,0 - 57,0	10,0	SH-10X054-A	44	-	-	-
60	61,5 - 63,5	10,0	SH-10X060-A	40	-	-	-

## SH/ArmaFlex tubes self-adhesive



Length 2,0 m, with tangential cut

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	[DE] Field of application A according to EnEV					
		Insulation thickness [mm]	Code	m/carton			
15	16,0 - 17,5	27,0	SH-24X015-A	36	-	-	-
18	19,0 - 20,5	26,0	SH-24X018-A	36	-	-	-
20	21,0 - 22,5	26,0	SH-24X020-A •	36	-	-	-
22	23,0 - 24,5	26,0	SH-24X022-A	36	-	-	-
25	26,0 - 27,5	25,0	SH-24X025-A •	32	-	-	-
28	29,0 - 30,5	25,0	SH-24X028-A <sup>4</sup>	32	-	-	-

<b>Length tolerance for tubes</b>	± 1,5 %
<b>Thickness tolerance</b>	9 mm - 18 mm: ± 1,5 mm 19 mm - 31 mm: ± 2,5 mm
<b>Regulations</b>	Pipe diam copper pipe acc. EN 1057 Pipe diam. Steel pipe acc. EN 10255 (middle row)

• Item not in stock. Delivery on request. [MTO]

<sup>4</sup> For steel pipes

## SH/ArmaFlex tubes endless [additional table to display with itemgroups of local regulations]



Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	[DE] Field of application D + C + B according to EnEV		
		Insulation thickness [mm]	Code	m/carton
15	16,0 - 17,5	11,0	SH-10X015/E	35
18	19,0 - 20,5	11,0	SH-10X018/E	30
22	23,0 - 24,5	11,0	SH-10X022/E	25
28	29,0 - 30,5	11,0	SH-10X028/E <sup>5</sup>	20

<b>Length tolerance for tubes</b>	± 1,5 %
<b>Thickness tolerance</b>	10 mm: ± 1,5 mm
<b>Regulations</b>	(1) Pipe diam copper pipe acc. DIN EN 1057 (2) Pipe diam. Steel pipe acc. DIN EN 10255 (3) only for steel pipe

<sup>5</sup> Only for steel pipe

## SH/ArmaFlex sheets



Length 2,0 m, Width 0,5 m

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
SH-10-99	10,0	13
SH-20-99	20,0	7

<b>Length tolerance for sheets</b>	±1,5 %
<b>Thickness tolerance for sheets</b>	10 mm: ±1,5 mm 20 mm: ±2,0 mm
<b>Reaction to fire</b>	SH 10 mm sheet: C-s3,d0 SH 20 mm sheet: D-s3,d0

## SH/ArmaFlex tapes self-adhesive



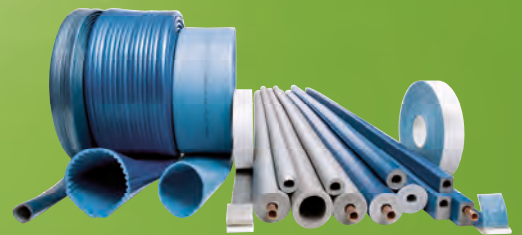
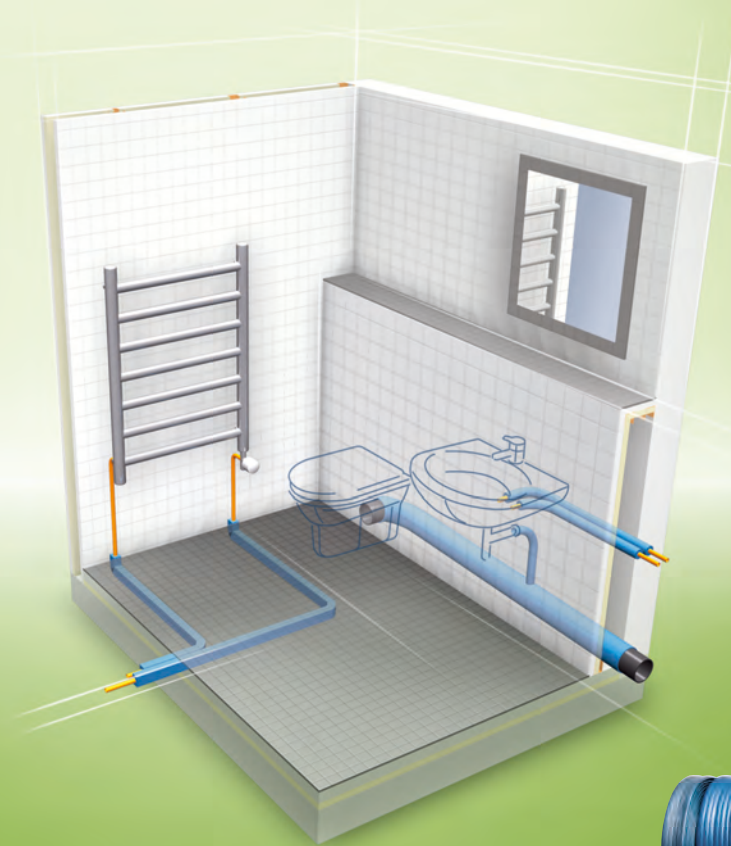
Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
SH-TAPE	50,0	15	3	12
SH-TAPE/6	50,0	15	3	6
SH-TAPE/PVC	25,0	10	3	72





TUBOLIT®

INSTALL IT. BENEFIT FROM THE RANGE



- Complete range of thermal and acoustic PE solutions
- Matching range for plastic pipe sizes
- Improved acoustic comfort
- Meets European energy regulations
- $\lambda_{40\text{ °C}} \leq 0,040 \text{ W}/(\text{m} \cdot \text{K})$



# Tubolit®

Tubolit saves energy, improves acoustic comfort in buildings and protects pipes installed within the building shell. Tubolit is the most complete range of thermal, acoustical and protective insulation products for installations of heating, domestic hot and cold water and sewage pipes in both residential as well as public and commercial buildings.

See typical application areas below:



Product	Type of installation				Additional Benefit / Requirement				
	Heating	Domestic hot water	Cold water pipes	Waste water	Extra protection	50% faster application	Noise reduction	Under plaster	Under floor
Tubolit									
DG	***	***	**						
DG self-seal	***	***	**			✓			
DG-B1	***	***	**						
DG Plus	***	***	**						
S	***	***	**		✓		✓	✓	
S Plus			***		✓		✓	✓	
DHS Quadra	***				✓		✓		✓
AR Fonowave				***	✓		✓		
AR Fonoblok				***	✓		✓		

## Technical Data - Tubolit DG

Brief description	Flexible, closed-cell extruded insulation material to reduce heat losses and noise on heating and plumbing installations.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	grey
Material Special Information	Self-adhesive coating on tapes and self-seal coating on tubes: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil.
Applications	Insulation / protection of pipes (heating system pipes, domestic hot and cold water pipes) and other parts of heating and plumbing installations (incl. elbows, fittings, flanges, etc).
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with constant or almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment		Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>				
Temperature Range	max. service temperature	+ 100 °C	(+ 85 °C for tapes)	EU 5673 EU 5681 Tested acc. to EN 14707 and EN 14313
	min. service temperature		(as is usual in plumbing and heating installations)	
<b>Thermal Conductivity</b>				
Thermal Conductivity	$\vartheta_m$	40	[°C]	EU 5673 EU 5681 Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
	Tubolit DG tubes 5 - 30 mm	$\lambda \leq 0,040$	W/(m · K)	
	Tubolit DG self-adhesive tape	$\lambda \leq 0,045$	W/(m · K)	
<b>Fire performance</b>				
Reaction to fire	Tubolit DG standard tubes 5 - 30 mm		E	EU 5673 EU 5681 Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
	Tubolit DG self-adhesive tape		E	
<b>Acoustic Performance</b>				
Reduction of structure-borne sound transmission				
<b>Other technical features</b>				
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2			EU 5673 EU 5681 Tested acc. to EN 822 EN 823 EN 13467
Storage & Shelf life	Tapes self-adhesive and tubes self-seal: 1 year			Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.  
Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Technical Data - Tubolit DG B1

Brief description	Flexible, closed-cell extruded insulation material to reduce heat losses on heating and plumbing installations.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	grey
Applications	Insulation / protection of pipes (heating system pipes, domestic hot and cold water pipes) and other parts of heating and plumbing installations (incl. elbows, fittings, flanges, etc).
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with constant or almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test*1	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes) min. service temperature (as is usual in plumbing and heating installations)	EU 5672	Tested acc. to EN 14707 and EN 14313
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 [°C] $\lambda =$	EU 5672	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
	Tubolit DG-B1 $\lambda \leq 0,040$ W/(m · K) $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$		
<b>Fire performance</b>			
Reaction to fire	Tubes 5 - 30 mm $D_L$ -s2, d0	EU 5672	Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	$\leq 27$ dB(A) VM L <sub>IN</sub>	EU 7284	Tested acc. to EN ISO 3822-1
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5672	Tested acc. to EN 822 EN 823 EN 13467

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.  
Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Technical Data - Tubolit DG Plus

Brief description	Flexible, closed-cell extruded insulation material with very low smoke development to reduce heat losses and noise on heating and plumbing installations.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	grey
Applications	Insulation / protection of pipes (heating system pipes, domestic hot and cold water pipes), and other parts of heating and plumbing installations incl. elbows, fittings, flanges etc.)
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark	
<b>Temperature Range</b>				
Temperature Range	max. service temperature	+100 °C	EU 5671 Tested acc. to EN 14707 and EN 14313	
	min. service temperature	as is usual in plumbing and heating installations		
<b>Thermal Conductivity</b>				
Thermal Conductivity	$\vartheta_m$ 0	[°C]	$\lambda =$	EU 5671 Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
	6 to 27 mm	$\lambda \leq 0,035$	W/(m · K)	
<b>Fire performance</b>				
Reaction to fire	From 6 mm to 25 mm	B <sub>L</sub> -s1,d0	EU 5671 Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2	
	26 mm and 27 mm	C <sub>L</sub> -s1,d0		
<b>Other technical features</b>				
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2		EU 5671 Tested acc. to EN 822 EN 823 EN 13467	
Storage & Shelf life	self-adhesive tubes: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).	

1. The reaction to fire classification is valid on metal surfaces.
  2. Further documents such as test certificates, approvals and the like can be requested using the registration number given.
  3. ●: Official supervision by independent institutes and /or test authorities
  4. ○: Own in-factory quality monitoring
- \*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.



## Technical Data - Tubolit S

Brief description	Flexible, closed-cell extruded insulation material to reduce heat losses and noise on heating and plumbing installations.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	Foam: grey; foil: blue or red (items with RE at the end)
Applications	Insulation / protection of pipes (heating system pipes, domestic hot and cold water pipes) and other parts of heating and plumbing installations (incl. elbows, fittings, flanges, etc).
Special Features	Foil coating on outer surface for additional protection of insulation surface.
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with constant or almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes) min. service temperature (as is usual in plumbing and heating installations)	EU 5675	Tested acc. to EN 14707 and EN 14313
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 [°C] $\lambda =$	EU 5675	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
Tubolit S	$\lambda \leq 0,040$ W/(m · K) $[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$		
<b>Fire performance</b>			
Reaction to fire	Tubolit S E	EU 5675	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5675	Tested acc. to EN 822 EN 823 EN 13467

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.  
Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Technical Data - Tubolit S Plus

Brief description	Flexible, closed-cell extruded insulation material to reduce heat losses and noise on heating and plumbing installations.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	foam: grey; foil: blue and red (item with RE at the end).
Applications	Insulation / protection of pipes (heating system pipes, domestic hot and cold water pipes) and other parts of heating and plumbing installations (incl. elbows, fittings, flanges, etc).
Special Features	Foil coating on outer surface for for additional protection of insulation surface. Foil coating on inner surface for better sleeve-on installation.
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with constant or almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes)	EU 5676	Tested acc. to EN 14707 and EN 14313
	min. service temperature (as is usual in plumbing and heating installations)		
<b>Thermal Conductivity</b>			
Thermal Conductivity <sup>1</sup>	$\vartheta_m$ 40 [°C] $\lambda =$	EU 5676	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
Tubolit S Plus	$\lambda \leq 0,045$ W/(m · K) $[45 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$		
<b>Fire performance</b>			
Reaction to fire	Tubolit S Plus E	EU 5676	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5676	Tested acc. to EN 822 EN 823 EN 13467

1. Due to testing method and laboratory equipment, thermal conductivity is measured for Tubolit DG, S and DHS in a regular way

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied. Please consult our Customer Service Center before insulating stainless steels.

## Technical Data - Tubolit AR Fonowave

Brief description	Flexible, closed-cell extruded insulation material to reduce noise and prevent condensation especially on plastic waste water, rain water and sewage pipes.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	blue
Material Special Information	Self-adhesive coating on tapes: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil.
Applications	Acoustical and thermal insulation of internal waste water, rain water and sewage pipes in residential and non-residential buildings. For complex and large diameter rain collecting and (roof-) drainage pipes, to provide optimal protection against the risk of condensation, we recommend using Armaflex insulation.
Special Features	Foil coating on outer surface for additional protection of insulation surface. Specially wave-shaped inner surface provides excellent acoustical performance on plastic pipes.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes) min. service temperature (as is usual in plumbing installations)	EU 5679	Tested acc. to EN 14707 and EN 14313
<b>Thermal Conductivity</b>			
Thermal Conductivity <sup>1</sup>	$\vartheta_m$ 40 [°C] $\lambda =$	EU 5679	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
Tubolit AR Fonowave	$\lambda \leq 0,045$ W/(m · K) $[41 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2]/1000$		
Tubolit AR tape	$\lambda \leq 0,045$ W/(m · K) $[41 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2]/1000$		
<b>Fire performance</b>			
Reaction to fire	Tubolit AR Fonowave E Tubolit AR tape E	EU 5679	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	on plastic waste water pipes $\leq 11$ dB(A)	D 4478	Tested acc. to EN 14366
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5679	Tested acc. to EN 822 EN 823 EN 13467
Storage & Shelf life	Tapes self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. Due to testing method and laboratory equipment, thermal conductivity is measured for Tubolit DG, S and DHS in a regular way

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.

## Technical Data - Tubolit AR Fonoblok

Brief description	Flexible, closed-cell extruded insulation material to reduce noise and prevent condensation especially on cast iron pipes for waste water, rain water and sewage pipes.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	blue
Material Special Information	Self-adhesive coating on tapes: pressure-sensitive adhesive coating on modified acrylate basis with mesh structure, covered with polyethylene foil.
Applications	Acoustical and thermal insulation of internal waste water, rain water and sewage pipes in residential and non-residential buildings. For complex and large diameter rain collecting and (roof-) drainage pipes, to provide optimal protection against the risk of condensation, we recommend using Armaflex insulation.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes)	EU 5677	Tested acc. to EN 14707 and EN 14313
	min. service temperature (as is usual in plumbing installations)		
<b>Thermal Conductivity</b>			
Thermal Conductivity <sup>1</sup>	$\vartheta_m$ 40 [°C] $\lambda =$	EU 5677	Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497
Tubolit AR Fonoblok	$\lambda \leq 0,045$ W/(m · K) $[41 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$		
Tubolit AR tape	$\lambda \leq 0,045$ W/(m · K) $[41 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2] / 1000$		
<b>Fire performance</b>			
Reaction to fire	Tubolit AR Fonoblok E	EU 5677	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
	Tubolit AR tape E		
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	on cast-iron waste water pipes $\leq 15$ dB(A)	D 2144	Tested acc. to EN 14366
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5677	Tested acc. to EN 822 EN 823 EN 13467
Storage & Shelf life	Tapes self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. Due to testing method and laboratory equipment, thermal conductivity is measured for Tubolit DG, S and DHS in a regular way

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.



## Technical Data - Tubolit ARS

Brief description	Flexible, closed-cell extruded insulation material to reduce noise and prevent condensation on waste water, rain water and sewage pipes.
Material type	Foam material based on polyethylene. Factory made polyethylene foam (PEF) according to EN 14313.
Colour	foam: grey; foil: blue
Product Range	Acoustical and thermal insulation of internal waste water, rain water and sewage pipes in residential and non-residential buildings. For complex and large diameter rain collecting and (roof-) drainage pipes, to provide optimal protection against the risk of condensation, we recommend using Armaflex insulation.
Special Features	Foil coating on outer surface for for additional protection of insulation surface.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 100 °C	(+ 85 °C for tapes)
	min. service temperature		(as is usual in plumbing installations)
<b>Thermal Conductivity</b>			
Thermal Conductivity <sup>1</sup>	$\vartheta_m$	40	[°C]
	Tubolit ARS	$\lambda \leq 0,045$	W/(m · K)
			$\lambda = \frac{[41 + 0,1 \cdot \vartheta_m + 0,0008 \cdot (\vartheta_m - 40)^2]}{1000}$
<b>Fire performance</b>			
Reaction to fire	Tubolit ARS	E	
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2		
		EU 5678	Tested acc. to EN 822 EN 823 EN 13467

1. Due to testing method and laboratory equipment, thermal conductivity is measured for Tubolit DG, S and DHS in a regular way

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.

## Technical Data - Tubolit DHS Quadra

Brief description	Flexible, closed-cell extruded insulation material to reduce heat losses and noise on heating and plumbing installations.
Material type	Foam material based on polyethylene.
Colour	foam: grey; foil: blue
Special Features	Specially designed insulation tubes with excentric rectangular cross-section to provide optimal control of heat loss and space saving in under-floor application. Robust protective foil with embossing for an additional mechanical protection during installation.
Remarks	After installation linear shrinkage of approx. 2% (or more in particular cases) may occur during the initial and even later phase of system operation. Under certain conditions (e.g. high humidity, main distribution pipes, pipes with constant or almost constant flow) cold water pipelines must be insulated with Armaflex, just the same as chilled water pipes in air-conditioning systems. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 100 °C (+ 85 °C for tapes) min. service temperature (as is usual in plumbing and heating installations)	EU 5725	Tested acc. to EN 14707 and EN 14313
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	40	[°C]
	Tubolit DHS Quadra, 9 mm $\lambda$	≤ 0,040	W/(m · K)
	Tubolit DHS Quadra, 25 - 27 mm $\lambda$	≤ 0,042	W/(m · K)
<b>Fire performance</b>			
Reaction to fire	Tubolit DHS Quadra 9 - 27 mm	E <sub>L</sub>	EU 5725 Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	Tubolit DHS Quadra	≤ 34 dB	D 4742 Tested according to EN ISO 140-8
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2	EU 5725	Tested acc. to EN 822 EN 823 EN 13467

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Technical Data - Tubolit FS

Brief description	<p>Tubolit®FS is a fleece endless tube with a white Low Density Polyethylene (LDPE) foil.</p> <p>Tubolit®FS includes also a vapour barrier.</p> <p>The thickness of the fleece band is 3 mm +/- 0,5 mm.</p> <p>Endless tube length = 10 m +/- 0,15 m.</p>
Colour	<p>Fleece tube = multicoloured brown.</p> <p>LDPE = white with a black printed text.</p>

Property	Value/Assessment
Fire performance	
Reaction to fire	Tubolit® FS B2 in accordance with DIN 4102

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - Tubolit WF

Brief description	<p>Tubolit® WF is a large range of:</p> <ul style="list-style-type: none"> <li>- non-woven strips (WFN, WF, WFP)</li> <li>- and polyethylene tapes (WFT, WF2).</li> </ul>
Material type	<p>Tubolit® WF is sold in rolls in width: 70 mm or 100 mm .</p> <p>Tubolit® WF range is available with (WF-A) or without self-adhesive (WF).</p> <p>Tubolit® WF is also available with self-adhesive with finger lift (WF-A-FL) to remove easily the liner</p>
Colour	<p>All the products in the range are covered with a blue foil excepted Tubolit WFN which is a non-woven strip, only.</p> <p>Non-woven strip = multicoloured braun.</p> <p>Polyethylene foam tape = white.</p>
Applications	Tubolit® WF is dedicated for heating and plumbing applications
Special Features	Tubolit® WF and WFN are free from salt corrosion in accordance with DIN 53 125
Manufacturing	<p>The product must be stocked in dry conditions.</p> <p>Adhesive shelf life = 1 year.</p>

Property	Value/Assessment	
Temperature Range		
Temperature Range	max. service temperature	+ 95 °C
		+105 °C for Tubolit® WFN
Fire performance		
Reaction to fire	Tubolit® WF	B2 in accordance with DIN 4102

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.



# Gesetzliche Anforderungen gemäß GebäudeEnergieGesetz (GEG)

	Anwendungsbereich A gemäß GEG 100%	Anwendungsbereich B gemäß GEG 50%	Anwendungsbereich C gemäß GEG im Fußbodenbau	Anwendungsbereich D Leitungen ohne besondere Anforderungen gemäß GEG bzw. nach DIN 1988, Teil200
Heizung <sup>1)</sup>	Leitungen in unbeheizten Räumen und Kellerräumen. Im Fußboden verlegte Leitungen, auch HK-Anschlussleitungen gegen Erdreich/unbeheizte Räume. Leitungen in Außenwänden, in Bauteilen zwischen unbeheizten und beheizten Räumen, in Schächten und Kanälen Verteilungsleitungen zur Versorgung mehrerer Parteien.	Leitungen in Bauteilen, zwischen beheizten Räumen verschiedener Nutzer, Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, an zentralen Leitungsverteilern	Im Fußbodenbereich verlegte Leitungen, zwischen beheizten Räumen verschiedener Nutzer.	Heizungsleitungen in beheizten Räumen oder in Bauteilen zwischen beheizten Räumen eines Nutzers und absperrbar, ohne besondere Anforderungen <sup>2)</sup>
Sanitär <sup>1)</sup> (Warmwasser)	Warmwasserleitungen	Armaturen von Rohrnetzverteilern		Warmwasserleitungen bis zu einer Länge von 4 m ohne Zirkulation/Begleitheizung (Sticheleitungen)
Sanitär (Kaltwasser)	Anwendungsbereich A <sup>3)</sup>  - Rohrleitungen verlegt, z. B. in Technikzentralen oder Medienkanälen und Schächten mit Wärmelasten und Umgebungstemperaturen $\geq 25 \text{ }^\circ\text{C}$		- Rohrleitungen frei verlegt in nicht beheizten Räumen, Umgebungstemperatur $\leq 20 \text{ }^\circ\text{C}$ (nur Tauwasserschutz)  - Rohrleitungen verlegt in Rohrschächten, Bodenkanälen und abgehängten Decken, Umgebungstemperatur $\leq 25 \text{ }^\circ\text{C}$  - Stockwerksleitungen und Einzelzuleitungen in Vorwandinstallationen  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau (auch neben nichtzirkulierenden Trinkwasserleitungen warm)  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau neben warmgehenden zirkulierenden Rohrleitungen	

<sup>1)</sup> Wärmeverteilungs- und Warmwasserleitungen, die direkt an Außenluft angrenzend verlegt sind, sind mit 200 % Dämmung zu versehen.

<sup>2)</sup> Selbst wenn in bestimmten Fällen aus Gesichtspunkten der Energieeinsparung keine Anforderungen an die Dämmung gestellt werden, müssen aber Leitungen in Bauteilen (z.B. im Estrich oder unter Putz) aus folgenden Gründen gedämmt werden: Korrosionsschutz, Vermeidung von Knack- und Fließgeräuschen (Körperschalldämmung), Verringerung der Wärmebelastung des umgebenden Mauerwerkes, o. ä. Bei nicht zirkulierenden Warmwasserleitungen stellt diese Mindestdämmung außerdem sicher, dass das Wasser bei Zapfbeginn durch angrenzende Bauteile nicht unnötig abgekühlt wird.

<sup>3)</sup> Anwendungsbereich B gilt nur bei Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, bei zentralen Leitungsnetzverteilern

## Tubolit DG tubes



Length 2,0 m

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	-	-	TL-15/13-DG	192
20	TL-20/9-DG	212	TL-20/13-DG	128
22	-	-	TL-22/13-DG	128
25	TL-25/9-DG	138	-	-
32	TL-32/9-DG	122	TL-32/13-DG	90
40	TL-40/9-DG	82	TL-40/13-DG	70
60	-	-	TL-60/13-DG	38
64	TL-64/9-DG	50	TL-64/13-DG	32
76	TL-76/9-DG	32	TL-76/13-DG	26
89	TL-89/9-DG	22	TL-89/13-DG	22
110	-	-	TL-110/13-DG	16
114	-	-	TL-114/13-DG	12

Pipe max. Outside-Ø [mm]	20,0 mm insulation thickness		25,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
42	TL-42/20-DG	44	-	-
48	TL-48/20-DG	40	TL-48/25-DG	24
54	TL-54/20-DG	32	TL-54/25-DG	24
60	TL-60/20-DG	28	TL-60/25-DG	24
64	TL-64/20-DG	26	-	-
76	TL-76/20-DG	20	-	-
89	TL-89/20-DG	18	-	-
110	TL-110/20-DG	12	-	-
114	TL-114/20-DG	12	-	-

## Tubolit DG tubes self-adhesive



Length 2,0 m

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
12	TL-12/9-DG-A ●	300	-	-
15	TL-15/9-DG-A	250	TL-15/13-DG-A	180
18	TL-18/9-DG-A	214	TL-18/13-DG-A	148
22	TL-22/9-DG-A	178	TL-22/13-DG-A	128
28	TL-28/9-DG-A	130	TL-28/13-DG-A	98
35	TL-35/9-DG-A	96	-	-
42	TL-42/9-DG-A	72	TL-42/13-DG-A	60
48	TL-48/9-DG-A ●	70	TL-48/13-DG-A	52
54	TL-54/9-DG-A ●	58	TL-54/13-DG-A	50
60	TL-60/9-DG-A ●	48	TL-60/13-DG-A	38

Pipe max. Outside-Ø [mm]	20,0 mm insulation thickness			
	Code	m/carton		
15	TL-15/20-DG-A ●	100	-	-
18	TL-18/20-DG-A ●	88	-	-
22	TL-22/20-DG-A ●	80	-	-
28	TL-28/20-DG-A ●	68	-	-
35	TL-35/20-DG-A	50	-	-
42	TL-42/20-DG-A	44	-	-
48	TL-48/20-DG-A	40	-	-
54	TL-54/20-DG-A	32	-	-
60	TL-60/20-DG-A	28	-	-

● Item not in stock. Delivery on request. [MTO]

## Tubolit DG B1 tubes [additional table to display with itemgroups of local regulations]



Length 2,0 m

Pipe max. Outside-Ø [mm]	[DE] Field of application C + D according to EnEV insulation thickness 9,0 mm		[DE] Field of application B according to EnEV insulation thickness 20,0 mm	
	Code	m/carton	Code	m/carton
12	TL-12/9-DG-B1	300	-	-
15	TL-15/9-DG-B1	250	TL-15/20-DG-B1	100
18	TL-18/9-DG-B1	214	TL-18/20-DG-B1	88
22	TL-22/9-DG-B1	178	TL-22/20-DG-B1	80
28	TL-28/9-DG-B1	130	TL-28/20-DG-B1	68
35	TL-35/9-DG-B1	96	TL-35/20-DG-B1	50
42	TL-42/9-DG-B1	72	-	-
48	TL-48/9-DG-B1	70	-	-
54	TL-54/9-DG-B1	58	-	-
60	TL-60/9-DG-B1	48	-	-
76	TL-76/9-DG-B1	32	-	-
89	TL-89/9-DG-B1	22	-	-

Pipe max. Outside-Ø [mm]	[DE] Field of application A according to EnEV insulation thickness 25,0 mm			
	Code	m/carton		
15	TL-15/27-DG-B1	66	-	-
18	TL-18/26-DG-B1	56	-	-
22	TL-22/26-DG-B1	54	-	-
28	TL-28/25-DG-B1 <sup>1</sup>	46	-	-

<sup>1</sup> For steel pipes

## Tubolit DG Plus tubes



Color dark grey

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness		13,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
12	TL-12/9-DGPlus ● <sup>1</sup>	300	TL-12/13-DGPlus ●	190
15	TL-15/9-DGPlus <sup>1</sup>	232	TL-15/13-DGPlus	162
18	TL-18/9-DGPlus <sup>1</sup>	190	TL-18/13-DGPlus	136
22	TL-22/9-DGPlus <sup>1</sup>	162	TL-22/13-DGPlus	120
28	TL-28/9-DGPlus <sup>1</sup>	126	TL-28/13-DGPlus	98
35	TL-35/9-DGPlus <sup>1</sup>	92	TL-35/13-DGPlus	72
42	TL-42/9-DGPlus <sup>1</sup>	72	TL-42/13-DGPlus	56
48	TL-48/9-DGPlus <sup>1</sup>	66	TL-48/13-DGPlus	50
54	TL-54/9-DGPlus <sup>1</sup>	50	TL-54/13-DGPlus	46
60	TL-60/9-DGPlus <sup>1</sup>	46	TL-60/13-DGPlus	38
64	TL-64/9-DGPlus <sup>1</sup>	42	TL-64/13-DGPlus	32
76	TL-76/9-DGPlus <sup>1</sup>	32	TL-76/13-DGPlus	24
89	TL-89/9-DGPlus <sup>1</sup>	22	TL-89/13-DGPlus	18
114	-	-	TL-114/13-DGPlus	12

Pipe max. Outside-Ø [mm]	20,0 mm insulation thickness		25,0 mm insulation thickness	
	Code	m/carton	Code	m/carton
15	TL-15/20-DGPlus	100	TL-15/27-DGPlus ●	66
18	TL-18/20-DGPlus	88	TL-18/26-DGPlus ●	56
22	TL-22/20-DGPlus	80	TL-22/26-DGPlus ●	54
28	TL-28/20-DGPlus	68	TL-28/25-DGPlus	46
35	TL-35/20-DGPlus	50	-	-
42	TL-42/20-DGPlus	44	-	-
54	TL-54/20-DGPlus	32	-	-
60	TL-60/20-DGPlus ●	28	-	-
64	TL-64/20-DGPlus ●	26	-	-
76	TL-76/20-DGPlus ●	20	-	-
89	TL-89/20-DGPlus ●	18	-	-
110	TL-110/20-DGPlus ●	12	-	-
114	TL-114/20-DGPlus ●	12	-	-

● Item not in stock. Delivery on request. [MTO]

<sup>1</sup> [DE] According to EnEV floor construction

## Tubolit S Plus tubes endless



Length 20,0 m, Color grey, Covering Color blue, with robust protective foil on outside plus transparent inner foil for fast and easy application

Pipe max. Outside-Ø [mm]	4,0 mm insulation thickness		
	Code	m/carton	Rolls/carton
15	TL-12-15/4-S+	520	26
18	TL-18/4-S+	440	22
22	TL-22/4-S+	400	20
25	TL-24/4-S+	400	20
28	TL-28/4-S+	320	16
30	TL-30/4-S+	320	16
35	TL-35/4-S+	280	14
42	TL-42/4-S+ ●	240	12

● Item not in stock. Delivery on request. [MTO]

## Tubolit AR Fonowave tubes endless



Length 10,0 m, Thickness 9,0 mm, Color blue, Covering Color blue, with engineered wavy profile and robust protective foil

Pipe max. Outside-Ø [mm]	9,0 mm insulation thickness				
	Outer- Ø [mm]	Nominal width DN	Code	m/carton	Rolls/carton
57	50/56	50/56	TL-50/9-ARW	80	8
76	75	70	TL-70/9-ARW	60	6
89	90	90	TL-90/9-ARW	50	5
110	110	100	TL-100/9-ARW	40	4
133	125/135	125	TL-125/9-ARW	40	4

## Tubolit AR Fonowave tapes self-adhesive



Color blue, made of high quality polyethylene

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
TL-TAPE/50-ARW	50,0	15	3	12

## Tubolit AR Fonoblok tubes endless



Length 15,0 m, Thickness 5,0 mm, Color blue

Pipe max. Outside-Ø [mm]	5,0 mm insulation thickness				
	Outer- Ø [mm]	Nominal width DN	Code	m/carton	Rolls/carton
57	58	50	TL-50/5-AR	135	9
64	63	60	TL-60/5-AR	120	8
76	78	70	TL-70/5-AR	105	7
89	90	90	TL-90/5-AR	75	5
108	110	100	TL-100/5-AR	75	5
133	135	125	TL-125/5-AR	60	4
160	160	150	TL-150/5-AR	45	3

## Tubolit AR Fonoblok tapes self-adhesive



Color blue, Material from high quality polyethelene

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
TL-TAPE/50-AR	50,0	15	3	12
TL-TAPE/100-AR ●	100,0	15	3	6

● Item not in stock. Delivery on request. [MTO]

## Tubolit AR Vlies tubes endless



Length 10,0 m, Thickness 4,0 mm, Covering Color white, Fleece wastewater hose with an exterior foil

Pipe max. Outside-Ø [mm]	Code	m/carton
50	TL-50/4-ARV	200
70	TL-70/4-ARV	150
90	TL-90/4-ARV	100
100	TL-100/4-ARV	100
125	TL-125/4-ARV •	50

• Item not in stock. Delivery on request. [MTO]

## Tubolit ARS tubes endless



Length 15,0 m, Thickness 4,0 mm, Covering Color blue, PE Abwasserschlauch mit Aussenfolie

Pipe max. Outside-Ø [mm]	4,0 mm insulation thickness	
	Code	m/carton
50	TL-50/4-ARS	135
70	TL-70/4-ARS	105
90	TL-90/4-ARS	75
100	TL-100/4-ARS	75
125	TL-125/4-ARS	60

## Tubolit DHS Quadra excetrical tubes [additional table to display with itemgroup local regulations]



Length 2,0 m, Color grey, Covering Color blue, Isolierung mit quadratischem Profil für Fußbodenverlegung im Estrichbereich gemäß EnEV

Pipe max. Outside-Ø [mm]	[DE] Field of application C according to EnEV insulation thickness 9,0 mm			[DE] Field of application A according to EnEV insulation thickness 25,0 mm		
	Code	Max. height[mµ]	m/carton	Code	Max. height[mµ]	m/carton
15	CO-15/9-DHQ	31	190	CO-15/25-DHQ	53	130
18	CO-18/9-DHQ	34	160	CO-18/25-DHQ	55	120
22	CO-22/9-DHQ	38	140	CO-22/25-DHQ	59	100
28	CO-28/9-DHQ	45.5	100	CO-28/25-DHQ <sup>1</sup>	65	70
35	CO-35/9-DHQ	52.5	80	-	-	-

<sup>1</sup> For steel pipes

## Tubolit FS tubes endless



Length 10,0 m, Covering Color silver, Schutzschlauch mit innenliegender Vliesschicht, feuchtigkeitssperrende Folie, Isolierschicht aus unverrottbarem, vernadeltem Vlies

Pipe max. Outside-Ø [mm]	4,0 mm insulation thickness	
	Code	m/carton
12	TL-12/15-FS	200
18	TL-18-FS	200
22	TL-22-FS	200
28	TL-28-FS	200
35	TL-35-FS	200



## Tubolit WF bandages



Length 3,6 m, Color blue

Code	Article description	Width [mm]	Rolls/carton
<b>TL-100-WF</b>	Tubolit WF: non-woven moisture-resistant strip with a blue polyethylene covering film	100,0	180
<b>TL-100-WF2</b>	Tubolit WF2: polyethylene foam tape covered with a blue foil	100,0	120
<b>TL-100-WFN</b>	Tubolit WFN: one non-woven moisture-resistant strip, needled fleece, without covering foil. Does not rot.	100,0	180
<b>TL-70-WF</b>	Tubolit WF: non-woven moisture-resistant strip with a blue polyethylene covering film	70,0	252
<b>TL-70-WF2</b>	Tubolit WF2: polyethylene foam tape covered with a blue foil	70,0	168
<b>TL-70-WFN •</b>	Tubolit WFN: one non-woven moisture-resistant strip, needled fleece, without covering foil. Does not rot.	70,0	252
<b>TL-70-WFP</b>	Tubolit WFP (Plus): non-woven strip on polyethylene band covered with a reinforced blue polyethylene film, moisture-resistant	70,0	168

• Item not in stock. Delivery on request. [MTO]

## Tubolit WF bandages self-adhesive



Length 3,6 m, Color blue

Code	Article description	Width [mm]	Rolls/carton
<b>TL-100-WF-A</b>	Tubolit WF-A: self-adhesive, non-woven moisture-resistant strip with blue polyethylene covering film	100,0	160
<b>TL-100-WF2-A</b>	Tubolit WF2-A: self-adhesive, polyethylene foam tape covered with a blue foil	100,0	120
<b>TL-70-WF-A</b>	Tubolit WF-A: self-adhesive, non-woven moisture-resistant strip with blue polyethylene covering film	70,0	224
<b>TL-70-WF2-A</b>	Tubolit WF2-A: self-adhesive, polyethylene foam tape covered with a blue foil	70,0	168
<b>TL-70-WFP-A •</b>	Tubolit WFP (Plus)-A: self-adhesive, non-woven strip on polyethylene band covered with a reinforced blue foil	70,0	168

• Item not in stock. Delivery on request. [MTO]

## Tubolit Accessories



Code	Article description	Pieces/bag	Pieces/carton
<b>TL-CLIPS</b>	Tubolit Clips (bags of 100 clips)	100	25
<b>TL-TAPE/50M-BE</b>	Tubolit Tape PVC Blue with mesh (50 m x 50 mm +/-3 mm width)	-	24
<b>TL-TAPE/50M-GY</b>	Tubolit Tape PVC Grey with mesh (50 m x 50 mm +/-3 mm width)	-	24
<b>TLT-TAPE/50-DG</b>	Tubolit DG PE Tape Grey (10 m x 50 mm width)	-	12





ARMAFLEX DUOSOLAR

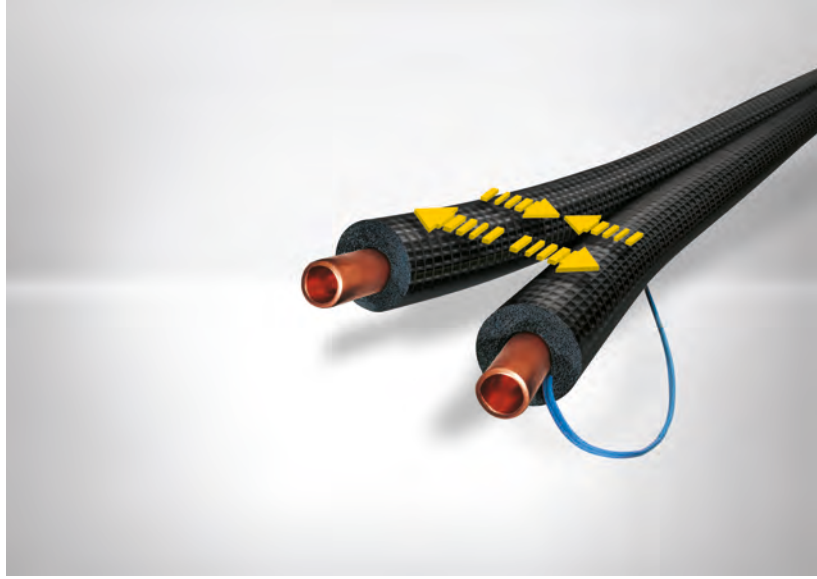
INSTALL IT. OPTIMIZE SOLAR ENERGY



- Specially designed pre-insulated solar tubing.
- Copper and steel pipe options
- Wide range of accessories



## Armaflex DuoSolar

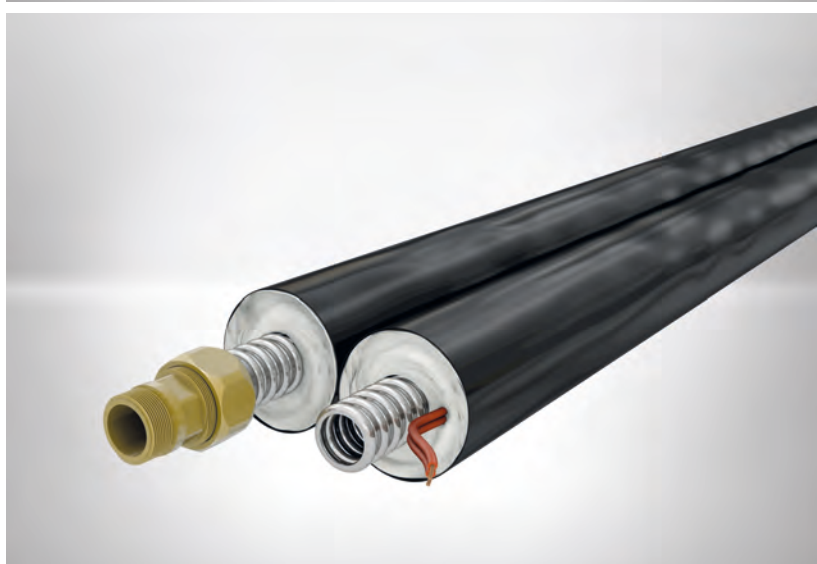


The Armaflex DuoSolar range offers reliable and easy-to-install solutions for solar thermal systems. The pre-insulated feed and return pipes connect the solar panel with the thermal storage water heater. They optimize thermal efficiency and increase the life time expectancy of the entire system. Armaflex DuoSolar for flat solar collectors with up to +150 °C is available as covered corrugated stainless-steel tubing (Armaflex DuoSolar VA) and copper piping (Armaflex DuoSolar CU). Due to the patented join-split fastening system, the pre-insulated pipes can be split and re-joined easily during the installation process without any damage to the protective foil.



### DUOSOLAR 220

While solar pipes for flat plate collectors are only suitable for a maximum application temperature of 150 °C, DuoSolar 220 even withstands the high temperatures of tube collectors of up to 220 °C. Flexible foam insulation materials become brittle at such high temperatures and lose their insulating properties. With DuoSolar 220 Armacell has closed this gap and also provides a twin-pipe system for the high operating temperatures of evacuated tube collectors.



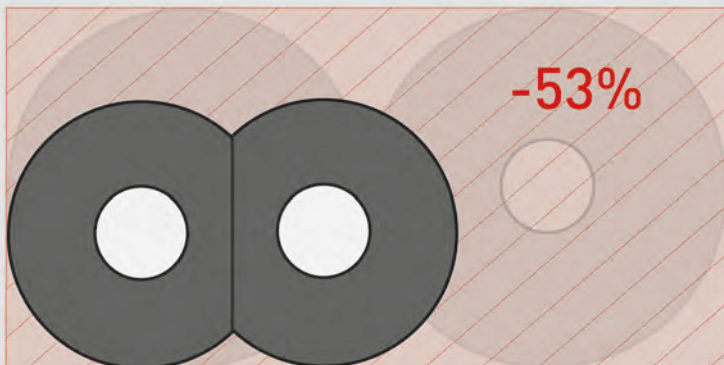
### QUICK-FITTING COUPLINGS

System accessories which are especially tailored to the solar range ensure tight connections. For the installation of Armaflex DuoSolar VA Armacell offers quick-fitting couplings: The flexible pipes can be connected to the system components of solar thermal systems in seconds – simply by tightening a nut. This eliminates the time-consuming flanging of connections and allows considerable cost savings. The couplings provide a permanent and leakproof seal for corrugated stainless steel tubes.



## Armaflex DuoSolar e-Save

With Armaflex DuoSolar e-Save Armacell now provides a space-saving '100% solution'. Based on calculations by FIW Munich using the finite element method, the R&D department developed pre-insulated twin pipes that not only offer high energy savings, but are also extremely space-efficient. Armaflex DuoSolar e-Save requires less than half the space needed by separately laid solar pipes to achieve same energy efficiency.



### YOUR BENEFITS

- Space-saving '100% solution'
- Pre-insulated twin pipes
- Maximum energy savings with extreme space-efficiency
- Requires less than half the space needed by separately laid solar pipes



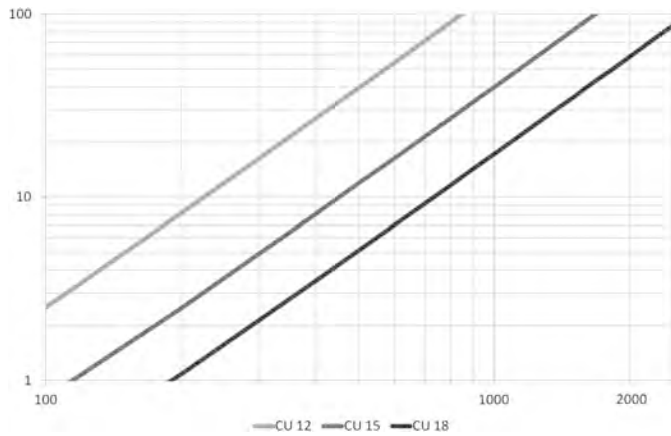
## Technical Data - Armaflex DuoSolar

Brief description	Armaflex DuoSolar is a flexible pre-insulated, UV resistant piping system used to connect solar collectors with the hot-water storage tank in an easy and professional way. The system is offered with a smart join-split system with two copper or stainless steel hoses and includes a sensor cable.
Material type	Insulation material: Synthetic EPDM rubber based foam. Factory made flexible elastomeric foam (FEF) according to EN 14304. Copper pipes seamless drawn soft annealed copper tubes, according to EN 1057. Corrugated stainless steel hose: austenitic stainless steel, according to EN 10088-2: X 2 CrNiMo 17-12-2 and DIN 17441: 1.4404. Fulfill EN ISO 10380:2013 and EN 13618 p.B7.2 Facing: polyolefin copolymer coating.
Colour	black
Material Special Information	In the return pipe, a sensor cable (2 x 0,75 mm <sup>2</sup> ) with halogen-free, temperature-resistant silicon coating (+180 °C) is integrated.
Product Range	Pre-insulated copper pipes or corrugated stainless steel hoses, in different coil lengths.
Applications	Piping system to connect the solar collector with the hot water boiler and for other uses.
Assembly	During normal installation we strongly recommend that proprietary hangers are used every one meter to support the whole system.
Remarks	The solar system and heat transfer fluid has to be well matched in order to guarantee corrosion and interference-free operation. We recommend an annual laboratory test of the fluid medium (density, concentration, corrosion, pH). The heat transfer fluid has to be completely replaced in case the parameters no longer meet the requirements. Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>  EC Certificate of Conformity no. 0543 of Güteschutzgemeinschaft Hartschaum e.V. , Celle

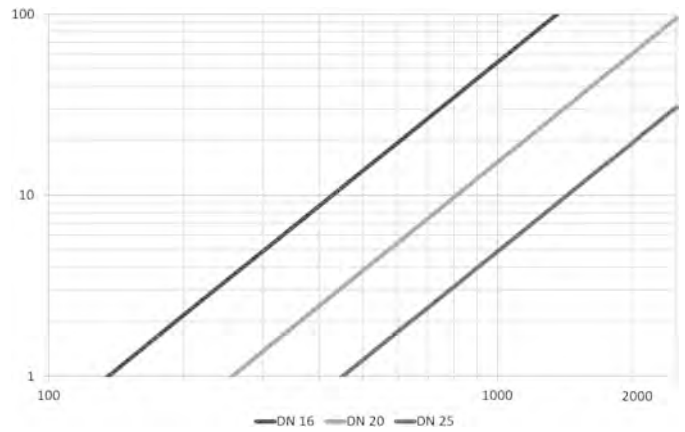
Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 150 °C	EU 5316	Tested acc. to EN 14707 EN 14304
	min. service temperature -50 °C		
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 °C	EU 5316	Declared acc. to EN ISO 13787 Tested according to EN ISO 8497
	$\lambda \leq 0,042$ W/(m · K)		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu \geq 4.000$	EU 5316	Tested according to EN 13469
<b>Fire performance</b>			
Reaction to fire	Euroclass E	EU 5316	Classified acc. to EN 13501-1 Tested according to EN ISO 11925-2
Dimensions and tolerances	In accordance with EN 14304, table 1	EU 5316	Tested acc. to EN 13467
UV resistance	Very Good	TB 142	Tested according to EN ISO 4892-2 (Xenon-test)
Max. operating pressure (bar)	CU12 = 79      DN16 = 16 CU15 = 62      DN20 = 10 CU18 = 65      DN25 = 10		
Pipe volume (l/m)	CU12 = 0,085      DN16 = 0,272 CU15 = 0,141      DN20 = 0,430 CU18 = 0,201      DN25 = 0,633		
Maintenance	Long-term corrosion and failure-proof operation of the solar thermal equipment is only possible when the system and heat transfer medium are optimally matched to each other. We recommend an annual laboratory test of the medium (eg density, concentration, corrosion protection, pH). The heat transfer medium must be replaced completely if the parameters do no longer meet the specifications.		

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

**Pressure drop diagram copper pipes**



**Pressure drop diagram corrugated stainless steel pipes**



Medium temperature 60 °C  
 Heat fluid 1,2 Propylenglykol  
 Dynamic Viscosity  $1612,8 \cdot 10^{-6}$  kg/ms  
 Weight density 1008 kg/m<sup>3</sup>

X-axis = volume flow in litre per hour  
 Y-axis = pressure drop in millibar per meter

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Armaflex HT625 adhesive must be used to guarantee proper installation. For temperatures below -50 °C or above +150 °C, please consult our Customer Service Center for further information.

## Armaflex DuoSolar CU pipes pre-insulated endless



Code	Insulation thickness [mm]	Outer- Ø [mm]	Ring length [m]
SO-DC-14X12/E15	14,0	2 x 40	15
SO-DC-14X12/E25 ●	14,0	2 x 40	25
SO-DC-14X15/E10	14,0	2 x 43	10
SO-DC-14X15/E15	14,0	2 x 43	15
SO-DC-14X15/E20 ●	14,0	2 x 43	20
SO-DC-14X15/E25	14,0	2 x 43	25
SO-DC-14X18/E10	14,0	2 x 46	10
SO-DC-14X18/E15	14,0	2 x 46	15
SO-DC-14X18/E20 ●	14,0	2 x 46	20
SO-DC-14X18/E25	14,0	2 x 46	25

● Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar CU accessories



Code	Article description	Pieces/set
SCH-CU15-FEF14	Pipe hanger for CU15-FEF14 with hex-head screw M8x80 and raw plugs S11, insulation thickness 14mm	4
SCH-CU18-FEF14 ●	Pipe hanger for CU18-FEF14 with hex-head screw M8x80 and raw plugs S12, insulation thickness 14mm	4

### Remark

4 pieces/set

● Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar VA pipes pre-insulated endless



Covering Color black, pre-insulated corrugated tubes made of stainless steel 1.4404 (ASTM 316 L)

Outer- Ø [mm]	Code	Insulation thickness [mm]	Outer-Ø pipe + insulation [mm]	Ring length [m]
21,4 VA	SO-DV-14X16/100	14,0	2 x 50	100
21,4 VA	SO-DV-14X16/E10	14,0	2 x 50	10
21,4 VA	SO-DV-14X16/E15	14,0	2 x 50	15
21,4 VA	SO-DV-14X16/E20	14,0	2 x 50	20
21,4 VA	SO-DV-14X16/E25	14,0	2 x 50	25
21,4 VA	SO-DV-14X16/E50	14,0	2 x 50	50
26,7 VA	SO-DV-14X20/100	14,0	2 x 55	100
26,7 VA	SO-DV-14X20/E10	14,0	2 x 55	10
26,7 VA	SO-DV-14X20/E15	14,0	2 x 55	15
26,7 VA	SO-DV-14X20/E20	14,0	2 x 55	20
26,7 VA	SO-DV-14X20/E25	14,0	2 x 55	25
26,7 VA	SO-DV-14X20/E50	14,0	2 x 55	50
31,8 VA	SO-DV-14X25/100	14,0	2 x 60	100
31,8 VA	SO-DV-14X25/E15	14,0	2 x 60	15
31,8 VA	SO-DV-14X25/E25	14,0	2 x 60	25

## Armaflex DuoSolar VA accessories



Code	Article description	Pieces/set
<b>SCH-DN16-FEF14</b>	Pipe hanger for DN16-FEF14 with hex-head screw M8x80 and raw plugs S10, insulation thickness 14mm	4
<b>SCH-DN16-FEF20</b>	Pipe hanger for DN16-FEF20 with hex-head screw M8x80 and raw plugs S10, insulation thickness 20mm	4
<b>SCH-DN20-FEF14</b>	Pipe hanger for DN20-FEF14 with hex-head screw M8x80 and raw plugs S11, insulation thickness 14mm	4
<b>SCH-DN20-FEF20</b>	Pipe hanger for DN20-FEF20 with hex-head screw M8x80 and raw plugs S11, insulation thickness 20mm	4
<b>SCH-DN25-FEF14</b>	Pipe hanger for DN25-FEF14 with hex-head screw M8x80 and raw plugs S12, insulation thickness 14mm	4
<b>SO-VA-DNI-16</b>	Double nipple ¾" for DN 16	2
<b>SO-VA-DNI-20</b>	Double nipple 1" for DN 20	2
<b>SO-VA-DNI-25</b>	Double nipple 1 ¼" for DN 25	2
<b>SO-VA-FIT-16/4</b>	Fitting set for DN16 with 4 of each spring rings, union nuts, washers	4
<b>SO-VA-FIT-20/4</b>	Fitting set for DN20 with 4 of each spring rings, union nuts, washers	4
<b>SO-VA-FIT-25/4</b>	Fitting set for DN25 with 4 of each spring rings, union nuts, washers	4

## Armaflex DuoSolar fitting for corrugated hoses



### Quick fitting coupling for corrugated stainless steel hoses

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-DN16</b>	corrugated stainless steel hoses DN 16	10
DN 20	<b>SO-SDN20-DN20</b>	corrugated stainless steel hoses DN 20	10
DN 25	<b>SO-SDN25-DN25 •</b>	corrugated stainless steel hoses DN 25	4

• Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar fitting for copper pipes



### Quick fitting coupling with clamping ring for copper pipes

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-CU12 •</b>	plain pipes Ø 12 mm	10
DN 16	<b>SO-SDN16-CU15</b>	plain pipes Ø 15 mm	10
DN 16	<b>SO-SDN16-CU18</b>	plain pipes Ø 18 mm	10
DN 16	<b>SO-SDN16-CU22</b>	plain pipes Ø 22 mm	10
DN 20	<b>SO-SDN20-CU15 •</b>	plain pipes Ø 15 mm	10
DN 20	<b>SO-SDN20-CU18</b>	plain pipes Ø 18 mm	10
DN 20	<b>SO-SDN20-CU22</b>	plain pipes Ø 22 mm	10
DN 25	<b>SO-SDN25-CU18 •</b>	plain pipes Ø 18 mm	4
DN 25	<b>SO-SDN25-CU22 •</b>	plain pipes Ø 22 mm	4

• Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar fitting with female straight internal thread



### Quick fitting coupling with female straight internal thread for metal-to-metal or for flat-sealing screw joints

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-I1 •</b>	inside thread G1"	10
DN 16	<b>SO-SDN16-I1/2</b>	inside thread G½"	10
DN 16	<b>SO-SDN16-I3/4</b>	inside thread G¾"	10
DN 20	<b>SO-SDN20-I1</b>	inside thread G1"	10
DN 20	<b>SO-SDN20-I3/4</b>	inside thread G¾"	10
DN 25	<b>SO-SDN25-I1</b>	inside thread G1"	4
DN 25	<b>SO-SDN25-I1/4 •</b>	inside thread G1 ¼"	4

• Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar fitting with male straight thread



### Quick fitting coupling with male straight thread for flat-sealing screw joints

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-F1</b> ●	external thread G1"	10
DN 16	<b>SO-SDN16-F3/4</b>	external thread G $\frac{3}{4}$ "	10
DN 20	<b>SO-SDN20-F1</b>	external thread 1"	10
DN 20	<b>SO-SDN20-F3/4</b>	external thread G $\frac{3}{4}$ "	10

● Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar fitting with male tapered thread



### Quick fitting coupling with male tapered thread for metal-to-metal sealing screw joints

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-E1</b> ●	external thread R1"	10
DN 16	<b>SO-SDN16-E1/2</b>	external thread R $\frac{1}{2}$ "	10
DN 16	<b>SO-SDN16-E3/4</b>	external thread R $\frac{3}{4}$ "	10
DN 20	<b>SO-SDN20-E1</b>	external thread R1"	10
DN 20	<b>SO-SDN20-E3/4</b>	external thread R $\frac{3}{4}$ "	10
DN 25	<b>SO-SDN25-E1</b>	external thread R1"	4
DN 25	<b>SO-SDN25-E11/4</b> ●	external thread R1 $\frac{1}{4}$ "	4

● Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar fitting with cylindrical connection



### Quick fitting coupling with cylindrical connection piece

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-Z18</b> ●	cylindrical connection piece $\varnothing$ 18 mm	10
DN 20	<b>SO-SDN20-Z18</b> ●	cylindrical connection piece $\varnothing$ 18 mm	10

● Item not in stock. Delivery on request. [MTO]

## Armaflex DuoSolar clamping ring



### Clamping ring for quick fitting coupling

Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-CR</b>	clamping ring	50
DN 20	<b>SO-SDN20-CR</b> ●	clamping ring	50
DN 25	<b>SO-SDN25-CR</b>	clamping ring	50

● Item not in stock. Delivery on request. [MTO]





DUOSOLAR 220

INSTALL IT. OPTIMIZE SOLAR ENERGY



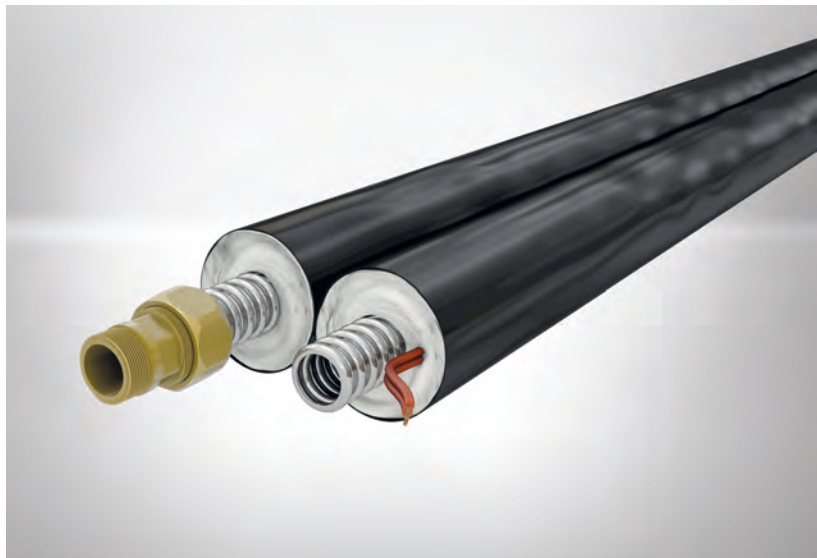
- Specifically designed for evacuated tube collectors
- Suitable for applications up to +220 °C
- Easy installation

## DuoSolar 220

The stagnation temperature of evacuated tube collectors is significantly higher than that of flat plate collectors. This often leads to breakdowns when standard +150 °C components are used.

Armacell now provides the new DuoSolar 220 which has been especially designed for evacuated tube collectors and offers a perfect solution at high temperatures.

- operating temperatures up to 220 °C
- for evacuated tube collectors



### COMPONENTS

DuoSolar 220 consists of a flexible corrugated stainless steel pipe, which is quick and easy to install even with small bending radii and in retrofit applications. The high-tech polyester insulation withstands the extreme operating temperatures of evacuated tube collectors and the tough foil covering protects the pre-insulated pipe against mechanical damage and UV radiation. DuoSolar 220 has an integrated sensor cable with halogen-free, high-temperature-resistant silicon coating.



### ACCESSORIES

The metal-to-metal sealing quick-fitting couplings from Armacell allow the flexible pipes to be connected to the system components in seconds.

- Ease of assembly: connections are made simply by tightening a nut
- The breakthrough family of quick-fitting couplings provides a permanent, leakproof seal for corrugated stainless steel pipes



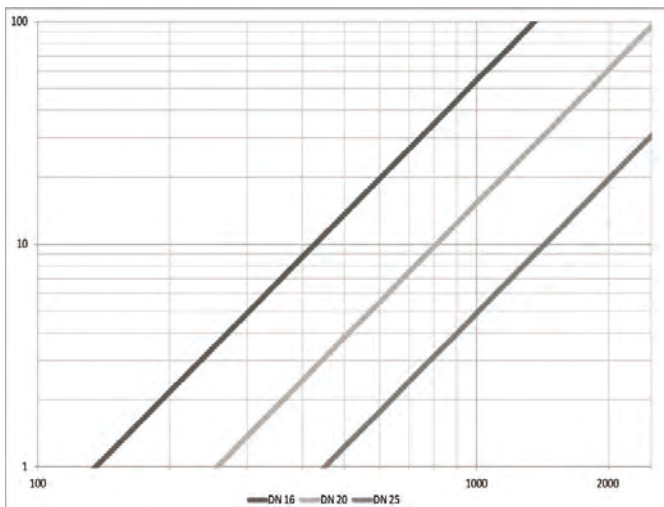
## Technical Data - DuoSolar 220

Brief description	DuoSolar 220 is a system solution with pre-insulated feed and return pipe for solar hot-water applications. DuoSolar is used to connect evacuated tube collectors with the hot-water storage tank in an easy and professional way.
Material type	Insulation material: Polyester Corrugated stainless steel hose: austenitic stainless steel, according to EN 10088-2: X2CrNiMo 17-12-2 and DIN 17441: 1.4404. Fulfill EN ISO 10380:2013 and EN 13618 p.B7.2 Facing: polyolefin copolymer coating
Colour	black
Material Special Information	In the return pipe, a sensor cable (2 x 0,75 mm <sup>2</sup> ) with halogen-free, temperature-resistant silicon coating (+180 °C) is integrated.
Product Range	Pre-insulated corrugated stainless steel hoses, in different coil lengths.
Applications	Flexible tubing system to connect evacuated tube collectors with the hot water boiler and for other uses.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 220 °C	
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	40	[°C]
	$\lambda$	≤ 0,040	W/(m · K)
<b>Fire performance</b>			
Reaction to fire			
Other Fire Class	Hardly inflammable	B1	D5753
			Tested according to DIN 4102
<b>Other technical features</b>			
UV resistance	Very Good	TB 142	Tested according to EN ISO 4892-2 (Xenon-test)
Melting point	+256 °C		

<sup>1</sup> Further documents such as test certificates, approvals and the like can be requested using the registration number given.

### Pressure drop diagram corrugated stainless steel pipes



Medium temperature 60 °C  
Heat fluid 1,2 Propylenglykol  
Dynamic Viscosity 1612,8 10<sup>-6</sup> kg/ms

X-axis = volume flow in litre per hour  
Y-axis = pressure drop in millibar per meter

## DuoSolar 220 VA pipes pre-insulated endless



Covering Color black

Outer- Ø [mm]	Code	Insulation thickness [mm]	Outer-Ø pipe + insulation [mm]	Ring length [m]
21,4 VA	<b>SO-DP-20X16/E15</b>	20,0	2 x 62	15
21,4 VA	<b>SO-DP-20X16/E25</b>	20,0	2 x 62	25
26,7 VA	<b>SO-DP-20X20/E15</b>	20,0	2 x 67	15
26,7 VA	<b>SO-DP-20X20/E25</b>	20,0	2 x 67	25
31,8 VA	<b>SO-DP-20X25/E25</b>	20,0	2 x 72	25

## DuoSolar 220 VA accessories



Code	Article description	Pieces/set
<b>SCH-DN16-FEF20</b>	Pipe hanger for DN16-FEF20 with hex-head screw M8x80 and raw plugs S10, insulation thickness 20mm	4
<b>SCH-DN20-FEF20</b>	Pipe hanger for DN20-FEF20 with hex-head screw M8x80 and raw plugs S11, insulation thickness 20mm	4

## DuoSolar 220 fitting for corrugated hoses



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-DN16</b>	corrugated stainless steel hoses DN 16	10
DN 20	<b>SO-SDN20-DN20</b>	corrugated stainless steel hoses DN 20	10
DN 25	<b>SO-SDN25-DN25</b> ●	corrugated stainless steel hoses DN 25	4

● Item not in stock. Delivery on request. [MTO]

## DuoSolar 220 fitting for copper pipes



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-CU12</b> ●	plain pipes Ø 12 mm	10
DN 16	<b>SO-SDN16-CU15</b>	plain pipes Ø 15 mm	10
DN 16	<b>SO-SDN16-CU18</b>	plain pipes Ø 18 mm	10
DN 16	<b>SO-SDN16-CU22</b>	plain pipes Ø 22 mm	10
DN 20	<b>SO-SDN20-CU15</b> ●	plain pipes Ø 15 mm	10
DN 20	<b>SO-SDN20-CU18</b>	plain pipes Ø 18 mm	10
DN 20	<b>SO-SDN20-CU22</b>	plain pipes Ø 22 mm	10
DN 25	<b>SO-SDN25-CU18</b> ●	plain pipes Ø 18 mm	4
DN 25	<b>SO-SDN25-CU22</b> ●	plain pipes Ø 22 mm	4

● Item not in stock. Delivery on request. [MTO]

## DuoSolar 220 fitting with female straight internal thread



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-I1</b> ●	inside thread G1"	10
DN 16	<b>SO-SDN16-I1/2</b>	inside thread G½"	10
DN 16	<b>SO-SDN16-I3/4</b>	inside thread G¾"	10
DN 20	<b>SO-SDN20-I1</b>	inside thread G1"	10
DN 20	<b>SO-SDN20-I3/4</b>	inside thread G¾"	10
DN 25	<b>SO-SDN25-I1</b>	inside thread G1"	4
DN 25	<b>SO-SDN25-I1¼</b> ●	inside thread G1 ¼"	4

● Item not in stock. Delivery on request. [MTO]



## DuoSolar 220 fitting with male straight thread



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-F1</b> ●	external thread G1"	10
DN 16	<b>SO-SDN16-F3/4</b>	external thread G $\frac{3}{4}$ "	10
DN 20	<b>SO-SDN20-F1</b>	external thread 1"	10
DN 20	<b>SO-SDN20-F3/4</b>	external thread G $\frac{3}{4}$ "	10

● Item not in stock. Delivery on request. [MTO]

## DuoSolar 220 fitting with male tapered thread



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-E1</b> ●	external thread R1"	10
DN 16	<b>SO-SDN16-E1/2</b>	external thread R $\frac{1}{2}$ "	10
DN 16	<b>SO-SDN16-E3/4</b>	external thread R $\frac{3}{4}$ "	10
DN 20	<b>SO-SDN20-E1</b>	external thread R1"	10
DN 20	<b>SO-SDN20-E3/4</b>	external thread R $\frac{3}{4}$ "	10
DN 25	<b>SO-SDN25-E1</b>	external thread R1"	4
DN 25	<b>SO-SDN25-E11/4</b> ●	external thread R1 $\frac{1}{4}$ "	4

● Item not in stock. Delivery on request. [MTO]

## DuoSolar 220 fitting with cylindrical connection



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-Z18</b> ●	cylindrical connection piece $\varnothing$ 18 mm	10
DN 20	<b>SO-SDN20-Z18</b> ●	cylindrical connection piece $\varnothing$ 18 mm	10

● Item not in stock. Delivery on request. [MTO]

## DuoSolar 220 clamping ring



Stainless steel VA	Code	Connection	Pieces/carton
DN 16	<b>SO-SDN16-CR</b>	clamping ring	50
DN 20	<b>SO-SDN20-CR</b> ●	clamping ring	50
DN 25	<b>SO-SDN25-CR</b>	clamping ring	50

● Item not in stock. Delivery on request. [MTO]

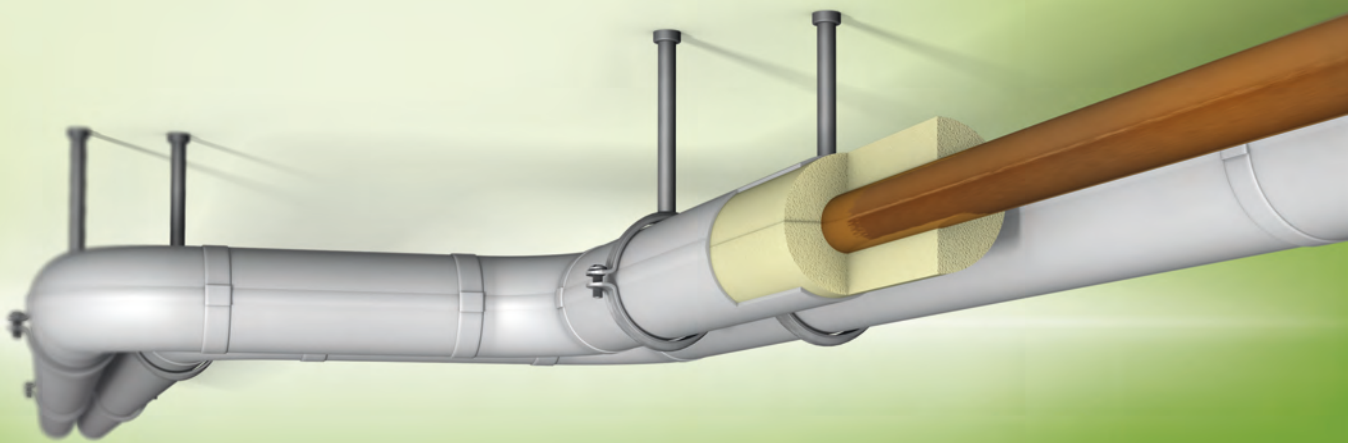






ARMALOK

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



- Pre-formed bends adjustable to several pipe dimensions
- Time-saving pipe closure with self-adhesive seal
- Robust and washable surface
- Good thermal efficiency

## Technical Data - Armalok [parent]

Brief description	PUR-insulation covered with PVC cladding, with self-seal locks, for visible areas.
Material type	Insulation: semi-rigid foam material based on polyurethane. Covering: PVC.
Colour	covering: light grey
Applications	For insulation / protection of pipes (heating systems and domestic hot water pipes), fittings and other elements, for heating and plumbing installations.

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature min. service temperature	+ 110 °C as usual in heating and plumbing systems	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	40 °C	EU 7365 Tested according to EN ISO 8497
	Armalok 100 sections $\lambda$	0,036 W/(m · K)	
	Armalok 50 all sections and elbows $\lambda$	0,038 W/(m · K)	
<b>Fire performance</b>			
Reaction to fire	all sections and elbows	E	EU 7365 EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Other technical features</b>			
Storage & Shelf life	Tapes and shells, self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50 % to 70 %) and ambient temperature (0 °C - 35 °C)

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Technical Data - Armalok 50

Brief description	PUR-insulation covered with PVC cladding, with self-seal locks, for visible areas.
Material type	Insulation: semi-rigid foam material based on polyurethane. Covering: PVC.
Colour	covering: light grey
Applications	For insulation / protection of pipes (heating systems and domestic hot water pipes), fittings and other elements, for heating and plumbing installations.

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 110 °C min. service temperature as usual in heating and plumbing systems		
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 [°C]	EU 7365	Tested according to EN ISO 8497
	all sections and elbows $\lambda \leq 0,038$ W/(m · K)		
<b>Fire performance</b>			
Reaction to fire	all sections and elbows E	EU 7365	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Other technical features</b>			
Storage & Shelf life	Tapes and shells, self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50 % to 70 %) and ambient temperature (0 °C - 35 °C)

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Technical Data - Armalok 100

Brief description	PUR-insulation covered with PVC cladding, with self-seal locks, for visible areas.
Material type	Insulation: semi-rigid foam material based on polyurethane. Covering: PVC.
Colour	covering: light grey
Applications	For insulation / protection of pipes (heating systems and domestic hot water pipes), fittings and other elements, for heating and plumbing installations.

Property	Value/Assessment	Test*1	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature + 110 °C min. service temperature as usual in heating and plumbing systems		
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ 40 [°C]	EU 7365	Tested according to EN ISO 8497
	sections $\lambda \leq 0,036$ W/(m · K)		
<b>Fire performance</b>			
Reaction to fire	all sections and elbows E	EU 7365	Classified acc. to EN 13501-1 Tested acc. to EN ISO 11925-2
<b>Other technical features</b>			
Storage & Shelf life	Tapes and shells, self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50 % to 70 %) and ambient temperature (0 °C - 35 °C)

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.



# Gesetzliche Anforderungen gemäß GebäudeEnergieGesetz (GEG)

	Anwendungsbereich A gemäß GEG 100%	Anwendungsbereich B gemäß GEG 50%	Anwendungsbereich C gemäß GEG im Fußbodenbau	Anwendungsbereich D Leitungen ohne besondere Anforderungen gemäß GEG bzw. nach DIN 1988, Teil200
Heizung <sup>1)</sup>	Leitungen in unbeheizten Räumen und Kellerräumen. Im Fußboden verlegte Leitungen, auch HK-Anschlussleitungen gegen Erdreich/unbeheizte Räume. Leitungen in Außenwänden, in Bauteilen zwischen unbeheizten und beheizten Räumen, in Schächten und Kanälen Verteilungsleitungen zur Versorgung mehrerer Parteien.	Leitungen in Bauteilen, zwischen beheizten Räumen verschiedener Nutzer, Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, an zentralen Leitungsverteilern	Im Fußbodenbereich verlegte Leitungen, zwischen beheizten Räumen verschiedener Nutzer.	Heizungsleitungen in beheizten Räumen oder in Bauteilen zwischen beheizten Räumen eines Nutzers und absperrbar, ohne besondere Anforderungen <sup>2)</sup>
Sanitär <sup>1)</sup> (Warmwasser)	Warmwasserleitungen	Armaturen von Rohrnetzverteilern		Warmwasserleitungen bis zu einer Länge von 4 m ohne Zirkulation/Begleitheizung (Sticheleitungen)
Sanitär (Kaltwasser)	Anwendungsbereich A <sup>3)</sup>  - Rohrleitungen verlegt, z. B. in Technikzentralen oder Medienkanälen und Schächten mit Wärmelasten und Umgebungstemperaturen $\geq 25 \text{ }^\circ\text{C}$		- Rohrleitungen frei verlegt in nicht beheizten Räumen, Umgebungstemperatur $\leq 20 \text{ }^\circ\text{C}$ (nur Tauwasserschutz)  - Rohrleitungen verlegt in Rohrschächten, Bodenkanälen und abgehängten Decken, Umgebungstemperatur $\leq 25 \text{ }^\circ\text{C}$  - Stockwerksleitungen und Einzelzuleitungen in Vorwandinstallationen  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau (auch neben nichtzirkulierenden Trinkwasserleitungen warm)  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau neben warmgehenden zirkulierenden Rohrleitungen	

<sup>1)</sup> Wärmeverteilungs- und Warmwasserleitungen, die direkt an Außenluft angrenzend verlegt sind, sind mit 200 % Dämmung zu versehen.

<sup>2)</sup> Selbst wenn in bestimmten Fällen aus Gesichtspunkten der Energieeinsparung keine Anforderungen an die Dämmung gestellt werden, müssen aber Leitungen in Bauteilen (z.B. im Estrich oder unter Putz) aus folgenden Gründen gedämmt werden: Korrosionsschutz, Vermeidung von Knack- und Fließgeräuschen (Körperschalldämmung), Verringerung der Wärmebelastung des umgebenden Mauerwerkes, o. ä. Bei nicht zirkulierenden Warmwasserleitungen stellt diese Mindestdämmung außerdem sicher, dass das Wasser bei Zapfbeginn durch angrenzende Bauteile nicht unnötig abgekühlt wird.

<sup>3)</sup> Anwendungsbereich B gilt nur bei Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, bei zentralen Leitungsnetzverteilern

## Armalok 50 sections



Pipe max. Outside-Ø [mm]	PVC-jacketed section made of semi-rigid PUR-foam with self-adhesive seal, length 1 m		
	Code	Thickness [mm]	m/carton
15	AL-15X20-50	20	70
18	AL-18X20-50	20	70
22	AL-22X20-50	20	60
28	AL-28X20-50	20	48
35	AL-35X20-50	20	40
42	AL-42X25-50	24	24
42	AL-42X30-50	30	20
48	AL-48X25-50	26	20
57	AL-57X30-50	30	15
60	AL-60X30-50	32	15
70	AL-70X40-50 <sup>1</sup>	40	8
76	AL-76X30-50	30	12
76	AL-76X40-50 <sup>1</sup>	40	9
89	AL-89X30-50 <sup>1</sup>	30	9

<sup>1</sup> [DE] Not 50% EnEV

## Armalok 50 bends



Pipe max. Outside-Ø [mm]	PVC-all-purpose bend with PUR-foam core, suitable for S-welded bend 50		
	Code	Thickness [mm]	Pieces/carton
15	AL-ABO-1520 <sup>2</sup>	20	20
18	AL-ABO-1820 <sup>2</sup>	20	20
18	AL-ABO-1830 ●	30	24
22	AL-ABO-2220 <sup>2</sup>	20	20
22	AL-ABO-2230	30	24
28	AL-ABO-2820 <sup>2</sup>	20	20
28	AL-ABO-2830 <sup>2</sup>	30	20
28	AL-ABO-2840 ●	40	20
35	AL-ABO-3520 <sup>2</sup>	20	20
35	AL-ABO-3530 <sup>2</sup>	30	12
35	AL-ABO-3540 ●	40	12
42	AL-ABO-4225 <sup>2</sup>	25	20
42	AL-ABO-4230 ●	30	20
42	AL-ABO-4240 <sup>2</sup>	40	12
48	AL-ABO-4825 <sup>2</sup>	25	20
48	AL-ABO-4830 ●	30	20
57	AL-ABO-5730	30	10
57	AL-ABO-5750 ●	50	6
60	AL-ABO-6030 <sup>2</sup>	30	10
60	AL-ABO-6050	50	6
76	AL-ABO-7630	30	8
89	AL-ABO-8930	30	8

### Remark

Special packaging resp. product labeling at extra cost.

● Item not in stock. Delivery on request. [MTO]

<sup>2</sup> According to DIN

## Armalok 100 sections



Color light grey, PUR-insulation programme with PVC-jacket for visible faces

Pipe max. Outside-Ø [mm]	PVC-jacketed section made of semi-rigid PUR-foam with self-adhesive seal, length 1 m		
	Code	Thickness [mm]	m/carton
15	AL-15X20-100	20	70
18	AL-18X20-100	20	70
18	AL-18X30-100 ●	30	40
22	AL-22X20-100	20	60
22	AL-22X30-100 ●	30	30
28	AL-28X20-100	20	48
28	AL-28X30-100	30	28
28	AL-28X40-100	40	20
35	AL-35X30-100	30	24
35	AL-35X40-100 ●	40	15
42	AL-42X30-100 ●	30	20
42	AL-42X40-100	40	15
48	AL-48X30-100 ●	30	18
48	AL-48X40-100 ●	42	12
57	AL-57X50-100 ●	50	7
60	AL-62X53-100	53	7

### Remark

Special packaging resp. product labelling at extra cost available.  
Real produced thicknesses are 1-2mm higher than displayed.

- Item not in stock. Delivery on request. [MTO]

## Armalok 100 bends



Color light grey, PUR-insulation programme with PVC-jacket for visible faces

Pipe max. Outside-Ø [mm]	PVC-all-purpose bend with PUR-foam core, suitable for S-welded bend 100		
	Code	Thickness [mm]	Pieces/carton
15	AL-ABO-1520 <sup>1</sup>	20	20
18	AL-ABO-1820 <sup>1</sup>	20	20
18	AL-ABO-1830 ●	30	24
22	AL-ABO-2220 <sup>1</sup>	20	20
22	AL-ABO-2230	30	24
28	AL-ABO-2820 <sup>1</sup>	20	20
28	AL-ABO-2830 <sup>1</sup>	30	20
28	AL-ABO-2840 ●	40	20
35	AL-ABO-3530 <sup>1</sup>	30	12
35	AL-ABO-3540 ●	40	12
42	AL-ABO-4240 <sup>1</sup>	40	12
57	AL-ABO-5750 ●	50	6
60	AL-ABO-6050	50	6

- Item not in stock. Delivery on request. [MTO]

<sup>1</sup> According to DIN

## Armalok [parent] rosette endcapping



Color light grey, with 2 fixing grooves

Code	Length [m]	Width [mm]	Rolls/carton
AL-AEMBG-18B	5	18,0	10
AL-AEMBG-28B ●	5	28,0	10
AL-AEMBG-38B	5	38,0	10

- Item not in stock. Delivery on request. [MTO]

## Armalok [parent] rosette endcapping



bare aluminium, with 2 fixing grooves

Code	Length [m]	Width [mm]	Rolls/carton
<b>AL-AEMBA-18B</b>	5	18,0	10
<b>AL-AEMBA-28B</b>	5	28,0	10
<b>AL-AEMBA-38B •</b>	5	38,0	10

• Item not in stock. Delivery on request. [MTO]

## Armalok [parent] tapes self-adhesive

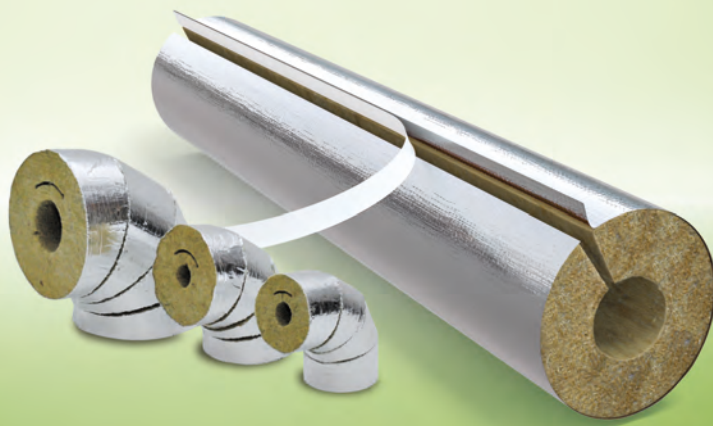


Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>AL-ASKB-40</b>	38,0	25	0.15	16



MINERAL FIBRE

MINERAL FIBRE INSULATION WITH  
ALUMINUM FOIL



- Non-combustible insulation
- Tear-resistant aluminium jacketing with quick self-adhesive tape
- Silicon-free, rotproof, chemically neutral
- AS-Quality according to AGI Q 132

- Euroclass A2<sub>L</sub>-s1,d0
- $\lambda$  at 40 °C 0,037 resp. 0.038 W/(m•K)



# Dämmschichtdicken gemäß GEG

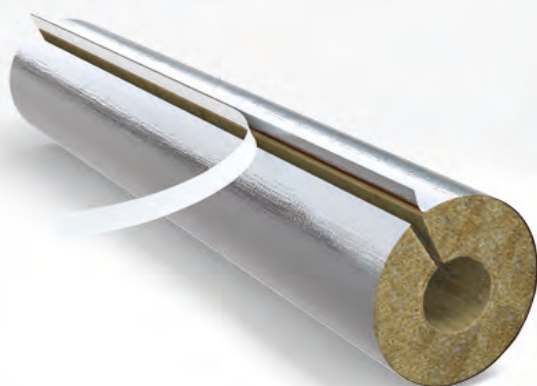
"Steinwolle Rohrschalen alukaschiert"

## Dämmschichtdicken gemäß GEG

				Anwendungsbereich A (100%)			Anwendungsbereich B	
Stahlrohre				DSD	Steinwolle Rohrschale	Steinwolle Bogen	DSD	Steinwolle Rohrschale
Außen-Ø mm	Nennweite DN	Außen-Ø mm	Zoll	[mm]	Bestell-Nr.	Bestell-Nr.	[mm]	Bestell-Nr.
5	8	13,5	¼	23	MF-20x015	MFB-20x015	23	MF-20x015
8	10	17,2	3/8	22	MF-20x018	MFB-20x018	22	MF-20x018
12	15	21,3	1/2	22	MF-20x022	MFB-20x022	22	MF-20x022
	20	26,9	¾	22	MF-20x028	MFB-20x028	22	MF-20x028
18				34	MF-30x028	MFB-30x028	22	MF-20x028
25	25	33,7	1	33	MF-30x035	MFB-30x035	20	MF-20x035
	32	42,4	1 ¼	40	MF-40x042	MFB-40x042	20	MF-20x042
32				50	MF-50x042	---	30	MF-30x042
	40	48,3	1 1/2	50	MF-50x048	---	30	MF-30x048
40				60	MF-60x054	---	30	MF-30x054
		57		60	---	---	30	MF-50x057
	50	60,3	2	60	MF-60x060	---	30	MF-30x060
44				70	MF-70x064	---	35	---
60	65	76,1	2 1/2	90	MF-90x076	---	40	MF-40x076
79	80	88,9	3	100	MF-100x089	---	50	MF-50x089
108				120	MF-120x108	---	60	MF-60x108
	100	114,3	4		---	---	60	MF-60x114
133					---	---	70	MF-70x133

20 - 40 mm:  $\lambda_{40^\circ\text{C}} = 0,037 \text{ W/(mK)}$

40 - 120 mm:  $\lambda_{40^\circ\text{C}} = 0,038 \text{ W/(mK)}$



Dämmschichtdicken 20 - 40 mm:  
 $\lambda_{40^\circ\text{C}} = 0,037 \text{ W/(mK)}$

Dämmschichtdicke > 40 - 120 mm:  
 $\lambda_{40^\circ\text{C}} = 0,038 \text{ W/(mK)}$

## Technical Data - Mineral Fibre

Brief description	Pipe section made of mineral wool, cut dimensionally accurately (length 1,000 mm) slit on one side, with foil facing.
Material type	Mineral wool with foil facing. Factory made mineral wool (MW) products according to EN 14303.
Product Range	Pipe section with aluminium foil facing and self-adhesive fastening.
Applications	Insulation / Protection of pipes (heating and hot-water pipes).
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature up to +250 °C	EU 7085	Tested acc. to EN 14707 Value refers to mineral wool.
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	10      40      150      [°C]	EU 7085 Declared acc. to EN ISO 13787 Tested according to EN ISO 8497
	insulation thickness 20 - 40 mm $\lambda_{N,R} \leq$	0,034      0,037      0,055      W/(m · K)	
	> 40 - 120 mm $\lambda_{N,R} \leq$	0,035      0,038      0,055      W/(m · K)	
<b>Fire performance</b>			
Reaction to fire	Non combustible A2 <sub>L</sub> -s1,d0	EU 7085	Classified acc. to EN 13501-1 Tested according to EN 13823, EN ISO 1716 EN
<b>Other technical features</b>			
Dimensions and tolerances	In accordance with EN 14303, class T8	EU 7085	Tested acc. to EN 13467
Chemical behaviour	AS-quality chemically neutral, rot-proof, free of silicon substances		
Melting point	> 1000 °C		Value refers to mineral wool.
Water-soluble chlorides	CL10	EU 7085	Tested acc. to EN 13468

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

# Gesetzliche Anforderungen gemäß GebäudeEnergieGesetz (GEG)

	Anwendungsbereich A gemäß GEG 100%	Anwendungsbereich B gemäß GEG 50%	Anwendungsbereich C gemäß GEG im Fußbodenbau	Anwendungsbereich D Leitungen ohne besondere Anforderungen gemäß GEG bzw. nach DIN 1988, Teil200
Heizung <sup>1)</sup>	Leitungen in unbeheizten Räumen und Kellerräumen. Im Fußboden verlegte Leitungen, auch HK-Anschlussleitungen gegen Erdreich/unbeheizte Räume. Leitungen in Außenwänden, in Bauteilen zwischen unbeheizten und beheizten Räumen, in Schächten und Kanälen Verteilungsleitungen zur Versorgung mehrerer Parteien.	Leitungen in Bauteilen, zwischen beheizten Räumen verschiedener Nutzer, Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, an zentralen Leitungsverteilern	Im Fußbodenbereich verlegte Leitungen, zwischen beheizten Räumen verschiedener Nutzer.	Heizungsleitungen in beheizten Räumen oder in Bauteilen zwischen beheizten Räumen eines Nutzers und absperrbar, ohne besondere Anforderungen <sup>2)</sup>
Sanitär <sup>1)</sup> (Warmwasser)	Warmwasserleitungen	Armaturen von Rohrnetzverteilern		Warmwasserleitungen bis zu einer Länge von 4 m ohne Zirkulation/Begleitheizung (Sticheleitungen)
Sanitär (Kaltwasser)	Anwendungsbereich A <sup>3)</sup>  - Rohrleitungen verlegt, z. B. in Technikzentralen oder Medienkanälen und Schächten mit Wärmelasten und Umgebungstemperaturen $\geq 25 \text{ }^\circ\text{C}$		- Rohrleitungen frei verlegt in nicht beheizten Räumen, Umgebungstemperatur $\leq 20 \text{ }^\circ\text{C}$ (nur Tauwasserschutz)  - Rohrleitungen verlegt in Rohrschächten, Bodenkanälen und abgehängten Decken, Umgebungstemperatur $\leq 25 \text{ }^\circ\text{C}$  - Stockwerksleitungen und Einzelzuleitungen in Vorwandinstallationen  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau (auch neben nichtzirkulierenden Trinkwasserleitungen warm)  - Stockwerksleitungen und Einzelzuleitungen im Fußbodenaufbau neben warmgehenden zirkulierenden Rohrleitungen	

<sup>1)</sup> Wärmeverteilungs- und Warmwasserleitungen, die direkt an Außenluft angrenzend verlegt sind, sind mit 200 % Dämmung zu versehen.

<sup>2)</sup> Selbst wenn in bestimmten Fällen aus Gesichtspunkten der Energieeinsparung keine Anforderungen an die Dämmung gestellt werden, müssen aber Leitungen in Bauteilen (z.B. im Estrich oder unter Putz) aus folgenden Gründen gedämmt werden: Korrosionsschutz, Vermeidung von Knack- und Fließgeräuschen (Körperschalldämmung), Verringerung der Wärmebelastung des umgebenden Mauerwerkes, o. ä. Bei nicht zirkulierenden Warmwasserleitungen stellt diese Mindestdämmung außerdem sicher, dass das Wasser bei Zapfbeginn durch angrenzende Bauteile nicht unnötig abgekühlt wird.

<sup>3)</sup> Anwendungsbereich B gilt nur bei Leitungen und Armaturen in Wand- und Deckendurchbrüchen, im Kreuzungsbereich von Leitungen, an Leitungsverbindungsstellen, bei zentralen Leitungsnetzverteilern

## Mineral Fibre sections [additional table to display with itemgroups of local regulations]



Pipe max. Outside-Ø [mm]	[DE] Field of application B according to EnEV			[DE] Field of application A according to EnEV		
	Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	-	-	-	23,0	MF-20X015	42
18	-	-	-	22,0	MF-20X018	42
18	-	-	-	30,0	MF-30X018	25
20	-	-	-	22,0	MF-20X022	36
22	-	-	-	30,0	MF-30X022	20
28	-	-	-	22,0	MF-20X028	30
28	-	-	-	34,0	MF-30X028	16
35	20,0	MF-20X035	25	33,0	MF-30X035	16
35	-	-	-	40,0	MF-40X035	9
42	20,0	MF-20X042	20	40,0	MF-40X042	9
42	30,0	MF-30X042	12	50,0	MF-50X042 ●	6
48	22,0	MF-20X048 ●	16	50,0	MF-50X048	6
48	30,0	MF-30X048	11	-	-	-
48	40,0	MF-40X048	9	-	-	-
54	30,0	MF-30X054	9	60,0	MF-60x054	4
54	40,0	MF-40X054	6	-	-	-
54	50,0	MF-50X054	5	-	-	-
57	50,0	MF-50X057 ●	5	-	-	-
60	30,0	MF-30X060 ●	9	60,0	MF-60x060	4
60	50,0	MF-50X060	5	-	-	-
64	30,0	MF-30X064 ●	9	70,0	MF-70X064	3
76	40,0	MF-40X076 ●	5	90,0	MF-90X076 ●	1
76	60,0	MF-60X076	4	-	-	-
76	70,0	MF-70X076 ●	2	-	-	-
89	50,0	MF-50x089 ●	4	-	-	-
89	60,0	MF-60X089	2	-	-	-
89	80,0	MF-80X089 ●	2	-	-	-
108	60,0	MF-60X108 ●	1	-	-	-
114	60,0	MF-60X114 ●	1	-	-	-

● Item not in stock. Delivery on request. [MTO]

## Mineral Fibre bends [additional table to display with itemgroups of local regulations]



Pipe max. Outside-Ø [mm]	[DE] Field of application B according to EnEV			[DE] Field of application A according to EnEV		
	Code	Thickness [mm]	Pieces/carton	Code	Thickness [mm]	Pieces/carton
15	-	-	-	MFB-20X015 ●	23	18
18	-	-	-	MFB-30X018 ●	30	18
22	-	-	-	MFB-20X022 ●	22	17
22	-	-	-	MFB-30X022 ●	30	16
28	-	-	-	MFB-20X028 ●	22	15
28	-	-	-	MFB-30X028 ●	34	16
35	MFB-20X035 ●	20	10	MFB-30X035 ●	33	16
42	MFB-20X042 ●	20	8	MFB-40X042 ●	40	9
42	MFB-30X042 ●	30	12	-	-	-
48	MFB-30X048 ●	30	10	-	-	-
48	MFB-40X048 ●	40	6	-	-	-
54	MFB-30X054 ●	30	8	-	-	-
54	MFB-40X054 ●	40	6	-	-	-
54	MFB-50X054 ●	50	5	-	-	-
60	MFB-50X060 ●	50	5	-	-	-

● Item not in stock. Delivery on request. [MTO]

## Mineral Fibre tapes self-adhesive



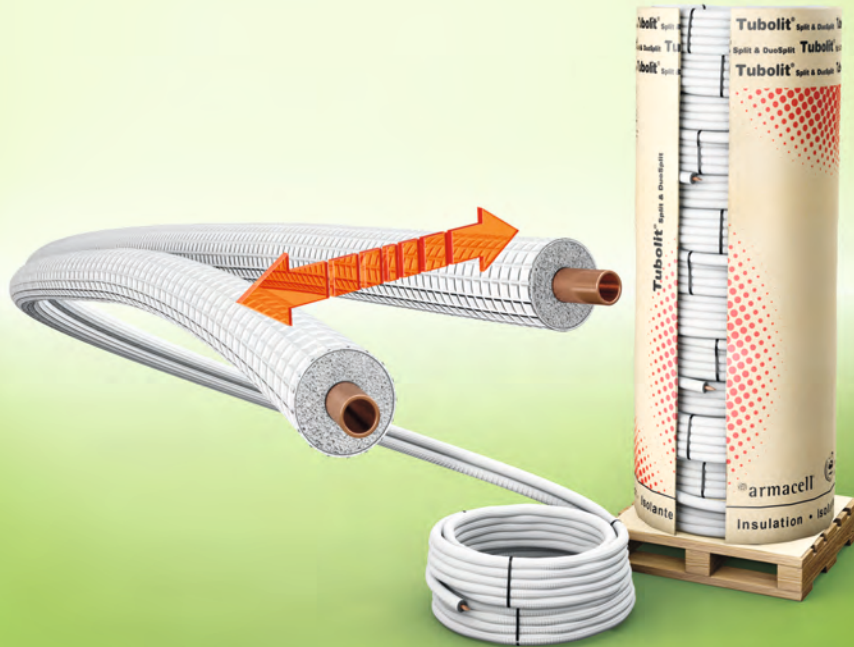
Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>OKF-TAPE50100</b>	50,0	100	0.025	6





TUBOLIT® SPLIT & DUOSPLIT

INSTALL IT. BENEFIT FROM THE RANGE



- Excellent protection against energy losses and condensation
- Easy to split and join
- UV-resistant coating
- Complete range of matching accessories for connecting air-conditioning units easily and durably

# Tubolit Split & DuoSplit

## LOW SMOKE DENSITY

In the event of a fire it is vital that those trapped find escape routes quickly. This is only possible with minimal smoke development. Tubolit Split and Tubolit DuoSplit achieve class C<sub>L</sub>-s1, d0 in the European fire test. In a fire the pipe insulation develops significantly less smoke than traditional PE products and has been proven to contribute to people's safety in buildings.



## SUSTAINABLE SPACE-SAVING: THE NEW TOWERPACK

The new, transport- and storage-friendly packaging takes up 40 % less space than traditional boxes. To ensure that the coils can be transported safely they are secured with straps and wrapped in a tough foil.

## ACCESSORIES

We also offer a comprehensive range of accessories for installing air-conditioning systems.



## Technical Data - Tubolit Split & DuoSplit

Brief description	Tubolit Split/DuoSplit is a reliable pre-insulated system solution for connect the indoor and outdoor air conditioning, refrigeration units of split, multi-split and heat pumps systems. The system consists of copper pipe(s), insulation material, a UV-resistant facing and matching accessories.
Material type	Insulation: foam material based on polyethylene. Pipes: soft-annealed, seamlessly drawn refrigeration copper according to EN-12735-1. Facing: polyolefin-copolymer coating.
Colour	White
Material Special Information	Insulation material is original Tubolit closed-cell insulation.
Applications	Split and multi-split air-conditioning systems, heat pumps and cooling counters.
Special Features	Durable solution, resistant against mechanical strain and UV radiation. Suitable for refrigeration gases R-410A, R-407C and R32
Assembly	No special tools required. Matching accessories to facilitate assembly. Insulation should remain uncut along the complete applied length and glued to the pipe at both ends. It is recommended that the insulation tube ends are additionally protected with tape.
Remarks	Certificate of Conformity with EN 12735-1 for TubolitSplit&DuoSplit copper pipes available on request

Property	Value/Assessment	Test <sup>1</sup>	Special Remark																																																				
<b>Temperature Range</b>																																																							
Temperature Range	max. service temperature	+ 105 °C	Tested acc. to EN 14706, EN 14707 and EN 14304																																																				
	min. service temperature <sup>1</sup>	- 50 °C																																																					
<b>Thermal Conductivity</b>																																																							
Thermal Conductivity	$\vartheta_m$ 0 °C		Declared acc. to EN ISO 13787 Tested acc. to EN ISO 8497																																																				
	$\lambda \leq 0,036$ W/(m · K)	$[36 + 0,1 \cdot \vartheta_m + 0,0008 \cdot \vartheta_m^2]/1000$																																																					
<b>Water vapour diffusion resistance</b>																																																							
Water vapour diffusion resistance	Only for non-slit insulation and coating: $\mu$	$\geq$ 5.000	Tested according to EN 13469																																																				
<b>Fire performance</b>																																																							
Reaction to fire	Euroclass	B <sub>L</sub> -s1,d0	EU 7881 Classified acc. to EN 13501-1 Tested according to EN 13823, EN ISO 11925-2																																																				
Dimensions and tolerances	In accordance with EN 14313, table 1 and 2		Tested acc. to EN 13467																																																				
UV resistance	Very Good		TB 142, D 5795 Tested according to EN ISO 4892-2 (Xenon-test)																																																				
Pipe size and pressure rating	<table border="0"> <tr> <td>1/4" x 0.7 mm</td> <td>136 bar</td> <td>6 x 0.8 mm</td> <td>169 bar</td> </tr> <tr> <td>1/4" x 0.8 mm</td> <td>159 bar</td> <td>6 x 1.0 mm</td> <td>220 bar</td> </tr> <tr> <td>1/4" x 1.0 mm</td> <td>206 bar</td> <td></td> <td></td> </tr> <tr> <td>3/8" x 0.7 mm</td> <td>87 bar</td> <td></td> <td></td> </tr> <tr> <td>3/8" x 0.8 mm</td> <td>101 bar</td> <td>10 x 0.8 mm</td> <td>96 bar</td> </tr> <tr> <td>3/8" x 1.0 mm</td> <td>129 bar</td> <td>10 x 1.0 mm</td> <td>122 bar</td> </tr> <tr> <td>1/2" x 0.7 mm</td> <td>64 bar</td> <td></td> <td></td> </tr> <tr> <td>1/2" x 0.8 mm</td> <td>74 bar</td> <td>12 x 0.8 mm</td> <td>79 bar</td> </tr> <tr> <td>1/2" x 1.0 mm</td> <td>94 bar</td> <td>12 x 1.0 mm</td> <td>100 bar</td> </tr> <tr> <td>5/8" x 0.8 mm</td> <td>58 bar</td> <td></td> <td></td> </tr> <tr> <td>5/8" x 1.0 mm</td> <td>74 bar</td> <td>16 x 1.0 mm</td> <td>73 bar</td> </tr> <tr> <td>3/4" x 1.0 mm</td> <td>61 bar</td> <td>18 x 1.0 mm</td> <td>65 bar</td> </tr> <tr> <td>7/8" x 1.0 mm</td> <td>52 bar</td> <td>22 x 1.0 mm</td> <td>52 bar</td> </tr> </table>			1/4" x 0.7 mm	136 bar	6 x 0.8 mm	169 bar	1/4" x 0.8 mm	159 bar	6 x 1.0 mm	220 bar	1/4" x 1.0 mm	206 bar			3/8" x 0.7 mm	87 bar			3/8" x 0.8 mm	101 bar	10 x 0.8 mm	96 bar	3/8" x 1.0 mm	129 bar	10 x 1.0 mm	122 bar	1/2" x 0.7 mm	64 bar			1/2" x 0.8 mm	74 bar	12 x 0.8 mm	79 bar	1/2" x 1.0 mm	94 bar	12 x 1.0 mm	100 bar	5/8" x 0.8 mm	58 bar			5/8" x 1.0 mm	74 bar	16 x 1.0 mm	73 bar	3/4" x 1.0 mm	61 bar	18 x 1.0 mm	65 bar	7/8" x 1.0 mm	52 bar	22 x 1.0 mm	52 bar
1/4" x 0.7 mm	136 bar	6 x 0.8 mm	169 bar																																																				
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1. For temperatures below 0 °C please contact our Customer Service Center to request for the corresponding technical information.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation.



## Tubolit Split pipes pre-insulated endless (metric)



Color light grey, Two preinsulated copper pipes according to EN 12735, insulation material additionally covered with an embossed white polyolefin coating.

Code	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm]	Rolls/carton	m/carton
SMC-061/E25	6	1	24	25	9,0	2	50
SMC-061/E50 •	6	1	24	50	9,0	1	50
SMC-101/E25	10	1	28	25	9,0	2	50
SMC-101/E50 •	10	1	28	50	9,0	1	50
SMC-121/E25	12	1	30	25	9,0	2	50
SMC-121/E50 •	12	1	30	50	9,0	1	50
SMC-161/E25	16	1	34	25	9,0	1	25
SMC-181/E25	18	1	36	25	9,0	1	25
SMC-221/E25	22	1	40	25	9,0	1	25

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split pipes pre-insulated endless tower (inch)



Color grey, Covering Color white,

Code	Pipe diameter [inch]	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm/mm]	rolls/tower	m/tower
SZ-061/E50	1/4	6.35	1	24	50	9	16	800
SZ-067/E25	1/4	6.35	0.7	18	25	6	30	750
SZ-067/E50	1/4	6.35	0.7	18	50	6	26	1300
SZ-068/E25	1/4	6.35	0.8	24	25	9	30	750
SZ-068/E50	1/4	6.35	0.8	24	50	9	16	800
SZ-101/E50	3/8	9.52	1	28	50	9	13	650
SZ-107/E25	3/8	9.52	0.7	22	25	6	30	750
SZ-107/E50	3/8	9.52	0.7	22	50	6	23	1150
SZ-108/E25	3/8	9.52	0.8	28	25	9	26	650
SZ-108/E50	3/8	9.52	0.8	28	50	9	13	650
SZ-121/E50	1/2	12.7	1	30	50	9	12	600
SZ-127/E25	1/2	12.7	0.7	24	25	6	30	750
SZ-127/E50	1/2	12.7	0.7	24	50	6	18	900
SZ-128/E25	1/2	12.7	0.8	30	25	9	24	600
SZ-128/E50	1/2	12.7	0.8	30	50	9	12	600
SZ-161/E25	5/8	15.875	1	34	25	9	21	525
SZ-168/E25	5/8	15.875	0.8	34	25	9	21	525
SZ-191/E25	3/4	19.05	1	37	25	9	12	300
SZ-221/E25	7/8	22.22	1	40	25	9	11	275

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.

## Tubolit Split pipes pre-insulated endless (inch)



Color grey, Covering Color white

Code	Pipe diameter [inch]	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm]	Rolls/carton	m/carton
SZC-068/E25	1/4	6.35	0.8	24	25	9,0	2	50
SZC-128/E25	1/2	12.7	0.8	30	25	9,0	2	50
SZC-068/E50	1/4	6.35	0.8	24	50	9,0	1	50
SZC-108/E25	3/8	9.52	0.8	28	25	9,0	2	50
SZC-108/E50	3/8	9.52	0.8	28	50	9,0	1	50
SZC-128/E50	1/2	12.7	0.8	30	50	9,0	1	50
SZC-161/E25	5/8	15.875	1	34	25	9,0	1	25
SZC-168/E25	5/8	15.875	0.8	34	25	9,0	1	25
SZC-191/E25	3/4	19.05	1	37	25	9,0	1	25
SZC-221/E25	7/8	22.22	1	40	25	9,0	1	25

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.

## Tubolit DuoSplit pipes pre-insulated endless (metric)



Code	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm]	Rolls/carton	m/carton
DMC-06101/E25	6/10	1.0 / 1.0	24 / 28	25	9,0	1	25
DMC-06121/E25	6/12	1.0 / 1.0	24 / 30	25	9,0	1	25
DMC-06161/E25	6/16	1.0 / 1.0	24 / 34	25	9,0	1	25
DMC-10161/E25	10/16	1.0 / 1.0	28 / 34	25	9,0	1	25
DMC-10181/E25	10/18	1.0 / 1.0	28 / 36	25	9,0	1	25

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.

## Tubolit DuoSplit pipes pre-insulated endless (inch)



Color light grey, Two preinsulated copper pipes according to EN 12735, insulation material additionally covered with an embossed white polyolefin coating.

Code	Pipe diameter [inch]	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm]	Rolls/carton	m/carton
DZC-061088/E25	1/4 / 3/8	6.35 / 9.525	0.8 / 0.8	24 / 28	25	9,0	1	25
DZC-061288/E25	1/4 / 1/2	6.35 / 12.70	0.8 / 0.8	24 / 30	25	9,0	1	25
DZC-061681/E25	1/4 / 5/8	6.35 / 15.875	0.8 / 1.0	24 / 34	25	9,0	1	25
DZC-061688/E25	1/4 / 5/8	6.35 / 15.875	0.8 / 0.8	24 / 34	25	9,0	1	25
DZC-101681/E25	3/8 / 5/8	9.52 / 15.875	0.8 / 1.0	28 / 34	25	9,0	1	25
DZC-101688/E25	3/8 / 5/8	9.52 / 15.875	0.8 / 0.8	28 / 34	25	9,0	1	25
DZC-101981/E25	3/8 / 3/4	9.52 / 19.05	0.8 / 1.0	28 / 37	25	9,0	1	25

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.

## Tubolit DuoSplit pipes pre-insulated endless (inch)



Color grey, Covering Color white

Code	Pipe diameter [inch]	Pipe diameter [mm]	Pipe wall thickness [mm]	Outer-Ø [mm] of insulation	Roll length [m]	Insulation thickness [mm/mm]	rolls/tower	m/tower
DZ-061077/E25	1/4 / 3/8	6.35 / 9.525	0.7 / 0.7	18 / 22	25	6.0 / 6.0	18	450
DZ-061088/E25	1/4 / 3/8	6.35 / 9.525	0.8 / 0.8	24 / 28	25	9.0 / 9.0	14	350
DZ-061277/E25	1/4 / 1/2	6.35 / 12.70	0.7 / 0.7	18 / 24	25	6.0 / 6.0	18	450
DZ-061288/E25	1/4 / 1/2	6.35 / 12.70	0.8 / 0.8	24 / 30	25	9.0 / 9.0	13	325
DZ-061688/E25	1/4 / 5/8	6.35 / 15.875	0.8 / 0.8	24 / 34	25	9.0 / 9.0	9	225
DZ-101678/E25	3/8 / 5/8	9.52 / 15.875	0.7 / 0.8	22 / 34	25	6.0 / 9.0	15	375
DZ-101688/E25	3/8 / 5/8	9.52 / 15.875	0.8 / 0.8	28 / 34	25	9.0 / 9.0	9	225
DZ-101981/E25	3/8 / 3/4	9.52 / 19.05	0.8 / 1.0	28 / 37	25	9.0 / 9.0	8	200

**Remark** Price line of the month is subject to change based on average LME (\$/t) and exchange rate (€/€) of the previous month.



## Tubolit Split & DuoSplit Accessories SAE flare fittings



SAE flare fittings are especially suitable whenever the installation of refrigeration pipes becomes difficult or impossible (soldering in dangerous atmosphere or when soldering is forbidden). They come with a nut and compression ferrule and can easily be installed using a wrench. The Armacell refrigeration connections fit most thermostatic valves, manometers, dehydrating filters and other components with flare-type joints.

Inch measurements				
Code	inch	Pieces/bag	Pipe wall thickness [mm]	Bag/carton
SF-FZ-006	1/4	10	0.8	10
SF-FZ-010	3/8	10	0.8	10
SF-FZ-012	1/2	10	0.8	10
SF-FZ-016	5/8	10	1.0	10
SF-FZ-019	3/4	5	1.0	10

### Remark

The SAE flare fittings are supplied in small bags of 10 sets, each carton contains 10 bags; one set contains a stiffener sleeve, a compression ferrule and a union nut.

### Technical properties

No copper sealing necessary - compression ferrule - tight up to 10-7 mbar l/s or < 0.5 g/a Helium for all refrigerants (CFC, HFC, HCFC).

#### Pressure rating

1/4" 100 bar  
 3/8" 64 bar  
 1/2" 45 bar  
 5/8" 45 bar  
 3/4" 45 bar

Subjected to internal testing according to DIN 3859 and by CETIM:

\* Reverse-bending strength test: no leakage after 10 million. cycles at 50 Hz under normal pressure

\* Helium-leakage detector (gas-tightness): < 0.5 g/year (10-5 mbar l/s)

\* Burst pressure test (4 times nominal pressure): no leakage

\* Temperature cycle test (5 cycles at -40 °C to -120 °C at 10 bar He): no leakage CETIM, internal and field test results.

### Regulations

Corresponds to the new standards and regulations of the CEN for refrigeration installations (EN 378/1 - EN 378/2).

## Tubolit Split & DuoSplit Accessories SAE calibration tool



Calibration tools to match SAE flare fittings

Inch measurements			
Code	Pieces/bag	Bag/carton	Outer- Ø [mm]
SF-CTZ-006 •	1	10	1/4
SF-CTZ-010 •	1	10	3/8
SF-CTZ-012 •	1	10	1/2
SF-CTZ-016 •	1	10	5/8
SF-CTZ-019 •	1	5	3/4

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories toolbox sae calibration tool



Inch measurements		
Code	Outer- Ø [mm]	Pieces/carton
SF-CBZ-06-16 •	1/4" / 3/8" 1/2" / 5/8"	5

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories duct split



Length 2,0 m, Color white, Armacell ducts and accessories provide an aesthetically compact ducting, an ideal complement for every split installation. It is highly shock resistant, easy and quick to install and resistant UV rays. The available dimensions were calculated accurately to offer the following advantages:

- ▶ Quick and easy to install
- ▶ Compact pipe covering
- ▶ Matches well to the building shell exteriors
- ▶ Sophisticated accessories
- ▶ Blu film protection covering, easily removable

Code	Article description	Size w x h [mm]	m/carton
<b>SD-CD-60X45</b>	duct split 60 x 45	60 x 45	24
<b>SD-CD-80X60</b>	duct split 80 x 60	80 x 60	16
<b>SD-CD-110X75</b>	duct split 110 x 75	110 x 75	8

### Technical properties

Material: Rigid, flame retardant, shockproof PVC, stabilised against UV radiation  
 Temperature: min. -20 °C, max. +60 °C.  
 Colour: RAL 9001 (white)

## Tubolit Split & DuoSplit Accessories tightening clamps



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CT-60X45 •</b>	tightening clamps 60 x 45	60 x 45	30
<b>SD-CT-80X60</b>	tightening clamps 80 x 60	80 x 60	30
<b>SD-CT-110X75 •</b>	tightening clamps 110 x 75	110 x 75	20

- Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories connection cover



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CC-60X45 •</b>	connection cover 60 x 45	60 x 45	30
<b>SD-CC-80X60</b>	connection cover 80 x 60	80 x 60	30
<b>SD-CC-110X75 •</b>	connection cover 110 x 75	110 x 75	20

- Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories wall cover



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CW-60X45 •</b>	wall cover 60 x 45	60 x 45	10
<b>SD-CW-80X60</b>	wall cover 80 x 60	80 x 60	8

- Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories end cover



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CE-60X45 •</b>	end cover 60 x 45	60 x 45	12
<b>SD-CE-80X60</b>	end cover 80 x 60	80 x 60	9

- Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories wall adapter



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CA-60X45 •</b>	wall adapter 60 x 45	60 x 45	9
<b>SD-CA-80X60</b>	wall adapter 80 x 60	80 x 60	6
<b>SD-CA-110X75 •</b>	wall adapter 110 x 75	110 x 75	4

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories internal elbow



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CI-60X45 •</b>	internal elbow 60 x 45	60 x 45	8
<b>SD-CI-80X60</b>	internal elbow 80 x 60	80 x 60	6
<b>SD-CI-110X75 •</b>	internal elbow 110 x 75	110 x 75	4

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories external elbow



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CX-60X45 •</b>	external elbow 60 x 45	60 x 45	12
<b>SD-CX-80X60</b>	external elbow 80 x 60	80 x 60	9
<b>SD-CX-110X75 •</b>	external elbow 110 x 75	110 x 75	6

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories flat bend



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CF-60X45 •</b>	flat bend 60 x 45	60 x 45	10
<b>SD-CF-80X60</b>	flat bend 80 x 60	80 x 60	8
<b>SD-CF-110X75</b>	flat bend 110 x 75	110 x 75	6

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories reduction joint



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CR-80X60 •</b>	reduction joint	80 x 60	12
<b>SD-CR-110X75 •</b>	reduction joint	110 x 75	8

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories t-piece



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CP-80X60 •</b>	T-piece 80 x 60	80 x 60	4
<b>SD-CP-110X75 •</b>	T-piece 110 x 75	110 x 75	2

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories flexible duct



Length 590,0 mm

Code	Article description	Size w x d [mm]	Pieces/carton
<b>SD-CL-60X45 •</b>	flexible duct 60 x 45	60 x 45	6
<b>SD-CL-80X60</b>	flexible duct 80 x 60	80 x 60	4

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories spiral hose smooth bore



Armaceil drain hoses are made of low-density polyvinyl chloride.

- ▶ available in single carton boxes, in rolls
- ▶ specially suitable for in-wall installations
- ▶ easy-to-carry carton
- ▶ pressure resistant

Code	Article description	Inner diameter [mm]	m/carton
<b>SC-SH-16/E30</b>	spiral hose smooth bore 16	16	30
<b>SC-SH-18/E30</b>	spiral hose smooth bore 18	18	30
<b>SC-SH-20/E30</b>	spiral hose smooth bore 20	20	30

## Tubolit Split & DuoSplit Accessories two-way junction



Code	Article description	Inner diameter [mm]	Pieces/carton
<b>SC-YW-16-18</b>	two-way junction 16 / 18	16 / 18	20

**Remark** Applicable for spiral and corrugated hose.

## Tubolit Split & DuoSplit Accessories corrugated hose



Code	Article description	Inner diameter [mm]	m/carton
<b>SC-CH-1618/E50</b>	corrugated hose 16 / 18	16 / 18	50

**Remark** With connections diameter 16-18 mm at 75 cm range.

## Tubolit Split & DuoSplit Accessories floor support rails



Armaceil floor supports are made of rigid, shockproof PVC, stabilised against UV radiation.

- ▶ Capacity 150 kg each
- ▶ Fixing set is included in the package with four screws, nut and washers respectively
- ▶ End cap can be ordered separately

Code	Article description	Size w x h x l [mm]	Pieces/carton
<b>SOR-350</b>	floor support rails 350	80 x 80 x 350	24
<b>SOR-450</b>	floor support rails 450	80 x 80 x 450	24
<b>SOR-1000</b>	floor support rails 1000	80 x 80 x 1000	4

## Tubolit Split & DuoSplit Accessories end cap & bolt



Code	Article description	Size	Pieces/carton
<b>SOR-10-30 •</b>	bolt	M 10 x 30	48

• Item not in stock. Delivery on request. [MTO]

## Tubolit Split & DuoSplit Accessories adjustable bracket with level



Armaceil wall brackets made of electro-galvanised steel are available in different designs and for various load requirements. The brackets are painted with epoxy resins for outdoor use in RAL 9002. Each set is packed in a carton, including an assembly kit and installation instructions.

Code	Article description	Size w x d [mm]	Pieces/carton
<b>SBAL-800X420</b>	adjustable bracket with level	800 x 420	1 Set

**Remark** Max. load 50 + 50 kg.

## Tubolit Split & DuoSplit Accessories adjustable bracket standard



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SBAS-700X465</b>	adjustable bracket standard	700 x 465	1 Set

**Remark** Max. load 70 + 70 kg

## Tubolit Split & DuoSplit Accessories adjustable bracket with safety hook



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SBAH-800X465</b>	adjustable bracket with safety hook	800 x 465	1 Set

**Remark** Max. load 70 + 70 kg

## Tubolit Split & DuoSplit Accessories heavy duty bracket



Code	Article description	Size w x d [mm]	Pieces/carton
<b>SBHD-550X550</b>	heavy duty bracket	550 x 550	1 Set

**Remark** Max. load 100 + 100 kg

## Tubolit Split & DuoSplit Accessories installation frame



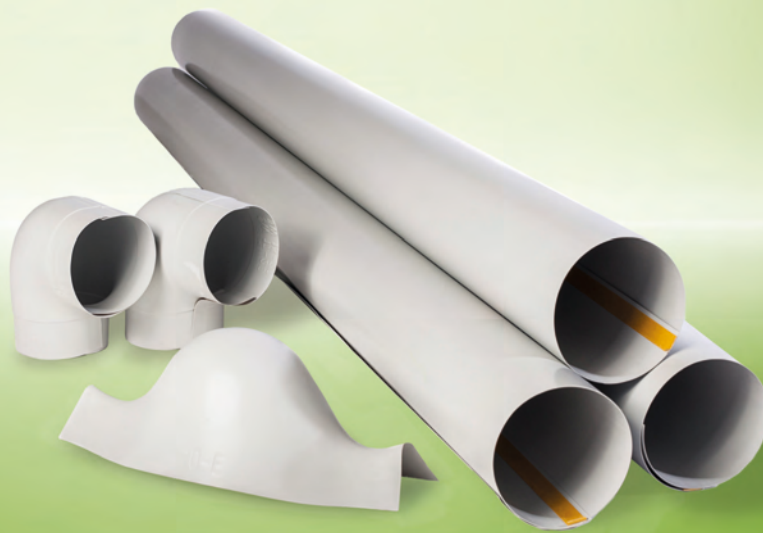
Code	Article description	Size l x w x d [mm]	Pieces/carton
<b>SIC540X85X55</b>	installation frame	540 x 85 x 55	15
<b>SIP540X85</b>	cover	540 x 85	15





OKAPAK

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



- Easy to apply
- High-quality mechanical protection
- Easy to clean



### Okapak 90° two-piece bends

Two piece bends with strengthening welded back for perfect fitting. Overview of different application areas, depending on pipe radius and type:

**Okapak S bends:** Bends for standard application S shaped seamless stell pipe according to EN 10253-1, type 3 (1,5d) with insulation  $\leq 100$ .

**Okapak W bends:** Bends for standard application W shaped angled tempered cast fittings according to EN 10242, A1, A4 with insulation  $\leq 50$  mm.

**Okapak D bends:** Bends for application D shaped short tempered cast fittings according to EN 10242, D1, D4 with insulation  $\leq 50$  mm.

**Okapak SML:** Bends for application of cast iron pipes with insulation  $\leq 40$  mm.

### Okapak 90° one-piece

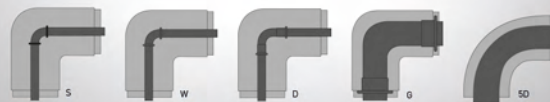
bends Overview of different application areas, depending on pipe radius and type:

**Okapak S bends:** Bends for standard application S shaped seamless stell pipe according to EN 10253-1, type 3 (1,5d) with insulation  $\leq 100$  mm.

**Okapak W bends:** Bends for standard application W shaped angled tempered cast fittings according to EN 10242, A1, A4 with insulation  $\leq 50$  mm.

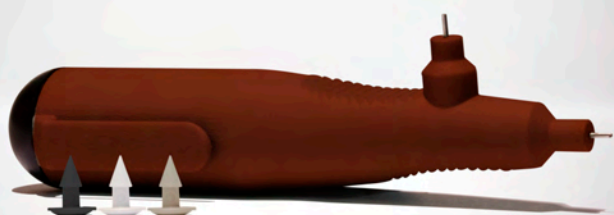
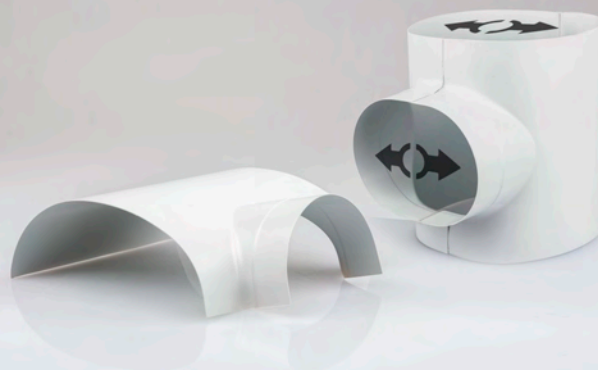
**Okapak D bends:** Bends for application D shaped short tempered cast fittings according to EN 10242, D1, D4 with insulation  $\leq 60$  mm.

**Okapak 5D bends:** Bends for application 5D shaped long insulated tempered cast fittings according to DIN2605-1 with insulation  $\leq 50$  mm.



### OKAPAK FLEXIBLE T-PIECES

Patented solution for cladding branch pipes. With our new Okapak T-pieces, you can cover 100 percent of all common applications with just eight items. A manageable range for more efficient storekeeping.



### RIVET TOOL FOR PVC CLADDINGS

Install PVC rivets straight or at an angle with one single tool. Even in tight spots. New stainless steel tips prevent the rivets from falling off. Grooved surfaces ensure a secure and firm hold. Fits perfectly in your hand.

# OVERVIEW TWO-PIECE (WELDED) ELBOWS

Ø	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm	80 mm	100 mm
15										
17										
21										
27										
33										
38										
42										
44										
48										
57										
60										
64										
70										
76										
83										
89										
102										
108										
114										
127										
133										
140										
159										
168										
194										
219										
267										

S  
 W  
 D  
 G  
 SML  
 45°



# OVERVIEW ONE-PIECE ELBOWS

Ø	20 mm	25 mm	30 mm	35 mm	40 mm	45 mm	50 mm	60 mm	80 mm	100 mm
15		Se	Se	Se	Se		Se			
17	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD		Se, De, Ge, We, SD			
21	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD			
27	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD			
33	Se, De, Ge, We	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD			
38	Se	Se	Se	Se	Se	Se	Se			
42	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se, De		
44	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se, De		
48	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se, De		
57	Se	Se	Se	Se	Se	Se	Se	Se		
60	Se, De, Ge, We, SD	Se, We, SD	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se	Se, De, Ge, We, SD	Se, De		
64	Se	Se	Se	Se	Se	Se	Se	Se		
70	Se	Se	Se	Se	Se	Se	Se	Se	Se	
76	Se, We	Se, We	Se, De, Ge, We	Se	Se, De, Ge, We	Se	Se, De, Ge	Se	Se	
83	Se	Se	Se	Se	Se	Se	Se	Se	Se	
89	Se, We	Se, We	Se, We	Se	Se, We	Se	Se	Se	Se	
102	Se	Se	Se	Se	Se	Se	Se	Se	Se	Se
108	Se	Se	Se	Se	Se	Se	Se	Se	Se	Se
114	Se, We	Se	Se	Se	Se	Se	Se	Se	Se	Se
127		Se	Se	Se	Se	Se	Se	Se	Se	Se
133		Se	Se	Se	Se	Se	Se	Se	Se	Se
140		Se	Se		Se		Se	Se	Se	Se
159		Se	Se		Se					Se
168		Se	Se		Se					Se
194										
219										
267										

 Se
  We
  De
  Ge
  SD

## Technical Data - Okapak

Brief description	Economic coating system according to DIN 4140.
Material type	Shock resistant hard PVC foil with fire protection equipment. Surface: semigloss and smooth
Colour	light grey
Product Range	Rolls, bends, fitting caps, valve caps, flange caps, front caps, cut-outs and complete accessories
Applications	Jacket for insulated pipes (incl. bends, branches, fittings, flanges, o.s.) for protection of damages of mechanical stress.
Special Features	No weakening of insulating thickness of bends.
Manufacturing	Sheeting calender method, extruding; straight vacuum forming. Manufactured without metals cadmium, lead, mercury, chrome and their compound, without use of silicone, unplasticised

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+60 °C	If the object is correctly insulated and no direct contact exists to the jacket, the medium temperature can essentially be higher or lower.
	min. service temperature	-20 °C	
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	μ	approx. 60.000	Tested according to DIN 53122-1
<b>Fire performance</b>			
Reaction to fire	Okapak SE	Low flammability (DIN 4102-B1)	D 5598 D 5599 Tested according to DIN 4102
	Okapak	Moderately flammable (DIN 4102-B2)	
Density	Okapak SE 1,43 ± 0,02 g/cm <sup>3</sup> Okapak 1,39 ± 0,02 g/cm <sup>3</sup>		Tested according to DIN EN ISO 1183
Biological / chemical behaviour	Aging resistance: good. Stability against usual building materials: very good. Against chemicals: see separate list.		
Tensile impact strength	≥ 400 KJ/m <sup>2</sup>		Tested according to DIN EN ISO 8256
Tensile strength	> 35 N/mm <sup>2</sup>		Tested according to DIN EN ISO 527
Health aspects	Physiologically harmless, even when used in food processing plants. Odourless.		

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.



## Okapak bends, 90°, two-pieces (welded)



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	20,0 mm			25,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	PB1720	S,W	440	-	-	-
17	PB1720	S,W	440	PB2720	S,W,D	300
17	PB2120	G	360	-	-	-
21	PB2120	S,W,D,G	360	PB3320	S,W,D,G	240
27	PB2720	S,W,D,G	300	PB2725	S,W,D,G	240
33	PB3320	S,W,D	240	PB3325	S,W,D	220
38	PB2130	S	260	PB4820	S	240
42	PB2130	S,W,D	260	PB3330	S,W,D	220
44	PB2130	S,W,D	260	PB3330	S,W,D	220
48	PB4820	S,W	240	PB4825	S,W,D	180
57	PB6020	S	180	PB6025	S	160
60	PB6020	S,W,G	180	PB6025	S,W,G	160
60	PB6420 ●	D	160	PB6425 ●	D	160
64	PB6420 ●	S	160	PB6425 ●	S	160
70	PB7020 ●	S	140	PB7025 ●	S	120
76	PB7025 ●	S	120	PB4840	W	120
76	-	-	-	PBS7625 ●	S	120
83	PBS8325 ●	S	120	PBS8325 ●	S	120
89	PBS8325 ●	S	120	PB6040	W	80
89	-	-	-	PB8925 ●	S	80
102	PBS10820 ●	S	60	-	-	-
108	PBS10820 ●	S	60	-	-	-
114	PBS10830	S	80	-	-	-

Pipe max. Outside-Ø [mm]	30,0 mm			35,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
17	PB2725	S,D,G	240	-	-	-
17	PBW1730	W	240	-	-	-
21	PB2130	S,D	260	-	-	-
21	PBW2130	W	260	-	-	-
27	PB2730	S,W	260	-	-	-
33	PB3330	S,W	220	PB4830	S	160
38	PB4430	S	160	-	-	-
42	PB4430	S,W,D	160	PB6030	S	160
42	PB6420 ●	G	160	-	-	-
44	PB4430	S,W,D	160	PB6030	S	160
44	PB6420 ●	G	160	-	-	-
48	PB4830	S,W,D	160	PB6030	S	160
57	PB6030	S	160	PB6040	S	80
60	PB6030	S,W	160	PB6040	S	80
60	PB7025 ●	D	120	-	-	-
64	PBS6430 ●	S	140	PBS7035 ●	S	80
70	PBS7630	S	80	PBS7035 ●	S	80
76	PBS7630	S	80	PBS7040 ●	S	80
76	PBW7630	W	100	-	-	-
83	PBS8930	S	80	PBS8935 ●	S	80
89	PBS8930	S	80	PBS8935 ●	S	80
89	PBW8930	W	80	-	-	-
102	PBS10830	S	80	PBS10835	S	40
108	PBS10830	S	80	PBS10835	S	40
114	PBS10835	S	40	PBS11435 ●	S	40
127	PBS13330	S	40	PBS13335	S	40
133	PBS13330	S	40	PBS13335	S	40

## Okapak bends, 90°, two-pieces (welded)



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	40,0 mm			45,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	PB1740 ●	S,W	180	-	-	-
17	PB1740 ●	S,W	180	-	-	-
21	PB2140	S,W	160	-	-	-
27	PB2740	S,W	160	-	-	-
33	PB3340	S,W	160	-	-	-
38	PB6030	S	160	-	-	-
42	PB4240	S,W,D	120	-	-	-
44	PB4240	S,W,D	120	-	-	-
48	PB4840	S,D	120	PB6040	S	80
48	PBW4840	W	120	-	-	-
57	PB6040	S	80	PBW8930	S	80
60	PB6040	S,D	80	PBW8930	S	80
64	PBS7040 ●	S	80	PBS7045 ●	S	40
70	PBS7040 ●	S	80	PBS7045 ●	S	40
76	PB7640	S,W	60	PBS7050 ●	S	60
83	PBS8940	S	40	PBS6060	S	60
89	PBS8940	S	40	PBS6060	S	60
89	PBW8940	W	40	-	-	-
102	PBS10840	S	40	PBS11440	S	40
108	PBS10840	S	40	PBS11445 ●	S	40
114	PBS11440	S	40	PBS11445 ●	S	40
114	PBW11440	W	40	-	-	-
127	PBS13340	S	40	PBS13345 ●	S	40
133	PBS13340	S	40	PBS13345 ●	S	40
140	PBS14040	S	30	PBS14045 ●	S	40
159	PBS15940 ●	S	60	PBS15945 ●	S	60
168	PBS16840	S	60	PBS15950	S	40

Pipe max. Outside-Ø [mm]	50,0 mm			60,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
17	-	-	-	PB7670	S	40
33	PB3350	S,W	80	-	-	-
42	PB4250	S,W	80	-	-	-
44	PB4250	S,W	80	-	-	-
48	PBS4850	S	60	-	-	-
57	PB6050	S	60	PBS6060	S	60
60	PB6050	S,W,D	60	PBS6060	S	60
64	PBS7050 ●	S	60	PBS6460 ●	S	40
70	PBS7050 ●	S	60	PBS7660	S	40
76	PB7650	S,W	40	PBS7660	S	40
83	PB8950	S	40	PBS8960 ▲	S	40
89	PB8950	S,W	40	PBS8960 ▲	S	40
102	PBS10850	S	40	PBS10860 ▲	S	40
108	PBS10850	S	40	PBS10860 ▲	S	40
114	PBS11450	S	40	PBS11460 ▲	S	40
114	PBW11450	W	40	-	-	-
127	PBS13350	S	60	PBS13360 ▲	S	40
133	PBS13350	S	60	PBS13360 ▲	S	40
140	PBS14050	S	60	PBS14060 ▲	S	40
159	PBS15950	S	40	PBS15960 ●	S	40
168	PBS16850	S	40	PBS16860	S	40
194	PBS19450 ●	S	40	PBS19460 ●	S	40
219	PBS21950	S	40	PBS21960	S	40
267	-	-	-	PBS26760 ●	S	40

## Okapak bends, 90°, two-pieces (welded)



Minimum Order Quantity: 1pc

Pipe max. Outside- Ø [mm]	80,0 mm			100,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
17	PB7670	S	40	-	-	-
70	PBS7680	S	40	-	-	-
76	PBS7680	S	40	-	-	-
83	PBS8980 ▲	S	40	-	-	-
89	PBS8980 ▲	S	40	-	-	-
102	PBS10880 ▲	S	40	PBS108100 ▲	S	40
108	PBS10880 ▲	S	40	PBS108100 ▲	S	40
114	PBS11480 ▲	S	40	PBS114100 ▲	S	40
127	PBS13380 ▲	S	40	PBS133100 ▲	S	40
133	PBS13380 ▲	S	40	PBS133100 ▲	S	40
140	PBS14080 ▲	S	40	PBS140100 ▲	S	40
159	PBS15980 ●▲	S	40	PBS159100 ▲	S	40
168	PBS16880 ▲	S	40	PBS168100 ▲	S	40
194	PBS19480 ●▲	S	40	PBS194100 ●▲	S	20
219	PBS21980 ▲	S	20	PBS219100 ▲	S	20
267	PBS26780 ●▲	S	20	PBS267100 ●▲	S	20

▲ Segment-similar form

● Item not in stock. Delivery on request. [MTO]

## Okapak bends 90° SML two-pieces (welded)



Minimum Order Quantity: 1pc

Nominal width DN	20,0 mm		30,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
40	PB4820	240	PB4830	160
50	-	-	PB6030	160
50	PB6020	180	-	-
50	PB6030	160	PBW7630	100
100	PB7640	60	PB7650	40
125	PB8950	40	PBW11440	40
125	PBW11450	40	PBS7680	40

Nominal width DN	40,0 mm			
	Code	Pieces/carton		
40	PBW4840	120	-	-
50	PB6040	80	-	-
70	PB6050	60	-	-
100	PBW11440	40	-	-
125	PBW11450	40	-	-
150	PBS8980 ▲	40	-	-

▲ Segment-similar form

## Okapak bends 45° two-piece (welded)



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	PB452120	400	-	-
27	PB452720	300	PB452725	250
33	PB453320	260	PB453325	200
42	-	-	PB454225	140
44	-	-	PB454225	140
48	-	-	PB454825	180
60	-	-	PB456025	160

## Okapak bends 45° two-piece (welded)



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	30,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
27	PB452730	250	-	-
33	-	-	PB453340	160
42	PB454230	160	-	-
44	PB454230	160	-	-
48	-	-	PB454840	160
60	PB456030	160	PB456040	160
76	PB457630	140	PB457640	120
89	PB458930	140	PB458940	100

Pipe max. Outside-Ø [mm]	50,0 mm			
	Code	Pieces/carton		
60	PB456050	140	-	-
76	PB457650	100	-	-
83	PB8950	40	-	-
89	PB458950	100	-	-
127	PBS13350	60	-	-

## Okapak bends 90° one-piece



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	20,0 mm			25,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	-	-	-	PBS2720E	S	450
17	PBS1720E	S,W,D,G,5D	500	PBS2720E	S,W,5D	450
21	PBS2120E	S,W,D,G,5D	400	PBS2125E	S,W	500
21	-	-	-	PBS3320E	5D	450
27	PBS2720E	S,W,D,G,5D	450	PBS2725E	S,W	400
33	PBS2125E	W	500	PBS2730E	S,W	300
33	PBS3320E	S,D,G	450	-	-	-
38	PBS2725E	S	400	PBS2730E	S	300
42	PBS2730E	W	300	PBS1740E ●	W	300
42	PBS4220E	S,D,G	500	PBS3330E	S	300
42	-	-	-	PBS6020E	5D	200
44	PBS2730E	S,W	300	PBS1740E ●	W	300
44	PBS4220E	D,G	500	PBS3330E	S	300
44	-	-	-	PBS6020E	5D	200
48	PBS2730E	W	300	PBS2140E ●	W	300
48	PBS4820E ●	S,D	300	PBS4230E	S	400
57	PBS6020E	S	200	PBS4830E	S	300
60	PBS2140E ●	W	300	PBS3340E	W	200
60	PBS6020E	S,D	200	PBS4830E	S	300
64	PBS4830E	S	300	PBS6030E	S	300
70	PBS7020E ●	S	300	PBS6030E	S	300
76	PBS1750E ●	W	200	PBS2750E ●	W	200
76	PBS6030E	S	300	PBS7625E ●	S	200
83	PBS7625E ●	S	200	PBS8920E	S	180
89	PBS3350E	W	180	PBS4250E	W	100
89	PBS8920E	S	180	PBS8925E ●	S	180
102	PBS10220E ●	S	100	PBS11420E ●	S	100
108	PBS10220E ●	S	100	PBS11420E ●	S	100
114	PBS11420E ●	S	100	PBS10230E ●	S	100
114	PBW6050E ●	W	100	-	-	-
133	-	-	-	PBS14025E ●	S	100
140	-	-	-	PBS14025E ●	S	100
159	-	-	-	PBS15925E ●	S	50
168	-	-	-	PBS16825E ●	S	50

## Okapak bends 90° one-piece



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	30,0 mm			35,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	PBS2725E	S	400	PBS2730E	S	300
17	PBS2725E	S,W,D,G,5D	400	PBS2730E	S	300
21	PBS2130E	S,W,D,G	300	PBS1740E ●	S	300
21	PBS4220E	5D	500	-	-	-
27	PBS2730E	S,W,D,G,5D	300	PBS1740E ●	S	300
33	PBS1740E ●	W	300	PBS2740E ●	S	200
33	PBS3330E	S,D,G	300	-	-	-
33	PBS6020E	5D	200	-	-	-
38	PBS4230E	S	400	PBS3340E	S	200
42	PBS4230E	S,D,G	400	PBS3340E	S	200
42	PBS4830E	5D	300	-	-	-
44	PBS2740E ●	S	200	PBS3340E	S	200
44	PBS4230E	D,G	400	-	-	-
44	PBS4830E	5D	300	-	-	-
48	PBS2740E ●	W	200	PBS6030E	S	300
48	PBS4830E	S,G	300	-	-	-
57	PBS6030E	S	300	PBS4840E	S	200
60	PBS2150E	W	200	PBS7630E	S	180
60	PBS6030E	S,D,G	300	-	-	-
64	PBS4840E	S	200	PBS7630E	S	180
70	PBS7630E	S	180	PBS6040E	S	180
76	PBS10220E ●	G	100	PBS8930E	S	180
76	PBS3350E	W	180	-	-	-
76	PBS7630E	S	180	-	-	-
83	PBS8925E ●	S	180	PBS7640E	S	100
89	PBS4850E	W	100	PBS7640E	S	100
89	PBS8930E	S	180	-	-	-
102	PBS10230E ●	S	100	PBS11430E	S	100
108	PBS10230E ●	S	100	PBS11430E	S	100
114	PBS11430E	S	100	PBS10240E ●	S	100
133	PBS14025E ●	S	100	PBS14030E	S	50
140	PBS14030E	S	50	-	-	-
159	PBS16825E ●	S	50	-	-	-
168	PBS16830E	S	50	-	-	-



## Okapak bends 90° one-piece



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	40,0 mm			45,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	PBS1740E ●	S	300	-	-	-
17	PBS1740E ●	S,W,D,G,5D	300	-	-	-
21	PBS2140E ●	S,W,D,G,5D	300	PBS1750E ●	S	200
27	PBS2740E ●	S,W,D,G	200	PBS1750E ●	S	200
27	PBS4830E	5D	300	-	-	-
33	PBS1750E ●	W	200	PBS2750E ●	S	200
33	PBS3340E	S,D,G	200	-	-	-
33	PBS7020E ●	5D	300	-	-	-
38	PBS1750E ●	S	200	PBS3350E	S	180
42	PBS2150E	S,W,D	200	PBS3350E	S	180
42	PBS6030E	G	300	-	-	-
42	PBS7625E ●	5D	200	-	-	-
44	PBS2150E	W,D	200	PBS3350E	S	180
44	PBS2750E ●	S	200	-	-	-
44	PBS6030E	G	300	-	-	-
44	PBS7625E ●	5D	200	-	-	-
48	PBS2750E ●	W	200	PBS4250E	S	100
48	PBS4840E	S,D,G	200	-	-	-
48	PBS8920E	5D	180	-	-	-
57	PBS6040E	S	180	PBS4850E	S	100
60	PBS10220E ●	5D	100	PBS7640E	S	100
60	PBS6040E	S,D,G	180	-	-	-
60	PBW6040E ●	W	180	-	-	-
64	PBS4850E	S	100	PBS7640E	S	100
70	PBS7640E	S	100	PBS6050E	S	100
76	PBS11420E ●	G	100	PBS4860E ●	S	100
76	PBS4260E ●	W	100	-	-	-
76	PBS7640E	S	100	-	-	-
83	PBS8940E	S	100	PBS7650E	S	100
89	PBS4860E ●	W	100	PBS8950E	S	100
89	PBS8940E	S	100	-	-	-
102	PBS10240E ●	S	100	PBS11440E	S	100
108	PBS11440E	S	100	PBS11440E	S	100
114	PBS11440E	S	100	PBS10250E ●	S	50
133	PBS11450E	S	50	PBS14040E	S	50
140	PBS14040E	S	50	-	-	-
159	PBS15940E ●	S	50	-	-	-
168	PBS16840E ●	S	25	-	-	-

# Okapak bends 90° one-piece



Minimum Order Quantity: 1pc

Pipe max. Outside-Ø [mm]	50,0 mm			60,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
15	PBS1750E ●	S	200	-	-	-
17	PBS1750E ●	S,W,D,G,5D	200	-	-	-
21	PBS2150E	S,W,D,G,5D	200	-	-	-
27	PBS2750E ●	S,W,D,G,5D	200	-	-	-
33	PBS3350E	S,W,D,G	180	-	-	-
33	PBS7630E	5D	180	-	-	-
38	PBS4250E	S	100	-	-	-
42	PBS4250E	S,D,G	100	PBS4260E ●	S,D	100
42	PBS4850E	5D	100	-	-	-
42	PBW4250E ●	W	100	-	-	-
44	PBS4250E	D,G	100	PBS4260E ●	D	100
44	PBS4850E	S,5D	100	PBS4860E ●	S	100
44	PBW4250E ●	W	100	-	-	-
48	PBS4850E	S,D	100	PBS4860E ●	S,D	100
48	PBS7640E	G	100	-	-	-
48	PBS8930E	5D	180	-	-	-
48	PBW4850E ●	W	100	-	-	-
57	PBS6050E	S	100	PBS7650E	S	100
60	PBS6050E	S,D,G	100	PBS6060E ●	S,D	100
60	PBS8940E	5D	100	-	-	-
60	PBW6050E ●	W	100	-	-	-
64	PBS4860E ●	S	100	PBS6060E ●	S	100
70	PBS7650E	S	100	PBS7660E	S	100
76	PBS11430E	G	100	PBS7660E	S	100
76	PBS7650E	S	100	-	-	-
83	PBS8950E	S	100	PBS8960E ●	S	100
89	PBS8950E	S	100	PBS8960E ●	S	100
102	PBS10250E ●	S	50	PBS10260E ●	S	50
108	PBS10250E ●	S	50	PBS10260E ●	S	50
114	PBS11450E	S	50	PBS11460E ●	S	50
133	PBS14050E ●	S	25	PBS14060E ●	S	25
140	PBS14050E ●	S	25	PBS14060E ●	S	25

Pipe max. Outside-Ø [mm]	80,0 mm			100,0 mm		
	Code	Application angle type	Pieces/carton	Code	Application angle type	Pieces/carton
70	PBS7670E ●	S	100	-	-	-
76	PBS7670E ●	S	100	-	-	-
83	PBS8980E ●	S	60	-	-	-
89	PBS8980E ●	S	60	-	-	-
102	PBS10280E ●	S	50	PBS102100E ●	S	30
108	PBS10280E ●	S	50	PBS114100E ●	S	30
114	PBS11480E ●	S	50	PBS114100E ●	S	30
133	PBS14080E ●	S	25	PBS140100E ●	S	25
140	PBS14080E ●	S	25	PBS140100E ●	S	25
168	-	-	-	PBS168100E ●	S	50

● Item not in stock. Delivery on request. [MTO]

## Okapak branches



Minimum Order Quantity: 1pc

20,0 mm insulation thickness			
Pipe diameter main section [mm]	Pipe diameter Junction [mm]	Code	Pcs./collar
27	21	PBA2721 ●	10
33	21	PBA3321 ●	10
33	27	PBA3327 ●	10
33	33	PBA3333 ●	10
42	21	PBA4221 ●	10
42	27	PBA4227 ●	10
42	33	PBA4233 ●	10
48	27	PBA4827 ●	10
48	33	PBA4833 ●	10
48	42	PBA4842 ●	10
60	27	PBA6027 ●	10
60	33	PBA6033 ●	10
60	42	PBA6042 ●	10
60	48	PBA6048 ●	10

● Item not in stock. Delivery on request. [MTO]

## Okapak flexible branches



Pipe diameter main section [mm]	Pipe diameter Junction [mm]	Code	Pcs./collar
100-156	100-108	PBT 105	10
116-182	116-128	PBT 125	10
136-194	136-149	PBT 145 ●	10
156-218	156-169	PBT 160 ●	10
57-100	57-67	PBT 65	10
74-108	74	PBT 75	10
83-120	83-88	PBT 85	10
94-140	94	PBT 95	10

● Item not in stock. Delivery on request. [MTO]

## Okapak valve caps



type: for straight line valves and inclined seat valves, without insulation layer, with integrated pressure closure

Minimum Order Quantity: 1pc

Diameter [mm]	Length [mm]	Without insulation layer	
		Code	Pieces/carton
90	190	PVK1 ●	25
120	255	PVK2 ●	25
155	323	PVK3 ●	25

● Item not in stock. Delivery on request. [MTO]

## Okapak flange caps



type: without insulation, with integrated pressure closure  
Minimum Order Quantity: 1pc

Diameter [mm]	Length [mm]	Without insulation layer	
		Code	Pieces/carton
150	145	<b>PFK15 ●</b>	25
160	150	<b>PFK20 ●</b>	25
180	150	<b>PFK25 ●</b>	25
190	155	<b>PFK32 ●</b>	25
200	155	<b>PFK40 ●</b>	25
220	155	<b>PFK50 ●</b>	25
250	165	<b>PFK65 ●</b>	25
270	170	<b>PFK80</b>	25
300	170	<b>PFK100 ●</b>	25
345	170	<b>PFK125 ●</b>	25

● Item not in stock. Delivery on request. [MTO]

## Okapak rosette endcapping



Length 5,0 m, material: aluminium AL99,5, surface smoothly  
Minimum Order Quantity: 1pc

Light-grey with 2 fixing grooves			
Lamella length [mm]	Insulation thickness [mm]	Code	Rolls/carton
18	20,0	<b>PEMBG18B</b>	10
28	30,0	<b>PEMBG28B</b>	10
38	40,0	<b>PEMBG38B</b>	10
48	50,0	<b>PEMBG48B</b>	10
58	60,0	<b>PEMBG58B</b>	10

## Okapak rivets



Color white or grey, type: rivets

Code	Article description	Pieces/bag	Pieces/carton
<b>PMN W</b>	rivet, white	1000	50000
<b>PMNG</b>	rivet, grey	1000	50000

## Okapak riveting tools



type: riveting tools

Code	Article description	Pieces/bag	Pieces/carton
<b>PMNWDUAL</b>	Combi - Straight & Angle	10	400
<b>PMNWG</b>	riveting tool, straight	15	450
<b>PMNWW</b>	riveting tool, angular	15	450

## Okapak foils



material: Okapak SE foil

Code	Thickness of material [mm]	Roll width [mm]	m <sup>2</sup> /pallet	Rolls/pallet
<b>PF251 B2</b>	0.35	1000	1250	50
<b>PFSE251 B1</b>	0.35	1000	1250	50

## Okapak foils cut-outs



Width 1.000,0 mm, material: PVC-foil cut-outs SE DIN 4102-B1 available with 20% surcharge. Material thickness: 0.35 MM

PZA - with strong latch effect					PZB - with self-seal cap and strong latch effect				
max. total outer diameter with 30 mm overlapping	Cut-out length	Code	Pcs./collar	Pieces/carton	max. total outer diameter with 30 mm overlapping	Cut-out length	Code	Pcs./collar	Pieces/carton
60	220	<b>PZA22</b>	10	400	60	220	<b>PZB22</b>	10	400
65	240	<b>PZA24</b>	10	400	65	240	<b>PZB24</b>	10	400
70	260	<b>PZA26</b>	10	400	70	260	<b>PZB26</b>	10	400
82	290	<b>PZA29</b>	10	400	82	290	<b>PZB29</b>	10	400
89	310	<b>PZA31</b>	5	200	89	310	<b>PZB31</b>	5	200
95	330	<b>PZA33</b>	5	200	95	330	<b>PZB33</b>	5	200
100	350	<b>PZA35</b>	5	200	100	350	<b>PZB35</b>	5	200
105	360	<b>PZA36</b>	5	200	105	360	<b>PZB36 ●</b>	5	200
-	-	-	-	-	110	380	<b>PZB38 ●</b>	5	1
124	420	<b>PZA42 ●</b>	5	1	124	420	<b>PZB42 ●</b>	5	1
-	-	-	-	-	130	440	<b>PZB44 ●</b>	5	1
-	-	-	-	-	136	460	<b>PZB46 ●</b>	5	1
150	500	<b>PZA50 ●</b>	5	1	-	-	-	-	-
165	550	<b>PZA55 ●</b>	5	1	165	550	<b>PZB55 ●</b>	5	1
-	-	-	-	-	180	600	<b>PZB60 ●</b>	5	1
-	-	-	-	-	195	650	<b>PZB65 ●</b>	5	1
229	750	<b>PZA75 ●</b>	5	1	-	-	-	-	-
-	-	-	-	-	308	1000	<b>PZB100 ●</b>	5	1
60	220	<b>PZA22</b>	10	400	-	-	-	-	-

**Remark** The specified dimensions are available in packaging units. Delivery ex stock 1-2 workdays from receipt of order. Other cuts-outs and packing units on request.

- Item not in stock. Delivery on request. [MTO]

## Okapak tapes self-adhesive



Length 25,0 m, Color light grey, type: plastic tape

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>PSKB19 ●</b>	19,0	25	0,35	32
<b>PSKB25 ●</b>	25,0	25	0,35	24
<b>PSKB30 ●</b>	30,0	25	0,35	20

- Item not in stock. Delivery on request. [MTO]

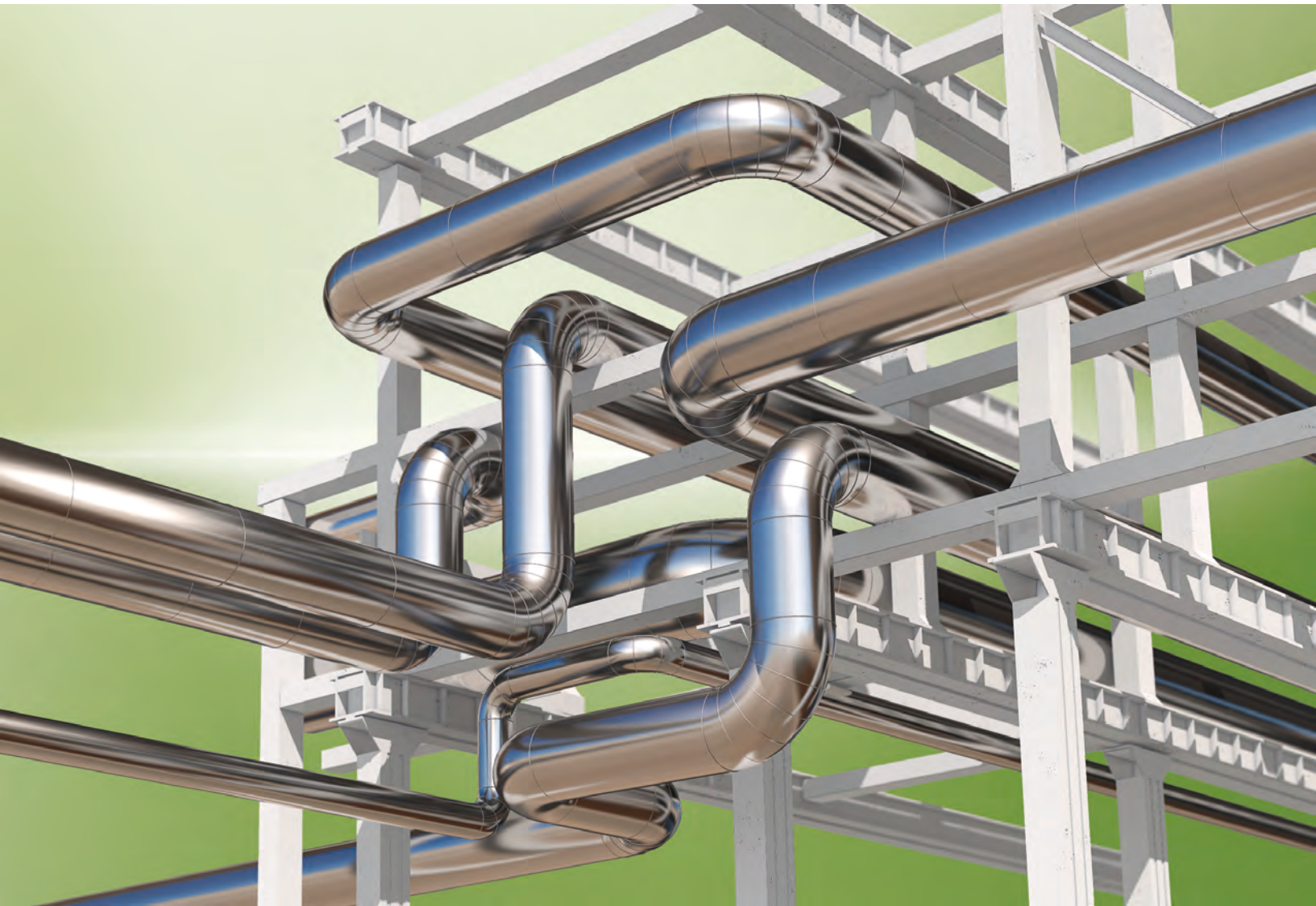






OKABELL

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



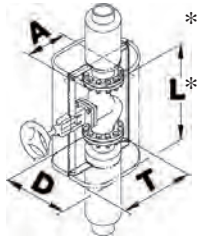
- High quality
- High-quality customized fitting covers
- Protection against UV rays, mechanical impact

Answer by fax +49 (0) 251 / 7603 - 267 (Armacell Customer-Service-Center)

company: \_\_\_\_\_  
 wholesaler: \_\_\_\_\_  
 Kom / code: \_\_\_\_\_

order  enquiry

delivery address: \_\_\_\_\_  
 \_\_\_\_\_  
 delivery time: \_\_\_\_\_



BV: \_\_\_\_\_

- galvanized steel organment   
  alu, sea-water resistant   
  alu, sea-water resistant + protective varnish sealing=M   
  alu zinc 185   
  V2A   
  \_\_\_\_\_  
 corrugation   
  adhesion   
  mat. thickness DIN   
  blunted   
  \_\_\_\_\_

position no.:	pc.	design (form)	diameter D	depth / $T = A + D/2$	or overhang A	overall length L	other

Note: Overall length L=eff. length: between cover and cover / outside length + ca. 12 mm

Answer by fax +49 (0) 251 / 7603 - 267 (Armacell Customer-Service-Center)

Company: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 For the accuracy of the dimensions / signature: \_\_\_\_\_

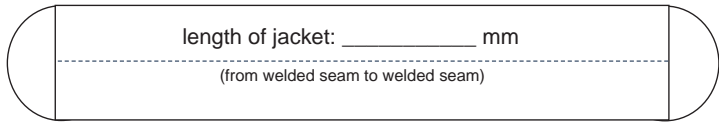
order  enquiry


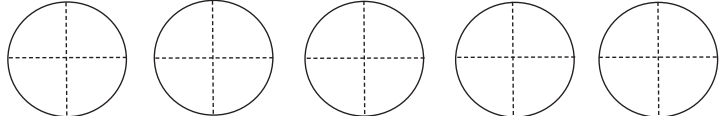
delivery address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 delivery time: \_\_\_\_\_

<b>Vessel position:</b>	<b>Type of metal:</b>	<b>mat. thickness:</b>
<input type="checkbox"/> standing <input type="checkbox"/> lying	<input type="checkbox"/> galvanized steel protective varnish sealing <input type="checkbox"/> alu, see-water resistant <input type="checkbox"/> _____	in mm: _____


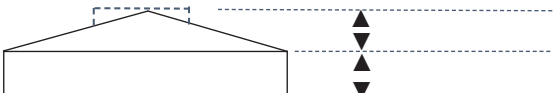
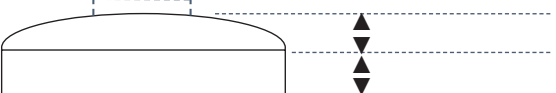
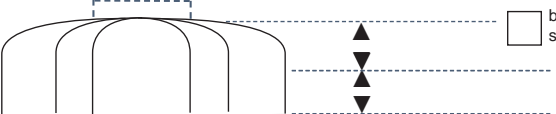
<b>Vessel-Ø (without insulation):</b>	<b>Insulation thickness:</b>	<b>totally-Ø:</b>	<b>quantity:</b>
_____ mm	_____ mm	_____ mm	_____ pc.

**Vessel jacket:**

above / left ►  length of jacket: \_\_\_\_\_ mm  
 (from welded seam to welded seam)

**Position of longitudinal seam:**  
 Example  

<b>Overlap of round seam:</b>	<b>Overlap of longitudinal seam:</b>
<input type="checkbox"/> standard <input type="checkbox"/> special dimension _____ mm	<input type="checkbox"/> standard <input type="checkbox"/> special dimension _____ mm

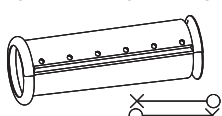
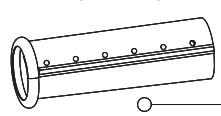
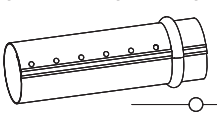
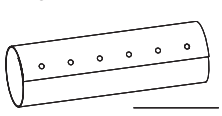
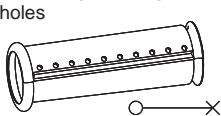
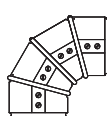
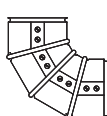

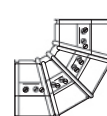
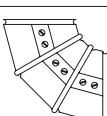
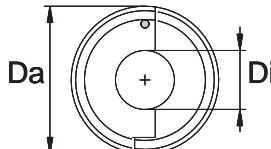
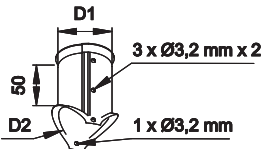
<b>Vessel heads:</b>			
Construction	Shape of head: all measurements in mm 1) incl. insulation: flat, funnel-shaped, calotte-shaped 2) excl. insulation: zeppelin-shaped	quantity per vessel	division segment
<input type="checkbox"/> overlapping standard <input type="checkbox"/> overlapping _____ mm	<b>flat surface</b> D / manhole: _____  <input type="checkbox"/> looser cover <input type="checkbox"/> impact cap		<input type="checkbox"/> standard
<input type="checkbox"/> overlapping standard <input type="checkbox"/> overlapping _____ mm	<b>funnel-shaped</b> D / manhole: _____ 		<input type="checkbox"/> standard
<input type="checkbox"/> overlapping standard <input type="checkbox"/> overlapping _____ mm	<b>calotte-shaped</b> D / manhole: _____ <input type="checkbox"/> D = standard 		<input type="checkbox"/> standard
corrugation on corrugation	<b>zeppelin-shaped</b> D / manhole: _____ <input type="checkbox"/> D=standard <input type="checkbox"/> torospherical <input type="checkbox"/> basket-shaped 		<input type="checkbox"/> standard



# Okabell Sheet metal jacket

Pipe- outer-Ø in mm	insulation thickness in mm							
	20	30	40	50	60	80	100	120
jacket- Ø in mm								
17	80	90	110	130	150	190	230	270
21	80	90	110	130	150	190	230	270
27	80	100	120	140	160	200	240	280
34	80	100	120	140	160	200	240	280
42	90	110	130	150	170	210	250	290
48	100	120	140	160	180	220	260	300
57/60	110	130	150	170	190	230	270	310
64	110	130	150	170	190	230	270	310
70	120	140	160	180	200	240	280	320
76	130	150	170	190	210	250	290	330
89	140	160	180	200	220	260	300	340
108	160	180	200	220	240	280	320	360
114	160	180	200	220	240	280	320	360
127	180	200	220	240	260	300	340	380
133	180	200	220	240	260	300	340	380
140	190	210	230	250	270	310	350	390
159	210	230	250	270	290	330	370	410
168	220	240	260	280	300	340	380	420
178	230	250	270	290	310	350	390	430
194	240	260	280	300	320	360	400	440
219	270	290	310	330	350	390	430	470
245	300	320	340	360	380	420	460	500
267	320	340	360	380	400	440	480	520
273	320	340	360	380	400	440	480	520
318	370	390	410	430	450	490	530	570
324	370	390	410	430	450	490	530	570
356	410	430	450	470	490	530	570	600
368	420	440	460	480	500	540	580	620

## Okabell - technical explanations

Sheet-metal jacket				
<p>PNLR standard pos.-neg. corrugation, left/ right increasing or falling</p> 	<p>PGR special pos. corrugation, right increasing or falling</p> 	<p>GP50R special corrugation 50 mm shifted, right increasing or falling</p> 	<p>GR special smooth, right increasing or falling</p> 	<p>PNR10 special pos.-neg. corrugation, right increasing or falling 10 holes</p> 
Sheet-metal blend				
(A) E1	(D) E4	(B) E2	(C) E3	Other dimenions, constructions and special materials on request.
				Economy bend 
Front slices			Sheet-metal connection piece	
				

This information refers to the following material types (standard qualities):

L = galvanized steel sheet + protective varnish sealing  
Z = aluminium zinc 185

S = aluminium sea-water resistant ALMg2Mn0,8  
M = aluminium sea-water resistant anodizing





## Technical Data - Okabell [parent]

Brief description	Jacket-system for the professional. Smooth surface, suitable for outside application.
Material type	Aluminium saltwater-proof, with / without Eloxal. Aluzinc 185 with protective varnish sealing. Hot-dip galvanized steel sheets, zinc coat on both sides 275 g/m <sup>2</sup> , with protective varnish sealing.
Material Special Information	Quality: EN AW 5049 (Al Mg 2 Mn 0,8). Quality: DX51D + Aluzinc 185. Quality: DX51D + Z275-MA + SLV
Product Range	Pipes, segment bends, flange and fitting caps, trunk caps, connection pieces, front slices
Applications	Jacket for insulated pipes (incl. bends, fittings, flanges, etc.) to protect against mechanical stress. Particularly suitable for outdoor applications.
Manufacturing	Industrial series production.
Remarks	Bends and pipes with double-sided corrugations.

Property	Value/Assessment	Special Remark
Temperature Range		
Temperature Range	max. service temperature min. service temperature	+ 250 °C (Aluminium, Aluzinc) + 320 °C (Hot dip) -196 °C
Water vapour diffusion resistance		
Water vapour diffusion resistance	Virtually vapour-tight	VDI 2055
Fire performance		
Reaction to fire	Non combustible	A1 DIN 4102
Tolerances	Thickness: According to DIN EN 485-4 (Aluminium) According to DIN EN 10143 (Aluzinc, Hot dip)	
Material thickness	0,5 mm - 1,0 mm (Aluminium, Aluzinc) 0,4 mm - 1,0 mm (Hot dip)	
Biological / chemical behaviour	Very good resistance to sea-water, salty air and in industrial environments. (Aluminium) Very good resistance in usual applications and in industrial environments (Aluzinc). Very good resistance in usual applications (Hot dip)	
Mass per unit area	1350 - 2700 g/m <sup>2</sup> (Aluminium) 3925 - 7850 g/m <sup>2</sup> (Aluzinc) 3140 - 7850 g/m <sup>2</sup> (Hot dip)	
Structure	Smooth	

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

# Okabell [parent] jacketing - galvanised steel



with protective varnish sealing

Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Jacket		Bend	
			Code	Pcs./package	Code	Pcs./package
70	0.5	55	BRL7004	270	BBL7005	24
80	0.5	60	BRL8004	288	BBL8005	30
90	0.5	65	BRL9004	280	BBL9005	24
100	0.5	75	BRL10004	240	BBL10005	24
110	0.5	80	BRL11005	210	BBL11005	24
120	0.5	85	BRL12005	180	BBL12005	24
130	0.6	85	BRL13005	150	BBL13006	20
140	0.6	95	BRL14005	125	BBL14006	20
150	0.6	100	BRL15005	125	BBL15006	20
160	0.6	105	BRL16006	100	BBL16006	16
170	0.6	110	BRL17006	100	BBL17006	24
180	0.6	115	BRL18006	80	BBL18006	17
190	0.6	120	BRL19006	80	BBL19006	14
200	0.6	125	BRL20006	60	BBL20006	12
210	0.6	130	BRL21006	60	BBL21006	16
220	0.6	135	BRL22006	60	BBL22006	14
230	0.6	140	BRL23006	75	BBL23006	13
240	0.6	145	BRL24006	70	BBL24006	12
250	0.6	155	BRL25006	65	BBL25006	12
260	0.7	160	BRL26007	60	BBL26007	12
270	0.7	170	BRL27007	55	BBL27007	11
280	0.7	175	BRL28007	55	BBL28007	10
290	0.7	180	BRL29007	40	BBL29007	10
300	0.7	185	BRL30007	40	BBL30007	9
310	0.7	190	BRL31007	40	BBL31007	8
320	0.7	190	BRL32007	35	BBL32007	8
330	0.7	195	BRL33007	35	BBL33007	7
340	0.7	200	BRL34007	30	BBL34007	6
350	0.7	210	BRL35007	30	BBL35007	6
360	0.7	215	BRL36007	30	BBL36007	6
370	0.7	230	BRL37007	30	BBL37007	5
380	0.7	270	BRL38007	30	BBL38007	5
390	0.7	270	BRL39007	30	BBL39007 •	-
400	0.7	300	BRL40007	25	BBL40007 •	-
410	0.7	305	BRL41007	25	BBL41007 •	-
420	0.7	305	BRL42007	20	BBL42007 •	-
430	0.7	310	BRL43007	20	BBL43007 •	-
440	0.7	320	BRL44007 •	15	BBL44007 •	-
450	0.7	330	BRL45007 •	15	BBL45007 •	-
460	0.7	340	BRL46007 •	15	BBL46007 •	-
470	0.7	360	BRL47007 •	15	BBL47007 •	-
480	0.7	380	BRL48007 •	15	BBL48007 •	-

# Okabell [parent] jacketing - galvanised steel



with protective varnish sealing

Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Front slice		Nozzle	
			Code	Pcs./package	Code	Pcs./package
70	0.5	-	BEL7005	120	BSL7070	18
80	0.5	-	BEL8005	120	BSL8080	24
90	0.5	-	BEL9005	120	BSL9090	30
100	0.5	-	BEL10005	120	BSL100100	24
110	0.5	-	BEL11005	100	BSL110110	21
120	0.5	-	BEL12005	100	BSL120120	21
130	0.6	-	BEL13006	60	BSL130130	15
140	0.6	-	BEL14006	60	BSL140140	15
150	0.6	-	BEL15006	60	BSL150150	21
160	0.6	-	BEL16006	60	BSL160160	15
170	0.6	-	BEL17006	50	BSL170170	15
180	0.6	-	BEL18006	50	BSL180180	15
190	0.6	-	BEL19006	50	BSL190190	15
200	0.6	-	BEL20006	60	BSL200200	15
210	0.6	-	BEL21006	60	BSL210210	15
220	0.6	-	BEL22006	60	BSL220220	15
230	0.6	-	BEL23006	50	BSL230230	15
240	0.6	-	BEL24006	50	BSL240240 ●	15
250	0.6	-	BEL25006	40	BSL250250	15
260	0.7	-	BEL26007	40	BSL260260 ●	9
270	0.7	-	BEL27007	40	BSL270270 ●	9
280	0.7	-	BEL28007	40	BSL280280 ●	9
290	0.7	-	BEL29007	30	BSL290290 ●	9
300	0.7	-	BEL30007	30	BSL300300 ●	9
310	0.7	-	BEL31007	30	BSL310310 ●	-
320	0.7	-	BEL32007	30	BSL320320 ●	-
330	0.7	-	BEL33007	30	BSL330330 ●	-
340	0.7	-	BEL34007	30	BSL340340 ●	-
350	0.7	-	BEL35007	30	BSL350350 ●	-
360	0.7	-	BEL36007	30	BSL360360 ●	-
370	0.7	-	BEL37007	-	BSL370370 ●	-
380	0.7	-	BEL38007	-	BSL380380 ●	-
390	0.7	-	BEL39007 ●	-	BSL390390 ●	-
400	0.7	-	BEL40007 ●	-	BSL400400 ●	-
410	0.7	-	BEL41007 ●	-	BSL410410 ●	-
420	0.7	-	BEL42007 ●	-	BSL420420 ●	-
430	0.7	-	BEL43007 ●	-	BSL430430 ●	-
440	0.7	-	BEL44007 ●	-	BSL440440 ●	-
450	0.7	-	BEL45007 ●	-	BSL450450 ●	-
460	0.7	-	BEL46007 ●	-	BSL460460 ●	-
470	0.7	-	BEL47007 ●	-	BSL470470 ●	-
480	0.7	-	BEL48007 ●	-	BSL480480 ●	-

## Remark

If not ordered differently we will supply above mentioned standard version. Other dimensions, types, materials and packaging units on request.

Metal thickness according to DIN4140 for Okabell systems with mechanical impact can be delivered on request.

## Insulation Thickness

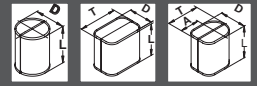
The material thickness may deviate.

## Technical properties

Jacket length 1000 mm

● Item not in stock. Delivery on request. [MTO]

# Okabell Caps galvanized steel with protective varnish sealing



Complete with holding and release handle closure without insulation layers

Reference dimension <sup>(1)</sup> D + T cm	Flange caps				Trunk caps				Fitting caps			
	Code BFL-D.-L.. reference dim. = 2 x D				Code BKL-(D+T)..L.. reference dim. = D + T				Code BAL-(D+T)..L.. reference dim. = D + T			
	length L up to ...				length L up to ...				length L up to ...			
	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm
28												
30	x	x	x	x								
32	x	x	x	x	x	x	x	x				
34	x	x	x	x					x	x	x	x
35					x	x	x	x				
36	x	x	x	x								
38					x	x	x	x	x	x	x	x
40	x	x	x	x								
41					x	x	x	x	x	x	x	x
42	x	x	x	x								
43									x	x	x	x
44	x	x	x	x	x	x	x	x				
46	x	x	x	x					x	x	x	x
47					x	x	x	x				
48	x	x	x	x					x	x	x	x
50	x	x	x	x	x	x	x	x	x	x	x	x
52									x	x	x	x
54	x	x	x	x	x	x	x	x	x	x	x	x
57									x	x	x	x
58	x	x	x	x	x	x	x	x				
60	x	x	x	x					x	x	x	x
62					x	x	x	x				
64	x	x	x	x					x	x	x	x
66					x	x	x	x				
68									x	x	x	x
70	x	x	x	x	x	x	x	x				
72	x	x	x	x					x	x	x	x
75					x	x	x	x				
76									x	x	x	x
80	x	x	x	x	x	x	x	x	x	x	x	x
82	x	x	x	x								
84	x	x	x	x								
85					x	x	x	x	x	x	x	x
90	x	x	x	x	x	x	x	x	x	x	x	x
94	x	x	x	x								
95					x	x	x	x	x	x	x	x
96	x	x	x	x								
100	x	x	x	x								
102									x	x	x	x
106					x	x	x	x				

<sup>(1)</sup> Reference dimension (= D + T): In the case of intermediate sizes the next larger reference dimension is consulted when calculating the selling price.



# Okabell [parent] jacketing - aluminium seawater-resistant



Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Jacket		Bend	
			Code	Pcs./package	Code	Pcs./package
70	0.5	55	<b>BRS7005</b>	48	<b>BBS7005</b>	24
80	0.5	60	<b>BRS8005</b>	64	<b>BBS8005</b>	30
90	0.5	65	<b>BRS9005</b>	60	<b>BBS9005</b>	24
100	0.5	75	<b>BRS10005</b>	45	<b>BBS10005</b>	24
110	0.5	80	<b>BRS11005</b>	45	<b>BBS11005</b>	24
120	0.5	85	<b>BRS12005</b>	30	<b>BBS12005</b>	24
130	0.6	85	<b>BRS13006</b>	25	<b>BBS13006</b>	20
140	0.6	95	<b>BRS14006</b>	25	<b>BBS14006</b>	20
150	0.6	100	<b>BRS15006</b>	25	<b>BBS15006</b>	20
160	0.6	105	<b>BRS16006</b>	20	<b>BBS16006</b>	16
170	0.6	110	<b>BRS17006</b>	20	<b>BBS17006</b>	24
180	0.6	115	<b>BRS18006</b>	20	<b>BBS18006</b>	17
190	0.6	120	<b>BRS19006</b>	20	<b>BBS19006</b>	14
200	0.6	125	<b>BRS20006</b>	20	<b>BBS20006</b>	12
210	0.6	130	<b>BRS21006</b>	20	<b>BBS21006</b>	16
220	0.6	135	<b>BRS22006</b>	15	<b>BBS22006</b>	14
230	0.6	140	<b>BRS23006</b>	15	<b>BBS23006</b>	13
240	0.6	145	<b>BRS24006</b>	15	<b>BBS24006</b>	12
250	0.6	155	<b>BRS25006</b>	110	<b>BBS25006</b>	12
260	0.8	160	<b>BRS26008</b>	110	<b>BBS26008</b>	12
270	0.8	170	<b>BRS27008</b>	80	<b>BBS27008</b>	11
280	0.8	175	<b>BRS28008</b>	80	<b>BBS28008</b>	10
290	0.8	180	<b>BRS29008</b>	80	<b>BBS29008</b>	10
300	0.8	185	<b>BRS30008</b>	80	<b>BBS30008</b>	9
310	0.8	190	<b>BRS31008</b>	60	<b>BBS31008</b>	8
320	0.8	190	<b>BRS32008</b>	60	<b>BBS32008</b>	8
330	0.8	195	<b>BRS33008 •</b>	60	<b>BBS33008 •</b>	7
340	0.8	200	<b>BRS34008 •</b>	60	<b>BBS34008 •</b>	6
350	0.8	210	<b>BRS35008 •</b>	60	<b>BBS35008 •</b>	6
360	0.8	215	<b>BRS36008 •</b>	60	<b>BBS36008 •</b>	6
370	0.8	230	<b>BRS37008 •</b>	60	-	-
380	0.8	270	<b>BRS38008 •</b>	50	<b>BBS38008 •</b>	5
390	0.8	270	<b>BRS39008 •</b>	50	<b>BBS39008 •</b>	-
400	0.8	300	<b>BRS40008 •</b>	40	<b>BBS40008 •</b>	-
410	0.8	305	<b>BRS41008 •</b>	40	<b>BBS41008 •</b>	-
420	0.8	305	<b>BRS42008 •</b>	40	<b>BBS42008 •</b>	-
430	0.8	310	<b>BRS43008 •</b>	40	<b>BBS43008 •</b>	-
440	0.8	320	<b>BRS44008 •</b>	30	<b>BBS44008 •</b>	-
450	0.8	330	<b>BRS45008 •</b>	30	<b>BBS45008 •</b>	-
460	0.8	340	<b>BRS46008 •</b>	30	<b>BBS46008 •</b>	-
470	0.8	360	<b>BRS47008 •</b>	30	<b>BBS47008 •</b>	-
480	0.8	380	<b>BRS48008 •</b>	20	<b>BBS48008 •</b>	-

# Okabell [parent] jacketing - aluminium seawater-resistant



Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Front slice		Nozzle	
			Code	Pcs./package	Code	Pcs./package
70	0.5	-	BES7006	120	BSS7070 ●	18
80	0.5	-	BES8006	120	BSS8080 ●	24
90	0.5	-	BES9006	120	BSS9090 ●	30
100	0.5	-	BES10006	120	BSS100100 ●	24
110	0.5	-	BES11006	100	BSS110110 ●	21
120	0.5	-	BES12006	100	BSS120120 ●	21
130	0.6	-	BES13006	60	BSS130130 ●	15
140	0.6	-	BES14006	60	BSS140140 ●	15
150	0.6	-	BES15006	60	BSS150150 ●	21
160	0.6	-	BES16006	60	BSS160160 ●	15
170	0.6	-	BES17006	50	BSS170170 ●	15
180	0.6	-	BES18006	50	BSS180180 ●	15
190	0.6	-	BES19006	50	BSS190190 ●	15
200	0.6	-	BES20006	60	BSS200200 ●	15
210	0.6	-	BES21006	60	BSS210210 ●	15
220	0.6	-	BES22006	60	BSS220220 ●	15
230	0.6	-	BES23006 ●	50	BSS230230 ●	15
240	0.6	-	BES24006 ●	50	BSS240240 ●	15
250	0.6	-	BES25008 ●	40	BSS250250 ●	15
260	0.8	-	BES26008 ●	40	BSS260260 ●	9
270	0.8	-	BES27008 ●	40	BSS270270 ●	9
280	0.8	-	BES28008 ●	40	BSS280280 ●	9
290	0.8	-	BES29008 ●	30	-	-
300	0.8	-	BES30008 ●	30	-	-
310	0.8	-	BES31008 ●	30	BSS310310 ●	-
320	0.8	-	BES32008 ●	30	BSS320320 ●	-
330	0.8	-	BES33008 ●	30	BSS330330 ●	-
340	0.8	-	BES34008 ●	30	BSS340340 ●	-
350	0.8	-	BES35008 ●	30	BSS350350 ●	-
360	0.8	-	BES36008 ●	30	BSS360360 ●	-
370	0.8	-	BES37008 ●	-	BSS370370 ●	-
380	0.8	-	BES38008 ●	-	BSS380380 ●	-
390	0.8	-	BES39008 ●	-	BSS390390 ●	-
400	0.8	-	BES40008 ●	-	BSS400400 ●	-
410	0.8	-	BES41008 ●	-	BSS410410 ●	-
420	0.8	-	BES42008 ●	-	BSS420420 ●	-
430	0.8	-	BES43008 ●	-	BSS430430 ●	-
440	0.8	-	BES44008 ●	-	BSS440440 ●	-
450	0.8	-	BES45008 ●	-	BSS450450 ●	-
460	0.8	-	BES46008 ●	-	BSS460460 ●	-
470	0.8	-	BES47008 ●	-	BSS470470 ●	-
480	0.8	-	BES48008 ●	-	BSS480480 ●	-

## Remark

If not ordered differently we will supply above mentioned standard version. Other dimensions, types, materials and packaging units on request.

Metal thickness according to DIN4140 for Okabell systems with mechanical impact can be delivered on request.

## Insulation Thickness

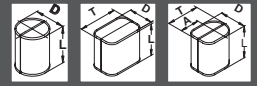
The material thickness may deviate.

## Technical properties

Jacket length 1000 mm

- Item not in stock. Delivery on request. [MTO]

# Okabell Caps aluminium seawater resistant



Complete with holding and release handle closure without insulation layers

Reference dimension <sup>(1)</sup> D + T cm	Flange caps				Trunk caps				Fitting caps			
	Code BFS-D...-L.. reference dim. = 2 x D				Code BKS-(D+T)...-L.. reference dim. = D + T				Code BAS-(D+T)...-L.. reference dim. = D + T			
	length L up to ...				length L up to ...				length L up to ...			
	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm
28												
30	x	x	x	x								
32	x	x	x	x	x	x	x	x				
34	x	x	x	x					x	x	x	x
35					x	x	x	x				
36	x	x	x	x								
38					x	x	x	x	x	x	x	x
40	x	x	x	x								
41					x	x	x	x	x	x	x	x
42	x	x	x	x								
43									x	x	x	x
44	x	x	x	x	x	x	x	x				
46	x	x	x	x					x	x	x	x
47					x	x	x	x				
48	x	x	x	x					x	x	x	x
50	x	x	x	x	x	x	x	x	x	x	x	x
52									x	x	x	x
54	x	x	x	x	x	x	x	x	x	x	x	x
57									x	x	x	x
58	x	x	x	x	x	x	x	x				
60	x	x	x	x					x	x	x	x
62					x	x	x	x				
64	x	x	x	x					x	x	x	x
66					x	x	x	x				
68									x	x	x	x
70	x	x	x	x	x	x	x	x				
72	x	x	x	x					x	x	x	x
75					x	x	x	x				
76									x	x	x	x
80	x	x	x	x	x	x	x	x	x	x	x	x
82	x	x	x	x								
84	x	x	x	x								
85					x	x	x	x	x	x	x	x
90	x	x	x	x	x	x	x	x	x	x	x	x
94	x	x	x	x								
95					x	x	x	x	x	x	x	x
96	x	x	x	x								
100	x	x	x	x								
102									x	x	x	x
106					x	x	x	x				

<sup>(1)</sup> Reference dimension (= D + T): In the case of intermediate sizes the next larger reference dimension is consulted when calculating the selling price.

# Okabell [parent] jacketing - aluminium eloxal seawater-resistant



Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Jacket		Bend	
			Code	Pcs./package	Code	Pcs./package
70	0.5	55	BRM7005	48	BBM7005	24
80	0.5	60	BRM8005	64	BBM8005	30
90	0.5	65	BRM9005	60	BBM9005	24
100	0.5	75	BRM10005	45	BBM10005	24
110	0.5	80	BRM11005	45	BBM11005	24
120	0.5	85	BRM12005	30	BBM12005	24
130	0.6	85	BRM13006	25	BBM13006	20
140	0.6	95	BRM14006	25	BBM14006	20
150	0.6	100	BRM15006	25	BBM15006	20
160	0.6	105	BRM16006	20	BBM16006	16
170	0.6	110	BRM17006	20	BBM17006	24
180	0.6	115	BRM18006	20	BBM18006	17
190	0.6	120	BRM19006	20	BBM19006	14
200	0.6	125	BRM20006	20	BBM20006	12
210	0.6	130	BRM21006	20	BBM21006	16
220	0.6	135	BRM22006	15	BBM22006	14
230	0.6	140	BRM23006	15	BBM23006 ●	13
240	0.6	145	BRM24006	15	BBM24006 ●	12
250	0.6	155	BRM25006	110	BBM25006 ●	12
260	0.8	160	BRM26008	110	BBM26008 ●	12
270	0.8	170	BRM27008	80	BBM27008 ●	11
280	0.8	175	BRM28008	80	BBM28008 ●	10
290	0.8	180	BRM29008	80	BBM29008 ●	10
300	0.8	185	BRM30008	80	BBM30008 ●	9
310	0.8	190	BRM31008	60	BBM31008 ●	8
320	0.8	190	BRM32008	60	BBM32008 ●	8
330	0.8	195	BRM33008 ●	60	BBM33008 ●	7
340	0.8	200	BRM34008 ●	60	BBM34008 ●	6
350	0.8	210	BRM35008 ●	60	BBM35008 ●	6
360	0.8	215	BRM36008 ●	60	BBM36008 ●	6
370	0.8	230	BRM37008 ●	60	BBM37008 ●	5
380	0.8	270	BRM38008 ●	50	BBM38008 ●	5
390	0.8	270	BRM39008 ●	50	BBM39008 ●	-
400	0.8	300	BRM40008 ●	40	BBM40008 ●	-
410	0.8	305	BRM41008 ●	40	BBM41008 ●	-
420	0.8	305	BRM42008 ●	40	BBM42008 ●	-
430	0.8	310	BRM43008 ●	40	BBM43008 ●	-
440	0.8	320	BRM44008 ●	30	BBM44008 ●	-
450	0.8	330	BRM45008 ●	30	BBM45008 ●	-
460	0.8	340	BRM46008 ●	30	BBM46008 ●	-
470	0.8	360	BRM47008 ●	30	BBM47008 ●	-
480	0.8	380	BRM48008 ●	20	BBM48008 ●	-

# Okabell [parent] jacketing - aluminium eloxal seawater-resistant



Outer- Ø [mm]	Thickness [mm]	Bend radius [mm]	Front slice		Nozzle	
			Code	Pcs./package	Code	Pcs./package
70	0.5	-	BEM7006 ●	120	BSM7070 ●	18
80	0.5	-	BEM8006	120	BSM8080 ●	24
90	0.5	-	BEM9006 ●	120	BSM9090 ●	30
100	0.5	-	BEM10006	120	BSM100100 ●	24
110	0.5	-	BEM11006	100	BSM110110 ●	21
120	0.5	-	BEM12006	100	BSM120120 ●	21
130	0.6	-	BEM13006	60	BSM130130 ●	15
140	0.6	-	BEM14006 ●	60	BSM140140 ●	15
150	0.6	-	BEM15006 ●	60	BSM150150 ●	21
160	0.6	-	BEM16006 ●	60	BSM160160 ●	15
170	0.6	-	BEM17006 ●	50	BSM170170 ●	15
180	0.6	-	BEM18006 ●	50	BSM180180 ●	15
190	0.6	-	BEM19006 ●	50	BSM190190 ●	15
200	0.6	-	BEM20006 ●	60	BSM200200 ●	15
210	0.6	-	BEM21006 ●	60	BSM210210 ●	15
220	0.6	-	BEM22006 ●	60	BSM220220 ●	15
230	0.6	-	BEM23006 ●	50	BSM230230 ●	15
240	0.6	-	BEM24006 ●	50	BSM240240 ●	15
250	0.6	-	BEM25008 ●	40	BSM250250 ●	15
260	0.8	-	BEM26008 ●	40	BSM260260 ●	9
270	0.8	-	BEM27008 ●	40	BSM270270 ●	9
280	0.8	-	BEM28008 ●	40	BSM280280 ●	9
290	0.8	-	BEM29008 ●	30	BSM290290 ●	9
300	0.8	-	BEM30008 ●	30	BSM300300 ●	9
310	0.8	-	BEM31008 ●	30	BSM310310 ●	-
320	0.8	-	BEM32008 ●	30	BSM320320 ●	-
330	0.8	-	BEM33008 ●	30	BSM330330 ●	-
340	0.8	-	BEM34008 ●	30	BSM340340 ●	-
350	0.8	-	BEM35008 ●	30	BSM350350 ●	-
360	0.8	-	BEM36008 ●	30	BSM360360 ●	-
370	0.8	-	BEM37008 ●	-	BSM370370 ●	-
380	0.8	-	BEM38008 ●	-	BSM380380 ●	-
390	0.8	-	BEM39008 ●	-	BSM390390 ●	-
400	0.8	-	BEM40008 ●	-	BSM400400 ●	-
410	0.8	-	BEM41008 ●	-	BSM410410 ●	-
420	0.8	-	BEM42008 ●	-	BSM420420 ●	-
430	0.8	-	BEM43008 ●	-	BSM430430 ●	-
440	0.8	-	BEM44008 ●	-	BSM440440 ●	-
450	0.8	-	BEM45008 ●	-	BSM450450 ●	-
460	0.8	-	BEM46008 ●	-	BSM460460 ●	-
470	0.8	-	BEM47008 ●	-	BSM470470 ●	-
480	0.8	-	BEM48008 ●	-	BSM480480 ●	-

## Remark

If not ordered differently we will supply above mentioned standard version. Other dimensions, types, materials and packaging units on request.

Metal thickness according to DIN4140 for Okabell systems with mechanical impact can be delivered on request.

## Insulation Thickness

The material thickness may deviate.

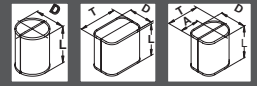
## Technical properties

Jacket length 1000 mm

- Item not in stock. Delivery on request. [MTO]



# Okabell Caps aluminum eloxal seawater-resistant



Complete with holding and release handle closure without insulation layers

Reference dimension <sup>(1)</sup> D + T cm	Flange caps				Trunk caps				Fitting Caps			
	Code BFM-D...-L.. reference dim. = 2 x D				Code BKM-(D+T)...-L.. reference dim. = D + T				Code BAM-(D+T)...-L.. reference dim. = D + T			
	length L up to ...				length L up to ...				length L up to ...			
	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm	30 cm	50 cm	75 cm	98 cm
28												
30	x	x	x	x								
32	x	x	x	x	x	x	x	x				
34	x	x	x	x					x	x	x	x
35					x	x	x	x				
36	x	x	x	x								
38					x	x	x	x	x	x	x	x
40	x	x	x	x								
41					x	x	x	x	x	x	x	x
42	x	x	x	x								
43									x	x	x	x
44	x	x	x	x	x	x	x	x				
46	x	x	x	x					x	x	x	x
47					x	x	x	x				
48	x	x	x	x					x	x	x	x
50	x	x	x	x	x	x	x	x	x	x	x	x
52									x	x	x	x
54	x	x	x	x	x	x	x	x	x	x	x	x
57									x	x	x	x
58	x	x	x	x	x	x	x	x				
60	x	x	x	x					x	x	x	x
62					x	x	x	x				
64	x	x	x	x					x	x	x	x
66					x	x	x	x				
68									x	x	x	x
70	x	x	x	x	x	x	x	x				
72	x	x	x	x					x	x	x	x
75					x	x	x	x				
76									x	x	x	x
80	x	x	x	x	x	x	x	x	x	x	x	x
82	x	x	x	x								
84	x	x	x	x								
85					x	x	x	x	x	x	x	x
90	x	x	x	x	x	x	x	x	x	x	x	x
94	x	x	x	x								
95					x	x	x	x	x	x	x	x
96	x	x	x	x								
100	x	x	x	x								
102									x	x	x	x
106					x	x	x	x				

<sup>(1)</sup> Reference dimension (= D + T): In the case of intermediate sizes the next larger reference dimension is consulted when calculating the selling price.





ISOTOP

INSTALL IT. SAFEGUARD YOUR EQUIPMENT.



- High level of protection in different colors
- Protection against mechanical impact
- Large range

## Technical Data - IsoTop

Brief description	PVC coating system in different colors.
Material type	Hard PVC Foils with fire protection equipment
Colour	Grey, Black, Nordic White & Sand Grey
Product Range	Rolls, bends, fitting caps, front caps and complete accessories
Applications	Jacket for insulated pipes (incl. bends, branches, fittings, flanges, o.s.) for protection against damages or mechanical stress.
Special Features	No weakening of insulating thickness of bends

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature	+60 °C
	min. service temperature	-20 °C
<b>Fire performance</b>		
Reaction to fire	IsoTop Foil	Moderately flammable (DIN 4102-B2)
		Tested according to DIN 4102
<b>Other technical features</b>		
Density	1,37 ± 0,01 g/cm <sup>3</sup>	Tested according to DIN 53479
Tensile impact strength	≥ 600 KJ/m <sup>2</sup>	Tested according to DIN EN ISO 8256
Tensile strength	40 - 50 N/mm <sup>2</sup>	Tested according to DIN 57455

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## IsoTop bends, 90°, one-piece 3S, black



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED1220-3SB	10	-	-
17	PED1720-3SB	10	PED1725-3SB	10
21	PED2120-3SB	10	PED2125-3SB	10
27	PED2720-3SB	10	PED2725-3SB	10
34	PED3420-3SB	10	PED3425-3SB	10
43	PED4320-3SB	10	PED4325-3SB	10
48	PED4820-3SB	10	PED4825-3SB	10
54	PED5420-3SB	10	PED5425-3SB	10
60	PED6020-3SB	10	PED6025-3SB	10
64	PED6420-3SB	10	-	-
70	PED7020-3SB	10	-	-
76	PED7620-3SB	10	PED7625-3SB	10
89	PED8920-3SB	10	PED8925-3SB	10
102	PED10220-3SB	10	PED10225-3SB	10
108	PED10820-3SB	10	PED10825-3SB	10
114	PED11420-3SB	10	PED11425-3SB	10
134	-	-	PED13425-3SB	10
140	-	-	PED14025-3SB	10
159	-	-	PED15925-3SB	10
168	-	-	PED16825-3SB	10
219	-	-	PED21925-3SB	10
267	-	-	PED26725-3SB	10
273	-	-	PED27325-3SB	10
324	-	-	PED32425-3SB	10

Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-3SB	10	PED1732-3SB	10
21	PED2130-3SB	10	PED2132-3SB	10
27	PED2730-3SB	10	PED2732-3SB	10
34	PED3430-3SB	10	PED3432-3SB	10
43	PED4330-3SB	10	PED4332-3SB	10
48	PED4830-3SB	10	PED4832-3SB	10
54	PED5430-3SB	10	PED5432-3SB	10
57	PED5730-3SB	10	-	-
60	PED6030-3SB	10	PED6032-3SB	10
64	PED6430-3SB	10	-	-
70	PED7030-3SB	10	-	-
76	PED7630-3SB	10	PED7632-3SB	10
89	PED8930-3SB	10	PED8932-3SB	10
102	PED10230-3SB	10	-	-
108	PED10830-3SB	10	-	-
114	PED11430-3SB	10	PED11432-3SB	10
127	PED12730-3SB	10	-	-
134	PED13430-3SB	10	-	-
140	PED14030-3SB	10	PED14032-3SB	10
159	PED15930-3SB	10	-	-
168	PED16830-3SB	10	PED16832-3SB	10
219	PED21930-3SB	10	-	-
267	PED26730-3SB	10	-	-
324	PED32430-3SB	10	-	-



## IsoTop bends, 90°, one-piece 3S, black



Pipe max. Outside-Ø [mm]	35,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	-	-	PED1740-3SB	10
21	-	-	PED2140-3SB	10
27	-	-	PED2740-3SB	10
34	-	-	PED3440-3SB	10
43	-	-	PED4340-3SB	10
48	-	-	PED4840-3SB	10
60	-	-	PED6040-3SB	10
70	-	-	PED7040-3SB	10
76	-	-	PED7640-3SB	10
89	PED8935-3SB	10	PED8940-3SB	10
102	-	-	PED10240-3SB	10
108	PED10835-3SB	10	PED10840-3SB	10
114	PED11435-3SB	10	PED11440-3SB	10
134	-	-	PED13440-3SB	10
140	-	-	PED14040-3SB	10
159	-	-	PED15940-3SB	10
168	-	-	PED16840-3SB	10
194	-	-	PED19440-3SB	10
219	-	-	PED21940-3SB	10

Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1750-3SB	10	-	-
21	PED2150-3SB	10	-	-
27	PED2750-3SB	10	-	-
34	PED3450-3SB	10	PED3460-3SB	10
43	PED4350-3SB	10	PED4360-3SB	10
48	PED4850-3SB	10	PED4860-3SB	10
54	PED5450-3SB	10	-	-
60	PED6050-3SB	10	PED6060-3SB	10
64	-	-	PED6460-3SB	10
70	PED7050-3SB	10	PED7060-3SB	10
76	PED7650-3SB	10	PED7660-3SB	10
89	PED8950-3SB	10	PED8960-3SB	10
102	PED10250-3SB	10	PED10260-3SB	10
108	PED10850-3SB	10	PED10860-3SB	10
114	PED11450-3SB	10	PED11460-3SB	10
127	PED12750-3SB	10	-	-
134	PED13450-3SB	10	PED13460-3SB	10
140	PED14050-3SB	10	PED14060-3SB	10
159	PED15950-3SB	10	PED15960-3SB	10
168	PED16850-3SB	10	PED16860-3SB	10
194	PED19450-3SB	10	PED19460-3SB	10
219	PED21950-3SB	10	PED21960-3SB	10
245	PED24550-3SB	10	-	-
267	PED26750-3SB	10	PED26760-3SB	10
324	PED32450-3SB	10	-	-

## IsoTop bends, 90°, one-piece 3S, black



Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
34	PED3470-3SB	10	-	-
43	PED4370-3SB	10	PED4380-3SB	10
48	PED4870-3SB	10	PED4880-3SB	10
60	PED6070-3SB	10	PED6080-3SB	10
70	PED7070-3SB	10	PED7080-3SB	10
76	PED7670-3SB	10	PED7680-3SB	10
89	PED8970-3SB	10	PED8980-3SB	10
108	PED10870-3SB	10	PED10880-3SB	10
114	-	-	PED11480-3SB	10
134	PED13470-3SB	10	PED13480-3SB	10
140	PED14070-3SB	10	PED14080-3SB	10
159	PED15970-3SB	10	PED15980-3SB	10
168	PED16870-3SB	10	PED16880-3SB	10
194	PED19470-3SB	10	PED19480-3SB	10
219	PED21970-3SB	10	PED21980-3SB	10
245	-	-	PED24580-3SB	10
267	-	-	PED26780-3SB	10
273	PED27370-3SB	10	PED27380-3SB	10

Pipe max. Outside-Ø [mm]	90,0 mm		100,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	-	-	PED21100-3SB	10
34	-	-	PED34100-3SB	10
48	PED4890-3SB	10	-	-
60	PED6090-3SB	10	PED60100-3SB	10
76	PED7690-3SB	10	PED76100-3SB	10
89	PED8990-3SB	10	PED89100-3SB	10
108	-	-	PED108100-3SB	10
114	-	-	PED114100-3SB	10
134	-	-	PED134100-3SB	10
140	PED14090-3SB	10	PED140100-3SB	10
159	PED15990-3SB	10	PED159100-3SB	10
168	PED16890-3SB	10	PED168100-3SB	10
194	-	-	PED194100-3SB	10
219	-	-	PED219100-3SB	10
267	-	-	PED267100-3SB	10

# IsoTop bends, 90°, one-piece 3S, nordic white



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED1220-3SW	10	-	-
17	PED1720-3SW	10	PED1725-3SW	10
21	PED2120-3SW	10	PED2125-3SW	10
27	PED2720-3SW	10	PED2725-3SW	10
34	PED3420-3SW	10	PED3425-3SW	10
43	PED4320-3SW	10	PED4325-3SW	10
48	PED4820-3SW	10	PED4825-3SW	10
54	PED5420-3SW	10	PED5425-3SW	10
60	PED6020-3SW	10	PED6025-3SW	10
64	PED6420-3SW	10	-	-
70	PED7020-3SW	10	-	-
76	PED7620-3SW	10	PED7625-3SW	10
89	PED8920-3SW	10	PED8925-3SW	10
102	PED10220-3SW	10	PED10225-3SW	10
108	PED10820-3SW	10	PED10825-3SW	10
114	PED11420-3SW	10	PED11425-3SW	10
134	-	-	PED13425-3SW	10
140	-	-	PED14025-3SW	10
159	-	-	PED15925-3SW	10
168	-	-	PED16825-3SW	10
219	-	-	PED21925-3SW	10
267	-	-	PED26725-3SW	10
273	-	-	PED27325-3SW	10
324	-	-	PED32425-3SW	10

Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-3SW	10	PED1732-3SW	10
21	PED2130-3SW	10	PED2132-3SW	10
27	PED2730-3SW	10	PED2732-3SW	10
34	PED3430-3SW	10	PED3432-3SW	10
43	PED4330-3SW	10	PED4332-3SW	10
48	PED4830-3SW	10	PED4832-3SW	10
54	PED5430-3SW	10	PED5432-3SW	10
57	PED5730-3SW	10	-	-
60	PED6030-3SW	10	PED6032-3SW	10
64	PED6430-3SW	10	-	-
70	PED7030-3SW	10	-	-
76	PED7630-3SW	10	PED7632-3SW	10
89	PED8930-3SW	10	PED8932-3SW	10
102	PED10230-3SW	10	-	-
108	PED10830-3SW	10	-	-
114	PED11430-3SW	10	PED11432-3SW	10
127	PED12730-3SW	10	-	-
134	PED13430-3SW	10	-	-
140	PED14030-3SW	10	PED14032-3SW	10
159	PED15930-3SW	10	-	-
168	PED16830-3SW	10	PED16832-3SW	10
219	PED21930-3SW	10	-	-
267	PED26730-3SW	10	-	-
324	PED32430-3SW	10	-	-

## IsoTop bends, 90°, one-piece 3S, nordic white



Pipe max. Outside-Ø [mm]	35,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	-	-	PED1740-3SW	10
21	-	-	PED2140-3SW	10
27	-	-	PED2740-3SW	10
34	-	-	PED3440-3SW	10
43	-	-	PED4340-3SW	10
48	-	-	PED4840-3SW	10
60	-	-	PED6040-3SW	10
70	-	-	PED7040-3SW	10
76	-	-	PED7640-3SW	10
89	PED8935-3SW	10	PED8940-3SW	10
102	-	-	PED10240-3SW	10
108	PED10835-3SW	10	PED10840-3SW	10
114	PED11435-3SW	10	PED11440-3SW	10
134	-	-	PED13440-3SW	10
140	-	-	PED14040-3SW	10
159	-	-	PED15940-3SW	10
168	-	-	PED16840-3SW	10
194	-	-	PED19440-3SW	10
219	-	-	PED21940-3SW	10

Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1750-3SW	10	-	-
21	PED2150-3SW	10	-	-
27	PED2750-3SW	10	-	-
33	-	-	PED3460-3SW	10
34	PED3450-3SW	10	PED3460-3SW	10
43	PED4350-3SW	10	PED4360-3SW	10
48	PED4850-3SW	10	PED4860-3SW	10
54	PED5450-3SW	10	-	-
60	PED6050-3SW	10	PED6060-3SW	10
64	-	-	PED6460-3SW	10
70	PED7050-3SW	10	PED7060-3SW	10
76	PED7650-3SW	10	PED7660-3SW	10
89	PED8950-3SW	10	PED8960-3SW	10
102	PED10250-3SW	10	PED10260-3SW	10
108	PED10850-3SW	10	PED10860-3SW	10
114	PED11450-3SW	10	PED11460-3SW	10
127	PED12750-3SW	10	-	-
134	PED13450-3SW	10	PED13460-3SW	10
140	PED14050-3SW	10	PED14060-3SW	10
159	PED15950-3SW	10	PED15960-3SW	10
168	PED16850-3SW	10	PED16860-3SW	10
194	PED19450-3SW	10	PED19460-3SW	10
219	PED21950-3SW	10	PED21960-3SW	10
245	PED24550-3SW	10	-	-
267	PED26750-3SW	10	PED26760-3SW	10
324	PED32450-3SW	10	-	-

## IsoTop bends, 90°, one-piece 3S, nordic white



Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
34	PED3470-3SW	10	-	-
43	PED4370-3SW	10	PED4380-3SW	10
48	PED4870-3SW	10	PED4880-3SW	10
60	PED6070-3SW	10	PED6080-3SW	10
70	PED7070-3SW	10	PED7080-3SW	10
76	PED7670-3SW	10	PED7680-3SW	10
89	PED8970-3SW	10	PED8980-3SW	10
108	PED10870-3SW	10	PED10880-3SW	10
114	-	-	PED11480-3SW	10
134	PED13470-3SW	10	PED13480-3SW	10
140	PED14070-3SW	10	PED14080-3SW	10
159	PED15970-3SW	10	PED15980-3SW	10
168	PED16870-3SW	10	PED16880-3SW	10
194	PED19470-3SW	10	PED19480-3SW	10
219	PED21970-3SW	10	PED21980-3SW	10
245	-	-	PED24580-3SW	10
267	-	-	PED26780-3SW	10
273	PED27370-3SW	10	PED27380-3SW	10

Pipe max. Outside-Ø [mm]	90,0 mm		100,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	-	-	PED21100-3SW	10
34	-	-	PED34100-3SW	10
48	PED4890-3SW	10	-	-
60	PED6090-3SW	10	PED60100-3SW	10
76	PED7690-3SW	10	PED76100-3SW	10
89	PED8990-3SW	10	-	-
108	-	-	PED108100-3SW	10
114	-	-	PED114100-3SW	10
134	-	-	PED134100-3SW	10
140	PED14090-3SW	10	PED140100-3SW	10
159	PED15990-3SW	10	PED159100-3SW	10
168	PED16890-3SW	10	PED168100-3SW	10
194	-	-	PED194100-3SW	10
219	-	-	PED219100-3SW	10
267	-	-	PED267100-3SW	10



## IsoTop bends, 90°, one-piece 3S, sand grey



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED1220-3SS	10	-	-
17	PED1720-3SS	10	PED1725-3SS	10
21	PED2120-3SS	10	PED2125-3SS	10
27	PED2720-3SS	10	PED2725-3SS	10
34	PED3420-3SS	10	PED3425-3SS	10
43	PED4320-3SS	10	PED4325-3SS	10
48	PED4820-3SS	10	PED4825-3SS	10
54	PED5420-3SS	10	PED5425-3SS	10
60	PED6020-3SS	10	PED6025-3SS	10
64	PED6420-3SS	10	-	-
70	PED7020-3SS	10	-	-
76	PED7620-3SS	10	PED7625-3SS	10
89	PED8920-3SS	10	PED8925-3SS	10
102	PED10220-3SS	10	PED10225-3SS	10
108	PED10820-3SS	10	PED10825-3SS	10
114	PED11420-3SS	10	PED11425-3SS	10
134	-	-	PED13425-3SS	10
140	-	-	PED14025-3SS	10
159	-	-	PED15925-3SS	10
168	-	-	PED16825-3SS	10
219	-	-	PED21925-3SS	10
267	-	-	PED26725-3SS	10
273	-	-	PED27325-3SS	10
324	-	-	PED32425-3SS	10

Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-3SS	10	PED1732-3SS	10
21	PED2130-3SS	10	PED2132-3SS	10
27	PED2730-3SS	10	PED2732-3SS	10
34	PED3430-3SS	10	PED3432-3SS	10
43	PED4330-3SS	10	PED4332-3SS	10
48	PED4830-3SS	10	PED4832-3SS	10
54	PED5430-3SS	10	PED5432-3SS	10
57	PED5730-3SS	10	-	-
60	PED6030-3SS	10	PED6032-3SS	10
64	PED6430-3SS	10	-	-
70	PED7030-3SS	10	-	-
76	PED7630-3SS	10	PED7632-3SS	10
89	PED8930-3SS	10	PED8932-3SS	10
102	PED10230-3SS	10	-	-
108	PED10830-3SS	10	-	-
114	PED11430-3SS	10	PED11432-3SS	10
127	PED12730-3SS	10	-	-
134	PED13430-3SS	10	-	-
140	PED14030-3SS	10	PED14032-3SS	10
159	PED15930-3SS	10	-	-
168	PED16830-3SS	10	PED16832-3SS	10
219	PED21930-3SS	10	-	-
267	PED26730-3SS	10	-	-
324	PED32430-3SS	10	-	-

## IsoTop bends, 90°, one-piece 3S, sand grey



Pipe max. Outside-Ø [mm]	35,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	-	-	PED1740-3SS	10
21	-	-	PED2140-3SS	10
27	-	-	PED2740-3SS	10
34	-	-	PED3440-3SS	10
43	-	-	PED4340-3SS	10
48	-	-	PED4840-3SS	10
60	-	-	PED6040-3SS	10
70	-	-	PED7040-3SS	10
76	-	-	PED7640-3SS	10
89	-	-	PED8940-3SS	10
102	-	-	PED10240-3SS	10
108	PED10835-3SS	10	PED10840-3SS	10
114	PED11435-3SS	10	PED11440-3SS	10
134	-	-	PED13440-3SS	10
140	-	-	PED14040-3SS	10
159	-	-	PED15940-3SS	10
168	-	-	PED16840-3SS	10
194	-	-	PED19440-3SS	10
219	-	-	PED21940-3SS	10

Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1750-3SS	10	-	-
21	PED2150-3SS	10	-	-
27	PED2750-3SS	10	-	-
34	PED3450-3SS	10	PED3460-3SS	10
43	PED4350-3SS	10	PED4360-3SS	10
48	PED4850-3SS	10	PED4860-3SS	10
54	PED5450-3SS	10	-	-
60	PED6050-3SS	10	PED6060-3SS	10
64	-	-	PED6460-3SS	10
70	PED7050-3SS	10	PED7060-3SS	10
76	PED7650-3SS	10	PED7660-3SS	10
89	PED8950-3SS	10	PED8960-3SS	10
102	PED10250-3SS	10	PED10260-3SS	10
108	PED10850-3SS	10	PED10860-3SS	10
114	PED11450-3SS	10	PED11460-3SS	10
127	PED12750-3SS	10	-	-
134	PED13450-3SS	10	PED13460-3SS	10
140	PED14050-3SS	10	PED14060-3SS	10
159	PED15950-3SS	10	PED15960-3SS	10
168	PED16850-3SS	10	PED16860-3SS	10
194	PED19450-3SS	10	PED19460-3SS	10
219	PED21950-3SS	10	PED21960-3SS	10
245	PED24550-3SS	10	-	-
267	PED26750-3SS	10	PED26760-3SS	10
324	PED32450-3SS	10	-	-

## IsoTop bends, 90°, one-piece 3S, sand grey



Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
34	PED3470-3SS	10	-	-
43	PED4370-3SS	10	PED4380-3SS	10
48	PED4870-3SS	10	PED4880-3SS	10
60	PED6070-3SS	10	PED6080-3SS	10
70	PED7070-3SS	10	PED7080-3SS	10
76	PED7670-3SS	10	PED7680-3SS	10
89	PED8970-3SS	10	PED8980-3SS	10
108	PED10870-3SS	10	PED10880-3SS	10
114	-	-	PED11480-3SS	10
134	PED13470-3SS	10	PED13480-3SS	10
140	PED14070-3SS	10	PED14080-3SS	10
159	PED15970-3SS	10	PED15980-3SS	10
168	PED16870-3SS	10	PED16880-3SS	10
194	PED19470-3SS	10	PED19480-3SS	10
219	PED21970-3SS	10	PED21980-3SS	10
245	-	-	PED24580-3SS	10
267	-	-	PED26780-3SS	10
273	PED27370-3SS	10	PED27380-3SS	10

Pipe max. Outside-Ø [mm]	90,0 mm		100,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	-	-	PED21100-3SS	10
34	-	-	PED34100-3SS	10
48	PED4890-3SS	10	-	-
60	PED6090-3SS	10	PED60100-3SS	10
76	PED7690-3SS	10	PED76100-3SS	10
89	PED8990-3SS	10	-	-
108	-	-	PED108100-3SS	10
114	-	-	PED114100-3SS	10
134	-	-	PED134100-3SS	10
140	PED14090-3SS	10	PED140100-3SS	10
159	PED15990-3SS	10	PED159100-3SS	10
168	PED16890-3SS	10	PED168100-3SS	10
194	-	-	PED194100-3SS	10
219	-	-	PED219100-3SS	10
267	-	-	PED267100-3SS	10

## IsoTop bends, 90°, one-piece W, black



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1720-WB	10	PED1725-WB	10
21	PED2120-WB	10	PED2125-WB	10
27	PED2720-WB	10	PED2725-WB	10
34	PED3420-WB	10	PED3425-WB	10
43	PED4320-WB	10	PED4325-WB	10
48	PED4820-WB	10	PED4825-WB	10
60	PED6020-WB	10	PED6025-WB	10
76	PED7620-WB	10	PED7625-WB	10
89	PED8920-WB	10	PED8925-WB	10
114	PED11420-WB	10	-	-

## IsoTop bends, 90°, one-piece W, black



Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-WB	10	PED1732-WB	10
21	PED2130-WB	10	PED2132-WB	10
27	PED2730-WB	10	PED2732-WB	10
34	PED3430-WB	10	PED3432-WB	10
43	PED4330-WB	10	PED4332-WB	10
48	PED4830-WB	10	PED4832-WB	10
60	PED6030-WB	10	PED6032-WB	10
76	PED7630-WB	10	PED7632-WB	10
89	PED8930-WB	10	PED8932-WB	10
114	PED11430-WB	10	PED11432-WB	10

Pipe max. Outside-Ø [mm]	40,0 mm		50,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1740-WB	10	PED1750-WB	10
21	PED2140-WB	10	PED2150-WB	10
27	PED2740-WB	10	PED2750-WB	10
34	PED3440-WB	10	PED3450-WB	10
43	PED4340-WB	10	PED4350-WB	10
48	PED4840-WB	10	PED4850-WB	10
60	PED6040-WB	10	PED6050-WB	10
76	PED7640-WB	10	PED7650-WB	10
89	PED8940-WB	10	PED8950-WB	10
114	PED11440-WB	10	-	-

Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
34	PED3470-WB	10	-	-
43	PED4370-WB	10	PED4380-WB	10
48	PED4870-WB	10	PED4880-WB	10

Pipe max. Outside-Ø [mm]	90,0 mm			
	Code	Pieces/carton		
48	PED4890-WB	10	-	-

## IsoTop bends, 90°, one-piece W, nordic white



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1720-WW	10	PED1725-WW	10
21	PED2120-WW	10	PED2125-WW	10
27	PED2720-WW	10	PED2725-WW	10
34	PED3420-WW	10	PED3425-WW	10
43	PED4320-WW	10	PED4325-WW	10
48	PED4820-WW	10	PED4825-WW	10
60	PED6020-WW	10	PED6025-WW	10
76	PED7620-WW	10	PED7625-WW	10
89	PED8920-WW	10	PED8925-WW	10
114	PED11420-WW	10	-	-

Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-WW	10	PED1732-WW	10
21	PED2130-WW	10	PED2132-WW	10
27	PED2730-WW	10	PED2732-WW	10
34	PED3430-WW	10	PED3432-WW	10
43	PED4330-WW	10	PED4332-WW	10
48	PED4830-WW	10	PED4832-WW	10
60	PED6030-WW	10	PED6032-WW	10
76	PED7630-WW	10	PED7632-WW	10
89	PED8930-WW	10	PED8932-WW	10
114	PED11430-WW	10	PED11432-WW	10

## IsoTop bends, 90°, one-piece W, nordic white



Pipe max. Outside-Ø [mm]	40,0 mm		50,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1740-WW	10	PED1750-WW	10
21	PED2140-WW	10	PED2150-WW	10
27	PED2740-WW	10	PED2750-WW	10
34	PED3440-WW	10	PED3450-WW	10
43	PED4340-WW	10	PED4350-WW	10
48	PED4840-WW	10	PED4850-WW	10
60	PED6040-WW	10	PED6050-WW	10
76	PED7640-WW	10	PED7650-WW	10
89	PED8940-WW	10	PED8950-WW	10
114	PED11440-WW	10	-	-

Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
34	PED3470-WW	10	-	-
43	PED4370-WW	10	PED4380-WW	10
48	PED4870-WW	10	PED4880-WW	10

Pipe max. Outside-Ø [mm]	90,0 mm			
	Code	Pieces/carton		
48	PED4890-WW	10	-	-

## IsoTop bends, 90°, one-piece W, sand grey



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1720-WS	10	PED1725-WS	10
21	PED2120-WS	10	PED2125-WS	10
27	PED2720-WS	10	PED2725-WS	10
34	PED3420-WS	10	PED3425-WS	10
43	PED4320-WS	10	PED4325-WS	10
48	PED4820-WS	10	PED4825-WS	10
60	PED6020-WS	10	PED6025-WS	10
76	PED7620-WS	10	PED7625-WS	10
89	PED8920-WS	10	PED8925-WS	10
114	PED11420-WS	10	-	-

Pipe max. Outside-Ø [mm]	30,0 mm		32,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1730-WS	10	PED1732-WS	10
21	PED2130-WS	10	PED2132-WS	10
27	PED2730-WS	10	PED2732-WS	10
34	PED3430-WS	10	PED3432-WS	10
43	PED4330-WS	10	PED4332-WS	10
48	PED4830-WS	10	PED4832-WS	10
60	PED6030-WS	10	PED6032-WS	10
76	PED7630-WS	10	PED7632-WS	10
89	PED8930-WS	10	PED8932-WS	10
114	PED11430-WS	10	PED11432-WS	10

Pipe max. Outside-Ø [mm]	40,0 mm		50,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	PED1740-WS	10	PED1750-WS	10
21	PED2140-WS	10	PED2150-WS	10
27	PED2740-WS	10	PED2750-WS	10
34	PED3440-WS	10	PED3450-WS	10
43	PED4340-WS	10	PED4350-WS	10
48	PED4840-WS	10	PED4850-WS	10
60	PED6040-WS	10	PED6050-WS	10
76	PED7640-WS	10	PED7650-WS	10
89	PED8940-WS	10	PED8950-WS	10
114	PED11440-WS	10	-	-



## IsoTop bends, 90°, one-piece W, sand grey



Pipe max. Outside-Ø [mm]	70,0 mm		80,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
33	PED3470-WS	10	-	-
34	PED3470-WS	10	-	-
43	PED4370-WS	10	PED4380-WS	10
48	PED4870-WS	10	PED4880-WS	10

Pipe max. Outside-Ø [mm]	90,0 mm			
	Code	Pieces/carton		
48	PED4890-WS	10	-	-

## IsoTop bends, 45°, one-piece S, black



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED52-45B	10	PED62-45B	10
17	PED57-45B	10	PED67-45B	10
21	PED62-45B	10	PED72-45B	10
27	PED67-45B	10	PED77-45B	10
34	PED72-45B	10	PED82-45B	10
43	PED82-45B	10	PED92-45B	10
48	PED88-45B	10	-	-
54	PED92-45B	10	PED102-45B	10
60	PED102-45B	10	PED108-45B	10
64	-	-	PED115-45B	10
70	PED108-45B	10	-	-
76	PED115-45B	10	PED128-45B	10
83	PED122-45B	10	-	-
89	PED128-45B	10	PED141-45B	10
102	PED141-45B	10	PED154-45B	10
108	PED149-45B	10	-	-
114	PED154-45B	10	PED167-45B	10
127	PED167-45B	10	PED180-45B	10
140	PED180-45B	10	PED193-45B	10
159	-	-	PED206-45B	10
168	PED206-45B	10	PED219-45B	10

Pipe max. Outside-Ø [mm]	30,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED72-45B	10	PED92-45B	10
17	PED77-45B	10	-	-
21	PED82-45B	10	PED102-45B	10
27	PED88-45B	10	PED108-45B	10
34	PED92-45B	10	PED115-45B	10
43	PED102-45B	10	PED122-45B	10
48	PED108-45B	10	PED128-45B	10
54	PED115-45B	10	-	-
57	-	-	PED136-45B	10
60	PED122-45B	10	PED141-45B	10
70	PED128-45B	10	PED149-45B	10
76	PED136-45B	10	PED154-45B	10
83	PED141-45B	10	-	-
89	PED149-45B	10	PED167-45B	10
102	-	-	PED180-45B	10
108	PED167-45B	10	-	-
114	-	-	PED193-45B	10
127	-	-	PED206-45B	10
134	PED193-45B	10	-	-
140	-	-	PED219-45B	10
159	PED219-45B	10	-	-
168	-	-	PED245-45B	10

## IsoTop bends, 45°, one-piece S, black



Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	PED122-45B	10	PED141-45B	10
24	PED128-45B	10	-	-
27	-	-	PED149-45B	10
34	PED136-45B	10	-	-
43	PED141-45B	10	-	-
48	PED149-45B	10	PED167-45B	10
54	PED154-45B	10	-	-
60	-	-	PED180-45B	10
70	PED167-45B	10	-	-
76	PED180-45B	10	PED193-45B	10
89	-	-	PED206-45B	10
108	PED206-45B	10	-	-
114	PED219-45B	10	PED232-45B	10
127	-	-	PED245-45B	10
134	PED232-45B	10	-	-
140	PED245-45B	10	PED258-45B	10
159	PED258-45B	10	-	-
168	PED271-45B	10	-	-

## IsoTop bends, 45°, one-piece S, nordic white



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED52-45 W	10	PED62-45 W	10
17	PED57-45 W	10	PED67-45 W	10
21	PED62-45 W	10	PED72-45 W	10
27	PED67-45 W	10	PED77-45 W	10
34	PED72-45 W	10	PED82-45 W	10
43	PED82-45 W	10	PED92-45 W	10
48	PED88-45 W	10	-	-
54	PED92-45 W	10	PED102-45 W	10
60	PED102-45 W	10	PED108-45 W	10
64	-	-	PED115-45 W	10
70	PED108-45 W	10	-	-
76	PED115-45 W	10	PED128-45 W	10
83	PED122-45 W	10	-	-
89	PED128-45 W	10	PED141-45 W	10
102	PED141-45 W	10	PED154-45 W	10
108	PED149-45 W	10	-	-
114	PED154-45 W	10	PED167-45 W	10
127	PED167-45 W	10	PED180-45 W	10
140	PED180-45 W	10	PED193-45 W	10
159	-	-	PED206-45 W	10
168	PED206-45 W	10	PED219-45 W	10

# IsoTop bends, 45°, one-piece S, nordic white



Pipe max. Outside-Ø [mm]	30,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED72-45 W	10	PED92-45 W	10
17	PED77-45 W	10	-	-
21	PED82-45 W	10	PED102-45 W	10
27	PED88-45 W	10	PED108-45 W	10
34	PED92-45 W	10	PED115-45 W	10
43	PED102-45 W	10	PED122-45 W	10
48	PED108-45 W	10	PED128-45 W	10
54	PED115-45 W	10	-	-
57	-	-	PED136-45 W	10
60	PED122-45 W	10	PED141-45 W	10
70	PED128-45 W	10	PED149-45 W	10
76	PED136-45 W	10	PED154-45 W	10
83	PED141-45 W	10	-	-
89	PED149-45 W	10	PED167-45 W	10
102	-	-	PED180-45 W	10
108	PED167-45 W	10	-	-
114	-	-	PED193-45 W	10
127	-	-	PED206-45 W	10
134	PED193-45 W	10	-	-
140	-	-	PED219-45 W	10
159	PED219-45 W	10	-	-
168	-	-	PED245-45 W	10

Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	PED122-45 W	10	PED141-45 W	10
24	PED128-45 W	10	-	-
27	-	-	PED149-45 W	10
34	PED136-45 W	10	-	-
43	PED141-45 W	10	-	-
48	PED149-45 W	10	PED167-45 W	10
54	PED154-45 W	10	-	-
60	-	-	PED180-45 W	10
70	PED167-45 W	10	-	-
76	PED180-45 W	10	PED193-45 W	10
89	-	-	PED206-45 W	10
108	PED206-45 W	10	-	-
114	PED219-45 W	10	PED232-45 W	10
127	-	-	PED245-45 W	10
134	PED232-45 W	10	-	-
140	PED245-45 W	10	PED258-45 W	10
159	PED258-45 W	10	-	-
168	PED271-45 W	10	-	-

# IsoTop bends, 45°, one-piece S, sand grey



Pipe max. Outside-Ø [mm]	20,0 mm		25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED52-45S	10	PED62-45S	10
17	PED57-45S	10	PED67-45S	10
21	PED62-45S	10	PED72-45S	10
27	PED67-45S	10	PED77-45S	10
34	PED72-45S	10	PED82-45S	10
43	PED82-45S	10	PED92-45S	10
48	PED88-45S	10	-	-
54	PED92-45S	10	PED102-45S	10
60	PED102-45S	10	PED108-45S	10
64	-	-	PED115-45S	10
70	PED108-45S	10	-	-
76	PED115-45S	10	PED128-45S	10
83	PED122-45S	10	-	-
89	PED128-45S	10	PED141-45S	10
102	PED141-45S	10	PED154-45S	10
108	PED149-45S	10	-	-
114	PED154-45S	10	PED167-45S	10
127	PED167-45S	10	PED180-45S	10
140	PED180-45S	10	PED193-45S	10
159	-	-	PED206-45S	10
168	PED206-45S	10	PED219-45S	10

Pipe max. Outside-Ø [mm]	30,0 mm		40,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
12	PED72-45S	10	PED92-45S	10
17	PED77-45S	10	-	-
21	PED82-45S	10	-	-
27	PED88-45S	10	-	-
34	PED92-45S	10	-	-
43	PED102-45S	10	-	-
48	PED108-45S	10	-	-
54	PED115-45S	10	-	-
60	PED122-45S	10	-	-
70	PED128-45S	10	-	-
76	PED136-45S	10	-	-
83	PED141-45S	10	-	-
89	PED149-45S	10	-	-
108	PED167-45S	10	-	-
134	PED193-45S	10	-	-
159	PED219-45S	10	-	-

Pipe max. Outside-Ø [mm]	50,0 mm		60,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	PED122-45S	10	PED141-45S	10
24	PED128-45S	10	-	-
27	-	-	PED149-45S	10
34	PED136-45S	10	-	-
43	PED141-45S	10	-	-
48	PED149-45S	10	PED167-45S	10
54	PED154-45S	10	-	-
60	-	-	PED180-45S	10
70	PED167-45S	10	-	-
76	PED180-45S	10	PED193-45S	10
89	-	-	PED206-45S	10
108	PED206-45S	10	-	-
114	PED219-45S	10	PED232-45S	10
127	-	-	PED245-45S	10
134	PED232-45S	10	-	-
140	PED245-45S	10	PED258-45S	10
159	PED258-45S	10	-	-
168	PED271-45S	10	-	-

# IsoTop branches, black



Branches Main Pipe 52 - 108 mm				Branches Main Pipe 116 - 245 mm			
Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar	Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar
100	100	PTD100100-B	10	116	116	PTD116116-B	10
100	61	PTD10061-B	10	120	120	PTD120120-B	10
100	67	PTD10067-B	10	128	128	PTD128128-B	10
100	74	PTD10074-B	10	136	136	PTD136136-B	10
100	83	PTD10083-B	10	140	108	PTD140108-B	10
100	88	PTD10088-B	10	140	120	PTD140120-B	10
100	94	PTD10094-B	10	140	128	PTD140128-B	10
103	100	PTD103100-B	10	140	140	PTD140140-B	10
103	103	PTD103103-B	10	140	67	PTD14067-B	10
103	61	PTD10361-B	10	140	94	PTD14094-B	10
103	67	PTD10367-B	10	149	149	PTD149149-B	10
103	74	PTD10374-B	10	156	103	PTD156103-B	10
103	83	PTD10383-B	10	156	108	PTD156108-B	10
103	88	PTD10388-B	10	156	140	PTD156140-B	10
103	94	PTD10394-B	10	156	156	PTD156156-B	10
108	100	PTD108100-B	10	156	94	PTD15694-B	10
108	103	PTD108103-B	10	169	140	PTD169140-B	10
108	108	PTD108108-B	10	169	149	PTD169149-B	10
108	61	PTD10861-B	10	169	156	PTD169156-B	10
108	67	PTD10867-B	10	169	169	PTD169169-B	10
108	74	PTD10874-B	10	176	176	PTD176176-B	10
108	83	PTD10883-B	10	182	182	PTD182182-B	10
108	88	PTD10888-B	10	189	189	PTD189189-B	10
108	94	PTD10894-B	10	194	194	PTD194194-B	10
52	52	PTD5252-B	10	214	140	PTD214140-B	10
57	52	PTD5752-B	10	214	156	PTD214156-B	10
57	57	PTD5757-B	10	214	169	PTD214169-B	10
61	52	PTD6152-B	10	214	182	PTD214182-B	10
61	57	PTD6157-B	10	214	189	PTD214189-B	10
61	61	PTD6161-B	10	214	194	PTD214194-B	10
67	52	PTD6752-B	10	214	214	PTD214214-B	10
67	57	PTD6757-B	10	245	189	PTD245189-B	10
67	61	PTD6761-B	10	245	218	PTD245218-B	10
67	67	PTD6767-B	10	245	245	PTD245245-B	10
74	61	PTD7461-B	10	-	-	-	-
74	67	PTD7467-B	10	-	-	-	-
74	74	PTD7474-B	10	-	-	-	-
83	61	PTD8361-B	10	-	-	-	-
83	67	PTD8367-B	10	-	-	-	-
83	74	PTD8374-B	10	-	-	-	-
83	83	PTD8383-B	10	-	-	-	-
88	61	PTD8861-B	10	-	-	-	-
88	67	PTD8867-B	10	-	-	-	-
88	74	PTD8874-B	10	-	-	-	-
88	83	PTD8883-B	10	-	-	-	-
88	88	PTD8888-B	10	-	-	-	-
94	61	PTD9461-B	10	-	-	-	-
94	67	PTD9467-B	10	-	-	-	-
94	74	PTD9474-B	10	-	-	-	-
94	83	PTD9483-B	10	-	-	-	-
94	88	PTD9488-B	10	-	-	-	-
94	94	PTD9494-B	10	-	-	-	-



# IsoTop branches, nordic white



Branches Main Pipe 52 - 108 mm				Branches Main Pipe 116 - 245 mm			
Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar	Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar
100	100	PTD100100-W	10	116	116	PTD116116-W	10
100	61	PTD10061-W	10	120	120	PTD120120-W	10
100	67	PTD10067-W	10	128	128	PTD128128-W	10
100	74	PTD10074-W	10	136	136	PTD136136-W	10
100	83	PTD10083-W	10	140	108	PTD140108-W	10
100	88	PTD10088-W	10	140	120	PTD140120-W	10
100	94	PTD10094-W	10	140	128	PTD140128-W	10
103	100	PTD103100-W	10	140	140	PTD140140-W	10
103	103	PTD103103-W	10	140	67	PTD14067-W	10
103	61	PTD10361-W	10	140	94	PTD14094-W	10
103	67	PTD10367-W	10	149	149	PTD149149-W	10
103	74	PTD10374-W	10	156	103	PTD156103-W	10
103	83	PTD10383-W	10	156	108	PTD156108-W	10
103	88	PTD10388-W	10	156	140	PTD156140-W	10
103	94	PTD10394-W	10	156	156	PTD156156-W	10
108	100	PTD108100-W	10	156	94	PTD15694-W	10
108	103	PTD108103-W	10	169	140	PTD169140-W	10
108	108	PTD108108-W	10	169	149	PTD169149-W	10
108	61	PTD10861-W	10	169	156	PTD169156-W	10
108	67	PTD10867-W	10	169	169	PTD169169-W	10
108	74	PTD10874-W	10	176	176	PTD176176-W	10
108	83	PTD10883-W	10	182	182	PTD182182-W	10
108	88	PTD10888-W	10	189	189	PTD189189-W	10
108	94	PTD10894-W	10	194	194	PTD194194-W	10
52	52	PTD5252-W	10	214	140	PTD214140-W	10
57	52	PTD5752-W	10	214	156	PTD214156-W	10
57	57	PTD5757-W	10	214	169	PTD214169-W	10
61	52	PTD6152-W	10	214	182	PTD214182-W	10
61	57	PTD6157-W	10	214	189	PTD214189-W	10
61	61	PTD6161-W	10	214	194	PTD214194-W	10
67	52	PTD6752-W	10	214	214	PTD214214-W	10
67	57	PTD6757-W	10	245	189	PTD245189-W	10
67	61	PTD6761-W	10	245	218	PTD245218-W	10
67	67	PTD6767-W	10	245	245	PTD245245-W	10
74	61	PTD7461-W	10	-	-	-	-
74	67	PTD7467-W	10	-	-	-	-
74	74	PTD7474-W	10	-	-	-	-
83	61	PTD8361-W	10	-	-	-	-
83	67	PTD8367-W	10	-	-	-	-
83	74	PTD8374-W	10	-	-	-	-
83	83	PTD8383-W	10	-	-	-	-
88	61	PTD8861-W	10	-	-	-	-
88	67	PTD8867-W	10	-	-	-	-
88	74	PTD8874-W	10	-	-	-	-
88	83	PTD8883-W	10	-	-	-	-
88	88	PTD8888-W	10	-	-	-	-
94	61	PTD9461-W	10	-	-	-	-
94	67	PTD9467-W	10	-	-	-	-
94	74	PTD9474-W	10	-	-	-	-
94	83	PTD9483-W	10	-	-	-	-
94	88	PTD9488-W	10	-	-	-	-
94	94	PTD9494-W	10	-	-	-	-

# IsoTop branches, sand grey



Branches Main Pipe 52 - 108 mm				Branches Main Pipe 116 - 245 mm			
Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar	Outer- Ø main pipe	Outer- Ø branch pipe	Code	Pcs./collar
100	100	PTD100100-S	10	116	116	PTD116116-S	10
100	61	PTD10061-S	10	120	120	PTD120120-S	10
100	67	PTD10067-S	10	128	128	PTD128128-S	10
100	74	PTD10074-S	10	136	136	PTD136136-S	10
100	83	PTD10083-S	10	140	108	PTD140108-S	10
100	88	PTD10088-S	10	140	120	PTD140120-S	10
100	94	PTD10094-S	10	140	128	PTD140128-S	10
103	100	PTD103100-S	10	140	140	PTD140140-S	10
103	103	PTD103103-S	10	140	67	PTD14067-S	10
103	61	PTD10361-S	10	140	94	PTD14094-S	10
103	67	PTD10367-S	10	149	149	PTD149149-S	10
103	74	PTD10374-S	10	156	103	PTD156103-S	10
103	83	PTD10383-S	10	156	108	PTD156108-S	10
103	88	PTD10388-S	10	156	140	PTD156140-S	10
103	94	PTD10394-S	10	156	156	PTD156156-S	10
108	100	PTD108100-S	10	156	94	PTD15694-S	10
108	103	PTD108103-S	10	169	140	PTD169140-S	10
108	108	PTD108108-S	10	169	149	PTD169149-S	10
108	61	PTD10861-S	10	169	156	PTD169156-S	10
108	67	PTD10867-S	10	169	169	PTD169169-S	10
108	74	PTD10874-S	10	176	176	PTD176176-S	10
108	83	PTD10883-S	10	182	182	PTD182182-S	10
108	88	PTD10888-S	10	189	189	PTD189189-S	10
108	94	PTD10894-S	10	194	194	PTD194194-S	10
52	52	PTD5252-S	10	214	140	PTD214140-S	10
57	52	PTD5752-S	10	214	156	PTD214156-S	10
57	57	PTD5757-S	10	214	169	PTD214169-S	10
61	52	PTD6152-S	10	214	182	PTD214182-S	10
61	57	PTD6157-S	10	214	189	PTD214189-S	10
61	61	PTD6161-S	10	214	194	PTD214194-S	10
67	52	PTD6752-S	10	214	214	PTD214214-S	10
67	57	PTD6757-S	10	245	189	PTD245189-S	10
67	61	PTD6761-S	10	245	218	PTD245218-S	10
67	67	PTD6767-S	10	245	245	PTD245245-S	10
74	61	PTD7461-S	10	-	-	-	-
74	67	PTD7467-S	10	-	-	-	-
74	74	PTD7474-S	10	-	-	-	-
83	61	PTD8361-S	10	-	-	-	-
83	67	PTD8367-S	10	-	-	-	-
83	74	PTD8374-S	10	-	-	-	-
83	83	PTD8383-S	10	-	-	-	-
88	61	PTD8861-S	10	-	-	-	-
88	67	PTD8867-S	10	-	-	-	-
88	74	PTD8874-S	10	-	-	-	-
88	83	PTD8883-S	10	-	-	-	-
88	88	PTD8888-S	10	-	-	-	-
94	61	PTD9461-S	10	-	-	-	-
94	67	PTD9467-S	10	-	-	-	-
94	74	PTD9474-S	10	-	-	-	-
94	83	PTD9483-S	10	-	-	-	-
94	88	PTD9488-S	10	-	-	-	-
94	94	PTD9494-S	10	-	-	-	-

## IsoTop front caps, black



Diameter [mm]	Code	Pieces/carton
60-70	PCD6070-B	10
70-80	PCD7080-B	10
60-70	PCD6070-B	10
80-90	PCD8090-B	10
90-100	PCD90100-B	10
100-110	PCD100110-B	10
110-130	PCD110130-B	10
130-150	PCD130150-B	10
150-170	PCD150170-B	10
170-190	PCD170190-B	10
190-210	PCD190210-B	10
210-250	PCD210250-B	10
250-300	PCD250300-B	10
300-350	PCD300350-B	10
350-400	PCD350400-B	10
400-450	PCD400450-B	10

## IsoTop front cap, nordic white



Diameter [mm]	Code	Pieces/carton
60-70	PCD6070-W	10
70-80	PCD7080-W	10
60-70	PCD6070-W	10
80-90	PCD8090-W	10
90-100	PCD90100-W	10
100-110	PCD100110-W	10
110-130	PCD110130-W	10
130-150	PCD130150-W	10
150-170	PCD150170-W	10
170-190	PCD170190-W	10
190-210	PCD190210-W	10
210-250	PCD210250-W	10
250-300	PCD250300-W	10
300-350	PCD300350-W	10
350-400	PCD350400-W	10
400-450	PCD400450-W	10

## IsoTop front cap, sand grey



Diameter [mm]	Code	Pieces/carton
60-70	PCD6070-S	10
70-80	PCD7080-S	10
60-70	PCD6070-S	10
80-90	PCD8090-S	10
90-100	PCD90100-S	10
100-110	PCD100110-S	10
110-130	PCD110130-S	10
130-150	PCD130150-S	10
150-170	PCD150170-S	10
170-190	PCD170190-S	10
190-210	PCD190210-S	10
210-250	PCD210250-S	10
250-300	PCD250300-S	10
300-350	PCD300350-S	10
350-400	PCD350400-S	10
400-450	PCD400450-S	10

## IsoTop rivets



Code	Article description	Pieces/bag	Pieces/carton
PRIV-B	Rivets Black	1000	50000
PRIV-G	Rivets Grey	1000	50000
PRIV-W	Rivets Nordic White	1000	50000

## IsoTop riveting tools



Code	Article description	Pieces/bag	Pieces/carton
PMNWDUAL	Combi - Straight & Angle	10	400
TOOLDOUBLER	Combi - Straight & Angle	5	5

## IsoTop foils, black



M1 certified, B2 certified

Code	Thickness of material [mm]	Width [m]	Length [m]	Rolls/pallet
PF35X10X25M1-B	0.35	1	25	59

## IsoTop foils, grey



M1 certified, B2 certified

Code	Thickness of material [mm]	Width [m]	Length [m]	Rolls/pallet
PF25X102X25M1G	0.25	1.02	25	61
PF25X10X25M1-G	0.25	1	25	59
PF25X10X50M1-G	0.25	1	50	44
PF30X10X35M1-G	0.3	1	35	50
PF30X14X25M1-G	0.3	1.4	25	46
PF35X07X25B2-G	0.35	0.7	25	60
PF35X07X25M1-G	0.35	0.7	25	60
PF35X07X50B2-G	0.35	0.7	50	46
PF35X07X50M1-G	0.35	0.7	50	46
PF35X10X12B2-G	0.35	1	12.5	83
PF35X10X25B2-G	0.35	1	25	59
PF35X10X25M1-G	0.35	1	25	59
PF35X10X35M1-G	0.35	1	35	44
PF35X12X25M1-G	0.35	1.2	25	46
PF35X14X25M1-G	0.35	1.4	25	46

## IsoTop foils, nordic white



M1 certified, B2 certified

Code	Thickness of material [mm]	Width [m]	Length [m]	Rolls/pallet
PF35X10X25B2-W	0.35	1	25	59
PF35X10X25M1-W	0.35	1	25	59
PF35X14X25M1-W	0.35	1.4	25	46

## IsoTop foils, sand grey



M1 certified, B2 certified

Code	Thickness of material [mm]	Width [m]	Length [m]	Rolls/pallet
PF35X07X25B2-S	0.35	0.7	25	60
PF35X07X50B2-S	0.35	0.7	50	46
PF35X07X50M1-S	0.35	0.7	50	46
PF35X10X25B2-S	0.35	1	25	59

## IsoTop tapes self-adhesive



Code	Colour	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
PTAPE25X25-B	Black	25,0	25	0.15	24
PTAPE25X25-W	Nordic White	25,0	25	0.15	24
PTAPE25X33-G	Grey	25,0	33	0.15	24
PTAPE30X25-B	Black	30,0	25	0.15	20
PTAPE30X25-W	Nordic White	30,0	25	0.15	20
PTAPE30X33-G	Grey	30,0	33	0.15	20
PTAPE50X25-B	Black	50,0	25	0.15	12
PTAPE50X25-W	Nordic White	50,0	25	0.15	12
PTAPE50X33-G	Grey	50,0	33	0.15	12

## IsoTop bandages



Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
PBD100X50	100,0	50	0.25	5
PBD30X100	30,0	100	0.25	5
PBD50X50	50,0	50	0.25	5

## IsoTop Wire

Code	Thickness [mm]	Length [m]
WIGAL06	0.6	40

## IsoTop Cutting Table



Code	Length [m]
CUTTABLE10	1
CUTTABLE12	1.2
CUTTABLE14	1.4

## IsoTop Rosette Endcapping PVC



Length 10,0

Black			Grey		
Lamella length [mm]	Code	Rolls/carton	Lamella length [mm]	Code	Rolls/carton
18	PMD18-B	5	18	PMD18-G	5
23	PMD23-B	5	23	PMD23-G	5
28	PMD28-B	5	38	PMD38-G	5
38	PMD38-B	5	48	PMD48-G	5
48	PMD48-B	5	-	-	-



## IsoTop Rosette Endcapping PVC



Length 10,0

Nordic White			Sandgrey		
Lamella length [mm]	Code	Rolls/carton	Lamella length [mm]	Code	Rolls/carton
18	PMD18-W	5	18	PMD18-S	5
23	PMD23-W	5	23	PMD23-S	5
28	PMD28-W	5	28	PMD28-S	5
38	PMD38-W	5	38	PMD38-S	5
48	PMD48-W	5	48	PMD48-S	5

## IsoTop Rosette Endcapping Aluminium



Length 10,0

Black			Grey		
Lamella length [mm]	Code	Rolls/carton	Lamella length [mm]	Code	Rolls/carton
18	AMD18-B	5	13	AMD13-G	5
23	AMD23-B	5	18	AMD18-G	5
28	AMD28-B	5	23	AMD23-G	5
38	AMD38-B	5	28	AMD28-G	5
48	AMD48-B	5	38	AMD38-G	5
58	AMD58-B	5	48	AMD48-G	5
-	-	-	58	AMD58-G	5
-	-	-	68	AMD68-G	5
-	-	-	78	AMD78-G	5
-	-	-	88	AMD88-G	5
-	-	-	98	AMD98-G	5

Blue			Red		
Lamella length [mm]	Code	Rolls/carton	Lamella length [mm]	Code	Rolls/carton
18	AMD18-BLUE	5	18	AMD18-RED	5
23	AMD23-BLUE	5	23	AMD23-RED	5
28	AMD28-BLUE	5	28	AMD28-RED	5
38	AMD38-BLUE	5	38	AMD38-RED	5
48	AMD48-BLUE	5	48	AMD48-RED	5
58	AMD58-BLUE	5	58	AMD58-RED	5



DANCAP

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



- Rigid Longlife Polyurethane
- Halogen free
- Re-opening closure

## Technical Data - DanCap

Brief description	DanCap valve boxes consists of two parts, covering the valve from both sides. The boxes are easily assembled with the included metal rings or metal bands with a snap lock. They are easily to remove and replace over and over again.
Material type	Insulation material: Polyurethane Surface: Polystyrene
Colour	Grey
Applications	Insulation of valves and fittings.

Property	Value/Assessment
Temperature Range	
Temperature Range	max. service temperature +120 °C
	min. service temperature +10 °C
Other technical features	
Density	55-60 kg/m <sup>3</sup>

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

# DanCap valve caps



MG KS			MG LS		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD15MGKS-G	15	5	VCD15MGLS-G	15	5
VCD20MGKS-G	20	5	VCD20MGLS-G	20	5
VCD25MGKS-G	25	5	VCD25MGLS-G	25	5
VCD32MGKS-G	32	5	VCD32MGLS-G	32	5
VCD40MGKS-G	40	5	VCD40MGLS-G	40	5
VCD50MGKS-G	50	5	VCD50MGLS-G	50	5

MS			MSK		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD15MS-G	15	5	VCD15MSK-G	15	5
VCD20MS-G	20	5	VCD20MSK-G	20	5
VCD25MS-G	25	5	VCD25MSK-G	25	5
VCD32MS-G	32	5	VCD32MSK-G	32	5
VCD40MS-G	40	5	VCD40MSK-G	40	5
VCD50MS-G	50	5	VCD50MSK-G	50	5

MSTA			MS COM		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD10-20MSTA-G	15	5	VCD10-15MSCOM-G	10	5
VCD25MSTA-G	25	5	VCD20MSCOM-G	20	5
VCD32MSTA-G	32	5	VCD25MSCOM-G	25	5
VCD40MSTA-G	40	5	VCD32MSCOM-G	32	5
VCD50MSTA-G	50	5	VCD40MSCOM-G	40	5
-	-	-	VCD50MSCOM-G	50	5

FG			FGC		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD10-15FG-G	10	5	VCD10-15FGC-G	10	5
VCD100FG-G	100	5	VCD100FGC-G	100	5
VCD20-25FG-G	20	5	VCD20-25FGC-G	20	5
VCD32FG-G	32	5	VCD32FGC-G	32	5
VCD40FG-G	40	5	VCD40FGC-G	40	5
VCD50FG-G	50	5	VCD50FGC-G	50	5
VCD65FG-G	65	5	VCD65FGC-G	65	5
VCD80FG-G	80	5	VCD80FGC-G	80	5

SF			FL		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD100SF-G	100	5	VCD100FL-G	100	5
VCD15SF-G	15	5	VCD125FL-G	125	5
VCD20SF-G	20	5	VCD150FL-G	150	5
VCD25SF-G	25	5	VCD15FL-G	15	5
VCD32SF-G	32	5	VCD200FL-G	200	5
VCD40SF-G	40	5	VCD20FL-G	20	5
VCD50SF-G	50	5	VCD250FL-G	250	5
VCD65SF-G	65	5	VCD25FL-G	25	5
VCD80SF-G	80	5	VCD300FL-G	300	5
-	-	-	VCD32FL-G	32	5
-	-	-	VCD40FL-G	40	5
-	-	-	VCD50FL-G	50	5
-	-	-	VCD65FL-G	65	5
-	-	-	VCD80FL-G	80	5

## DanCap valve caps



KV			MG STRA		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD100KV-G	100	5	VCD10-20MGSTR-G	15	5
VCD125KV-G	125	5	VCD25MGSTR-G	25	5
VCD150KV-G	150	5	VCD32MGSTR-G	32	5
VCD15KV-G	15	5	VCD40MGSTR-G	40	5
VCD200KV-G	200	5	VCD50MGSTR-G	50	5
VCD20KV-G	20	5	-	-	-
VCD250KV-G	250	5	-	-	-
VCD25KV-G	25	5	-	-	-
VCD300KV-G	300	5	-	-	-
VCD32KV-G	32	5	-	-	-
VCD40KV-G	40	5	-	-	-
VCD50KV-G	50	5	-	-	-
VCD65KV-G	65	5	-	-	-
VCD80KV-G	80	5	-	-	-

FTVV			SNM		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD100FTVV-G	100	5	VCD10-15SNM-G	10	5
VCD15-25FTVV-G	15	5	VCD20SNM-G	20	5
VCD32-40FTVV-G	32	5	VCD25SNM-G	25	5
VCD50FTVV-G	50	5	VCD32SNM-G	32	5
VCD65-80FTVV-G	65	5	VCD40SNM-G	40	5
-	-	-	VCD50SNM-G	50	5

PKH			STAF		
Code	Dimension	Pieces/carton	Code	Dimension	Pieces/carton
VCD25PKH-G	25	5	VCD100STAF-G	100	5
VCD32PKH-G	32	5	VCD125STAF-G	125	5
-	-	-	VCD150STAF-G	150	5
-	-	-	VCD50STAF-G	50	5
-	-	-	VCD65STAF-G	65	5
-	-	-	VCD80STAF-G	80	5





## Okatherm [parent] bends, 90°, 2-piece



material: made of aluminium AL99,5 - surface: alu-course-grained

type: bend-types for welded bends according to EN 10253-1, Type 3 (≈1,5 . da), 2-piece types, without insulation layer, material thickness 0,2 mm and/or 0,3 mm (see u).

Pipe max. Outside-Ø [mm]	20,0 mm		30,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
17	TB1720	120	TB1730	90
21	TB2120	120	TB2130	80
27	TB2720	100	TB2730	65
33	TB3320	100	TB3330	55
42	TB4220	65	TB4230	50
45	TB4220	65	TB4230	50
48	TB4820	65	TB4830	80
60	TB6020 ●	80	TB6030	40
64	TB6420 ●	80	TB6430 ●	60
70	TB4830	80	TB7030 ●	40
76	TB6030	40	TB7630	40
89	TB7030 ●	40	TB8930 ▼	20
108	TB8930 ▼	20	TB10830 ●▼	20
114	-	-	TB11430 ▼	25
127	TB10830 ●▼	20	TB10840 ●▼	20
140	TB10840 ●▼	20	TB12740 ●▼	15
159	-	-	TB14040 ▼	15

Pipe max. Outside-Ø [mm]	40,0 mm		50,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
21	TB2140	50	-	-
27	TB2740	40	-	-
33	TB3340	80	-	-
42	TB4240	80	-	-
45	TB4240	80	-	-
48	TB4840	80	TB4850 ▼	30
60	TB6040	40	TB6050 ▼	20
64	TB6440 ●	40	-	-
70	TB7040 ●	40	-	-
76	TB7640 ▼	20	TB7650 ▼	20
89	TB8940 ▼	20	TB8950 ▼	20
102	TB8950 ▼	20	TB10850 ▼	10
108	TB10840 ●▼	20	TB10850 ▼	10
114	TB11440 ●▼	10	TB11450 ▼	10
127	TB12740 ●▼	15	TB10860 ●▼	10
140	TB14040 ▼	15	TB12760 ▼	10
159	TB12760 ▼	10	TB14060 ▼	10

Pipe max. Outside-Ø [mm]	60,0 mm		70,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
60	TB6060 ▼	20	-	-
64	TB8950 ▼	20	TB8960 ▼	20
76	TB7660 ▼	20	TB7670 ▼	15
89	TB8960 ▼	20	TB10860 ●▼	10
108	TB10860 ●▼	10	TB12760 ▼	10
114	TB11460 ▼	10	-	-
127	TB12760 ▼	10	TB10880 ●▼	10
140	TB14060 ▼	10	-	-

Pipe max. Outside-Ø [mm]	80,0 mm		100,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
89	TB8980 ▼	20	-	-
102	TB10880 ●▼	10	-	-
108	TB10880 ●▼	10	TB114100 ▼	10
114	-	-	TB114100 ▼	10
127	-	-	TB127100 ●▼	10
159	-	-	TB159100 ●▼	10

### Remark

Other dimensions on request.

▼ Material thickness 0,3 mm

● Item not in stock. Delivery on request. [MTO]

## Okatherm [parent] bends segment



Thickness 0,5 mm, material: made of aluminium AL99,5 - surface: Stucco

type: segment bend 4-piece - with round corrugation (without beginning and final corrugation) and boreholes, for bolting and riveting, without insulation layer

Outer- Ø [mm]	Parts	Middle radius r [mm]	Length beginning / end X [mm]	Sticks Z [mm]	Code	Pieces/carton
200	4	125	50	175	<b>BBC20005 •</b>	20
210	4	130	50	180	<b>BBC21005 •</b>	18
220	4	135	50	185	<b>BBC22005 •</b>	14
230	4	140	50	190	<b>BBC23005 •</b>	12
240	4	145	50	195	<b>BBC24005 •</b>	12
250	4	160	50	210	<b>BBC25005 •</b>	10
260	4	165	50	215	<b>BBC26005 •</b>	8
270	4	170	50	220	<b>BBC27005 •</b>	10
280	4	175	50	225	<b>BBC28005 •</b>	9
310	4	190	50	240	<b>BBC31005 •</b>	6
320	4	195	50	245	<b>BBC32005 •</b>	6
330	4	200	50	250	<b>BBC33005 •</b>	5
340	4	205	50	255	<b>BBC34005 •</b>	5

### Remark

Other dimensions on request.

- Item not in stock. Delivery on request. [MTO]

## Okatherm [parent] rosette endcapping



Thickness 0,2 mm, material: made of aluminium AL99,5

Aluminium with 2 fixing grooves			
Lamella length [mm]	Insulation thickness [mm]	Code	Rolls/carton
18	20,0	<b>PEMBA18B</b>	10
28	30,0	<b>PEMBA28B</b>	10
38	40,0	<b>PEMBA38B</b>	10
48	50,0	<b>PEMBA48B</b>	10
58	60,0	<b>PEMBA58B</b>	10

## Okatherm [parent] foils



Thickness 0,2 mm, material: made of aluminium AL99,5 - surface: alu-course-grained

Code	Roll width [mm]	Roll length [m]	Rolls/carton
<b>TFR20025</b>	1000	25	25

## Okatherm [parent] foils cut-outs



Width 1.000,0 mm, Thickness 0,2 mm, material: made of aluminium AL99,5 hard - surface: alu-course-grained, cuts with strong cure

max. total outer diameter with 30 mm overlapping	Cut-out length	Code	Pcs./collar	Pieces/carton
54	200	TZR20020 ●	5	150
60	220	TZR20022 ●	5	150
65	240	TZR20024	5	150
70	260	TZR20026	5	125
79	280	TZR20028	5	125
85	300	TZR20030	5	100
92	320	TZR20032	5	100
98	340	TZR20034	5	100
105	360	TZR20036	5	100
110	380	TZR20038	5	100
117	400	TZR20040 ●	5	80
124	420	TZR20042 ●	5	80
130	440	TZR20044 ●	5	80
136	460	TZR20046 ●	5	80
143	480	TZR20048 ●	5	80
150	500	TZR20050 ●	5	60
165	550	TZR20055 ●	5	60
180	600	TZR20060 ●	5	45
195	650	TZR20065 ●	5	45
213	700	TZR20070 ●	5	45
229	750	TZR20075 ●	5	45
245	800	TZR20080 ●	5	45
260	850	TZR20085 ●	5	45
277	900	TZR20090 ●	5	40
293	950	TZR20095 ●	5	40
309	1000	TZR200100 ●	5	40

● Item not in stock. Delivery on request. [MTO]

## Okatherm [parent] foils cut-outs



In the particular code of the pre-cut part an overlap of 40 mm is already included (as from pipe diameter 114 on 50 mm)

Pipe max. Outside-Ø [mm]	20,0 mm insulation thickness		30,0 mm insulation thickness	
	Code	Pieces/carton	Code	Pieces/carton
17	TZR20024	150	TZR20030	100
21	TZR20024	150	TZR20030	100
27	TZR20026	125	TZR20032	100
33	TZR20028	125	TZR20034	100
42	TZR20032	100	TZR20038	100
44	TZR20032	100	TZR20038	100
48	TZR20034	100	TZR20040 ●	80
60	TZR20036	100	TZR20044 ●	80
64	TZR20038	100	TZR20044 ●	80
70	TZR20040 ●	80	TZR20050 ●	60
76	TZR20042 ●	80	TZR20050 ●	60
89	TZR20046 ●	80	TZR20055 ●	60
108	TZR20055 ●	60	TZR20060 ●	45
114	TZR20055 ●	60	TZR20065 ●	45
127	TZR20060 ●	45	TZR20065 ●	45
140	TZR20065 ●	45	TZR20070 ●	45
159	TZR20070 ●	45	TZR20075 ●	45
168	TZR20075 ●	45	TZR20080 ●	45

## Okatherm [parent] foils cut-outs



In the particular code of the pre-cut part an overlap of 40 mm is already included (as from pipe diameter 114 on 50 mm)

Pipe max. Outside-Ø [mm]	40,0 mm insulation thickness		50,0 mm insulation thickness	
	Code	Pieces/carton	Code	Pieces/carton
17	TZR20036	100	TZR20040 ●	80
21	TZR20038	100	TZR20044 ●	80
27	TZR20040 ●	80	TZR20046 ●	80
33	TZR20042 ●	80	TZR20048 ●	80
42	TZR20044 ●	80	-	-
44	TZR20044 ●	80	-	-
48	TZR20046 ●	80	TZR20050 ●	60
60	TZR20050 ●	60	TZR20055 ●	60
64	TZR20050 ●	60	-	-
76	TZR20055 ●	60	TZR20060 ●	45
89	TZR20060 ●	45	TZR20065 ●	45
108	TZR20065 ●	45	TZR20070 ●	45
114	TZR20070 ●	45	TZR20075 ●	45
127	TZR20075 ●	45	TZR20080 ●	45
140	TZR20075 ●	45	TZR20085 ●	45
159	TZR20080 ●	45	TZR20090 ●	40
168	TZR20085 ●	45	TZR20090 ●	40

● Item not in stock. Delivery on request. [MTO]

## Okatherm [parent] tapes self-adhesive



Outer-Ø ≤ 100 mm apply with 50 mm self-seal tape Outer-Ø > 100 mm apply with 100 mm self-seal tape

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
OKF-TAPE50100	50,0	100	0.025	6

## Okatherm [parent] accessories



Code	Article description	Pieces/carton
TMN	rivet, cadmium coated	1000
TMNW	riveting tool magnetized	1

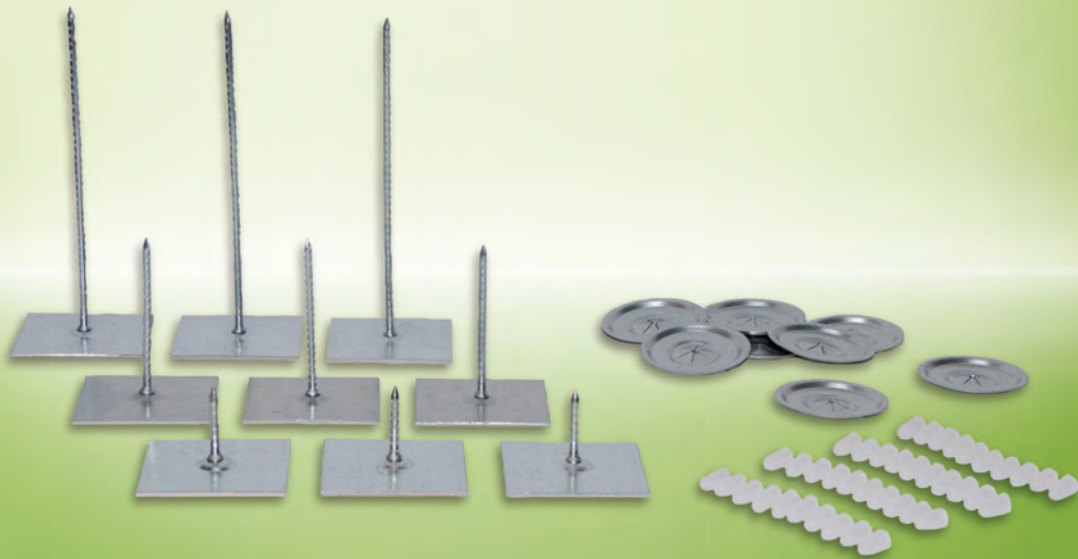






OKAFIX

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



- Range matches all common insulation thicknesses
- Self-adhesive bottom
- Various lengths, from 23 to 115 mm

## Technical Data - Okafix

Brief description	Self-adhesive mounting pins
Material type	Base plate: galvanized steel DX 51 D and zinc coating 275 g/m <sup>2</sup> on both sides. Pin: galvanized steel. Adhesive tape: cross-linked PE foam laminated on both sides with pressure-sensitive, cross-linked synthetic rubber resin adhesive.
Colour	silver grey
Product Range	Pin: length 23 to 115 mm.
Applications	Mounting method for fitting insulation materials on smooth surfaces e.g. air-conditioning ducts made of galvanized steel.
Special Features	Pin lengths to match all common insulation thicknesses, optimal adhesion corresponding to the technical data for the adhesive tape when installation instructions are heeded. Industrial serial production.

Property	Value/Assessment	Special Remark
Temperature Range		
Temperature Range	max. service temperature	+ 70 °C
	min. service temperature	-40 °C
Processing temperature	+ 10 °C - appr. + 30 °C	
Other technical features		
Shear strength	600 ks FTM.2 Finat.8 PSTC.7	
Tensile strength	1,3 KN/m ATM.13 (tape)	ASTM D 882
Permitted constant load	0,3 N/cm <sup>2</sup> (Recommendation: 6 N/pin = approx. 600 g max.)	
Storage & Shelf life	24 months at +21 °C and 50% relative humidity	Direct sunlight should be avoided

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Okafix end caps



Protective caps. To fit mounting pins

Inner diameter mm	Code	Pieces/bag	Bag/carton
2.3	<b>XBSK26</b>	250	40

## Okafix pins



Mounting pins. Consisting of self-adhesive surface with riveted pin and holding clips

Pin length [mm]	Code	Pieces/carton
23	<b>XBST23</b>	250
33	<b>XBST33</b>	250
43	<b>XBST43</b>	250
53	<b>XBST53</b>	250
65	<b>XBST65</b>	250
85	<b>XBST85</b>	250
95	<b>XBST95</b>	250
115	<b>XBST115</b>	250

## Okafix clips



Holding clips. To fit mounting pins

Outer- Ø [mm]	Code	Pieces/carton
40	<b>XHC20</b>	2000

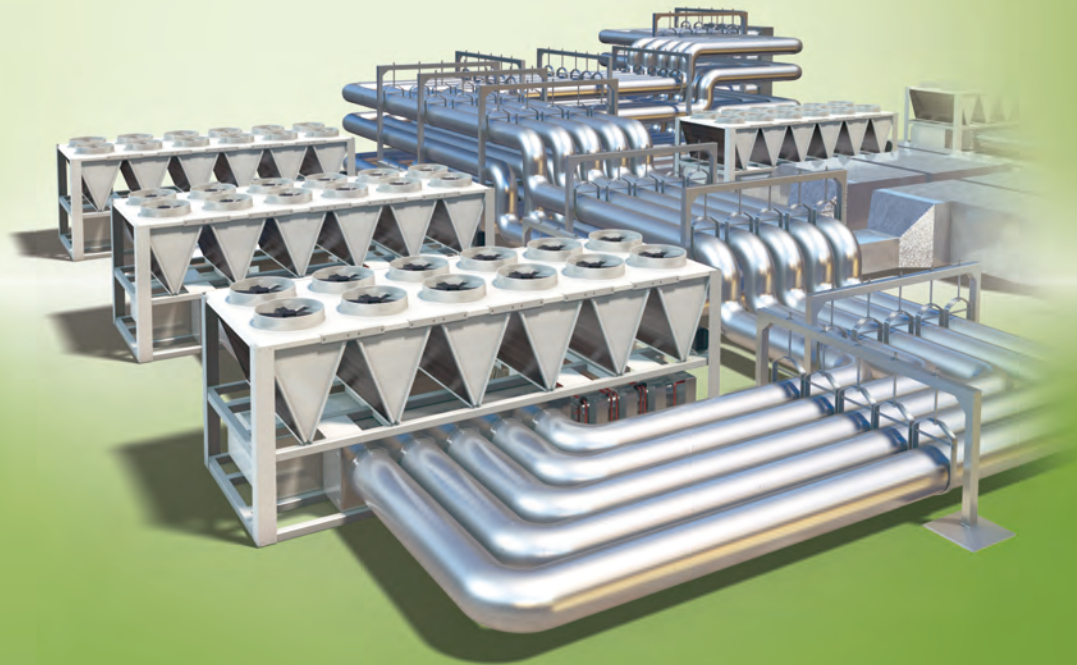






## ARMA-CHEK SILVER

INSTALL IT. SAFEGUARD YOUR EQUIPMENT.



- UV-resistant protection
- Multilayer impact resistance
- Lightweight 2-1 solution
  
- Full system with Tape, Elbows and T-Parts
- Good chemical resistance

## INSULATION AND CLADDING IN ONE PRODUCT

Arma-Chek Silver is based on high performance AF/Armaflex insulation combined with a UV resistant metal finishing for aesthetic indoor and outdoor installations.

The product saves installation time with the pre-covered System compared with traditional cladding. In addition, the self-adhesive tubes are with tangential cut for improved adhesion security.

Watch the video under <http://youtu.be/x0nHyDRcEzo> and see the difference!



## PRE-FORMED PARTS

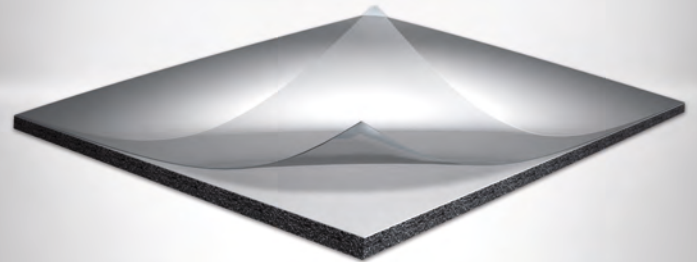
Specially designed Arma-Chek Silver elbows and t-pieces offer you additional installation time savings. The pre-formed parts match the Armaflex tubes perfectly and complete the system.

Together with the prefabricated AF/Armaflex elbows and T-pieces thus fabrication and installation times can be reduced even further.



## UV-RESISTANCE

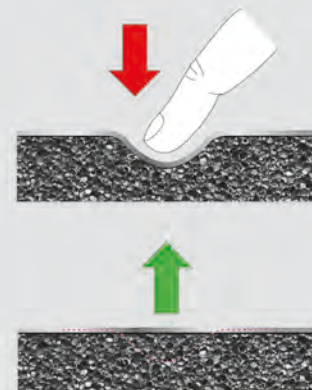
The UV-resistance of Arma-Chek Silver is constantly tested with Weather-O-Meter equipment according to ISO 4892. The samples are exposed to simulated weather for at least 15000 hours, which equals estimated 15 years of outdoor application in Central Europe.



## SURFACE PRESSURE RESISTANCE

Unlike traditional metal cladding, Arma-Chek Silver recovers itself to original shape after pressure is exerted on its surface.

This property prevents lasting dents and ensures a durable installation.





# Arma-Chek Silver in the world's largest lyocell plant

## LENZING, AUSTRIA

The Lenzing Group's new lyocell fibre plant is record-breaking: in just 24 months the most modern fibre production facilities in the world were constructed at the company headquarters.



## CHALLENGE

Part of the new patented TENCEL® line is an innovative air-handling concept. The wet-spinning process results in very high temperatures and high humidity in the production areas. These conditions are very different to those outdoors where temperatures range from -16 °C in winter to +35 °C in summer. So it is essential that the air-handling equipment is insulated efficiently. The product installed also had to be UV-resistant and easy to clean. Furthermore, the schedule for insulating the extensive pipe- and ductwork was very tight.

## SOLUTION

In these ambient conditions a closed-cell insulation material was the only option for the project management of Lenzing AG. Together with the insulation company Knierzinger the optimal solution for the complex requirements was found in Arma-Chek Silver. The product not only provides the pipes with reliable protection against condensation – the tough, covered insulation material is also UV-resistant and very easy to clean. Unlike traditional insulation materials and coverings, Arma-Chek Silver can be installed in one work step. The pre-covered elastomeric insulation material was specified for insulating the entire pipe- and ductwork of the air-handling system. All in all 10,455 m<sup>2</sup> of Arma-Chek Silver continuous sheets in insulation thicknesses of 19, 25 and 32 mm were installed.

### The insulation contractor:

"Especially in production areas where space is at a premium, Arma-Chek Silver is an ideal solution. When installed professionally, the pre-covered, closed-cell insulation material ensures reliable condensation control even where there is a high temperature difference and prevents energy losses. Using the 2-in-1 product also allowed us to save a great deal of time – a huge benefit when you're on such a tight schedule. And the result looks really good, too."





## Arma-Chek Silver (AF) tubes self-adhesive pre-covered



Length 1,0 m

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-2 insulation thickness 11,5 mm - 16,0 mm			AF-4 Insulation thickness 17,0 mm - 25,0 mm		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	16,0 - 17,5	11,5	<b>AFSI-2-015</b> ○	65	17,0	<b>AFSI-4-015</b>	44
18	19,0 - 20,5	11,5	<b>AFSI-2-018</b>	60	17,5	<b>AFSI-4-018</b>	35
22	23,0 - 24,5	12,0	<b>AFSI-2-022</b>	50	18,0	<b>AFSI-4-022</b>	30
28	29,0 - 30,5	12,5	<b>AFSI-2-028</b>	42	19,0	<b>AFSI-4-028</b>	24
35	36,0 - 38,0	13,0	<b>AFSI-2-035</b>	31	19,5	<b>AFSI-4-035</b>	18
42	43,5 - 45,5	13,5	<b>AFSI-2-042</b>	24	20,5	<b>AFSI-4-042</b>	16
48	49,5 - 51,5	13,5	<b>AFSI-2-048</b>	22	21,0	<b>AFSI-4-048</b>	12
54	55,0 - 57,0	13,5	<b>AFSI-2-054</b>	18	21,0	<b>AFSI-4-054</b>	12
60	61,5 - 63,5	14,0	<b>AFSI-2-060</b>	16	21,5	<b>AFSI-4-060</b>	10
64	65,0 - 67,5	14,0	<b>AFSI-2-064</b>	15	21,5	<b>AFSI-4-064</b>	9
76	77,0 - 79,5	14,0	<b>AFSI-2-076</b>	14	22,0	<b>AFSI-4-076</b>	8
89	90,5 - 93,5	14,5	<b>AFSI-2-089</b> ●	11	22,5	<b>AFSI-4-089</b>	6
114	116,0 - 120,0	15,0	<b>AFSI-2-114</b> ○●	8	23,5	<b>AFSI-4-114</b> ○●	5
140	142,0 - 146,0	15,5	<b>AFSI-2-140</b> ○●	4	24,5	<b>AFSI-4-140</b> ○●	3
168	170,0 - 176,0	-	-	-	25,0	<b>AFSI-4-168</b> ○●	2

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-5 insulation thickness 25,0 mm - 33,0 mm					
		Insulation thickness [mm]	Code	m/carton			
18	19,0 - 20,5	25,0	<b>AFSI-5-018</b>	21	-	-	-
22	23,0 - 24,5	25,0	<b>AFSI-5-022</b>	18	-	-	-
28	29,0 - 30,5	25,0	<b>AFSI-5-028</b>	18	-	-	-
35	36,0 - 38,0	27,0	<b>AFSI-5-035</b>	12	-	-	-
42	43,5 - 45,5	27,0	<b>AFSI-5-042</b>	11	-	-	-
48	49,5 - 51,5	27,5	<b>AFSI-5-048</b>	8	-	-	-
54	55,0 - 57,0	28,5	<b>AFSI-5-054</b>	8	-	-	-
60	61,5 - 63,5	29,0	<b>AFSI-5-060</b>	6	-	-	-
64	65,0 - 67,5	29,0	<b>AFSI-5-064</b>	6	-	-	-
76	77,0 - 79,5	30,0	<b>AFSI-5-076</b>	5	-	-	-
89	90,5 - 93,5	30,5	<b>AFSI-5-089</b>	4	-	-	-
114	116,0 - 120,0	31,5	<b>AFSI-5-114</b> ○●	3	-	-	-
140	142,0 - 146,0	32,0	<b>AFSI-5-140</b> ○●	3	-	-	-
168	170,0 - 176,0	33,0	<b>AFSI-5-168</b> ○●	2	-	-	-

**Length tolerance for tubes** +/- 1,5%

**Thickness tolerance**

≤ 8 mm:	±1,0 mm
9 - 18 mm:	±1,5 mm
19 - 31 mm:	±2,5 mm
> 31 mm:	±3,0 mm

○ In the case of this item the seam is not self-adhesive and is achieved with a radial cut surface.

● Item not in stock. Delivery on request. [MTO]

## Arma-Chek Silver (AF) sheets endless pre-covered



Width 1,0 m

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
<b>AFSI-13MM/E</b>	13,0	8	8
<b>AFSI-19MM/E</b>	19,0	6	6
<b>AFSI-25MM/E</b>	25,0	4	4
<b>AFSI-32MM/E</b>	32,0	3	3

**Length tolerance for sheets** +/- 1,5%

**Thickness tolerance for sheets**

≤ 6 mm:	±1,0 mm
7 - 19 mm:	±1,5 mm
> 19 mm:	±2,0 mm



## Arma-Chek Silver (AF) sheets endless self-adhesive pre-covered



Width 1,0 m

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
<b>AFSI-13MM/EA •</b>	13,0	8	8
<b>AFSI-19MM/EA</b>	19,0	6	6
<b>AFSI-25MM/EA •</b>	25,0	4	4
<b>AFSI-32MM/EA</b>	32,0	3	3

Length tolerance for sheets

+/- 1,5%

Thickness tolerance for sheets

≤ 6 mm: ±1,0 mm

7 - 19 mm: ±1,5 mm

> 19 mm: ±2,0 mm

• Item not in stock. Delivery on request. [MTO]

## Arma-Chek Silver covering endless



Color silver, Covering foil

Code	Width [mm]	Roll length [m]	Rolls/carton	m <sup>2</sup> /carton
<b>ACH-SI25</b>	1.040,0	25	2	52
<b>ACH-SI25-I</b>	1.040,0	25	1	26
<b>ACH-SI25/100</b>	100,0	25	4	10

## Arma-Chek Silver elbows pre-fabricated



Color silver, Elbow fitting (covering without insulation)

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness 11,5 mm - 16,0 mm		AF-4 insulation thickness 15,5 mm - 25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
15	<b>ACHB-040</b>	1	<b>ACHB-050</b>	1
18	<b>ACHB-040</b>	1	<b>ACHB-060</b>	1
22	<b>ACHB-050</b>	1	<b>ACHB-060</b>	1
28	<b>ACHB-050</b>	1	<b>ACHB-070</b>	1
35	<b>ACHB-060</b>	1	<b>ACHB-080</b>	1
42	<b>ACHB-070</b>	1	<b>ACHB-080</b>	1
48	<b>ACHB-080</b>	1	<b>ACHB-090</b>	1
54	<b>ACHB-080</b>	1	<b>ACHB-100</b>	1
60	<b>ACHB-090</b>	1	<b>ACHB-110</b>	1
64	<b>ACHB-100</b>	1	<b>ACHB-110</b>	1
76	<b>ACHB-110</b>	1	<b>ACHB-120</b>	1
89	<b>ACHB-130 •</b>	1	<b>ACHB-140</b>	1
114	<b>ACHB-150 •</b>	1	<b>ACHB-160 •</b>	1
140	<b>ACHB-180 •</b>	1	<b>ACHB-200 •</b>	1
168	<b>ACHB-210 •</b>	1	<b>ACHB-220 •</b>	1

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness 25,0 mm - 32,0 mm			
	Code	Pieces/carton		
18	<b>ACHB-070</b>	1	-	-
22	<b>ACHB-080</b>	1	-	-
28	<b>ACHB-080</b>	1	-	-
35	<b>ACHB-090</b>	1	-	-
42	<b>ACHB-100</b>	1	-	-
48	<b>ACHB-100</b>	1	-	-
54	<b>ACHB-110</b>	1	-	-
60	<b>ACHB-120</b>	1	-	-
64	<b>ACHB-120</b>	1	-	-
76	<b>ACHB-130 •</b>	1	-	-
89	<b>ACHB-160 •</b>	1	-	-
114	<b>ACHB-180 •</b>	1	-	-
140	<b>ACHB-210 •</b>	1	-	-
168	<b>ACHB-230</b>	1	-	-

• Item not in stock. Delivery on request. [MTO]

## Arma-Chek Silver elbows pre-fabricated



Color black, Elastomeric pre-fabricated elbows

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness				AF-4 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
15	AF-2-015-C90 ●	11,5	3 segment	3	AF-4-015-C90 ●	17	3 segment	3
18	AF-2-018-C90 ●	11,5	3 segment	3	AF-4-018-C90 ●	17,5	3 segment	3
22	AF-2-022-C90 ●	12	3 segment	3	AF-4-022-C90 ●	18	3 segment	3
28	AF-2-028-C90 ●	12,5	3 segment	3	AF-4-028-C90 ●	19	3 segment	3
35	AF-2-035-C90 ●	13,0	3 segment	3	AF-4-035-C90 ●	19,5	3 segment	3
42	AF-2-042-C90 ●	13,5	3 segment	3	AF-4-042-C90 ●	20,5	4 segment	3
48	AF-2-048-C90 ●	13,5	3 segment	3	AF-4-048-C90 ●	21	4 segment	3
54	AF-2-054-C90 ●	13,5	3 segment	3	AF-4-054-C90 ●	21	4 segment	3
60	AF-2-060-C90 ●	14	3 segment	3	AF-4-060-C90 ●	21,5	4 segment	3
64	AF-2-064-C90 ●	14	4 segment	3	AF-4-064-C90 ●	21,5	4 segment	3
76	AF-2-076-C90 ●	14	4 segment	3	AF-4-076-C90 ●	22	4 segment	3
89	AF-2-089-C90 ●	14,5	4 segment	3	AF-4-089-C90 ●	22,5	4 segment	3

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness							
	Code	Thickness [mm]	Article description	Pieces/carton				
18	AF-5-018-C90 ●	25	3 segment	3	-	-	-	-
22	AF-5-022-C90 ●	25	3 segment	3	-	-	-	-
28	AF-5-028-C90 ●	25	4 segment	3	-	-	-	-
35	AF-5-035-C90 ●	27	4 segment	3	-	-	-	-
42	AF-5-042-C90 ●	27	4 segment	3	-	-	-	-
48	AF-5-048-C90 ●	27,5	4 segment	3	-	-	-	-
54	AF-5-054-C90 ●	28,5	4 segment	3	-	-	-	-
60	AF-5-060-C90 ●	29	4 segment	3	-	-	-	-
64	AF-5-064-C90 ●	29	4 segment	3	-	-	-	-
76	AF-5-076-C90 ●	30	4 segment	3	-	-	-	-
89	AF-5-089-C90 ●	30,5	4 segment	3	-	-	-	-
114	AF-5-114-C90 ●	31,5	4 segment	3	-	-	-	-

### Thickness tolerance

AF-1, AF-2: ± 1,0 mm  
 AF-3, AF-4: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

### Remark

Other items can be produced make to order.

- Item not in stock. Delivery on request. [MTO]

## Arma-Chek Silver t-pieces pre-fabricated



Color silver, T-piece fitting (covering without insulation)

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness 11,5 mm - 16,0 mm		AF-4 Insulation thickness 17,0 mm - 25,0 mm	
	Code	Pieces/carton	Code	Pieces/carton
18	-	-	ACHT-052	1
22	ACHT-052	1	ACHT-057	1
28	ACHT-052	1	ACHT-067	1
35	ACHT-057	1	ACHT-073	1
42	ACHT-067	1	ACHT-082	1
48	ACHT-073	1	ACHT-093	1
54	ACHT-082	1	ACHT-100	1
60	ACHT-088	1	ACHT-102	1
64	ACHT-100	1	ACHT-108	1
76	ACHT-102	1	ACHT-120	1
89	ACHT-116	1	ACHT-136	1
114	ACHT-149	1	ACHT-156	1
140	ACHT-176	1	ACHT-189	1
168	ACHT-214	1	ACHT-214	1

## Arma-Chek Silver t-pieces pre-fabricated



Color silver, T-piece fitting (covering without insulation)

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness 25,0 mm - 33,0 mm				
	Code	Pieces/carton			
18	ACHT-067	1		-	-
22	ACHT-073	1		-	-
28	ACHT-082	1		-	-
35	ACHT-093	1		-	-
42	ACHT-093	1		-	-
48	ACHT-100	1		-	-
54	ACHT-102	1		-	-
60	ACHT-116	1		-	-
64	ACHT-120	1		-	-
76	ACHT-128	1		-	-
89	ACHT-140	1		-	-
114	ACHT-169	1		-	-
140	ACHT-194	1		-	-
168	ACHT-245	1		-	-

## Arma-Chek Silver t-pieces pre-fabricated



Color black, Elastomeric pre-fabricated T-pieces

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness				AF-4 insulation thickness			
	Code	Thickness [mm]	Article description	Pieces/carton	Code	Thickness [mm]	Article description	Pieces/carton
15	AF-2-015-T90 ●	11,5	2 segment	3	AF-4-015-T90 ●	17	2 segment	3
18	AF-2-018-T90 ●	11,5	2 segment	3	AF-4-018-T90 ●	17,5	2 segment	3
22	AF-2-022-T90 ●	12	2 segment	3	AF-4-022-T90 ●	18	2 segment	3
28	AF-2-028-T90 ●	12,5	2 segment	3	AF-4-028-T90 ●	19	2 segment	3
35	AF-2-035-T90 ●	13	2 segment	3	AF-4-035-T90 ●	19,5	2 segment	3
42	AF-2-042-T90 ●	13,5	2 segment	3	AF-4-042-T90 ●	20	2 segment	3
48	AF-2-048-T90 ●	13,5	2 segment	3	AF-4-048-T90 ●	21	2 segment	3
54	AF-2-054-T90 ●	13,5	2 segment	3	AF-4-054-T90 ●	21	2 segment	3
60	AF-2-060-T90 ●	14	2 segment	3	AF-4-060-T90 ●	21,5	2 segment	3
64	AF-2-064-T90 ●	14	2 segment	3	AF-4-064-T90 ●	21,5	2 segment	3
76	AF-2-076-T90 ●	14	2 segment	3	AF-4-076-T90 ●	22	2 segment	3
89	AF-2-089-T90 ●	14,5	2 segment	3	AF-4-089-T90 ●	22,5	2 segment	3

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness							
	Code	Thickness [mm]	Article description	Pieces/carton				
18	AF-5-018-T90 ●	25	2 segment	3	-	-	-	-
22	AF-5-022-T90 ●	25	2 segment	3	-	-	-	-
28	AF-5-028-T90 ●	25	2 segment	3	-	-	-	-
35	AF-5-035-T90 ●	27	2 segment	3	-	-	-	-
42	AF-5-042-T90 ●	27	2 segment	3	-	-	-	-
48	AF-5-048-T90 ●	27,5	2 segment	3	-	-	-	-
54	AF-5-054-T90 ●	28,5	2 segment	3	-	-	-	-
60	AF-5-060-T90 ●	29	2 segment	3	-	-	-	-
64	AF-5-064-T90 ●	29	2 segment	3	-	-	-	-
76	AF-5-076-T90 ●	30	2 segment	3	-	-	-	-
89	AF-5-089-T90 ●	30,5	2 segment	3	-	-	-	-

### Thickness tolerance

AF-1, AF-2: ± 1,0 mm  
 AF-3, AF-4: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

### Remark

Other items can be produced make to order.

- Item not in stock. Delivery on request. [MTO]

## Arma-Chek Silver tapes self-adhesive



Covering Color silver, Composite aluminium tape

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>ACH-PSATAPES-30</b>	30,0	25	0.08	10
<b>ACH-PSATAPES-50</b>	50,0	50	0.08	6
<b>ACH-PSATAPES-50-I</b>	50,0	50	0.08	2
<b>ACH-PSATAPES-75</b>	75,0	50	0,08	2

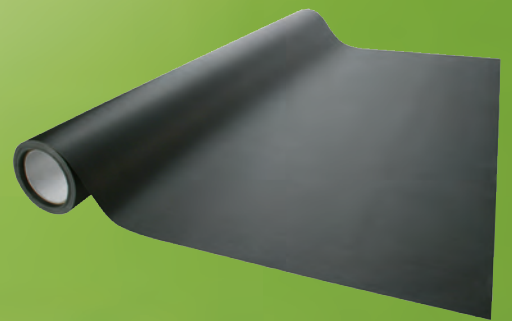






ARMA-CHEK D

INSTALL IT. SAFEGUARD YOUR  
EQUIPMENT.



- UV-resistant protection
- Slim mechanical protection
- Black - reduction of insulation thicknesses
- Reduces risk of corrosion under insulation (CUI)

## Technical Data - Arma-Chek D

Brief description	Arma-Chek D is a flexible, woven glass fibre covering system for long term mechanical protection of ArmaFlex substrates.
Material type	Insulation: Highly flexible, closed-cell elastomeric foam material based on synthetic rubber. Covering: woven, glass fibre, dry-wrap flexible material.
Colour	black (covering)
Product Range	Arma-Chek D is available in a range of pre-insulated tubes & sheets, as well as single covering.
Applications	Insulation and protection of pipes, ducts, valves and vessels of refrigeration and air conditioning equipments, food industries, etc.
Assembly	The ArmaFlex and Arma-Chek installation manuals should be consulted before assembly. We offer special installation courses for the application of Arma-Chek. Please consult our Customer Service.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a> (Armaflex substrate)

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature <sup>1</sup> +110 °C  min. service temperature <sup>2</sup> -50 °C	(+85 °C if sheet or tape is glued to the object with its whole surface.) EU 5687 EU 5688 EU 5689	Tested acc. to EN 14706, EN 14707 and EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	Depends on the ArmaFlex substrate used.	EU 5687 EU 5688 EU 5689	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Depends on the ArmaFlex substrate used.	EU 5687 EU 5688 EU 5689	Tested according to EN ISO 12086 EN 13469
<b>Fire performance</b>			
Reaction to fire	Arma-Chek D (AF+ NH)      E	EU 5687 EU 5688 EU 5689	Classified acc. to EN 13501-1 Tested acc. to DIN EN 13823 DIN EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	Depends on ArmaFlex substrate used.		
Density	1200 kg/m <sup>3</sup> (covering)		
Dimensions and tolerances	In accordance with EN 14304, table 1 (ArmaFlex substrate)	EU 5687 EU 5688 EU 5689	Tested acc. to EN 822, EN 823, EN 13467
Resistance to mechanical impact	Good		
UV resistance <sup>3</sup>	Excellent	TB 142	Tested according to EN ISO 4892-2 (Xenon-Test)
Health aspects	Dust and fibre free.		
Storage & Shelf life	Tape, sheets, tubes, self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% - 70%) and ambient temperature (0 °C – 35 °C).

1. When there are fluctuations in temperature, the surface may wrinkle slightly, as elastomeric products expand and contract in these circumstances. However, these superficial changes do not have any impact on the performance of the material. The wrinkles usually disappear as soon as the plant is heated to its original operating temperature.

2. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

3. In outdoor applications the colour may fade. This does not have any impact on the functionality of the covering or the insulation material.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Arma-Chek installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Arma-Chek D (AF) tubes self-adhesive pre-covered



Length 1,0 m

Pipe max. Outside-Ø [mm]	AF-2 insulation thickness 11,5 mm - 16,0 mm			AF-4 Insulation thickness 17,0 mm - 25,0 mm		
	Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	11,5	AFD-2-015 ●	65	17,0	AFD-4-015 ●	44
18	11,5	AFD-2-018 ●	60	17,5	AFD-4-018 ●	35
22	12,0	AFD-2-022 ●	50	18,0	AFD-4-022 ●	30
28	12,5	AFD-2-028 ●	42	19,0	AFD-4-028 ●	24
35	13,0	AFD-2-035 ●	31	19,5	AFD-4-035 ●	18
42	13,5	AFD-2-042 ●	24	20,5	AFD-4-042 ●	16
48	13,5	AFD-2-048 ●	22	21,0	AFD-4-048 ●	12
54	13,5	AFD-2-054 ●	18	21,0	AFD-4-054 ●	12
60	14,0	AFD-2-060 ●	16	21,5	AFD-4-060 ●	10
76	14,0	AFD-2-076 ●	14	22,0	AFD-4-076 ●	8
89	14,5	AFD-2-089 ●	11	22,5	AFD-4-089 ●	6
114	15,0	AFD-2-114 ○●	8	23,5	AFD-4-114 ○●	5

Pipe max. Outside-Ø [mm]	AF-5 insulation thickness 25,0 mm - 33,0 mm					
	Insulation thickness [mm]	Code	m/carton			
18	25,0	AFD-5-018 ●	21	-	-	-
22	25,0	AFD-5-022 ●	18	-	-	-
28	25,0	AFD-5-028 ●	18	-	-	-
35	27,0	AFD-5-035 ●	12	-	-	-
42	27,0	AFD-5-042 ●	11	-	-	-
48	27,5	AFD-5-048 ●	8	-	-	-
54	28,5	AFD-5-054 ●	8	-	-	-
60	29,0	AFD-5-060 ●	6	-	-	-
76	30,0	AFD-5-076 ●	5	-	-	-
89	30,5	AFD-5-089 ●	4	-	-	-
114	31,5	AFD-5-114 ○●	3	-	-	-

**Length tolerance for tubes** ± 1,5 %

- No self-seal fastening at the longitudinal seam
- Item not in stock. Delivery on request. [MTO]

## Arma-Chek D (AF) sheets pre-covered



Length 2,0 m

Code	Insulation thickness [mm]	Width [m]	Pieces/carton	m <sup>2</sup> /carton
AFD-13MM ●	13,0	0.5	9	9
AFD-13MM-W ●	13,0	1.0	12	24
AFD-19MM ●	19,0	0.5	7	7
AFD-19MM-W ●	19,0	1.0	8	16
AFD-25MM ●	25,0	0.5	5	5
AFD-25MM-W ●	25,0	1.0	6	12

**Length tolerance for sheets** ± 1,5 %

**Thickness tolerance for sheets**

≤ 6 mm:	±1,0 mm
7 -19 mm:	±1,5 mm
> 19 mm:	±2,0 mm

- Item not in stock. Delivery on request. [MTO]

## Arma-Chek D (NH) sheets pre-covered



Length 2,0 m

Code	Insulation thickness [mm]	Width [m]	Pieces/carton	m <sup>2</sup> /carton
<b>NHD-13-99</b> ●	13,0	0.5	9	9
<b>NHD-19-99</b> ●	19,0	0.5	7	7
<b>NHD-25-99</b> ●	25,0	0.5	5	5

Length tolerance for sheets

± 1,5 %

Thickness tolerance for sheets

≤ 6 mm: ±1,0 mm

7 - 19 mm: ±1,5 mm

> 19 mm: ±2,0 mm

Remark

Delivery period for surface-coated tubes 15 working days after receipt of order (ex warehouse).

- Item not in stock. Delivery on request. [MTO]

## Arma-Chek D covering endless



woven glassfibre

Code	Width [mm]	Roll length [m]	Rolls/carton	m <sup>2</sup> /carton
<b>ACH-D25</b>	1.100,0	25	1	27.5
<b>ACH-D25/100</b>	100,0	25	3	7.5

## Arma-Chek D tapes self-adhesive



woven glassfibre

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>ACH-TAPED2025</b>	20,0	25	0.18	12
<b>ACH-TAPED5050</b>	50,0	50	0.18	6
<b>ACH-TAPED10025</b>	100,0	25	0.18	3

## Arma-Chek D accessories



Code	Article description	Pieces/carton
<b>ACH-MASTICD</b>	Mastic black. Sealing compound for installing Arma-Chek outdoors, 290 ml	12





ARMA-CHEK R

FLEXIBLE NON-METALLIC COVERING  
FOR OFFSHORE AND INDUSTRIAL  
INSTALLATIONS



- Flexible polymeric covering formulated with CSM (CSPE) with combined acoustic barrier performance
- Excellent mechanical and weathering protection
- Specially developed for use in offshore and industrial environments
- Mitigates the risk of corrosion under insulation (CUI)
- Resistant to UV, salt water and chemicals
- In-built water vapour barrier  $\mu > 50.000$
- Works in harmony with ArmaFlex, expanding and contracting as required
- IMO certified





## Technical Data - Arma-Chek R [ES]

Brief description	Flexible covering system for elastomeric and other insulation material types. Especially developed for use in offshore and industrial environments.
Material type	Flexible EPDM rubber formulated with Chlorosulphonated Monomer (CSM) also known as CSPE.
Colour	Grey
Product Range	Sheets in rolls, 1 and 2 mm thickness / width 700 and 1,400 mm Arma-Chek Mastic is available for sealing of joints and seams.
Applications	Mechanical and weathering protection of insulated pipework, fittings, vessels and equipment in offshore, heavy industry, chemical and petrochemical environments.
Special Features	Exceptional resistance to UV attack, salt water and mechanical impact. Reduces the risk of Corrosion Under Insulation (CUI). Excellent acoustic performance with natural dampening properties to reduce re-radiation effects.
Safety and Environment	MED Module B ( EC type examination certificate ) by DNV-GL / IMO 2010 FTP ( Fire Test Procedure) Code part 2 and part 5
Assembly	The Armaflex® and Arma-Chek installation manuals should be consulted before assembly. Please consult our Technical Services.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature <sup>1</sup> min. service temperature	+100 °C / +212°F - 50 °C / -58°F	
<b>Thermal Conductivity</b>			
Thermal Conductivity	Depending on insulation used. System thermal performance depends on properties and configuration of individual layers.		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Water Vapour diffusion resistance factor	μ ≥ 50.000	Tested according to EN 12086 (Equivalent method ASTM E96)
	Water Vapour permeability	Perm inch ≤ 0,003	
	Water Vapour permeability	g/(m.s.Pa) ≤ 3.91 x 10 <sup>-12</sup>	
<b>Fire performance</b>			
Reaction to fire	Euroclass	B-s3,d0	Classified according to EN 13501-1 Tested according to EN 13823 (SBI) and EN ISO 11925-2
Other Fire Class	Part 2 and Part 5 (IMO 2010 FTP Code) ASTM E 84 BS 476 Part 6 and Part 7 NFP 92-507	Pass Class A (< 25 flame spread index) Class 0 and Class 1 M1	IMO Approved by DNV
Density	1650 to 1750 kg/m <sup>3</sup> / 103.00 to 109.25 lb/ft <sup>3</sup>		Tested according to ISO 845, ASTM D1622
Resistance to mechanical impact	Good		
UV resistance	Excellent		Tested According to EN ISO 4892-2 1000h no cracking, no visible discoloration, 3000 / 5000 h cracking under microscope, slight discoloration
Tear strength	≥ 7,0 N/mm / ≥ 40 lbf/in		Tested according to ISO 34-1 - Method B, procedure b (MD/CD)
Tensile strength	≥ 4.5 MPa / ≥ 653 psi		Tested according to ISO 37 - Type II sample (MD)

## Technical Data - Arma-Chek R [ES]

Elongation	≥ 200 %	Tested according to ISO 37 - Type II sample	
Water-soluble chlorides <sup>2</sup>	≤ 100 ppm (mg/kg or µg/g)	Tested according to EN 13468 and ASTM C871	
Storage & Shelf life	Max 3. Years Material shall be stored indoors, in clean and dry conditions, away from direct sunlight and in no direct contact with ground		Shelf life ( maximum storage time) is limited in order to make sure that only currently manufactured products are applied on projects. This limitation is restricted solely to storage of the product and does not affect the lifetime of product after it has been installed
Hydrostatic pressure resistance of joints <sup>2</sup>	No leak at 6.89 bar (70.4 m) / 100 psi	Tested according to ASTM D5385	
Puncture Resistance ( 2mm only) <sup>2</sup>	23.48 lbf / 104.44 N	Tested according to ASTM D751	
Bursting strength ( 2mm only) <sup>2</sup>	131 lbf / 582.72 N	Tested according to ASTM D751, Section 18.2	
Weather resistance	Excellent	Assessed according to Allunga Exposure Laboratory	
Fungi Resistance <sup>2</sup>	No growth	Tested according to ASTM C1338	
Ozone Resistance	Excellent	Tested according to DIN 53509-1	Tested at 48h/25 ± 5ppm / 20 ± 2 % elongation / no cracks
Application temperature	+5°C to + 35°C / +41°F to +95°F Max. relative humidity 80%		
Acoustic Insertion loss	When used as part of a system ISO 15665 Class A to C, Shell DEP 31.46.00.31 Gen Class D		Tested according to ISO 3741 (Equivalent method ASTM E1222) Classified according to ISO 15665

1. For temperatures above or below those indicated in the "temperature range" above, please contact our Customer Service Center to request for the corresponding technical information.

2. Based on single test results. Can be used for information / reference only

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Arma-Chek installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification.

## Arma-Chek R [ES] covering endless



Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
RCS-R05/1-07-GY ●	1	700,0	5	3.5
RCS-R05/1-14-GY ●	1	1.400,0	5	7
RCS-R05/2-07-GY ●	2	700,0	5	3.5
RCS-R10/1-07-GY	1	700,0	10	7
RCS-R10/1-14-GY	1	1.400,0	10	14
RCS-R10/2-07-GY	2	700,0	10	7
RCS-R20/1-07-GY	1	700,0	20	14

● Item not in stock. Delivery on request. [MTO]

## Arma-Chek R [ES] accessories



Code	Article description	Pieces/carton
<b>ACH-MASTICS</b>	Sealing compound for installing Arma-Chek R, Cartridge 290 ml	12
<b>ADH-HT625/1,0</b>	Armaflex® HT625 one-component adhesive, 1,0 litre cans	12
<b>CLEANER/1,0</b>	Special cleaner for use with Armaflex® Adhesive 520 and Armaflex® Adhesive HT625.	4

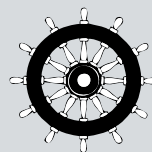


ARMA-CHEK JUNA

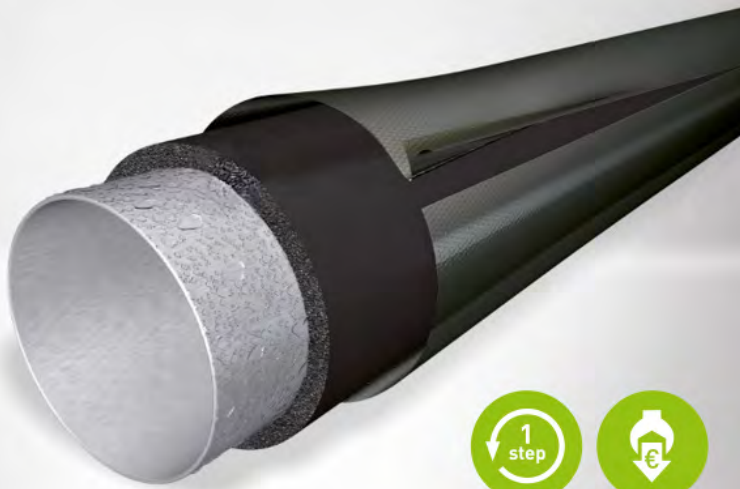
INSTALL IT. SAFEGUARD YOUR EQUIPMENT.



- IMO certified space-saving mechanical protection
- Black colour allows insulation thickness to be reduced
- Robust
  
- Small wall thicknesses due to very high surface emissivity factor
- Low weight and outstanding tear strength
- Excellent UV-resistance





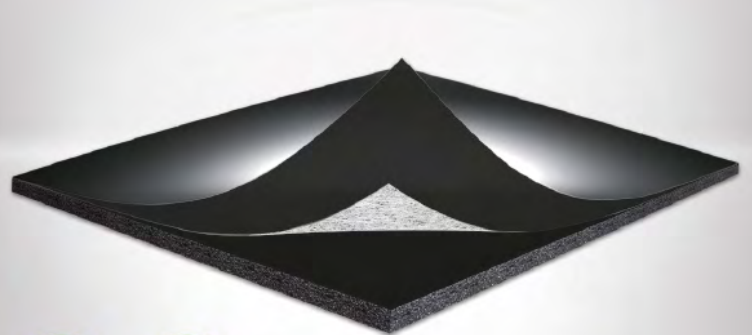


## The cost-efficient one-step solution

Technical installations which are subject to mechanical stress should be covered to protect them against damage. Armacell's flexible covering systems not only provide tough protection against weathering, mechanical impact and corrosion under insulation (CUI), but also save time and money. Unlike traditional insulation materials and coverings, the precovered products can be installed in a single step. Arma-Chek Juna is UV-resistant and can be installed on combustible and non-combustible pipes.

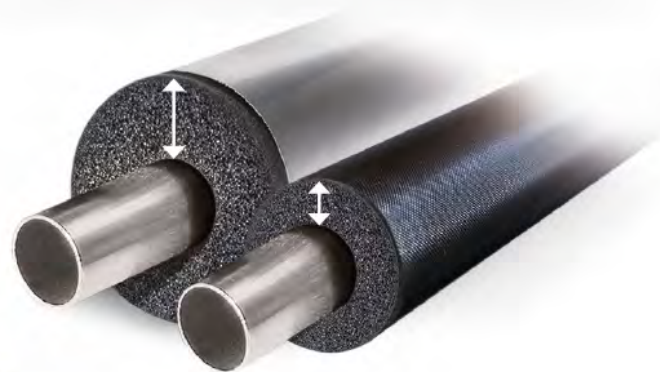
## Optimal strength-to-weight ratio

The flexible incombustible covering is made of fibreglass fabric laminated with black aluminium. Thanks to its low bulk density and outstanding tear strength, Arma-Chek Juna is predestined for covering elastomeric and other insulation materials used in marine applications. In combination with Armaflex insulation it offers a perfect strength-to-weight ratio. Ships equipped with Armacell's lightweight solutions are less expensive to operate due to lower fuel demands.



## Highly flexible and space saving

Due to its high flexibility Arma-Chek Juna ensures easy installation even in tight spaces on board vessels. What's more, compared to aluminium-clad insulation the lightweight product allows space-saving installation. As the black surface of the covering is highly absorptive, thinner insulation thicknesses can be specified. The emissivity factor indicates the relative ability of a material to emit energy by radiation. The higher this factor, the smaller the insulation thickness needed. When a bright shiny surface is used, the wall thickness of the insulation has to be increased significantly.



## Ideal solution for python beverage tubing

Pythons are now state of the art for supplying beverages at low temperatures. They consist of a bundle of plastic tubes and cooling lines encased in insulation. The ArmaFlex insulation ensures that the desired medium temperature is maintained and prevents energy losses and condensation. The Arma-Chek Juna covering protects the surface of the python against mechanical impact, thus ensuring a long service life for the equipment.





## Technical Data - Arma-Chek Juna

Brief description	Arma-Chek Juna innovative covering is, thanks to its low bulk density and outstanding tear strength, predestined for covering elastomeric insulations or other material types used in the ship industry. Arma-Chek Juna in combination with Armaflex insulation can be used on combustible and non-combustible substrates.
Material type	Insulation: highly flexible, closed-cell elastomeric foam material based on synthetic rubber. Covering: made of fiberglass fabrics laminated with black coloured aluminium facing.
Colour	black (covering)
Product Range	Arma-Chek Juna is available in a range of pre-covered tubes & sheets, as well as single covering.
Applications	Insulation and mechanical protection on cold service pipework/fittings for refrigeration systems everywhere onboard, and for pipework, fittings, air ducts and tanks insulation in cargo areas, mail rooms, baggage rooms and refrigerated compartments of service spaces, and exterior locations.
Assembly	The Armaflex and Arma-Chek installation manuals should be consulted before assembly. We offer special installation courses for the application of Arma-Chek. Please consult our Customer Service.
Remarks	Rough handling of the material can cause puckering on the surface. Creases and micro-cracks of the surface don't affect the functional properties of the covering.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range <sup>1</sup>	max. service temperature	+110 °C for substrate (+85 °C if sheet is glued to the object with its whole surface) (+550 °C for the jacketing)	Tested acc. to EN 14706 and EN 14707
	min. service temperature <sup>2</sup>	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	depends on used Armaflex substrate		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	depends on used Armaflex substrate		Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>			
Reaction to fire	Pre-covered products	low-flammable	EU 7004 EU 7003 EU 7177 D 5555 Tested according to IMO 2010 FTP Code, part 5 Classified acc. to MED 96/98/EC Modul D
	Covering; tape (fiberglass fabrics laminated with black coloured aluminium facing)	low-flammable	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Weight	approx. 240 g/m <sup>2</sup> (covering)		Tested according to EN 2286
Material thickness	approx. 240 µm (0,24 mm)		Tested according to EN 2286
Resistance to mechanical impact	Good puncture and tear resistance.		
UV resistance <sup>3</sup>	Excellent		
Storage & Shelf life	Tape, self-adhesive: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

1. When there are fluctuations in temperature, the surface may wrinkle slightly, as elastomeric products expand and contract in these circumstances. However, these superficial changes do not have any impact on the performance of the material. The wrinkles usually disappear as soon as the plant is heated to its original operating temperature.

2. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

3. In outdoor applications the colour may fade. This does not have any impact on the functionality of the covering or the insulation material.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Arma-Chek installation manual.

## Arma-Chek Juna tubes self-adhesive pre-covered



Length 1,0 , Color black

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-3			AF-5		
		Insulation thickness [mm]	Code	m/carton	Insulation thickness [mm]	Code	m/carton
15	16,0 - 17,5	14,0	AFJ-3-015 ●	54	-	-	-
18	19,0 - 20,5	14,0	AFJ-3-018 ●	48	25,0	AFJ-5-018 ●	30
22	23,0 - 24,5	14,5	AFJ-3-022 ●	42	25,0	AFJ-5-022 ●	26
28	29,0 - 30,5	15,5	AFJ-3-028 ●	30	25,0	AFJ-5-028 ●	26
35	36,0 - 38,0	16,0	AFJ-3-035 ●	20	27,0	AFJ-5-035 ●	16
42	43,5 - 45,5	16,5	AFJ-3-042 ●	20	27,0	AFJ-5-042 ●	14
54	55,0 - 57,0	17,0	AFJ-3-054 ●	12	28,5	AFJ-5-054 ●	10
60	61,5 - 63,5	17,0	AFJ-3-060 ●	12	29,0	AFJ-5-060 ●	8
76	77,0 - 79,5	17,5	AFJ-3-076 ●	8	30,0	AFJ-5-076 ●	6
89	90,5 - 93,0	18,0	AFJ-3-089 ●	8	30,5	AFJ-5-089 ●	6
114	116,0 - 120,0	18,5	AFJ-3-114 ●	6	31,5	AFJ-5-114 ●	5
140	142,0 - 146,0	-	-	-	32,0	AFJ-5-140 ●	3

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	AF-6					
		Insulation thickness [mm]	Code	m/carton			
15	16,0 - 17,5	32,0	AFJ-6-015 ●	22	-	-	-
18	19,0 - 20,5	32,0	AFJ-6-018 ●	22	-	-	-
22	23,0 - 24,5	33,5	AFJ-6-022 ●	20	-	-	-
28	29,0 - 30,5	35,0	AFJ-6-028 ●	16	-	-	-
35	36,0 - 38,0	35,0	AFJ-6-035 ●	14	-	-	-
42	43,5 - 45,5	36,5	AFJ-6-042 ●	10	-	-	-
48	49,5 - 51,5	37,5	AFJ-6-048 ●	8	-	-	-
54	55,0 - 57,0	38,0	AFJ-6-054 ●	8	-	-	-
60	61,5 - 63,5	39,0	AFJ-6-060 ●	6	-	-	-
76	77,0 - 79,5	40,5	AFJ-6-076 ●	5	-	-	-
89	90,5 - 93,0	41,5	AFJ-6-089 ●	4	-	-	-
114	116,0 - 120,0	43,0	AFJ-6-114 ●	4	-	-	-
140	142,0 - 146,0	44,5	AFJ-6-140 ●	2	-	-	-
168	170,0 - 174,0	45,0	AFJ-6-168 ●	2	-	-	-

**Length tolerance for tubes** +/- 1,5%  
**Thickness tolerance**  
 AFJ-3: ± 1,5 mm  
 AF-5: ± 2,5 mm  
 AF-6: ± 3,0 mm

● Item not in stock. Delivery on request. [MTO]

## Arma-Chek Juna sheets pre-covered



Length 2,0m, Width 0,5m, colour Black

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
AFJ-13MM ●	13,0	9
AFJ-19MM ●	19,0	7
AFJ-25MM ●	25,0	5
AFJ-32MM ●	32,0	4

**Length tolerance for sheets** +/- 1,5%  
**Thickness tolerance for sheets**  
 7 - 19 mm: ±1,5 mm  
 > 19 mm: ±2,0 mm

● Item not in stock. Delivery on request. [MTO]

## Arma-Chek Juna covering endless



The flexible incombustible covering is made of fiberglass fabrics laminated with black coloured aluminium facing with a very high surface emissivity factor.

Code	Width [mm]	Roll length [m]	Rolls/carton	m <sup>2</sup> /carton
AJ-COAT	980,0	50	1	49

## Arma-Chek Juna tapes self-adhesive



Material: coated aluminium tape for ArmaChek system.

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>AJ-TAPE50</b>	50,0	50	0,05	6

## Arma-Chek Juna tapes self-adhesive beverage pipes



Material: aluminium/glasfiber tape for beverage pipes or adhesion on elastomeric foams. Suitable as repair tape.

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>AJ-TAPE75-P</b>	75,0	50	0,30	8

## Arma-Chek Juna accessories



Code	Article description	Pieces/carton
<b>ACH-MASTICD</b>	Mastic black. Sealing compound for installing Arma-Chek outdoors, 290 ml	12
<b>ADH520/0,5E</b>	Armaflex® adhesive 520, 0,5 liter cans	12
<b>ADH520/1,0E</b>	Armaflex® adhesive 520, 1,0 liter cans	12





ARMAPROTECT

INSTALL IT. ENSURE SAFETY.



- Versatile passive fire protection portfolio
- System approach providing coverages for a wide variety of pipe and electrical aperture penetrations
- Approved quality through international (European Technical Assessment) and/or national certifications





## Armaflex Protect

The appropriate test certificates are to be consulted for information on permitted pipe materials and other necessary basic conditions. During planning and execution, not only the diagrams shown but also the basic conditions of the test certificate must be observed.



### PIPE MATERIALS AND ZERO DISTANCE

Due to its intumescent effect in the event of a fire, the new Armaflex Protect can be used to securely seal off penetrations not only for copper, steel and stainless steel pipework but also for combustible supply pipes such as multilayer composite pipes, PE, PE-HD, PP or PVC pipes. Armaflex Protect is a system component working with all Armaflex elastomeric insulation materials and Armaflex 520 Adhesives.

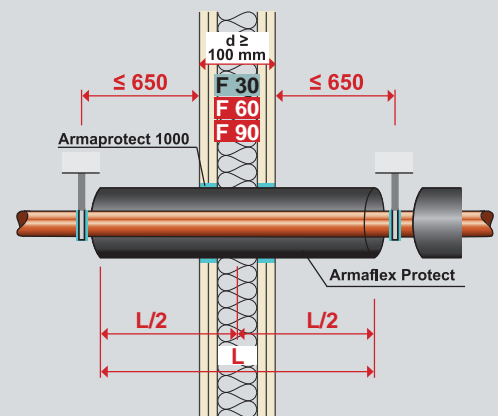
#### The greatest advantage:

Metal pipes up to an outside pipe diameter of up to 88.9 mm and plastic pipes up to an outside pipe diameter of up to 75 mm can be installed at "zero distance" from each other.



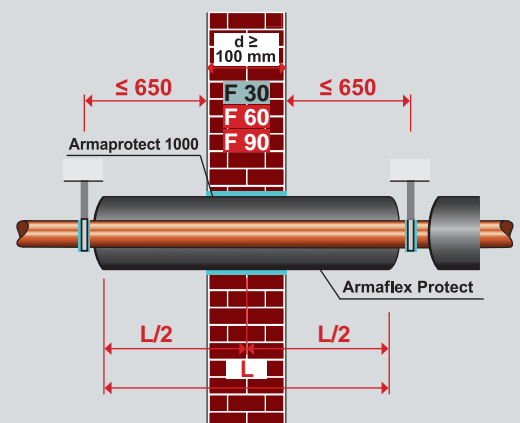
### LIGHTWEIGHT WALL

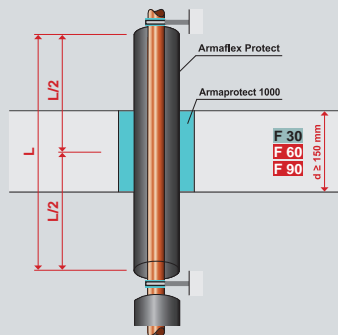
In fire-rated lightweight walls, Armaflex Protect is installed centrally. The annular gap is closed within the insulation level using Armaprotect 1000 or conventional filler is used against the gypsum board. Additional strips or protective insulation are not required.



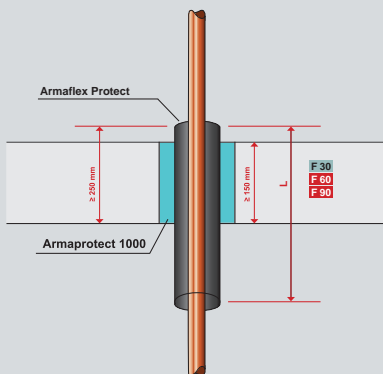
### SOLID WALL

In fire-rated solid walls, Armaflex Protect is installed centrally. The gap is closed using Armaprotect 1000 or ordinary mineral mortar. Additional strips are not required!



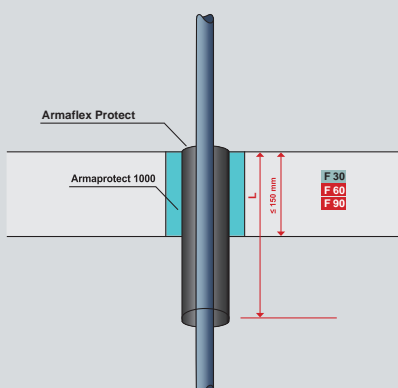


Armaflex Protect can also be installed centrally in ceiling penetrations. Armaprotect 1000 or mineral mortar is used to close the remaining gap in the penetration or core-drilled hole.



If no insulation is required or possible above the ceiling, Armaflex Protect can be installed under the ceiling. In this way radiator connections, for example, can be sealed off simply and safely.

Under-ceiling insulation on copper, steel, stainless steel pipes.



Under-ceiling insulation in the case of plastic pipes.

# ArmaproTECT 1000

## FIRESTOP FILLER

The revolutionary aspect of this product is the consistency of the ready-to-use material. It can be applied directly from the bucket using either fingers or a spatula. In this way the annular gap in wall and ceiling penetrations can be sealed quickly and neatly. With the firestop filler ArmaproTECT 1000 it is possible to seal wall and ceiling penetrations safely and reliably even under difficult conditions on the building site. The non-combustible compound with a melting point of  $>1000\text{ }^{\circ}\text{C}$  not only ensures reliable and effective fire protection, but also protects the pipes against heat losses and prevents noise being transmitted to adjoining structural elements.

### ARMAPROTECT 1000 AND ARMAFLEX PROTECT: THE PERFECT COMBINATION

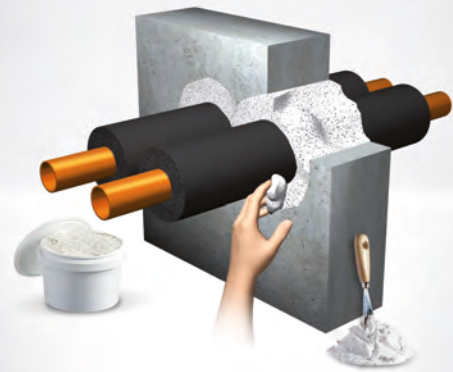
In applications in which Armaflex Protect is used, ArmaproTECT 1000 completes the system perfectly. But it can also be applied directly onto pipes or even electricity cables in wall and ceiling penetrations. The product complies with European standard EN 998-2 and bears the CE marking.

### IN A PRACTICAL TUBE:

The firestop filler is now also available in a practical tube. It is very easy to squeeze out the required amount of the paste. After use the tube is resealed simply by replacing the screw top.

### EASY TO APPLY

The firestop filler is ready to use, stirring is not necessary. The product can be scooped easily from the bucket directly by hand into the gap. The surface can be smoothed using your hand or a scraper. No waste because of resealable bucket.



## Technical Data - ArmaFlex Protect

Brief description	Flexible fire seal and insulation for metal and composite pipes through fire-resistant walls and floors (up to EI 120).
Material type	Flexible elastomeric foam based on synthetic rubber
Colour	black
Applications	Insulation and fire protection barrier for drinking water hot / cold, heating and refrigeration metal pipes up to 326 mm diameter and composite pipes up to 75 mm.
Special Features	Detailed information on the fields of application (building elements, services, limits in size) and description of construction of the penetration seal are available in the ETA-11/0454.
Safety and Environment	Please refer to latest product Safety Datasheet (SDS)
Assembly	Please refer to "ArmaFlex Application Manual" and "ArmaProtect System Comprehensive Compendium". For information on marine applications, please consult your local Armacell contact or get in touch with our Customer service.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+85 °C	EU 5925 Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\delta_m$	0	EU 5925 Tested according to EN 12667 EN ISO 8497
	$\lambda$	≤ 0,056	
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu$	≥ 7.000	EU 5925 Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>			
Other Fire Class	Marine applications	A-60 class decks and bulkheads	EU 5616 EU 5883 EU 5870 D 5555 Tested according to 2010 FTP-Code part3, IMO A.754 (18) Classified acc. to MED 96/98/EC MODULE D
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Fire resistance of structural element	up to EI 120 (ETA-11/0454)		EU 4384 EN 1366-3, EN 13501-2
Storage & Shelf life	Cartons shall be stored horizontally. Can be stored in dry, clean rooms at normal relative humidity (50 % - 70 %) and ambient temperature (0 °C - 35 °C). Minimum temperature for transport -50 °C under condition of frost-free storage before installation.		
Use category	Type Y2 - intended for use at temperatures below 0 °C, but with no exposure to rain nor UV		EU 4384 EOTA TR 024

<sup>1</sup> Further documents such as test certificates, approvals and the like can be requested using the registration number given.

### Armaflex Protect – ideal for condensation control on refrigeration and coolant piping

Pipe outer diameter	Line temperature / Ambient temperature			
	+6 °C / 23 °C	0 °C / 23 °C	-5 °C / 23 °C	-10 °C / 23 °C
≥ 10 mm ≤ 323,9 mm	Relative humidity ≤ 80 %	Relative humidity ≤ 75 %	Relative humidity ≤ 70 %	Relative humidity ≤ 65 %

## Technical Data - ArmaFlex Protect

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.



## Technical Data - ArmaProtect 1000

Brief description	ArmaProtect 1000 Firestop Filler is a particularly practical, ready-to-use, high-temperature resistant mortar with excellent fire-protection, thermal insulation and noise control properties. It is self-hardening and very easy to apply by hand. No need for formwork – and it can be used even in tight spots.
Material type	High-temperature resistant mortar with hollow microspheres and inorganic binding agents.
Colour	light grey
Applications	Ideal system solution for sealing the annular gap in applications using ArmaFlex Protect. Furthermore, in accordance with the German MLAR 2020, ArmaProtect 1000 can be used for penetrations with individual pipes or even electricity cables. Only for indoor use.
Special Features	When used to fill the annular gap, ArmaProtect 1000 Firestop Filler fulfils the German guidelines for pipe installations (MLAR, version 2020) and the legal guidelines for pipe installations issued by the federal states.
Safety and Environment	Please refer to latest product Safety Datasheet (SDS).
Assembly	The ready-to-use ArmaProtect 1000 Firestop Filler is supplied in buckets / handy plastic bag and can be applied using either a spatula or fingers. The substrate must be dry and free of dust and grease. The room temperature must not fall below 5 °C during application. Once it has dried hard, the Firestop Filler can be sanded, drilled and cut without any difficulties.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a>

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	10 °C	EU 5738 Tested according to EN 12667
	$\lambda$	≤ 0,052 W/(m · K)	
<b>Fire performance</b>			
Reaction to fire	Euroclass A1	EU 5738	Classified acc. to EN 13501-1 Tested according to EN ISO 1182 EN ISO 1716
<b>Other technical features</b>			
Density	approx. 180 kg/m <sup>3</sup> (after drying)		
Compression strength	0,4 N/mm <sup>2</sup>	EU 5738	Tested according to EN 998-2:2017-02
Drying time	48 h		high humidity, low temperature and as well limited convection extend the drying time
Melting point	> 1000 °C	EU 5738	Tested according to DIN 4102-17
Water-soluble chlorides	≤ 0,01 %	EU 5738	Tested according to EN 998-2:2017-02
Yield	1:1		
Storage & Shelf life	24 month in sealed original container.		in a cool and dry place. Protect from temperatures below +5 °C!

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - ArmaProtect PP

Brief description	Pipe collar for creating pipe penetration seals of fire resistance class R90.
Material type	A solid metal sleeve which is equipped with several layers of the high performance intumescent material. In the event of a fire, the intumescent material expands with high pressure and thus seals the opening hermetically against flames and smoke
Colour	light grey
Applications	Fire resistant collar for pipe penetrations in solid walls and ceilings made of concrete or aerated concrete and lightweight partition walls. Two pieces are needed for walls, one piece for ceilings.
Special Features	Identification sign provided. Particularly suitable for multiple-use beverage lines (python tubing). Free of halogens, PVC, silicone. Moisture resistant.
Assembly	For fire resistant seals on combustible supply / drainage pipes with/without insulation: - PVC; PP; PE-HD; LDPE; PB; PE-X; ABS; ASA pipes up to Ø 200 mm - multi-layer composite pipes up to Ø 110 mm - pipe-in-pipe system up to Ø 160 mm - PVDF pipes up to Ø 90 mm - sound-reducing wastewater pipes (Friaphon, Geberit dB 20 + Silent PP, Georg Fischer COOL-FIT, POLO-KAL NG + XS, Rehau Raupiano plus, Wavin AS + Si Tech, Ostendorf Skolan dB) up to Ø 200 mm - Beverage lines up to Ø 108 mm - PE/PVC pipes with AF/ArmaFlex or SH/ArmaFlex insulation up to Ø 160 mm Can be installed on pipe sleeves / inclined penetrations.
Remarks	The collar may only be used for the pipe materials and dimensions defined in the allgemeinen bauaufsichtlichen Zulassung (general building authorities approval).

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Fire performance</b>			
Fire resistance of structural element	Wall penetrations	≤ R90	D 3968 D 7079
	Floor penetrations	≤ R90	
<b>Other technical features</b>			
Start of reaction / volume expansion	approx. +170 °C / 18 times in the event of fire		
Health aspects	Free of fibres and compounds containing heavy metals.		

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Technical Data - ArmaProtect A1

Brief description	2-part pipe sections made material with inorganic-based ceramic binding agents, consisting of 2-component silicon oxide and aluminum oxide. The product is covered with the aluminum foil enclosed and a vapour tight seal is created with aluminium adhesive tape.
Material type	Insulation: inorganic-based ceramic binding agents, consisting of 2-component silicon oxide and aluminum oxide. Covering: aluminum foil, thickness 50 µm.
Colour	light grey (insulation)
Applications	Fire protection of pipe penetrations through walls and ceilings according to the German Model Conduit Systems Directive (MLAR) for non-combustible pipes up to an outer diameter of 160 mm and plastic pipes up 32 mm.
Assembly	The non-combustible ArmaProtect A1 adhesive paste is used to install the Armaprotect A1 shells

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Fire performance</b>			
Reaction to fire	Non-combustible A1	D 3215	Classified acc. to EN 13501-1 Tested acc. to DIN EN ISO 1182 DIN EN ISO 1716
<b>Other technical features</b>			
Density	350 kg/m <sup>3</sup>		
Pipe dimensions	Non-combustible pipes ≤ 168mm outer diameter, plastic pipes ≤ 32 mm outer diameter		
Melting point	> 1000 °C	D 3158	Tested according to DIN 4102-17

1. For temperatures below 0 °C please contact our Customer Service Center to request for the corresponding technical information.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## ArmaFlex Protect tubes



Length 1,0 m

Pipe max. Outside-Ø [mm]	Insulation thickness [mm]	Code	m/carton
6	16,0	PRO-AX-16X006	34
8	16,0	PRO-AX-16X008	30
10	19,0	PRO-AX-19X010	18
12	19,0	PRO-AX-19X012	17
15	19,0	PRO-AX-19X015	16
16	20,0	PRO-AX-20X016	14
18	20,0	PRO-AX-20X018	13
20	20,0	PRO-AX-20X020	12
22	20,0	PRO-AX-20X022	12
25	20,0	PRO-AX-20X025	11
28	25,0	PRO-AX-25X028	9
32	25,0	PRO-AX-25X032	8
35	25,0	PRO-AX-25X035	8
40	25,0	PRO-AX-25X040	6
42	25,0	PRO-AX-25X042	6
48	25,0	PRO-AX-25X048	5
50	25,0	PRO-AX-25X050	5
54	25,0	PRO-AX-25X054	5
60	25,0	PRO-AX-25X060	4
64	25,0	PRO-AX-25X063	4
76	25,0	PRO-AX-25X076	4
89	25,0	PRO-AX-25X089	4

## ArmaFlex Protect sheets endless



Code	Roll length [m]	Width [m]	Insulation thickness [mm]	m <sup>2</sup> /carton	Rolls/carton
PRO-AX-13MM/E	6	0.5	13,0	2 x 3	2

**Remark** For sealing purposes at least two layers of sheet material must be installed; DIN 4140 requires that, in addition to being glued, they are secured by wire.

## ArmaProtect 1000 fire protection compound



pro-1000-0,5B in easy to handle plastic bag with removable lid  
Ready to use in plastic buckets

Code	Packaging units	Pieces/carton
PRO-1000-0,5B •	0,5 l	20
PRO-1000-1,0	1,0 l	27
PRO-1000-2,5	2,5 l	12
PRO-1000-5,0	5,0 l	8

**Remark** other packaging units on request

• Item not in stock. Delivery on request. [MTO]

## ArmaProtect PP fire protection sleeves



For flameproof sealing of combustible supply / sewage pipes with / without insulation.

Height mm	Outer-Ø pipe or insulation [mm]	Code	Pieces/carton
26	32/34	PRO-PP-032	5
26	40/42	PRO-PP-040 ●	5
26	50/52	PRO-PP-050 ●	5
26	63/65	PRO-PP-063 ●	10
26	75/77	PRO-PP-075 ●	10
26.6	90/92	PRO-PP-090 ●	10
26.6	110/112	PRO-PP-110 ●	10
40	125	PRO-PP-125 ●	2
40	140	PRO-PP-140 ●	2
40	160	PRO-PP-160 ●	2
40	200	PRO-PP-200 ●	2

● Item not in stock. Delivery on request. [MTO]

## ArmaProtect PP application set



For installation with solid walls and ceilings.

Code	For Armaprotect PP	Pieces/carton
PRO-PP-032-052	32 - 52	1
PRO-PP-063-125 ●	63 - 125	1
PRO-PP-140-160 ●	140 - 160	1
PRO-PP-180-200 ●	180 - 200	1

● Item not in stock. Delivery on request. [MTO]

## ArmaProtect A1 fire protection system



Length 0,3 m, including Aluminium foile

Pipe max. Outside-Ø [mm]	20,0 mm insulation thickness			30,0 mm insulation thickness		
	Code	Outer- Ø [mm]	Pieces/carton	Code	Outer- Ø [mm]	Pieces/carton
6	PRO20006-A1 ●	50	1	-	-	-
8	PRO20008-A1 ●	50	1	-	-	-
10	PRO20010-A1 ●	54	1	-	-	-
12	PRO20012-A1 ●	54	1	-	-	-
15	PRO20015-A1 ●	57	1	-	-	-
18	PRO20018-A1 ●	60	1	-	-	-
22	PRO20021-A1 ●	64	1	PRO30021-A1 ●	84	1
28	PRO20027-A1 ●	70	1	PRO30027-A1 ●	90	1
35	PRO20033-A1 ●	77	1	PRO30033-A1 ●	97	1
42	PRO20042-A1 ●	84	1	PRO30042-A1 ●	104	1
48	PRO20048-A1 ●	90	1	PRO30048-A1 ●	110	1
54	PRO20054-A1 ●	96	1	PRO30054-A1 ●	117	1
60	PRO20060-A1 ●	102	1	PRO30060-A1 ●	122	1
64	PRO20064-A1 ●	106	1	PRO30064-A1 ●	127	1
76	PRO20076-A1 ●	118	1	PRO30076-A1 ●	138	1
89	PRO20089-A1 ●	131	1	PRO30089-A1 ●	151	1
102	PRO20102-A1 ●	144	1	PRO30102-A1 ●	165	1
108	PRO20108-A1 ●	150	1	PRO30108-A1 ●	171	1
114	PRO20114-A1 ●	157	1	PRO30114-A1 ●	177	1
133	-	-	-	PRO30133-A1 ●	196	1
140	-	-	-	PRO30139-A1 ●	202	1
154	-	-	-	PRO30154-A1 ●	-	1
159	-	-	-	PRO30160-A1 ●	223	1
168	-	-	-	PRO30168-A1 ● <sup>1</sup>	231	1

● Item not in stock. Delivery on request. [MTO]

<sup>1</sup> Not conform with Paragraph 4.2 MLAR. Approval necessary in individual cases.



## ArmaProtect A1 adhesive paste non-combustible



Adhesive paste in flexible bag for installing the Armaprotect A1 fire wall / ceiling penetration.

Code	Pieces/carton	kg/unit
ADHPR •	6	1 kg

### Remark

- Item not in stock. Delivery on request. [MTO]

Shelf-life: 12 months protected from frost .

## ArmaProtect A1 tapes self-adhesive



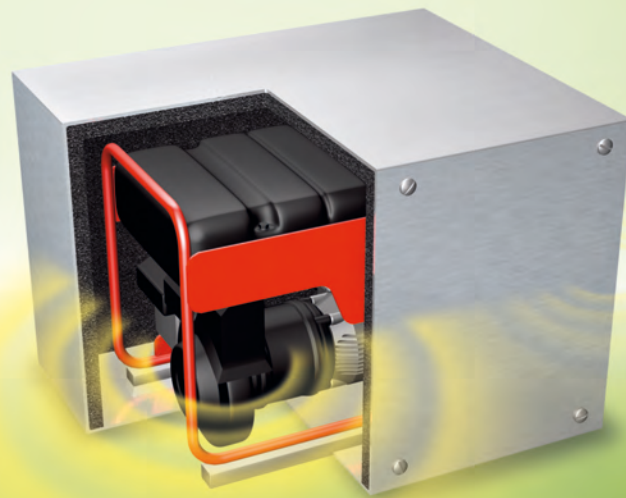
Material: Aluminium

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
OKF-TAPE50100	50,0	100	0.025	6



ARMASOUND® RD

INSTALL IT. ENJOY QUIETNESS



- Superior acoustic performance
- Flexible and light-weight
- Combined acoustic and thermal properties

## Technical Data - ArmaSound RD120

Brief description	Highly-flexible, open-cell acoustic material with complex pore geometry.
Material type	Elastomeric foam based on synthetic rubber.
Colour	black
Material Special Information	Self-adhesive coating (on request): pressure-sensitive adhesive coating on modified acrylate basis with mesh structure. Covered with polyethylene foil.
Applications	Acoustic insulating material with high sound absorption performance for use in a variety different applications, e.g. fan-coil units, duct linings, cabinet linings, chiller systems, enclosures, pipelines etc.

Property	Value/Assessment							Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>									
Temperature Range	max. service temperature			+ 85 °C					Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature			-20 °C					
<b>Thermal Conductivity</b>									
Thermal Conductivity	$\vartheta_m$	± 0		°C	$\lambda =$			Declared acc. to EN ISO 13787 Tested acc. to EN 12667	
	$\lambda$	≤ 0,052		W/(m · K)	[52 + 0,1 · $\vartheta_m$ + 0,0009 · $\vartheta_m^2$ ]/1000				
<b>Fire performance</b>									
Reaction to fire	Euroclass			E				D 4411	Tested according to EN ISO 11925-2
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames								
<b>Acoustic Performance</b>									
Sound absorption	Practical sound absorption coefficient $\alpha_p$	Octave band absorption coefficient		≤	0,800			EU 2555	Tested according to EN ISO 20354
Weighted sound absorption coefficient $\alpha_w$	Depending on material thickness.								
Calculated broadband insertion loss	$a_s$ / Thickness	125	250	500	1.000	2.000	4.000		Calculated according to EN ISO 11654
	10	0,010	0,030	0,120	0,360	0,700	0,760		
	15	0,020	0,090	0,290	0,720	0,810	0,760		
	20	0,030	0,120	0,450	0,770	0,750	0,760		
	25	0,050	0,190	0,610	0,740	0,750	0,780		
	50	0,150	0,530	0,710	0,730	0,770	0,760		
	Thickness	10 mm	15 mm	20 mm	25 mm	50 mm			
	$\alpha_w^2$	0.20 (H)	0.35 (MH)	0.40 (MH)	0.50 (MH)	0,750			
Class	E	D	D	D	C				
NRC <sup>3</sup>	0,300	0,450	0,500	0,550	0,700				
<b>Other technical features</b>									
Density	≥ 100 kg/m <sup>3</sup>								Tested according to producer's quality control
Dimensions and tolerances	l:1000 mm (+/- 15 mm)								Tested according to producer's quality control
Health aspects	Dust and fibre free								
Storage & Shelf life	Self-adhesive sheets: 1 year								Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## Technical Data - ArmaSound RD240 [ES]

Brief description	Highly-flexible, hydrophobic, open-cell acoustic insulation material with complex pore geometry.
Material type	Elastomeric foam based on synthetic rubber.
Colour	Black
Product Range	Sheets, 10, 15, 20, 25, 30, 40 and 50 mm thickness / width 500 and 1000 mm / length 1000 and 2000 mm
Applications	In general applications ArmaSound® RD240 is used as acoustic insulation material with excellent sound absorption performance in a variety of different applications, e.g. fan-coil units, duct linings, cabinet linings, chiller systems, enclosures, pipelines. In industrial applications ArmaSound® RD240 is used as an important component of Arma-Sound Industrial Systems to provide acoustic insulation on industrial pipework and vessels ensuring reduction of sound transmission. Further industrial application area is sound absorption performance of enclosures.
Special Features	Excellent sound absorption performance.
Assembly	For industrial applications it is recommended to consult the ArmaSound Industrial Systems Application manual and other relevant Armacell installation instructions and application manuals. Please consult our Customer Service Centre.

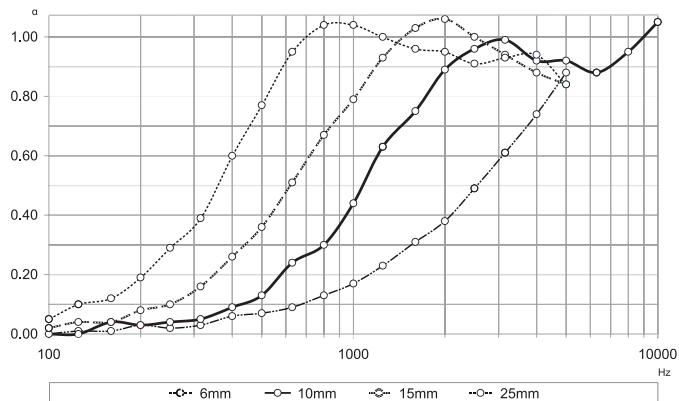
Property	Value/Assessment							Special Remark	
<b>Temperature Range</b>									
Temperature Range	max. service temperature		+85 °C						
	min. service temperature		-20 °C						
<b>Thermal Conductivity</b>									
Thermal Conductivity	$\vartheta_m$		0		°C		Tested according to EN 12667 (Equivalent methods ASTM C177 and C518)		
	$\lambda$		≤		0,062		W/(m · K)		
<b>Fire performance</b>									
Other Fire Class <sup>1</sup>	BS 476 Part 7 ASTM E84		Class 1 < 25 Flame Spread Index				BS 476 Class 1 Approved by Lloyds		
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames								
<b>Acoustic Performance</b>									
								Tested according to EN ISO 354 Rated according to EN ISO 11654	
								Tested according to ISO 345. rated according to EN ISO 11654	
Calculated broadband insertion loss	$a_s$ / Thickness	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	Tested according to ISO 354. Rated according to EN ISO 11654	
	6 mm	0,010	0,030	0,070	0,180	0,390	0,740		
	10 mm	0,010	0,040	0,150	0,460	0,870	0,940		
	15 mm	0,030	0,110	0,380	0,800	1,030	0,890		
	25 mm	0,090	0,280	0,770	1,030	0,940	0,900		
	Thickness	6 mm	10 mm	15 mm	25 mm				
	$\alpha_w$	0.15 (H)	0.25 (H)	0.40 (MH)	0.60 (MH)				
	Class	E	E	D	C				
NRC (acc. to ASTM C 423)	0,150	0,400	0,600	0,750					
<b>Other technical features</b>									
Density	220 to 360 kg/m <sup>3</sup>							Tested according to ISO 845, ASTM D1622	
Dimensions and tolerances	l:1000 mm (+/- 15 mm)							Tested according to producer's quality control	
Tear strength	0.4 - 1.4 kN/m							Tested according to ISO 34-1	
Tensile strength	MD 70 to 190 kPa							Tested according to ISO 1798	
Elongation	MD 50 - 90 %							Tested according to ISO 1798	

## Technical Data - ArmaSound RD240 [ES]

Health aspects	Fibre dust free	
Storage & Shelf life	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight.	
Acoustic Insertion Loss	When used as part of a system ArmaSound RD 240 complies to ISO 15665 Classes A to C and Shell DEP 31.46.00.31-Gen Class D	Tested according to ISO 3741 and ISO 15665 (equivalent method ASTM E1222)
Water absorption <sup>1</sup>	4.4 %	Tested according to AGI Q 136

1. Based on single test results. Can be used for information / reference only

### Typical Sound Absorption Behaviour of ArmaSound RD 240 (ISO 354)



### Typical Sound Absorption Values of ArmaSound RD 240

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification.



## ArmaSound RD120 sheets



Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-120-06 •	6	1.0	1.0	8
ASD-120-10	10	1.0	1.0	5
ASD-120-15	15	1.0	1.0	3
ASD-120-20	20	1.0	1.0	2
ASD-120-25	25	1.0	1.0	2

### Remark

Further dimensions and insulation thicknesses on request.

- Item not in stock. Delivery on request. [MTO]

## ArmaSound RD120 sheets self-adhesive



Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-120-06/A	6	1.0	1.0	8
ASD-120-10/A	10	1.0	1.0	5
ASD-120-15/A	15	1.0	1.0	3
ASD-120-20/A	20	1.0	1.0	2
ASD-120-25/A	25	1.0	1.0	2

### Remark

Further dimensions and insulation thicknesses on request.

## ArmaSound RD240 [ES] sheets



Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-240-10 •	10	1.0	1.0	5
ASD-240-15 •	15	1.0	1.0	3
ASD-240-20	20	1.0	1.0	2
ASD-240-25 •	25	1.0	1.0	2

### Remark

Further dimensions and insulation thicknesses on request.

- Item not in stock. Delivery on request. [MTO]

## ArmaSound RD240 [ES] sheets (jumbo cartons)



Length 2,0 m

Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-240-25/10	25	1.0	2.0	80
ASD-240-25/l •	25	0.5	2.0	80

### Remark

Further dimensions and insulation thicknesses on request.

- Item not in stock. Delivery on request. [MTO]

## ArmaSound RD240 [ES] sheets self-adhesive



Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-240-06/A	6	1.0	1.0	8
ASD-240-10/A	10	1.0	1.0	5
ASD-240-15/A	15	1.0	1.0	3
ASD-240-20/A	20	1.0	1.0	2
ASD-240-25/A	25	1.0	1.0	2

### Remark

Further dimensions and insulation thicknesses on request.





## ARMASOUND® BARRIER E

HIGH PERFORMANCE NOISE BARRIER  
FOR ARMASOUND INDUSTRIAL SYSTEMS



- Excellent at reducing the transmission of airborne sound
- Enhances the insertion loss performance of pipe insulation
- Flexible, easy to install
  
- Mean sound reduction index  $R_w$ : 28 dB
- Free of lead, unrefined aromatic oils and bitumen
- Integral component of ArmaSound Industrial Systems - Compliant to ISO 15665 Class C and Shell DEP 31.46.00.31- Gen Class D
- Sound Transmission Class (STC) from 25 to 31

## Technical Data - ArmaSound Barrier E [ES]

Brief description	High performance mass loaded sound barrier for a quieter environment
Material type	Vinyl sound barrier mat. Thermoplastic polymer compound.
Colour	Black
Material Special Information	The material is free of lead, unrefined aromatic oils and bitumen.
Applications	Flexible sheet for noise control - designed as an integral component of the ArmaSound Industrial Systems.
Assembly	The ArmaSound Industrial Systems Application manual should be consulted before assembly. Please consult our Customer Service Centre.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature	+ 65 °C / + 149°F
	min. service temperature	- 20 °C / -4°F
<b>Fire performance</b>		
Other Fire Class	FMVSS 302	self-extinguishing, burn rate < 100 mm/min
<b>Acoustic Performance</b>		
Reduction of structure-borne sound transmission	Mean sound reduction index $R_W$ for 2mm	≥ 22 dB
	Mean sound reduction index $R_W$ for 3mm	≥ 25 dB
	Mean sound reduction index $R_W$ for 4mm	≥ 28 dB
Sound Transmission class (STC)		
Sound Transmission class (STC)	2mm thickness	ASTM E413 25
	4mm thickness	ASTM E413 31
<b>Other technical features</b>		
Weight	2mm = 5 kg/m <sup>2</sup> 3mm = 7.5 kg/m <sup>2</sup> 4mm = 10 kg/m <sup>2</sup>	
Tensile strength	MC/CD ≥1.8 MPa	Tested according to ISO 37
Elongation	MD/CD ≥25 %	Tested according to ISO 37
Mass per unit area	2mm = 4.8 to 5.5 kg/m <sup>2</sup> 3mm = 7.2 to 8.25 kg/m <sup>2</sup> 4mm = 9.7 to 11.0 kg/m <sup>2</sup>	
Health aspects	Free of lead	
Storage & Shelf life	shall be stored indoors, in clean and dry conditions, away from direct sunlight storage: max. 3 years	
Acoustic Insertion Loss	When used as part of a system ArmaSound Barrier E complies to ISO 15665 Classes A to C and Shell DEP 31.46.00.31-Gen Class D.	Tested according to ISO 3741

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification.

## ArmaSound Barrier E [ES] sheets



Color black

Sheets				
Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-BAR-E-02	2	1.25	2	2.5
ASD-BAR-E-03	3	1.25	2	2.5
ASD-BAR-E-04	4	1.25	2	2.5

**Remark**

ArmaSound Barrier E is part of the ArmaSound Industrial System and should only be installed as a part of it.

## ArmaSound Barrier E [ES] sheets endless



width 0,625 m

Sheets endless				
Code	Thickness [mm]	Width [m]	Length [m]	m <sup>2</sup> /carton
ASD-BAR-E-02/E •	2	0.625	140	87.5
ASD-BAR-E-03/E •	3	0.625	93	58.125
ASD-BAR-E-04/E •	4	0.625	70	43.75

**Remark**

ArmaSound Barrier E is part of the ArmaSound Industrial System and should only be installed as a part of it.

- Item not in stock. Delivery on request. [MTO]







ARMACOMFORT®

INSTALL IT. ENJOY QUIETNESS

HIGH FLEXIBLE ACOUSTIC COMFORT



- Specially designed to reduce noise
- Thin acoustic lagging with high performances
- Easy to apply and maintain



## NOISE CONTROL: KEY TERMS

**Sound** is a mechanical vibration which is perceived by the human ear in the frequency range 16 Hz to 16.000 Hz.

**Frequency** is the number of vibrations per second. The pitch rises as frequency increases. The most important range for building acoustics lies between 100 Hz and 3150 Hz.

**Sound Insertion loss** is the difference in sound levels measured between the bare pipe and the pipe with insulation. Such a measurement of sound reduction in dB(A) provides a direct indication of the improvement due to an acoustic solution.

**Bel (B) and decibel (dB)** are relative units and represent the ratio between two acoustic quantities on a logarithmic scale.

**Decibel (A), dB (A)** weights the volume according to frequencies. In this way it is possible to achieve a measurable representation of noise as it is perceived. Depending on the frequency, the human ear perceives tones of the same sound pressure as being of different loudness.

## Technical Data - ArmaComfort AB

Brief description	ArmaComfort® AB and AB Plus combine the acoustic performance of an excellent flexible Acoustic Barrier of 2 mm thickness and 4 kg/m <sup>2</sup> of weight and a damping Armaflex® flexible elastomeric foam of 9 mm.
Material type	Multilayer consists of an acoustic epdm-eva barrier and an elastomeric foam based on synthetic rubber.
Colour	Black
Material Special Information	ArmaComfort® AB and AB Plus offer an outstanding durability.
Applications	ArmaComfort® AB and AB Plus are widely used as an acoustical insulation of waste water, rain water and sewage pipes in residential and nonresidential buildings.
Remarks	Declaration of Performance is available in accordance with Article 7(3) of Regulation (EU) No 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a> .

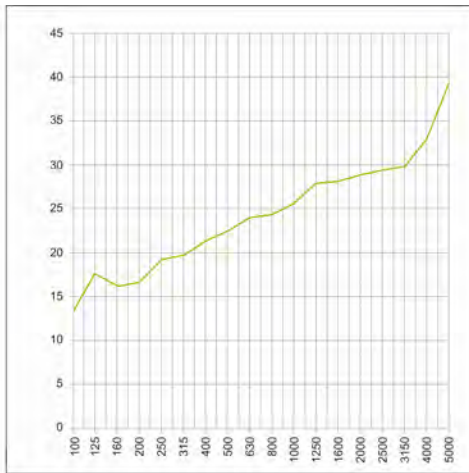
Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature +110 °C min. service temperature (as is usual in plumbing installations)	EU 5843 EU 5933	Tested acc. to EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m \pm 0$ °C $\lambda =$	EU 5843 EU 5933	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
	ArmaComf AB $\lambda \leq 0,040$ W/(m · K) $[40 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$		
	ArmaComf AB Plus $\lambda \leq 0,042$ W/(m · K) $[42 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance <sup>1</sup>	$\mu \geq 7.000$	EU 5843 EU 5933	Tested acc. to EN 12086 EN 13469
<b>Fire performance</b>			
Reaction to fire	ArmaComfort® AB D-s2,d0 ArmaComfort® AB Plus C-s2,d0 ArmaComfort® AB Plus self-adhesive C-s2,d0	EU 5843 EU 5933	Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	on plastic waste water pipes $\leq 14$ dB(A) on Geberit PE HD $\leq 16$ dB(A) on Geberit Silent db 20 $\leq 18$ dB(A)	EU 6410 EU 6411 EU 6733	Tested acc. to EN 14366
<b>Weighted sound reduction index</b>			
Calculated broadband insertion loss	Rw = 26 dB (C;Ctr) = (-1;-3) dB	EU 6412	Classified acc. to EN ISO 10140-1-2012 & 2-2010 & tested acc. to EN ISO 717-1:2003
Density	ArmaComfort® AB and AB Plus 378 - 435 kg/m <sup>3</sup>		
Dimensions and tolerances	Thickness: 11 mm $\pm$ 1,5 mm Width: 1000 mm $\pm$ 15 mm Length: 2000 mm $\pm$ 20 mm or 25000 mm $\pm$ 1,5%		

1. For temperatures below 0 °C please contact our Customer Service Center to request for the corresponding technical information.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.



## ArmaComfort® AB Sound Reduction Index Rw (EN ISO-717-1)



X-axis = Frequences (Hz)

Y-axis = Sound Reduction Index (dB)

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual.

## Technical Data - ArmaComfort AB Alu

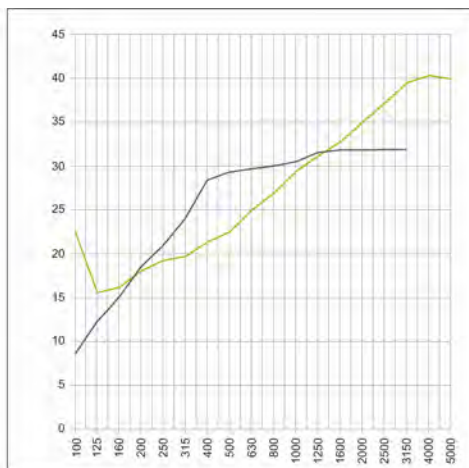
Brief description	ArmaComfort® AB Alu combines excellent acoustic performance and excellent fire performance B-s1,d0 to increase people safety.
Material type	Multilayer consists of an acoustic aluminium epdm-eva barrier of 2 mm thickness and 4 kg/m <sup>2</sup> of weight and a decoupling polyurethane foam of 10 mm .
Colour	Aluminium covering a black acoustic barrier combined with a black foam. Wrinkles horizontal or diagonal may occurred on the aluminium covering
Material Special Information	ArmaComfort®AB Alu offers an outstanding durability.
Applications	ArmaComfort® AB Alu is widely used as an acoustical insulation of waste water, rain water and sewage pipes. It has been specially designed for non residential buildings such as office buildings, hotels, hospitals, school buildings, retirement residence, shopping center, conference center,...
Special Features	Without halogens (chloride, bromide) acc. to DIN / VDE 0472, part 815.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature <sup>1</sup> +100 °C min. service temperature <sup>1</sup> (as is usual in plumbing installations)		Tested acc. to EN 14706 and EN 14304
<b>Fire performance</b>			
Reaction to fire	B-s1,d0	EU 6449	Tested acc. to EN 13823 and EN ISO 11925-2
<b>Acoustic Performance</b>			
Calculated broadband insertion loss	Weighted Sound Rw = 28 dB	EU 6439	UNI EN ISO 10140-1-2012 UNI EN ISO 10140-2-2010 UNI EN ISO 717-1: 2003
	Reduction Index (C; Ctr) = (-1;-4) dB		
<b>Other technical features</b>			
Density	Density: ArmaComfort® AB Alu in thickness 12 mm (barrier of 2400+/- 500 kg/m <sup>3</sup> + 10 mm of polyurethane foam : 92,5 +/- 17,5 kg /m <sup>3</sup> ) 450 - 690 kg/m <sup>3</sup>		
Dimensions and tolerances	Thickness: 12 mm ± 1,5 mm; Width: 1000 mm ± 15 mm; Length: 2000 mm ± 20 mm		
Health aspects	Halogene free Tested acc. to DIN VDE 0472-815	EU 7073	

1. For further information, please contact our customer service.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

### ArmaComfort® AB Alu Sound Reduction Index Rw (EN ISO-717-1)



All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual.



## Technical Data - ArmaComfort AB Alu Plus

Brief description	ArmaComfort® AB Alu Plus combines excellent acoustic performance, fire performance B-s1,d0 to increase people safety and prevents corrosion.
Material type	Multilayer consists of an acoustic barrier epdm-eva barrier of 2 mm thickness with an aluminium foil and a decoupling elastomeric foam Armaflex® of 9 mm.
Colour	Aluminium covering a black acoustic barrier combined with a black foam.
Material Special Information	ArmaComfort® AB Alu Plus offers an outstanding durability
Applications	ArmaComfort® AB Alu Plus is used as an acoustical insulation of waste water, rain water and sewage pipes in residential and non-residential buildings.
Remarks	Declaration of Performance is available in accordance with Article 7 (3) of Regulation (EU) N° 305/2011 on our homepage: <a href="http://www.armacell.com/DoP">www.armacell.com/DoP</a> .

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature +110 °C	EU 5934	Tested acc. to EN 14706 and EN 14304
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m \pm 0$ °C $\lambda =$	EU 5934	Declared acc. to EN ISO 13787 Tested acc. to EN 12667
	$\lambda$ 0,042 W(m · K) $[42 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$		
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance <sup>1</sup>	$\mu \geq 10.000$	EU 5934	Tested acc. to EN 12086 EN 13469
<b>Fire performance</b>			
Reaction to fire	B-s1,d0	EU 5934	Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2
<b>Acoustic Performance</b>			
Reduction of structure-borne sound transmission	on Geberit Silent db 20 $\leq 18$ dB(A)	EU 6733 EU 7095	Tested acc. to EN 14366
	on NF PVC Diameter 110 mm $\leq 24.5$ dB(A)		
Density	ArmaComfort® AB Alu Plus in thickness 11 mm = 450 - 690 kg/m <sup>3</sup>		
Dimensions and tolerances	Thickness: 11 mm $\pm 1,5$ mm Width: 1000 mm $\pm 15$ mm Length: 2000 mm $\pm 20$ mm	EU 5934	Tested acc. to EN 822, EN 823, EN 13467
Material quality	WELL Compliance Cards	EU 7035	Requirements acc. to WELL Certification System
Health aspects	Determination of emissions of VOC from the product in the climate chamber.  Complies with the requirement .. - stated in the German Scheme AgBB - French Class A+ - of US (California)	EU 6957	Testing acc. to ISO 16000 - Part 3, 6 & 9

1. For temperatures below 0 °C please contact our Customer Service Center to request for the corresponding technical information.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, promptly clarify with us to determine whether or not the data and information apply to the intended application area.  
Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Adhesive Armaflex 520 must be used to guarantee proper installation. For some refrigerants, the discharge temperature may exceed +110 °C; please consult our Customer Service Center for further information. For outside use, Armaflex should be protected within 3 days, e.g. with Armafinish 99 Paint or Arma-Chek covering.

## ArmaComfort AB sheets



Color black

Code	Width [mm]	Length [m]	Thickness [mm]	m <sup>2</sup> /carton
AO-11-99/E-AB	1.000,0	2	11	2

**Remark** ArmaComfort® AB must be applied with Armaflex®520 adhesive and ArmaComfort® AB tape

## ArmaComfort AB Plus sheets



Color black

Code	Width [mm]	Length [m]	Thickness [mm]	m <sup>2</sup> /carton
AO-11-99/E-AB+	1.000,0	2	11	2

**Remark** ArmaComfort®AB Plus must be applied with Armaflex® 520 adhesive and ArmaComfort®AB tape

## ArmaComfort AB Plus sheets self-adhesive



Color black

Code	Width [mm]	Length [m]	Thickness [mm]	m <sup>2</sup> /carton
AO-11-99/EA-AB+	1.000,0	2	11	2

**Remark** ArmaComfort® AB Plus self-adhesive must be applied with Armaflex®520 adhesive and ArmaComfort® AB tape

## ArmaComfort AB tapes



Color black

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
TAPE-PE-FE904	50,0	25	0.23	30

## ArmaComfort AB Alu sheets



12,0 mm  
insulation thickness

Code	Width [mm]	Length [m]	Thickness [mm]	m <sup>2</sup> /carton
AO-12-99/E-AB-AL	1.000,0	2	12	2

**Remark** ArmaComfort®AB Alu must be applied with Armaflex® 520 adhesive and ArmaComfort® AB Alu tape

## ArmaComfort AB Alu tapes



Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
ACH-PSATAPES-30	30,0	25	0.08	10

## ArmaComfort AB Alu Plus sheets



Code	Width [mm]	Length [m]	Thickness [mm]	m <sup>2</sup> /carton
AO-11-99/E-AB-AL+	1.000,0	2	11	2
AO-11-99/E25-AB-AL+	1.000,0	25	11	25

**Remark** ArmaComfort®AB Alu Plus must be applied with Armaflex® 520 adhesive and ArmaComfort® AB Alu tape.  
The bobbins (25 m<sup>2</sup> each bobbin) are sold by 3 bobbins which are inseparable on one pallet. It means the minimum order quantity is 75 m<sup>2</sup>.

## ArmaComfort AB Alu Plus tapes



Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
<b>ACH-PSATAPES-30</b>	30,0	25	0.08	10
<b>AO-TAPE/50-AL-B-25M</b>	50,0	25	0.02	18
<b>AO-TAPE/50-AL-S-25M</b>	50,0	25	0.02	18



ARMACOMFORT® BARRIERS B & P

INSTALL IT. ENJOY QUIETNESS



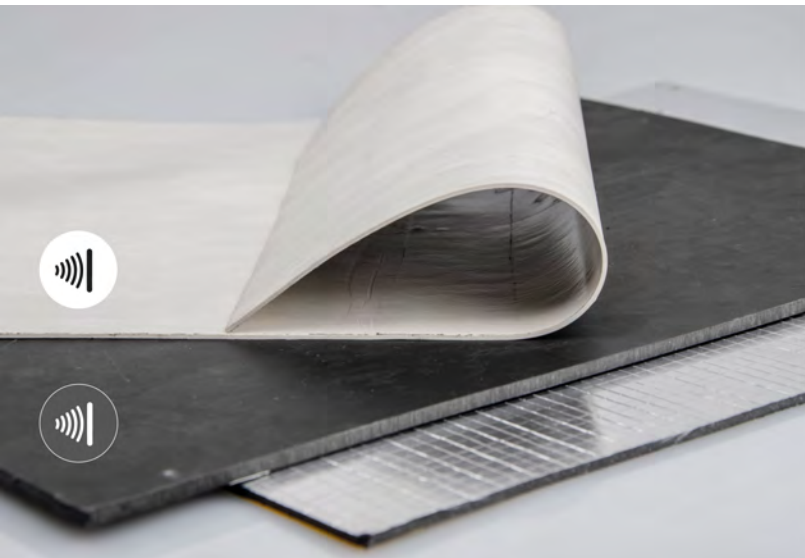
- Excellent safe and healthy solution that reduces airborne sound
- Excellent fire performance
- Halogen-free, lead-free, bitumen-free, phosphate-free
- Flexible, easy to cut and install. Self adhesive with good adhesion on steel and plasterboard



## ArmaComfort Barrier P & ArmaComfort Barrier B

### THE COMFORT OF SILENCE

Armacell's acoustic comfort solutions bring more quality of life to urban residents and commuters. They improve health and safety in the workplace by reducing noise. Creating quiet zones and noise corridors can minimise the harmful impact of noise exposure – in buildings, industrial environments and vehicles. Based on a unique EVA/EPM blend, ArmaComfort Barriers offer superior acoustic transmission reduction. This new sound attenuation technology allows you to add mass to walls and mechanical equipment without losing space – invisibly in constructions or visibly on existing partitions.



### (IN) VISIBLE SOUND PROTECTION

Discover Armacell's two new faces of silence: a black acoustic barrier for hidden applications in wall, ceiling and HVAC constructions; and a pearly-white sheet for visually appealing ad-hoc solutions. This premium self-adhesive product is B-s2,d0 classified and certified according to IMO and UL94. The sheets can remain visible or be painted over with water-based acrylic products. The self-adhesive foil-faced ArmaComfort Barrier ALU achieves the highest fire rating (B-s1,d0) for organic products. Explore a multitude of ways to reduce disturbing noise with just one product solution. Visible or invisible.

### PROTECTION SCREEN

Air-conditioning compressors, heating pumps and plant rooms can cause unacceptable noise levels in buildings. In industrial environments generators, pumps, printing machines or other heavy equipment can induce hearing loss and endanger the health and safety of staff. Enclosures, protection screens, mobile partitions or fences can all be easily fabricated with ArmaComfort Barriers.



### CEILING PLENUM

When sound travels along elements shared by adjacent structures, flanking noise transmission occurs. Flanking noise can easily exceed direct transmission and the performance gained from acoustic barriers can be entirely lost. Fitted in the plenum space above suspended ceilings and partition walls, ArmaComfort Barriers minimise flanking noise.



## CABIN

The noise in factory halls or machine rooms often exceeds acceptable levels and can impair the communication and concentration of staff. With ArmaComfort Barriers you can easily convert meeting or control rooms into soundproof cabins and thus create a quiet, safe and comfortable workplace.



## NEW PARTITION

Changes in construction practice have led to an increased use of lightweight components in modern buildings. As the low-mass materials offer poor sound transmission loss, noise can easily travel through walls and floors. Fitted between plasterboard walls, ArmaComfort Barriers greatly reduce the sound transmission and improve the performance at critical frequencies generated from adjacent rooms and by environmental noise.



## REFURBISHED PARTITION

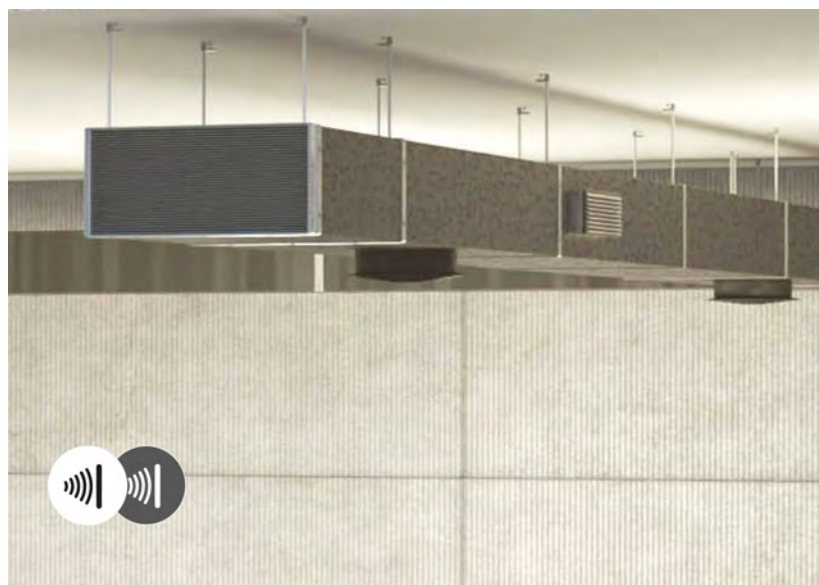
An easy, space-saving and cost-effective way to achieve a much improved acoustic performance in residential and nonresidential premises. The visually attractive self-adhesive ArmaComfort Barrier P sheets can simply be glued to existing walls and provide highly improved sound control within just a few hours.\* To check the compatibility of a desired coating please contact our technical service.

\*Local fire regulations (e.g. firewalls) have to be observed.



## HVAC

HVAC systems create noise and carry it from one room to another. If not acoustically treated, pipe- and ductwork act as a path sound travels along, throughout buildings. Noise from fans and motors is transmitted through ducts and grilles whistle or rattle. With ArmaComfort Barriers the transmission loss of pipes and ducts can be greatly improved and breakout noise minimised.





## Technical Data - ArmaComfort Barrier

Brief description	High performance mass loaded sound barrier for a quieter environment
Material type	EVA / EPM
Colour	ArmaComfort® Barrier P has a pearly white color. ArmaComfort® Barrier B is black. ArmaComfort® Barrier B Alu has a natural aluminium color.
Material Special Information	The material is free of lead, bitumen halogen and phosphate
Applications	Flexible sheet to reduce airborne sound transmission. The substrate must be cleaned, the dust must be removed and the substrate must be dry during application

Property	Value/Assessment							Test <sup>1</sup>	Special Remark
<b>Temperature Range</b>									
Temperature Range <sup>1</sup>	max. service temperature		+80 °C						Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature		-20 °C						
<b>Fire performance</b>									
Reaction to fire	ArmaComfort® Barrier P		B-s2, d0				EU 7098 EU 7097 EU 7117	Classified acc. to EN 13501-1 Tested acc. to EN 13823 and EN ISO 11925-2	
	ArmaComfort® Barrier B		C-s2, d0						
	ArmaComfort® Barrier B Alu		B-s1, d0						
Other Fire Class	ArmaComfort® Barrier P		V-0 @ 2,5 mm				EU 7127 EU 7084	EN 60695-11-10-2013. UL 94 Ed. Jan19, 2018 & IMO ISO-5658-2 (2006) FTP 2010 Annex 1 Part 5	
	ArmaComfort® Barrier P		IMO MED B Approval						
<b>Acoustic Performance</b>									
Calculated broadband insertion loss	Weighted Sound Reduction Index in accordance with ISO 10140-2							EU 7083 EU 7093 EU 7092	Tested acc. to EN ISO 10140-1: 2016
	Arma Comfort®	mm	1 mm	2 mm	3 mm	4 mm	5 mm		
	Barrier P	Rw (dB)	23 (-1;-4)	27 (-1;-3)	30 (-1;-4)	32 (-1;-3)	34 (-1;-3)		
	Barrier B	Rw (dB)		27 (-1;-4)	30 (-1;-4)	32 (-1;-3)			
	Barrier B Alu	Rw (dB)		27 (0;-3)	30 (-1;-4)	32 (-1;-3)			
<b>Other technical features</b>									
Density	ArmaComfort® Barrier P		≥ 2050			kg / m <sup>3</sup>			
	ArmaComfort® Barrier B & B-Alu		≥ 1950			kg / m <sup>3</sup>			
Dimensions and tolerances	Tolerance of max. 2 mm								Tested according to EN 822, EN 823, EN 13467
Storage & Shelf life	Self-adhesive sheets: 1 year								Can be stored in dry-clean rooms at normal relative humidity (50% to 70 %) and ambient temperature (0 °C-35 °C). Application temperature > +10 °C and < +35 °C & rel. humidity < 80%.

1. For temperatures below -20 °C please contact our Customer Service Center to request for the corresponding technical information.

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

## ArmaComfort Barrier sheets self-adhesive



Code	Article description	Length [m]	Thickness [mm]	weight/m <sup>2</sup>	m <sup>2</sup> /sheet	m <sup>2</sup> /pallet
AO-BAR-BAL02-A	ArmaComfort® Barrier B Alu self adhesive	2	2	3.90	2	200
AO-BAR-BAL03-A ●	ArmaComfort® Barrier B Alu self adhesive	2	3	5.85	2	120
AO-BAR-BAL04-A ●	ArmaComfort® Barrier B Alu self adhesive	2	4	7.80	2	100
AO-BAR-B-03-A ●	ArmaComfort® Barrier B self adhesive	2	3	5.85	2	120
AO-BAR-B-04-A ●	ArmaComfort® Barrier B self adhesive	2	4	7.80	2	100
AO-BAR-P-03-A	ArmaComfort® Barrier P self adhesive	2	3	6.30	2	120
AO-BAR-P-04-A ●	ArmaComfort® Barrier P self adhesive	2	4	8.40	2	100
AO-BAR-P-05-A ●	ArmaComfort® Barrier P self adhesive	2	5	10.50	2	80

### Remark

ArmaComfort® Barriers P , B and B-Au are each of them sold individually on one indivisible pallet. It means that the minimum order quantity is one pallet per item.

- Item not in stock. Delivery on request. [MTO]

## ArmaComfort Barrier Standard Rolls

One rolled sheet per carton

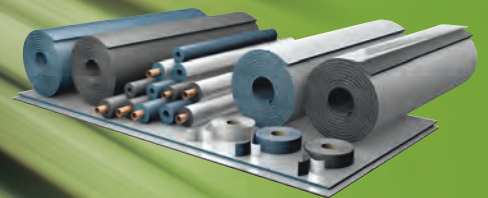
Sheets self-adhesive width						
Code	Article description	Width [mm]	Length [m]	Thickness [mm]	weight/m <sup>2</sup>	m <sup>2</sup> /roll
AO-BAR-B-02-A	ArmaComfort® Barrier B self-adhesive	1.000,0	2	2	3.9	2
AO-BAR-P-01-A	ArmaComfort® Barrier P self-adhesive	1.000,0	4	1	2.1	4
AO-BAR-P-02-A	ArmaComfort® Barrier P self - adhesive	1.000,0	2	2	4.2	2





ARMAFLEX RAIL

INSTALL IT. TRAVEL SAFELY.



- Advanced fire protection for railway vehicles: hazard level 2 & 3 according to EN 45545
- Effectively prevents moisture penetration
- High flexibility ensures ease of installation

## ARMAFLEX RAIL SD

- Extremely low smoke density and superior fire behaviour
- Built-in Microban® antimicrobial protection reduces mould and bacteria growth
- Complies with most international railway standards for insulation materials

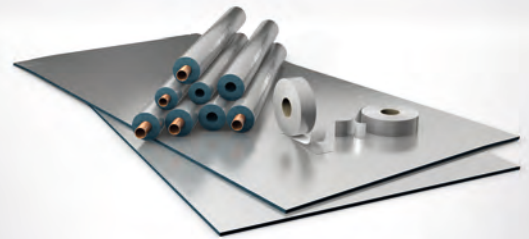
- EN 45545 – HL2, R1
- NFPA 130
- DIN 5510-2
- GOST 12.1.044-89
- United Nations ECE R-118 p. 6-8



## ARMAFLEX RAIL SD-C

- With Microban® antimicrobial product protection
- Excellent mechanical protection and high degree of stability under exposure to ultraviolet light
- Wash-down waterproof and easy to clean
- Meets highest hazard level requirements

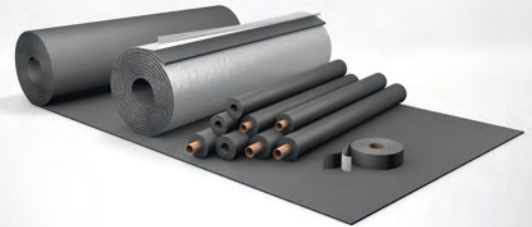
- EN 45545 – HL3,R1



## ARMAFLEX RAIL ZH

- The protective halogen-free insulation to reduce corrosive effects and smoke toxicity in a fire
- Low smoke density, superior fire behaviour
- Fibre- and dust-free material provides low thermal conductivity
- High-tech insulation with built-in fire protection for railway vehicles

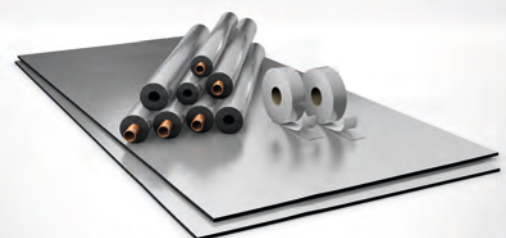
- EN 45545 – HL2,R1



## ARMAFLEX RAIL ZH-C

- Halogen-free insulation reduces toxicity and corrosive effects on people and equipment
- Resistant to UV, salt water and chemicals
- Wash-down waterproof and easy to clean
- The revolutionary insulation product has a factory-applied, silver-metallic look, reinforced coating for increased hygienic requirements

- EN 45545 – HL3,R1





# EN 45545

## HAZARD LEVEL OF A VEHICLE

Fire safety requirements are part of the European Directive on the interoperability of the trans-European high-speed rail system. The seven-parts standard EN 45545 'Railway applications - Fire protection on railway vehicles' has been developed to harmonize classifications and fire testing.

EN 45545 introduces a new concept – the hazard level of a vehicle (HL). This is obtained by combining the operation and design categories of the vehicle.

Operation category	Design category			
	N: Standard vehicles	A: Automatic vehicles	D: Double de-cked vehicle	S: Sleeping and couchette cars
1. Surface Operation	HL1	HL1	HL1	HL2
2. Metro - Tunnel Operation	HL2	HL2	HL2	HL2
2. Inter-City Tunnel Operation	HL2	HL2	HL2	HL3
4. Metro - Tunnel Operation - Restricted	HL3	HL3	HL3	HL3

EN 45545-2:2013 classifies all material on board in groups which have to fulfil specific requirement sets which often includes several test methods. The most important fire tests used in EN 45545-2 are the flame propagation, the cone calorimeter and the smoke and toxicity tests. For requirement set R1 they are all based on radiant panels with heat fluxes 50 kW/m<sup>2</sup>.

### REQUIREMENTS FOLLOW THE FIRST PRINCIPLES:

- Flame Spread
- Ignitability
- Heat Release
- Smoke Emissions
- Toxic Gas Emissions

Requirement set	Test method reference	Parameter unit	Requirement definition	HL1	HL2	HL3
R1 (for insulation material)	Spread of flame ISO 5658-2	CFE kWm <sup>-2</sup>	Minimum	20	20	20
	Heat release, smoke production and mass loss rate ISO 5660-1	MAHRE kWm <sup>-2</sup>	Maximum	-	90	60
	Smoke optical density and toxicity EN ISO 5659-2	Ds(4) dimensionless	Maximum	600	300	150
		VOF4 Minutes	Maximum	1200	600	300
		CITG dimensionless	Maximum	1.2	0.9	0.75

## Technical Data - Armaflex Rail SD

Brief description	Highly-flexible, closed-cell insulation foam with improved fire retardant properties, low smoke generation and in-built Microban® antimicrobial protection for railway vehicles.
Material type	Elastomeric foam based rubber; manufactured with Armaprene® patented technology; US patent no. 8 163 811, EU patent no. 2 261 305
Colour	Blue
Material Special Information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration to prevent condensation
Remarks	Armaflex® Rail SD is not designed for transparent insulation applications (exposed to sun light) and is not UV stable.

Property	Value/Assessment	Test <sup>1</sup>	Special Remark			
<b>Temperature Range</b>						
Temperature Range	max. service temperature	+ 110 °C	EU 5654	Tested acc.to EN 14706, EN 14707 and EN 14304		
	min. service temperature	-50 °C				
<b>Thermal Conductivity</b>						
Thermal Conductivity	$\vartheta_m$	+/-0	°C	$\lambda =$	EU 5654	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
	$\lambda$	$\leq 0,040$	W/(m · K)	$[40 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$		
<b>Water vapour diffusion resistance</b>						
Water vapour diffusion resistance	$\mu$	$\geq$	5.000	EU 5654	Tested acc. to EN 12086 and EN 13469	
<b>Fire performance</b>						
Reaction to fire	insulation thickness 6 mm-25 mm	HL1,2,acc. to R1 ; HL1,2,3, acc.to R 7		EU 7568, 7569, 7570, 7563, 7564, 7565 EU 7366	Declared acc. to EN 45545-2	
	3 mm sheets & tape	HL1,2,3 acc.to R1, R7				
	Insulation thickness 3-19 mm	Certificate of Conformity with EN 45545-2				
Other Fire Class	3-13 mm Russian Federation Certificate of conformity	G1, V1, D2, T2		RUS 7872	Declared acc to: GOST 12.1.044-89, Mandatory Certificate	
	Burning behaviour for the use in motor vehicles (ECE Regulations)	Passed Annex 6,7,8,9		EU 7285, 7286	ECE R-118	
	NFPA 130 American fire test to railway components	$I_s \leq 25$	$D_s(4,0) \leq 100$	EU 5955 EU 5956	Classified acc to NFPA 130:2014 Tested acc to ASTM E 162:20 ASTM E 662:2012	
	Fire behaviour and fire side effects	S3,ST2, SR2, FED < 1 (S4 for 3 mm product)		D 7308, 7309, 7310, 7311, 7312, 7313, 7314, 7369	Classified acc to DIN 5510-2 Tested acc to DIN 54837, ISO 5659-2	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames					
Dimensions and tolerances	In accordance with EN 14304, table 1; Tested acc. to EN 822, EN 823, EN 13467			EU 5654		
Biological / chemical behaviour	Fungal Resistance, no fungal growth according to tests Tested according to ASTM G21			EU 7134		
UV resistance	Protection against UV-radiation is necessary, see TB 142					
Health aspects	Fulfill hygienically requirements of Russian Rail Industry			RUS 6567		
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).					

## Technical Data - Armaflex Rail SD

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels.

## Technical Data - Armaflex Rail SD-C

Brief description	Highly flexible, closed-cell pre-covered insulation foam with improved fire retardant properties, low smoke generation and in-built Microban® antimicrobial protection for railway vehicles.
Material type	Elastomeric foam based rubber with high-tech coating; manufactured with Armaprene® patented technology; US patent no. 8 163 811, EU patent no. 2 261 305, patent for multi-layer coating technology EP 2 522 502.
Colour	Blue with silver metallic look coating
Material Special Information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration to prevent condensation
Special Features	The covering offers an excellent durability even under UV exposure when used for outdoor applications. The insulation system is designed for easy cleaning.
Remarks	When dimensioning the insulation thickness please calculate with an external surface coefficient of 8 W/(m²·K).

Property	Value/Assessment	Test*1	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 110 °C	(+ 85 °C If sheet or tape is glued to the object with its whole surface)
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	+/-0	°C
	$\lambda$	$\leq 0,040$	W/(m · K)
		$\lambda = [40 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$	
			Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu$	$\geq$	10.000
			Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>			
Reaction to fire	insulation thickness 3 mm - 25 mm	HL3, R1	EU 7880 EU 7572
	Certificate of conformity with hazard levels	product conforms with declared HL	EU7366
Other Fire Class	NFPA 130 American fire test to railway components	$I_s \leq 25$ $D_s(4,0) \leq 100$	EU 7576 EU 7575 EU 7574 EU 7573
	6-25 mm Russian Federation Certificate of conformity	G1, V1 D2, T2	RUS 7872
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Tolerances	In accordance with EN 14304, table 1		
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		
			Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

## Technical Data - Armaflex Rail ZH

Brief description	Halogen free, flexible closed-cell insulation foam with improved fire retardant properties and low smoke generation for railway vehicles.
Material type	Elastomeric foam based on synthetic rubber.
Colour	Dark grey
Material Special Information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration to prevent condensation
Special Features	Without halogens (chloride, bromide) acc. to DIN / VDE 0472, part 815. Fulfils DIN 1988 Parts 200.
Remarks	Armaflex Rail ZH is not designed for transparent insulation applications (exposed to sun light) and is not UV stable.

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 110 °C	(+ 85 °C If sheet or tape is glued to the object with its whole surface)
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$ +/-0	°C	$\lambda =$
	$\lambda \leq 0,040$	W/(m · K)	$[40 + 0,1 \cdot \vartheta_m + 0,0009 \cdot \vartheta_m^2]/1000$
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu$	$\geq$	1.000
<b>Fire performance</b>			
Reaction to fire	insulation thickness 13 mm standard	HL1,2 acc. to R1	EU 7288 EU7525, 7526
	insulation thickness 3 mm standard and self-adh.	HL1,2,3 acc. to R1	
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
UV resistance	Protection against UV-radiation is necessary, see TB 142		
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		
			Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.



## Technical Data - Armaflex Rail ZH-C

Brief description	Halogen free, flexible closed-cell pre-covered insulation foam with improved fire retardant properties and low smoke generation for railway vehicles.
Material type	Elastomeric foam based on synthetic rubber with patented high-tech multi-layer coating; EU patent no. 2 522 502.
Colour	Dark grey with silver metallic look coating
Material Special Information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration to prevent condensation
Special Features	Without halogens (chloride, bromide) acc. to DIN / VDE 0472, part 815. Fulfils DIN 1988 Parts 200. The covering offers an excellent durability even under UV exposure when used for outdoor applications. The insulation system is designed for easy cleaning.
Remarks	When dimensioning the insulation thickness please calculate with an external surface coefficient of 8 W/(m <sup>2</sup> ·K).

Property	Value/Assessment	Test <sup>*1</sup>	Special Remark
<b>Temperature Range</b>			
Temperature Range	max. service temperature	+ 110 °C (+ 85 °C If sheet or tape is glued to the object with its whole surface)	Tested acc. to EN 14706, EN 14707 and EN 14304
	min. service temperature	-50 °C	
<b>Thermal Conductivity</b>			
Thermal Conductivity	$\vartheta_m$	+/-0 °C	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 EN ISO 8497
	$\lambda$	$\leq 0,040$ W/(m · K)	
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	$\mu$	$\geq 10.000$	Tested acc. to EN 12086 and EN 13469
<b>Fire performance</b>			
Reaction to fire	Insulation thickness 6mm- 25 mm	HL1,2,3 acc. to R1	EU 7571
	Certificate of conformity with EN 45545-2	product conform with declared HL	EU 7366
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames		
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0 °C – 35 °C).

\*1 Further documents such as test certificates, approvals and the like can be requested using the registration number given.

## Armaflex Rail SD tubes



Length 2,0 m, Color blue

Pipe max. Outside-Ø [mm]	9,0 mm		13,0 mm	
	Code	m/carton	Code	m/carton
12	RA-09X012	192	RA-13X012	130
15	RA-09X015	164	RA-13X015	112
18	RA-09X018	150	RA-13X018	98
22	RA-09X022	122	RA-13X022	88
28	RA-09X028	90	RA-13X028	64
35	RA-09X035	68	RA-13X035	56
42	RA-09X042	56	RA-13X042	48

Length tolerance for tubes	± 1,5 %
Thickness tolerance	± 1,5 mm
Reaction to fire	Hazard level 2, R1 according to EN 45545-2

## Armaflex Rail SD sheets endless



Color blue

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
RA-03-99/E	3,0	30	30
RA-06-99/E	6,0	15	15
RA-09-99/E	9,0	10	10
RA-13-99/E	13,0	8	8
RA-19-99/E	19,0	5	5
RA-25-99/E	25,0	4	4

Length tolerance for sheets	+/- 1,5 %
Thickness tolerance	3 - 6 mm ± 1,0 mm 9 - 19 mm ± 1,5 mm
Reaction to fire	Hazard level 2, R1 according to EN 45545-2 3 mm sheets: HL3, R1

## Armaflex Rail SD sheets endless self-adhesive



Color blue

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
RA-03-99/EA	3,0	30	30
RA-06-99/EA	6,0	15	15
RA-09-99/EA	9,0	10	10
RA-13-99/EA	13,0	8	8
RA-19-99/EA	19,0	5	5
RA-25-99/EA	25,0	4	4

Length tolerance for sheets	+/- 1,5 %
Thickness tolerance for sheets	3 - 6 mm ± 1,0 mm 9 - 19 mm ± 1,5 mm
Reaction to fire	Hazard level 2, R1 according to EN 45545-2 3 mm sheets: HL3, R1

## Armaflex Rail SD tapes self-adhesive



Color blue

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
RA-TAPE	50,0	15	3	12

Thickness tolerance	- 0,1 / + 1,5 mm
Length tolerance	- 1,5 / + 5 %
Reaction to fire	Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail SD adhesive



Code	Article description	Pieces/carton
AHU-700/1,0	Armaflex Ultima Adhesive 700, 1 liter cans	12
AHU-SF990/0,8	Armaflex Ultima Adhesive SF990, 0,8 liter cans	12

## Armaflex Rail SD-C tubes pre-covered



Length 1,0 m, Color blue, Covering Color silver

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	9,0 mm	
		Code	m/carton
12	13,0 - 14,5	SDC-09X012	96
15	16,0 - 17,5	SDC-09X015	82
18	19,0 - 20,5	SDC-09X018	75
22	23,0 - 24,5	SDC-09X022	61
28	29,0 - 30,5	SDC-09X028	45
35	36,0 - 38,0	SDC-09X035	34
42	43,5 - 45,5	SDC-09X042	28

Length tolerance for tubes	± 1,5 %
Thickness tolerance	9 mm ± 1,5 mm
Reaction to fire	Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail SD-C sheets self-adhesive pre-covered



Length 2,0 m, Width 1,0 m, Color blue, Covering Color silver

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
SDC-06MM/A	6,0	50
SDC-09MM/A	9,0	34
SDC-13MM/A	13,0	24
SDC-19MM/A	19,0	16
SDC-25MM/A	25,0	12

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	6 mm ± 1,0 mm 9-19 mm ± 1,5 mm 25 mm ± 2,0 mm
Reaction to fire	Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail SD-C tapes self-adhesive



Color silver

Code	Colour	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
ACH-PSATAPES-30	Silver	30,0	25	0.08	10
ACH-PSATAPES-50	Silver	50,0	50	0.08	6

## Armaflex Rail ZH tubes



Length 2,0 m, Color dark grey

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	9,0 mm	
		Code	m/carton
12	13,0 - 14,5	ZH-09X012	192
15	16,0 - 17,5	ZH-09X015	164
18	19,0 - 20,5	ZH-09X018 •	150
22	23,0 - 24,5	ZH-09X022	122
28	29,0 - 30,5	ZH-09X028	90
35	36,0 - 38,0	ZH-09X035	68
42	43,5 - 45,5	ZH-09X042	56

**Length tolerance for tubes**

± 1,5 %

**Thickness tolerance**

9 mm ± 1,5 mm

**Reaction to fire**

Hazard level 2, R1 according to EN 45545-2

• Item not in stock. Delivery on request. [MTO]

## Armaflex Rail ZH sheets endless



Color dark grey

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
ZH-03-99/E	3,0	30	30
ZH-06-99/E •	6,0	15	15
ZH-10-99/E	10,0	10	10
ZH-13-99/E	13,0	8	8

**Length tolerance for sheets**

+/- 1,5 %

**Thickness tolerance for sheets**

3 - 6 mm ± 1,0 mm  
9 - 13 mm ± 1,5 mm

**Reaction to fire**

Hazard level 2, R1 according to EN 45545-2  
3 mm sheets: HL3, R1

• Item not in stock. Delivery on request. [MTO]

## Armaflex Rail ZH sheets endless self-adhesive



Color dark grey

Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
ZH-03-99/EA	3,0	30	30
ZH-06-99/EA	6,0	15	15
ZH-10-99/EA	10,0	10	10
ZH-13-99/EA	13,0	8	8

**Length tolerance for sheets**

+/- 1,5 %

**Thickness tolerance for sheets**

3 - 6 mm ± 1,0 mm  
9 - 13 mm ± 1,5 mm

**Reaction to fire**

Hazard level 2, R1 according to EN 45545-2  
3 mm sheets: HL3, R1

## Armaflex Rail ZH tapes self-adhesive



Color dark grey

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
ZH-TAPE	50,0	15	3	12

**Thickness tolerance**

- 0,1 / + 1,5 mm

**Length tolerance**

- 1,5 / + 5 %

**Reaction to fire**

Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail ZH-C tubes pre-covered



Length 1,0 m, Color dark grey, Covering Color silver

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	9,0 mm	
		Code	m/carton
12	13,0 - 14,5	ZHC-09X012	96
15	16,0 - 17,5	ZHC-09X015	82
18	19,0 - 20,5	ZHC-09X018	75
22	23,0 - 24,5	ZHC-09X022	61
28	29,0 - 30,5	ZHC-09X028	45
35	36,0 - 38,0	ZHC-09X035	34
42	43,5 - 45,5	ZHC-09X042	28

Length tolerance for tubes	± 1,5 %
Thickness tolerance	9 mm ± 1,5 mm
Reaction to fire	Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail ZH-C sheets self-adhesive pre-covered



Length 2,0 m, Width 1,0 m, Color dark grey, Covering Color silver

Code	Insulation thickness [mm]	m <sup>2</sup> /carton
ZHC-06MM/A	6,0	50
ZHC-10MM/A	10,0	34
ZHC-13MM/A	13,0	24
ZHC-19MM/A	19,0	16
ZHC-25MM/A	25,0	12

Length tolerance for sheets	± 1,5 %
Thickness tolerance for sheets	6 mm ± 1,0 mm 9-19 mm ± 1,5 mm 25 mm ± 2,0 mm
Reaction to fire	Hazard level 3, R1 according to EN 45545-2

## Armaflex Rail ZH-C tapes self-adhesive



Color silver

Code	Colour	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
ACH-PSATAPES-30	Silver	30,0	25	0.08	10
ACH-PSATAPES-50	Silver	50,0	50	0.08	6





ARMAFLEX LTD

FEF INSULATION FOR CRYOGENIC AND  
LOW TEMPERATURE APPLICATIONS  
DOWN TO -180 °C



- Improved flexibility at low temperatures over traditional insulation materials
- Mitigates the risk of corrosion under insulation (CUI)
- Protects against mechanical impact and shock
  
- Low thermal conductivity
- Low glass transition temperature
- Easy installation even to complex shapes
- Less wastage compared to rigid / pre-fabricated pieces

## Technical Data - Armaflex LTD [ES]

Brief description	Armaflex® LTD is a flexible, high density and mechanically robust, closed cell cryogenic thermal insulation material based on extruded elastomeric foam. The product has been specially developed for use on the import/export pipelines and process areas of LNG facilities.
Material type	Synthetic Diene Terpolymer rubber based foam. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	Blue
Material Special Information	Armaflex® LTD is suitable for a range of operating conditions down to -180 °C including liquefied natural gas (LNG) installations. However, it is not recommended for application to process pipelines and equipment carrying liquid oxygen, or to gaseous oxygen lines and equipment running above 1.5 MPa (218 psi) pressure or running above +60 °C (+140°F) operating temperature. For detailed information or advice please refer to Technical Services
Product Range	Tubes, 25 mm thickness, for pipe outer diameters ranging from 18 to 89 mm (¾" to 3" NB). Sheets in rolls, 25 mm thickness.
Applications	Cryogenic thermal insulation / protection of pipes, vessels and equipment (incl. elbows, fittings, flanges etc.) in production plants for petrochemicals, industrial gases, LNG, agricultural chemicals and other process equipment facilities. In all instances Armacell Energy shall be contacted to conduct a thorough technical review of the proposed use and operating environment.
Special Features	A high-performance thermal insulation material designed to meet the demands of cryogenic-temperature environments. Armaflex® LTD is part of Armaflex® Cryogenic Systems, providing low temperature flexibility to the system.
Assembly	For industrial applications it is recommended to consult the relevant Armacell installation instructions and application manuals. Please consult our Technical Services.
Remarks	EN 14304 (harmonized construction product standard for FEF) Lloyds approval (Class 1, BS 476 part 7)

Property	Value/Assessment	Special Remark														
<b>Temperature Range</b>																
Temperature Range	max. service temperature +110 °C / + 230 °F	Tested according to EN 14706, EN 14707 and EN 14304														
	min. service temperature <sup>1</sup> -180 °C / -292 °F															
<b>Thermal Conductivity</b>																
Thermal Conductivity	<table border="1"> <tr> <td><math>\vartheta_m</math></td> <td>-180 °C</td> <td>-100 °C</td> <td>-50 °C</td> <td>0 °C</td> <td>+50 °C</td> <td><math>\lambda_d(\vartheta_m)=0.04+9 \times 10^{-5} \times \vartheta_m+1.5 \times 10^{-7} \times \vartheta_m^2+1.5 \times 10^{-9} \times \vartheta_m^3</math>, where <math>\vartheta_m</math> is mean temperature in °C</td> </tr> <tr> <td>Sheets &amp; Tubes (25mm)</td> <td><math>\lambda \leq 0,020</math></td> <td>0,031</td> <td>0,036</td> <td>0,040</td> <td>0,045</td> <td>[W/(m · K)]</td> </tr> </table>	$\vartheta_m$	-180 °C	-100 °C	-50 °C	0 °C	+50 °C	$\lambda_d(\vartheta_m)=0.04+9 \times 10^{-5} \times \vartheta_m+1.5 \times 10^{-7} \times \vartheta_m^2+1.5 \times 10^{-9} \times \vartheta_m^3$ , where $\vartheta_m$ is mean temperature in °C	Sheets & Tubes (25mm)	$\lambda \leq 0,020$	0,031	0,036	0,040	0,045	[W/(m · K)]	Declared according to EN ISO 13787 Tested according to EN 12667 EN ISO 8497 (Equivalent methods ASTM C177 and C518)
$\vartheta_m$	-180 °C	-100 °C	-50 °C	0 °C	+50 °C	$\lambda_d(\vartheta_m)=0.04+9 \times 10^{-5} \times \vartheta_m+1.5 \times 10^{-7} \times \vartheta_m^2+1.5 \times 10^{-9} \times \vartheta_m^3$ , where $\vartheta_m$ is mean temperature in °C										
Sheets & Tubes (25mm)	$\lambda \leq 0,020$	0,031	0,036	0,040	0,045	[W/(m · K)]										
<b>Water vapour diffusion resistance</b>																
Water vapour diffusion resistance	For details on system performance please contact our Customer Service Centre															
<b>Fire performance</b>																
Reaction to fire	Euroclass Euroclass E	Classified according to EN 13501-1, Tested according to EN ISO 11925-2														
Other Fire Class	BS 476 Part 7 ASTM E84 Class 1 Class A (< 25 flame spread)	BS 476 Class 1 Approved by Lloyds														
Practical Fire Behaviour	Self-extinguishing, does not drip, does not spread flames.															
Density	65 to 80 kg/m <sup>3</sup>	Tested according to ISO 845, ASTM D1622														
Dimensions and tolerances	According to EN 14304, for detailed values please refer to product range tables.															
UV resistance	In all industrial applications the outer layer of the material must be protected with an adequate covering like Arma-Chek R, metal jacketing or preformed UV-cured GRP (Glass-Reinforced Plastic) cladding. For further information please consult our Customer Service Centre.															
Health aspects	Neutral, MSDS available on request.															
Storage & Shelf life	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight. max shelf (storage) life: 3 years															
Compression deflection	$\geq 10$ kPa/ $\geq 1.5$ psi at 25% deflection	Tested according to ISO 6916-1 (equivalent method ASTM D1056)														
Leachable (water-soluble)chlorides	$\leq 80$ ppm (mg/kg or $\mu$ g/g)	Tested according to EN 13468 and ASTM C871														

## Technical Data - Armaflex LTD [ES]

PH-value	7 to 9	Tested according to ISO 10523
Water absorption <sup>2</sup>	≤ 0.1% by volume (total submersion for 2 hours)	Tested according to ASTM C209
Closed cell content	≥ 90 % declared on the basis of the water absorption test	
Glass transition temperature <sup>2</sup>	Below -70 °C / -94 °F	
Application conditions	Ambient temperature: +5 °C to +35 °C Max. relative humidity: 80%	

1. For temperatures above or below those indicated in the "temperature range" above, please contact our Customer Service Center to request for the corresponding technical information.

2. Based on single test results. Can be used for information / reference only

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. For outside use, Armaflex should be protected with a suitable outer covering within 3 days of installation. For applications related to the processing or storage of oxygen, please consult our technical services department. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification. For temperatures above +110 °C please contact our Customer Service Centre to request the corresponding technical information.

## Technical Data - Armaflex LTD Anti-abrasive foil [ES]

Brief description	Insulation laminate used as a vapour barrier and reflection layer for insulation facings.
Material type	Foil construction: - 12 µ Alufoil, glossy - Glass scrim 5x5mm - 22 g/m <sup>2</sup> LDPE Coating
Product Range	Rolls, with the following make up: Width: 1,020 mm Core: 76 mm, cardboard Length: 1300 m

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range <sup>1</sup>	max. service temperature min. service temperature	110 °C -180 °C
<b>Water vapour diffusion resistance</b>		
Water vapour diffusion resistance	Water Vapour Transmission	< 0.03 g/m <sup>2</sup> /24h DIN 53122
Weight	Approx. 70 g/m <sup>2</sup>	EN ISO 2286-2
Tensile strength	MD 250 N/50mm CD 250 N/50 mm	EN ISO 13934-1
Elongation	MD 4% CD 4%	EN ISO 13934-1
Infrared reflection	Approx. 85%	

1. For temperatures above +100 °C please contact our Customer Service Center to request for the corresponding technical information.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification.

## Armaflex LTD [ES] tubes



Length 2,0 m

Pipe max. Outside-Ø [mm]	Inner Ø min/ max mm	25,0 mm insulation thickness	
		Code	m/carton
18	19,5 - 21,0	LTD-25X018	36
22	23,5 - 25,0	LTD-25X022	32
28	29,5 - 31,0	LTD-25X028	24
35	36,5 - 38,5	LTD-25X035	24
42	44,0 - 46,0	LTD-25X042	20
48	50,0 - 52,0	LTD-25X048	18
60	62,0 - 64,0	LTD-25X060	12
76	78,0 - 80,0	LTD-25X076	10
89	91,0 - 94,0	LTD-25X089	8

Length tolerance for tubes

± 1,5 %

Remark

Armaflex LTD is a part of the Armaflex Cryogenic System and should only be installed as a part of it.

## Armaflex LTD [ES] sheets endless



Code	Insulation thickness [mm]	Roll length [m]	m <sup>2</sup> /carton
LTD-25-99/E	25,0	4	4

Remark

Armaflex LTD is part of the Armaflex Cryogenic System and should only be installed as a part of it.

## Armaflex LTD [ES] anti-abrasive foil



Color silver, Aluminium vapour barrier foil, thickness 12 µ

Code	Width [mm]	Roll length [m]	Rolls/carton	m <sup>2</sup> /carton
LTD-1/50-ALU ●	1.000,0	50	1	50

Remark

Rolls of 50m length can be replaced by two 25 m rolls.

- Item not in stock. Delivery on request. [MTO]

## Armaflex LTD [ES] accessories



Code	Article description	Pieces/carton
ADH-HT625/1,0	Armaflex® HT625 one-component adhesive, 1,0 litre cans	12
ADH520/1,0E	Armaflex® adhesive 520, 1,0 liter cans	12
ADH520/2,5E	Armaflex® 520 adhesive, 2,5 litre cans	8
CLEANER/1,0	Special cleaner for use with Armaflex® Adhesive 520 and Armaflex® Adhesive HT625.	4







INSULATION JUST GOT BETTER



- Approved in accordance with EN45545 HL3
- Reduced weight and space requirements to achieve exceptional thermal insulation properties in hot and cold climates
- Improved sound absorption properties

## Technical Data - ArmaGel Rail

Brief description	Double-side laminated flexible aerogel insulation blanket. reduced space requirements to achieve exceptional thermal insulation properties
Material type	Aerogel insulation blanket with double-side aluminium foil
Colour	Silver
Material Special Information	ArmaGel Rail is intended for use as an efficient thermal insulation inside the train in all conditions. The product is suitable for use in multi-layer applications with other products
Product Range	Sheets in rolls 5, 10, 15, 20 mm (0,20, 0,39, 0,59, 0,79 in) thickness and width of 1,5 m (59,00 in)
Applications	ArmaGel rail can be used in HVAC systems, Walls, Ceilings, Floor, Door, applications for efficient thermal insulation at very low thicknesses
Safety and Environment	Neutral to health

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature +110 °C (+230 °F) min. service temperature <sup>1</sup> ( )	
<b>Thermal Conductivity</b>		
Thermal Conductivity	Metric $\vartheta_m$ +24 [°C]	Tested according to ASTM C177, based on ArmaGel HT
	Units $\lambda d \leq 0,021$ [W/(m · K)]	
	Imperial $\vartheta_m$ 75 [°F]	
	Units $\lambda d \leq 0,140$ [Btu-in/(h-ft <sup>2</sup> ·°F)]	
<b>Fire performance</b>		
Other Fire Class	Sheets 5-20 mm HL3, R1, R7, R17	Tested according to EN 45545-2 (2016)
<b>Other technical features</b>		
Density	160 to 240 kg/m <sup>3</sup> - 3.7 to 4.7 lb/ft <sup>3</sup>	Tested according to ASTM C303
Tolerances	Tolerances according to ASTM C1728, for detailed values please refer to product range tables.	
Health aspects	Neutral	
Storage & Shelf life	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight. Shelf (storage) life: max. 3 years	
Water absorption	Maximum 8%	Tested according to ASTM C 1763
Hydrophobic	Yes	

1. For temperatures above or below those indicated in the "temperature range" above, please contact our Customer Service Center to request for the corresponding technical information.

## ArmaGel Rail Jumbo Rolls

Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
<b>AGR-10-00/150P</b>	10	1.500,0	40	60

<b>Length tolerance for sheets</b>	length and width +/- 5%
<b>Thickness tolerance</b>	nominal 10mm = 10.0 -12.5mm
<b>Remark</b>	ArmaGel Rail at an insulation thickness of 5mm & 15mm & 20mm could be available against request







ARMAGEL HT

INSULATION JUST GOT BETTER

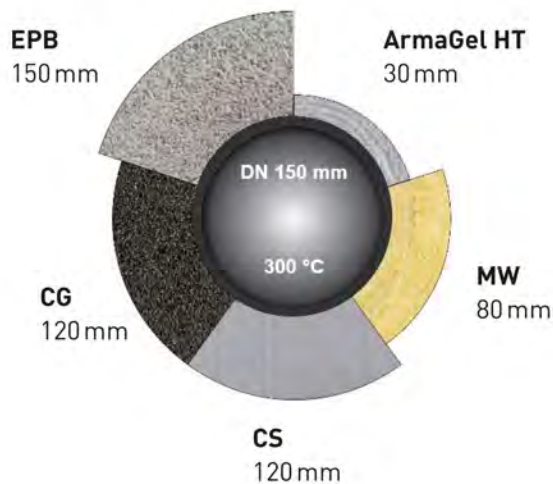


- Benefit from the extra thickness and flexibility of the blanket, work more efficiently and finish your project on time
- Minimum space required to achieve superior thermal and acoustic insulation performance
- Minimises the risk of CUI
  
- Mitigates the risk of corrosion under insulation (CUI)
- ASTM C1728 compliant
- Certified in accordance with ISO15665

# ArmaGel HT

## NEW SUPER-INSULATING MATERIALS

Traditional insulation materials do not always fulfil the high requirements in industrial environments and more effective, space- or weight-saving insulation solutions are necessary. New super-insulating materials (SIM), such as Armacell's next-generation aerogel technology provide solutions which are now economically feasible. ArmaGel HT can allow a reduction of insulation thickness by as much as a factor of five.



## OUTSTANDING INSULATION PERFORMANCE

With its exceptionally low thermal conductivity, ArmaGel HT is one of the best performing insulation materials available today, offering equal thermal performance at a fraction of the thickness – up to 80 percent thinner than competing insulation products. It is compliant to the ASTM C1728 standard for flexible aerogel insulation (type 3, grade 1A) and the fire behaviour is classified as B-s1,d0 according to DIN EN 13501-1 (single certificate).

## COST-EFFECTIVE INSTALLATION

More thicknesses – higher coverage: ArmaGel HT is offered in 5, 10, 15 and 20 mm thicknesses. A thicker layer gives more insulation coverage per man hour than other aerogel insulation products and allows lower labour costs. To produce a more flexible aerogel blanket, Armacell combined an efficient aerogel powder manufacturing process with a proprietary blanket technology. ArmaGel HT is highly flexible – even at an insulation thickness of 20 mm and on small pipe diameters. It cuts easily and conforms to preferred shapes.



## ULTRA-THIN AND ULTRA-LIGHT

ArmaGel HT is thinner than other insulation options, allowing easy transportation and enabling installers to achieve a high-tech insulation with less space consumed.

For a defined linear heat loss target ArmaGel HT can provide:

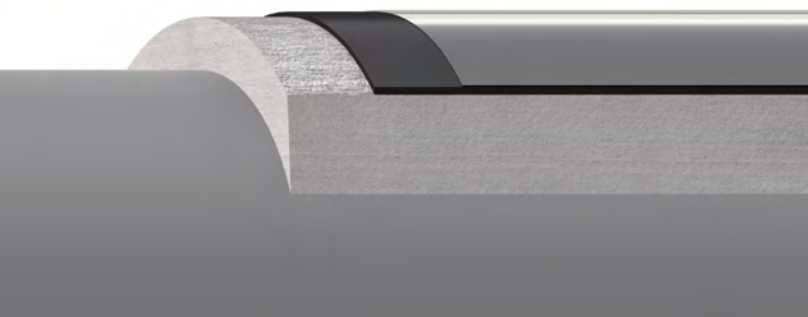
- Up to 80 % savings on insulation thickness
- Up to 50 % savings on metal cladding
- Reduced pipe spacing, allowing a smaller plant footprint
- Reduced system weight for fewer pipe supports and metalwork to save on costs and space required





## HYDROPHOBIC AND BREATHABLE

ArmaGel HT is hydrophobic and breathable. It repels water but allows air to pass through it. These unique properties offer enhanced protection against corrosion under insulation (CUI). ArmaGel's superior performance to mitigate the risk of CUI was also confirmed in an independent test by the renowned German-based corrosion institute INNCOA. ArmaGel HT and a combined ArmaFlex and ArmaGel HT insulation system performed best in this comparative test: they attained the top rating, RP 10 according to EN ISO 10289. No signs of corrosion were found anywhere on the surface of the pipe.



## SOUND ATTENUATION

Sound is just another form of energy transfer and ArmaGel's heat-blocking multi-porous structure creates not only a thermal but also a sound and vibration barrier. When ArmaGel HT blankets are used in a system configuration, they offer superior acoustic insertion loss at reduced thickness and weight compared to conventional insulation materials. ArmaGel HT Industrial Acoustic Systems have passed all three classes (A, B and C) according to ISO 15665 and specific configurations also passed the requirements of Class D according to Shell DEP 31.46.00.31-Gen.

## HEALTH, SAFETY ENVIRONMENT

ArmaGel HT is not harmful to the human body. The blankets are composed of glass fibres, amorphous silica and other filling agents (e.g. opacifiers). No restricted substances (e.g. titanium dioxide) are used in the manufacture. ArmaGel HT will produce some amounts of dust and fibres during handling and fabrication which must be managed in accordance with local regulations. Risks from inhaling silica powder can be controlled by using a suitable dust mask and for worker comfort the use of gloves, safety glasses and coveralls are recommended. ArmaGel HT is environmentally safe, chloride-free and landfill disposable.



## 360° SERVICE SUPPORT

ArmaGel HT is available from stock. The innovative manufacturing process and scalability allow Armacell to build capacity close to demand resulting in reduced logistics and supply costs. All over the world, Armacell customers can rely on sales representatives, technical consultants and applications engineers. They provide project-specific technical calculations, application training, on-site support and expert advice at every stage of the project. From planning to handover – our 360° service supports you throughout.

## Technical Data - ArmaGel HT

Brief description	ArmaGel® HT is a flexible aerogel blanket suitable for elevated temperature applications with maximum operating temperatures up to 650 °C (1200 °F).
Material type	Silica-aerogel blanket
Colour	Grey
Product Range	Sheets in rolls, 5, 10, 15 and 20 mm (0.20, 0.39, 0.59, 0.79 in) thickness. Available in widths of 0.75 and 1.5 m (29.53 and 59.00 in). For further details please refer to the product range tables at the back of this document.
Applications	Thermal insulation/protection of pipes, vessels and ducts (incl. elbows, fittings, flanges etc.) in offshore, industrial (typically oil & gas) and process equipment facilities. ArmaGel HT is also used as a component of ArmaSound Industrial Systems to provide acoustic insulation on industrial pipework and vessels ensuring reduction of sound transmission. For industrial applications it is recommended to consult the relevant Armacell installation instruction and application manual(s). Please consult our Technical Services for further information and support.
Special Features	ArmaGel HT is resistant to elevated operating temperatures up to 650 °C (1200 °F). The product is suitable for use in multi-layer applications including ArmaSound® Industrial Systems. Approval compliance: ASTM C 1728: Type III, Grade 1A

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range <sup>1</sup>	max. service temperature +650 °C (+1200 °F)	Tested according to ASTM C411 and ASTM C447
<b>Thermal Conductivity</b>		
Thermal Conductivity	Metric $\vartheta_m$ +24 +38 +93 +149 +204 [°C]	Tested according to ASTM C177  Formula: Metric: TC=2.28581E-10x3 + 1.54201E-09x2 + 2.78327E-05x + 2.05147E-02 Imperial: TC = 6.34392E-10x3 - 4.75142E-07x2 + 2.72191E-04x + 1.23462E-01
	Units $\lambda_d \leq$ 0,021 0,022 0,023 0,025 0,029 [W/(m · K)]	
	$\vartheta_m$ 260 316 371 [°C]	
	$\lambda_d \leq$ 0,032 0,036 0,043 [W/(m · K)]	
	Imperial $\vartheta_m$ 75 100 200 300 400 [°F]	
	Units $\lambda_c$ 0,140 0,150 0,160 0,180 0,200 [Btu-in/(h-ft2·°F)]	
$\vartheta_m$ 500 600 700 [°F]		
$\lambda_c$ 0,220 0,250 0,300 [Btu-in/(h-ft2·°F)]		
<b>Fire performance</b>		
Reaction to fire	Sheets B-s1,d0	Classified acc. to EN 13501-1. Tested acc. to EN 13823 & EN ISO 11925-2
Other Fire Class	Surface Burning < 5 Flame Spread Index Characteristics < 10 Smoke Development	Tested according to ASTM E84
<b>Other technical features</b>		
Density	160 to 240 kg/m <sup>3</sup> - 3.7 to 4.7 lb/ft <sup>3</sup>	Tested according to ASTM C303
Tolerances	Tolerances according to ASTM C1728, for detailed values please refer to product range tables.	
Health aspects	Neutral, MSDS available on request.	
Storage & Shelf life	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight. Shelf (storage) life: max. 3 years	
Compressive strength	>3 psi / 20.7 kPa at 10 % compression	Tested according to ASTM C165
Classifying the flexibility of the mineral fibre blankets	Flexible	Tested according to ASTM C1101
Sag resistance	< 5% Thickness Change	Tested according to ASTM C411
Stress Corrosion Cracking	Insulation for use over austenitic steel: No cracks, passed	Tested according to ASTM C692, ASTM C795
Corrosiveness of steel*	Passed, MLCR not exceeding 5 ppm chloride solution	Tested according to ASTM C1617, procedure A
Weather resistance	In all industrial applications the outer layer of the material must be protected with an adequate covering like metal jacketing, Arma-Chek® R flexible elastomeric jacketing or preformed UV-cured GRP (Glass-Reinforced Plastic) cladding. For further information please consult Technical Services.	
Hydrophobic	Yes	
Water absorption	≤ 5 % by weight	Tested according to ASTM C1104
Fungal resistance Tested according to ASTM C1338	No growth	

## Technical Data - ArmaGel HT

1. For temperatures above or below those indicated in the "temperature range" above, please contact our Customer Service Center to request for the corresponding technical information.

## ArmaGel HT Standard Rolls

Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
AGH-05-00/150S	5	1.500,0	16	24.0
AGH-10-00/150S	10	1.500,0	8	12.0
AGH-15-00/150S	15	1.500,0	6	9.0
AGH-20-00/150S	20	1.500,0	4	6.0

**Length tolerance for sheets**

length & width = +/- 5 %

**Thickness tolerance**

5mm nominal = 5.0 - 7.5mm  
 10mm nominal = 10.0 - 12.5mm  
 15mm nominal = 15.0 - 17.5mm  
 20mm nominal = 20.0 - 22.5mm

## ArmaGel HT Jumbo Rolls

Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
AGH-05-00/150P	5	1.500,0	65	97.5
AGH-10-00/150P	10	1.500,0	40	60.0
AGH-15-00/150P	15	1.500,0	26	39.0
AGH-20-00/150P	20	1.500,0	20	30.0

**Length tolerance for sheets**

length & width: +/- 5 %

**Thickness tolerance**

5mm nominal = 5.0 - 7.5mm  
 10mm nominal = 10.0 - 12.5mm  
 15mm nominal = 15.0 - 17.5mm  
 20mm nominal = 20.0 - 22.5mm





ARMAGEL DT

INSULATION JUST GOT COOLER



- Benefit from the extra thickness and flexibility of the blanket, work more efficiently and finish your project on time
- Minimum space required to achieve superior thermal and acoustic insulation performance
- Minimises the risk of CUI

## Technical Data - ArmaGel DT

Brief description	ArmaGel DT is a flexible aerogel insulation blanket suitable for applications with operating temperatures between -180 °C (-292°F) and +250 °C (+482°F).
Material type	Silica-aerogel blanket
Colour	Grey
Product Range	Sheets in rolls, 5, 10, 15 and 20mm (0.20, 0.39, 0.59, 0.79 in) thickness and width of 1.5m (59.00 in). For further details, please refer to the product range tables at the end of this document. Also available in 0.75m width (29.53 in) upon request.
Applications	Thermal insulation/protection of pipes, vessels and ducts (including elbows, fittings, flanges etc.) in cryogenic, offshore, industrial (typically oil and gas) and process equipment facilities. ArmaGel DT is also used as a component of ArmaSound Industrial Systems to provide acoustic insulation on industrial pipework and vessels, ensuring reduction of sound transmission.
Special Features	ArmaGel DT is intended for use in dual temperatures and cyclic operating conditions between -180 °C (-292 °C) and +250 °C (+482 °C). The product is suitable for use in multi-layer applications with other insulation products including ArmaSound Industrial Systems.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range <sup>1</sup>	max. service temperature	+250 °C (+482°F)
	min. service temperature	-180 °C (-292°F)
<b>Thermal Conductivity</b>		
Thermal Conductivity	Metric	$\theta_m$ -129 -73.3 -17.8 +23.9 +37.8 [°C]
	Unit	$\lambda d \leq 0,015$ 0,018 0,020 0,021 0,022 [W/(m · K)]
		$\theta_m$ 93,300 [°C]
		$\lambda d \leq 0,023$ [W/(m · K)]
	Imperial	$\theta_m$ -200 -100 0 75 100 [°F]
	Unit	$\lambda d \leq 0,100$ 0,120 0,140 0,150 0,150 [Btu-in/(h-ft <sup>2</sup> ·°F)]
		$\theta_m$ 200 [°F]
	$\lambda d \leq 0,160$ [Btu-in/(h-ft <sup>2</sup> ·°F)]	
<b>Fire performance</b>		
Reaction to fire	Surface burning characteristics	< 25 flame spread index < 50 smoke development Tested according to ASTM E84
Other Fire Class	International Maritime Organisation (IMO)	Compliant to IMO Part 2 (smoke generation and toxicity) Compliant to IMO Part 5 (surface flammability) Tested according to IMO 2010 FTP Code
<b>Other technical features</b>		
Density	160 to 240 kg/m <sup>3</sup> (10 to 15 lb/ft <sup>3</sup> )	Tested according to ASTM C303
Health aspects	Neutral, MSDS available on request	
Storage & Shelf life	Material should be stored indoors, in clean and dry conditions, away from direct sunlight. Shelf (storage) life: max. 3 years	
Compressive strength	> 5 psi / 34.5 kPa at 10% compression	Tested according to ASTM C165
Classifying the flexibility of mineral fibre blankets	Flexible	Tested according to ASTM C1101
Linear shrinkage under soaking heat	< 2% in width and length	Tested according to ASTM C356
Stress Corrosion Cracking	Insulation for use over austenitic steel: No cracks, Passed	Tested according to ASTM C692, ASTM C795
Corrosiveness of steel	Passed, MLCR not exceeding 5 ppm chloride solution	Tested according to ASTM C1617, procedure A
Weather resistance	In all industrial applications the outer layer of the material must be protected with an adequate covering like metal jacketing or preformed UV-cured GRP (Glass-Reinforced Plastic). For further information please consult Technical Services.	
Hydrophobic	Yes	
Water vapour sorption	$\leq 5\%$ by weight	Tested according to ASTM C1104
Water vapour transmission rate of integrated vapour barrier	0.00 perm	Tested according to ASTM E96
Fungal resistance	No growth	Tested according to ASTM C1338

1. For temperatures above or below those indicated in the "temperature range" above, please contact our Customer Service Center to request for the corresponding technical information.



## ArmaGel DT Standard Rolls

Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
AGD-05-00/150S	5	1,5	13.00	19.50
AGD-10-00/150S	10	1,5	8.00	12.00
AGD-15-00/150S	15	1,5	5.20	7.80
AGD-20-00/150S	20	1,5	4.00	6.00

**Length tolerance for sheets**

length and width +/- 5%

**Thickness tolerance**

nominal 5mm = 5.0 - 7.0mm  
 nominal 10mm = 10.0 - 12.5mm  
 nominal 15mm = 15.0 - 17.5mm  
 nominal 20mm = 20.0 - 22.5mm

## ArmaGel DT Jumbo Rolls

Code	Thickness [mm]	Width [mm]	Length [m]	m <sup>2</sup> /roll
AGD-05-00/150P	5	1,5	65.00	97.50
AGD-10-00/150P	10	1,5	40.00	60.00
AGD-15-00/150P	15	1,5	26.00	39.00
AGD-20-00/150P	20	1,5	20.00	30.00

**Length tolerance for sheets**

length and width +/- 5%

**Thickness tolerance**

nominal 5mm = 5.0 - 7.0mm  
 nominal 10mm = 10.0 - 12.5mm  
 nominal 15mm = 15.0 - 17.5mm  
 nominal 20mm = 20.0 - 22.5mm





ARMAFLEX® ACCESSORIES

THE RIGHT SET FOR PROFESSIONALS



- Specially designed to install Armaflex®
- Reliable installations
- Optimal performance
  
- Complete range of high-quality tools and accessories
- Innovative solutions to meet present and future market needs

## Armaflex Toolbox - Tools for professionals!

When it comes to preventing condensation and energy losses on equipment, not only high-quality insulation material is crucial, but also the installation.

Armaflex insulation materials not only have the required technical properties, they can also be installed quickly and easily. Armacell already offers various tools and aids such as the Armaflex Application Manual and the installation videos.

Now all the tools and aids are available in a lightweight, robust, lockable aluminium case!



### MEASURING CORRECTLY

- Armaflex Application Manual with fabrication and measuring instructions for Armaflex covers for complex-shaped components
- Folding rule with circumference scale
- Callipers (300 mm) to determine diameters precisely
- Edding marker pen, Armacell ballpoint pen and silver-ink marker pen for marking, making notes and transferring measurements to Armaflex insulation material
- Bow compass with a holder for the silver-ink marker pen and protective cap for use on Armaflex insulation material

### CUT PERFECTLY

- Armaflex template
- 4 knives: with blade length of 9, 17 and 27 cm for different cut-outs and 1 ceramic knife
- Knife holster for attaching to a belt
- Sharpening stone for the knives
- Sharpened copper pipe ends (6 different diameters) for cut-outs in Armaflex insulation material
- Tool for re-sharpening the copper pipe ends

### GLUE NEATLY

- Armaflex short-bristle brush 14, 70mm flat brush
- Armaflex Gluemaster (adhesive pump)
- Cleaning cloth for the tools



## Armaflex Accessories

Elastomeric insulation materials not only have good technical properties, they are also very user-friendly due to their high flexibility and ease of application. When installing these insulation materials it is crucial that they are glued professionally. Therefore, Armacell offers a broad range of accessories specifically developed for its products and regularly adds innovative solutions. Alongside the tried-and-tested contact adhesives such as the Armaflex 520 adhesive, interesting alternatives are also available.

## ARMAFLEX ULTIMA ADHESIVES

Armaflex Ultima and Armaflex Rail, synthetic rubber insulation materials based on the innovative Armaprene technology, require the use of adhesives that have been specially formulated for this type of foam. For these materials too, Armacell offers in addition to the standard Armaflex Ultima 700 adhesive a solvent-free alternative (Armaflex Ultima SF990 adhesive).

Find out more about all accessories such as the Armaflex Toolbox under [www.armacell.eu](http://www.armacell.eu)



## SOLVENT-FREE ACCESSORIES

Armacell is the first manufacturer of elastomeric insulation materials to provide solvent-free products. Armaflex SF990 and Armaflex Ultima SF990 meet the higher requirements of green building schemes regarding environmental and health aspects of the building products used.

A completely new addition to the range of accessories is a solvent-free cleaner: the Armaflex SF cleaner can be used to clean soiled surfaces of technical installations as well as the surface of insulation materials, thus ensuring perfect adhesion. The cleaner is supplied in a practical spray bottle so that it can be applied sparingly and precisely.

## DRIP-FREE GEL ADHESIVE

The drip-free, thixotropic (gel-like) adhesive Armaflex RS850 guarantees neat application. The special consistency of this product means that it is very drip-resistant, which is a great benefit when working overhead or when it is important that the insulation is not soiled by drops of adhesive. As it only releases minimal quantities of solvents when idle, the Armaflex RS850 adhesive is particularly suitable for installations in workshops and confined spaces.



## Technical Data - Armaflex Ultima 700 [Adhesive]

Brief description	One-component adhesive specifically for processing Armaflex Ultima and insulating materials based on Armaprene® synthetic rubbers.
Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	blue
Applications	Application on pipes and tanks with service temperatures up to +110 °C. Gluing of Armaflex Ultima and insulation materials based on Armaprene® synthetic rubbers.
Special Features	Specially formulated adhesive for uniform and safe seam bonding of Armaflex Ultima and insulating materials based on Armaprene® synthetic rubbers.
Assembly	<p>Please observe our installation instructions / product data. Application temperature: ideally between +15 °C and +20 °C, not below 0 °C. At temperatures below +5 °C or high humidity (above approx. 80%), increased condensation may form on the surfaces to be glued or adhesive films. In this cases bonding is bad or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on working plants or areas exposed to strong sunlight.</p> <p>Shake and stir well before use. Apply thinly to the places to be bonded with a brush or spatula. In case of contact adhesion press together with force during the contact adhesion time. Extensive notes for application are available.</p>
Remarks	The adhesive achieves its final strength after 36 hours. Only then should the plant be taken into operation. Wait 36 hours before applying coatings (exception: Armafinish 99), adhesive tape, coverings etc.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature +110 °C min. service temperature -50 °C	
<b>Other technical features</b>		
Yield	Minimum consumption with the adhesive applied to both surfaces: Armaflex tubes (thickness > consumption unslotted > consumption slotted): 10 mm > 1120 m/l > 140 m/l; 20 mm > 280 m/l > 70 m/l; 30 mm > 175 m/l > 45 m/l; 40 mm > 130 m/l > 35 m/l;  Sheets: 3-4 m <sup>2</sup> /l	These figures are a guide only.
Storage & Shelf life	18 month in a closed (unopened) container. Do not store together with: explosive substances; spontaneously combusting substances.	As cool as possible, but protected from frost. In the event of frost any gelling is reversible on warming.
Flash Point	approx: -26 °C	
Explosion limits	Lower: approx. 1,0 Vol. % Upper: approx. 12,8 Vol. %	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Ageing stability	Very good	
Resistance to weathering	Very good	
Pre-treatment of surface to be bonded	Clean dirty surfaces and Armaflex Ultima surface with Armaflex Cleaner Compatibility with bases: very good adhesion to metallic base. The compatibility with colour coated surface with adhesive needs to be tested. Incompatible with Asphalt, bitumen or red lead (inseed oil-based).	For more information see Technical Bulletin no. 17
Transport Classes	Depending on the type of transport	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	
Working time	at 20 °C: 1. Minimum drying time (airing time): 3 - 5 minutes 2. Contact adhesion time: 15 - 20 minutes 3. Setting time: 36 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.

## Technical Data - Armaflex Ultima SF990 [Adhesive]

Brief description	Water-based one component solvent-free adhesive. Specifically formulated for processing Armaflex Ultima and insulating materials based on Armaprene® synthetic rubbers.
Material type	Solvent-free dispersion adhesive based on synthetic latex.
Colour	blue
Material Special Information	liquid
Applications	Gluing of Armaflex Ultima and insulation materials based on Armaprene® synthetic rubbers.
Assembly	Please observe our installation / product data. The maximum relative humidity must not exceed 70%. Work should not be carried out on working plants, for areas exposed to strong sunlight, and high wind speed. Apply adhesive with a brush in a thin uniform layer to both surfaces to be joined. Adhesive bond reaches full strength after 72 hours. The system should not be operated during this period and any self-adhesive tapes or protective coatings should only be applied after this period has elapsed. A detailed application advice is available.
Remarks	The application of the Armaflex Ultima SF990 shall be performed only by certified users. Before starting application work, a practical instruction training performed by the Armacell Technical Customer Service is obligatory!

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature	+100 °C
	min. service temperature	-30 °C
Processing temperature	Ideally between +20 °C and +30 °C For temperatures at low temperature e.g. +5 °C please contact our application specialist.	
<b>Other technical features</b>		
Yield	Minimum consumption with the adhesive applied to both surfaces:: 3-4 m <sup>2</sup> / l	These figures are a guide only.
Storage & Shelf life	6 month in sealed original container.	In a cool (preferably not under +15 °C and not below +30 °C) and dry place. Protect from temperatures below +5 °C!
Pre-treatment of surface to be bonded	Clean dirty surfaces and Armaflex surface with Armaflex Cleaner or Armaflex SF Cleaner. Compatibility with bases: very good adhesion to metallic base, except galvanized surfaces. The compatibility with colour coated surfaces with adhesive needs to be tested.	
Transport classes	No hazardous material as defined by the transport regulations.	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	
Working time	at 20 °C; 55%: : 1. Minimum drying time (airing time): approx. 12 - 60 minutes 2. Contact adhesion time (open time): approx. 5 to 10 minutes 3. Setting time: 72 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.

## Technical Data - Armaflex 520 [Adhesive]

Brief description	Special adhesive for installing all flexible Armaflex insulation materials (with the exception of Armaflex EPDM-based products). See also "Overview Adhesive Application".
Material type	Contact adhesive on polychloroprene basis, free of aromatic solvent.
Colour	Beige
Material Special Information	Liquid
Applications	Gluing flexible Armaflex insulation materials (see above).
Special Features	Specially formulated adhesive for uniform and safe seam bonding of flexible Armaflex insulation materials.
Assembly	<p>Please observe our installation instructions / product data. Application temperature: ideally + 20 °C, not below 0 °C. At temperatures below + 5 °C or high humidity (above approx. 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested using absorbent paper (blotting or crepe paper). Work should not be carried out on working plants or areas exposed to strong sunlight.</p> <p>Shake and stir well before use. Apply thinly to the areas to be bonded with a brush or spatula. In case of contact adhesion press together with force during the contact adhesion time. Extensive guidance for application are available.</p>
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Never insulate a plant which is in operation or work in strong sunlight. Wait 36 hours before applying coatings (exception: Armafinish 99), adhesive tape, coverings etc.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature + 105 °C min. service temperature <sup>1</sup> - 50 °C	
<b>Other technical features</b>		
Yield	Minimum consumption with the adhesive applied to both surfaces: Armaflex tubes (thickness > consumption unslotted > consumption slotted): 10 mm > 1120 m/l > 140 m/l; 20 mm > 280 m/l > 70 m/l; 30 mm > 175 m/l > 45 m/l; 40 mm > 130 m/l > 35 m/l;  Sheets: 7-9 m <sup>2</sup> /l	These figures are a guide only.
Storage & Shelf life	18 months in a closed (unopened) container in a dry, cool, well ventilated place. Do not store together with: explosive substances; spontaneously combusting substances.	In a cool, but frost-free place. Jellification due to frost is reversible.
Flash Point	approx. - 15 °C	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Ageing stability	Very good	
Resistance to weathering	Very good	
Pre-treatment of surface to be bonded.	Clean dirty surfaces and the Armaflex surface with Armaflex Cleaner.  Compatibility with bases: very good adhesion to metallic base. The compatibility with colour coated surfaces with adhesive needs to be tested.  Incompatible with: Asphalt, bitumen or red lead paint (inseed oil based).	For more information pls. see Technical Bulletin no. 17.
Transport Classes	Depending on the type of transport	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Packaging must be emptied of all residues. Packaging with traces of cured product can be re-cycled. Packaging with uncured product must be disposed of in the same manner as the medium.	
Working time <sup>2</sup>	at 20 °C: 1. Minimum drying time (airing time): 3-5 minutes 2. Contact adhesion time: 15-20 minutes 3. Setting time: 36 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

2. The full adhesion of the adhesive is achieved after 168 h.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information. Armaflex 520 adhesive and Clipse must be used to guarantee proper installation.

## Technical Data - Armaflex HT625 [Adhesive]

Brief description	One-component adhesive which has been developed to bond Armaflex insulation applied on high temperatures, especially well matched with Armaflex EPDM- based products like HT/Armaflex, but also suitable for all other Armaflex synthetic rubber based insulation materials.
Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	Beige
Material Special Information	Liquid.
Applications	Application on pipes and tanks with service temperatures up to 150 °C. Gluing of Armaflex EPDM-based insulation material and other Armaflex synthetic rubber based insulation materials.
Special Features	Specially formulated adhesive for uniform and safe seam bonding of flexible Armaflex insulation materials applied on high temperature lines.
Assembly	Please observe our installation instructions / product data. Application temperature: ideally + 20 °C, not below 0 °C. At temperatures below + 5 °C or high humidity (above approx. 80%), increased condensation may form on the surfaces to be glued or adhesive films. In this cases bonding is bad or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on working plants or areas exposed to strong sunlight.  Shake and stir well before use. Apply thinly to the places to be bonded with a brush or spatula. In case of contact adhesion press together with force during the contact adhesion time. Extensive notes for application are available.
Remarks	The adhesive achieves its final strength after 36 hours. Only then should the plant be taken into operation. Wait 36 hours before applying coatings (exception: Armafinish 99), adhesive tape, coverings etc.

Property	Value/Assessment	Special Remark
Temperature Range		
Temperature Range	max. service temperature <sup>1</sup> + 150 °C min. service temperature <sup>2</sup> -50 °C	
Other technical features		
Yield	Minimum consumption with the adhesive applied to both surfaces: Armaflex tubes (thickness > consumption unslotted > consumption slotted): 10 mm > 1120 m/l > 140 m/l; 20 mm > 280 m/l > 70 m/l; 30 mm > 175 m/l > 45 m/l; 40 mm > 130 m/l > 35 m/l;  Sheets: 7-9 m <sup>2</sup> /l	These figures are a guide only.
Storage & Shelf life	18 months in a closed (unopened) container . Do not store together with: explosive substances; spontaneously combusting substances.	As cool as possible, but protected from frost. In the event of frost any gelling is reversible on warming.
Flash Point	approx. -26 °C	
Explosion limits	Lower: approx. 1,0 Vol. % Upper: approx. 12,8 Vol. %	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Ageing stability	Very Good	
Resistance to weathering	Very good	
Pre-treatment of surface to be bonded:	Clean dirty surfaces and the Armaflex surface with Armaflex Cleaner.  Compatibility with bases: very good adhesion to metallic base. The compatibility with colour coated surfaces with adhesive needs to be tested.  Incompatible with: Asphalt, bitumen or red lead paint (inseed oil based).	For more information pls. see Technical Bulletin no. 17.
Transport classes	Depending on the type of transport.	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	
Working time	at 20 °C: 1. Minimum drying time (airing time): 3-5 minutes 2. Contact adhesion time: 15-20 minutes 3. Setting time: 36 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

1. For temperatures above +150 °C please contact our Customer Service Center to request for the corresponding technical information.

2. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Armaflex HT625 adhesive must be used to guarantee proper installation.

## Technical Data - Armaflex RS850 [Adhesive]

Brief description	Non-dripping one-component adhesive in gel form. Specifically for processing all Armaflex insulating materials based on synthetic rubber with the exception of Armaflex EPDM-based products.
Material type	Thixotropic contact adhesive on polychloroprene basis
Colour	Yellowish
Material Special Information	Jellylike
Applications	Application on pipes, ducts and tanks with service temperature up to +70 °C. Gluing of all Armaflex insulation materials with the exception of HT/ Armaflex .
Special Features	Specifically formulated adhesive for uniform and safe seam-bonding of flexible Armaflex insulation materials.
Assembly	Please observe our installation instructions / product data. Application temperature: ideally between +15 °C and 25 °C, not below +10 °C. At temperatures below + 5 °C or high humidity (above approx. 80%), increased condensation may form on the surfaces to be glued or adhesive films. In this cases bonding is bad or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on working plants or areas exposed to strong sunlight.
Remarks	Adhesive bond reaches full strength after 24 hours. The system should not be operated during this period and any self-adhesive tape or protective coatings, except Armafinish 99 paint, should only be applied after this period has elapsed.

Property	Value/Assessment	Special Remark
Temperature Range		
Temperature Range	max. service temperature +70 °C min. service temperature -40 °C	
Other technical features		
Yield	Minimum consumption with the adhesive applied to both surfaces: Armaflex tubes (thickness > consumption unslotted > consumption slotted): 10 mm > 1120 m/l > 140 m/l; 20 mm > 280 m/l > 70 m/l; 30 mm > 175 m/l > 45 m/l; 40 mm > 130 m/l > 35 m/l;  Sheets: 7-9 m <sup>2</sup> /l	These figures are a guide only.
Storage & Shelf life	36 months in a closed (unopened) container; Store between 0 °C and 35 °C in a dry place. Do not store together with: explosive substances; spontaneously combusting substances.	As cool as possible, but protected from frost. Cold or frozen adhesive (under +5 °C) will become fully usable again if slowly acclimatized up to working temperature (approx. +20 °C).
Flash Point	-17 °C	
Explosion limits	Lower: 1,1 Vol. % Upper: 11,5 Vol. %	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Ageing stability	Very good	
Resistance to weathering	Very good	
Pre-treatment of surface to be bonded	Clean dirty surfaces and Armaflex surface with Armaflex Cleaner. Compatibility with bases: The compatibility with color coated surface with adhesive needs to be tested. Incompatible with: Asphalt, bitumen, red lead (in seed oil-based), polystyrene and plasticized PVC	For more information see Technical Bulletin No. 17
Transport classes	Depending on type of transport	
Disposal consideration	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	
Working time	at 20 °C 1. Minimum drying time (airing time): > 2 minutes 2. Contact adhesion time: 10 to 15 minutes 3. Setting time: 24 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.



## Technical Data - Armaflex SF990 [Adhesive]

Brief description	Water-based one component adhesive. Specifically for processing of all Armacell insulating materials based on synthetic rubber with the exception of Armaflex EPDM-based and Armaprene based products in buildings.
Material type	Solvent-free dispersion adhesive based on synthetic latex.
Colour	dark grey
Material Special Information	liquid
Applications	Gluing of Armaflex insulation materials based on synthetic rubber (see above).
Assembly	Please observe our installation / product data. The maximum relative humidity must not exceed 70%. Work should not be carried out on working plants, for areas exposed to strong sunlight, and high wind speed. Apply adhesive with a brush in a thin uniform layer to both surfaces to be joined. Adhesive bond reaches full strength after 72 hours. The system should not be operated during this period and any self-adhesive tapes or protective coatings should only be applied after this period has elapsed. A detailed application advice is available.
Remarks	The application of the Armaflex SF990 shall be performed only by certified users. Before starting application work, a practical instruction training performed by the Armacell Technical Customer Service is obligatory!

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature	+100 °C
	min. service temperature	-30 °C
Processing temperature	ideally between +20 °C and +30 °C For temperatures at low temperature e.g. +5 °C please contact our application specialist.	
<b>Other technical features</b>		
Yield	Minimum consumption with the adhesive applied to both surfaces:: 3-4 m <sup>2</sup> / l	These figures are a guide only.
Storage & Shelf life	6 month in sealed original container.	In a cool (preferably not under +15 °C and above +30 °C) and dry place. Protect from temperatures below +5 °C!
Pre-treatment of surface to be bonded	Clean dirty surfaces and Armaflex surface with Armaflex Cleaner or Armaflex SF Cleaner. Compatibility with bases: very good adhesion to metallic base, except galvanized surfaces. The compatibility with colour coated surfaces with adhesive needs to be tested.	
Transport classes	No hazardous material as defined by the transport regulations.	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	
Working time	at 20 °C; 55% : 1. Minimum drying time (airing time): approx. 12 - 60 minutes 2. Contact adhesion time (open time): approx. 5 to 10 minutes 3. Setting time: 72 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. For some refrigerants the discharge temperature may exceed +110 °C, please consult our Customer Service Center for further information.

## Technical Data - Armaflex Cleaner

Brief description	Special cleaner for use with all Armaflex adhesives
Colour	Clear
Material Special Information	Liquid
Applications	Cleaning of surfaces where Armaflex Adhesive are to be used.
Assembly	To ensure perfect adhesion all contaminated surfaces - including contaminated Armaflex - must be cleaned. In addition, the cleaner can also be used to clean surfaces when Armafinish 99, for example, is to be applied.
Remarks	Please also use the Armaflex Cleaner to clean tools (except Armaflex Ultima SF990 and Armaflex SF990 adhesive).

Property	Value/Assessment	Special Remark
Other technical features		
Storage & Shelf life	Approx. 1 year	Keep container tightly closed in a cool, well ventilated place. Protect from heat and direct sunlight. Do not store together with: explosive substances; spontaneously combusting substances.
Flash Point	approx. - 20 °C	
Explosion limits	Lower: approx. 1 Vol-% Upper: approx. 13 Vol-%	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Transport classes	depending on the type of transport	
Disposal consideration	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. More details see relevant Safety Data Sheet.  Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.	

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. During storage of the product blooming on the surfaces may occur, especially at wall thickness below 19mm. This blooming does not affect the technical properties of the material, but can affect the adhesion properties. Therefore, the surface needs to be cleaned (wiped off) before adhesives can be applied.

## Technical Data - Armaflex SF Cleaner

Brief description	Water-soluble Cleaner
Colour	yellowish
Material Special Information	Liquid
Applications	Cleaning of surfaces where Armaflex Adhesive are to be used.
Assembly	To ensure perfect adhesion all contaminated surfaces - including contaminated Armaflex - must be cleaned.
Remarks	Armaflex SF Cleaner is sprayed onto areas to be cleaned, allowed to have an effect depending on pollution degree, then wash off.

Property	Value/Assessment	Special Remark
Other technical features		
Storage & Shelf life	1 year in sealed original container	Keep container tightly closed in a cool, well-ventilated place. Protect from frost, do not store it below of +5 °C.
Flash Point	> 100 °C	
Hazard Statement	This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP).	
Transport classes	No hazardous material as defined by the transport regulations.	
Disposal consideration	Dispose of waste according to applicable legislation. More details see relevant Safety Data Sheet.	

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area.

## Technical Data - ArmaFinish 99

Brief description	Armafinish 99 is a paint, which remains permanently elastic, is resistant to weathering and has good ageing resistance.
Material type	Non-drip
Colour	white (RAL 9001) or grey (RAL 7037)
Material Special Information	Normal consumption: 0,55 l/m <sup>2</sup> when two coats are applied (corresponds to a dry film thickness of 0,26mm).
Applications	Protection of Armaflex insulation materials when installed outdoors and for marking purposes for interior use.
Assembly	All Armaflex insulation (except HT/Armaflex and Armaflex products based on Armaprene), see relevant product data sheet) which is installed outdoors must be covered with two complete coats of Armafinish 99. Application temperature: + 10 °C to + 30 °C, maximum relative humidity 80%. Drying time at + 20 °C: approx. 2 hours. It is also necessary to allow this time between coats; the second coat must be applied within 7 days. Paint may be applied using a brush or roller. Clean tools with water.
Remarks	Unprotected Armaflex must not be exposed to weathering for more than 3 days, so the paint should be applied as soon as possible. The protective coating should be inspected at regular intervals. After 2 years at the latest, two further coats should be applied.  Refer to special instruction / safety data sheet.

Property	Value/Assessment	Special Remark
Other technical features		
Storage & Shelf life	Shelf-life in unopened container: 12 months.	Keep container tightly closed and store in a cool, well ventilated and frost-free place.
Explosion limits	Lower: none Upper: none	
Hazard Class	Environmentally hazardous substance as defined by the transport regulations (ADR/RID, IMDG-Code, ICAO-TI/IATA-DGR).	
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. More details see relevant Safety Data Sheet.	Packaging must be emptied of all residues. Packaging with traces of cured product can be recycled. Packaging with uncured product must be disposed of in the same manner as the medium.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual.

## Technical Data - ArmaFlex 525 [Adhesive]

Brief description	Special premium adhesive for installing the next generation of flexible Armaflex insulation materials (e.g. AF/ArmaFlex Evo). See also "Overview Adhesive Application".
Material type	Contact adhesive on polychloroprene basis, free of aromatic solvent.
Colour	Beige
Material Special Information	Liquid
Applications	Gluing flexible Armaflex insulation materials (see above).
Special Features	Specially formulated premium adhesive for uniform and safe seam bonding of the next generation of flexible Armaflex insulation materials.
Assembly	<p>Please observe our installation instructions / product data. Application temperature: ideally + 20 °C, not below 0 °C. At temperatures below + 5 °C or high humidity (above approx. 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested using absorbent paper (blotting or crepe paper). Work should not be carried out on working plants or areas exposed to strong sunlight.</p> <p>Shake and stir well before use. Apply thinly to the areas to be bonded with a brush or spatula. In case of contact adhesion press together with force during the contact adhesion time. Extensive guidance for application are available.</p>
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Never insulate a plant which is in operation or work in strong sunlight. Wait 36 hours before applying coatings (exception: Armafinish 99), adhesive tape, coverings etc.

Property	Value/Assessment	Special Remark
<b>Temperature Range</b>		
Temperature Range	max. service temperature + 110 °C min. service temperature <sup>1</sup> - 50 °C	
<b>Other technical features</b>		
Yield	Minimum consumption with the adhesive applied to both surfaces: Armaflex tubes (thickness > consumption unslotted > consumption slotted): 10 mm > 1120 m/l > 140 m/l; 20 mm > 280 m/l > 70 m/l; 30 mm > 175 m/l > 45 m/l; 40 mm > 130 m/l > 35 m/l;  Sheets: 7-9 m <sup>2</sup> /l	These figures are a guide only.
Storage & Shelf life	18 months in a closed (unopened) container in a dry, cool, well ventilated place. Do not store together with: explosive substances; spontaneously combusting substances.	In a cool, but frost-free place. Jellification due to frost is reversible.
Flash Point	approx. -26 °C	
Explosion limits	Lower: approx. 1,0 Vol. % Upper: approx. 12,8 Vol. %	
Hazard Statement	highly flammable liquid and vapour	For more information pls. see EC Safety Data Sheet.
Ageing stability	Very Good	
Resistance to weathering	Very good	
Pre-treatment of surface to be bonded.	Clean dirty surfaces and the Armaflex surface with Armaflex Cleaner.  Compatibility with bases: very good adhesion to metallic base. The compatibility with colour coated surfaces with adhesive needs to be tested.  Incompatible with: Asphalt, bitumen or red lead paint (inseed oil based).	For more information pls. see Technical Bulletin no. 17.
Transport classes	Depending on the type of transport.	
Disposal considerations	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.	
Working time	at 20 °C: 1. Minimum drying time (airing time): 3-5 minutes 2. Contact adhesion time: 15-20 minutes 3. Setting time: 36 hours	The open time depends on the quantity as well as indoor climate conditions. Before operation time the setting time needs to be allowed to elapse.

1. For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.



## Armaflex accessories [parent] tools



Code	Article description	Pieces/carton
<b>ADHESIVE BRUSH</b>	Armaflex Adhesive Brush (15 pcs/box)	15
<b>BLADES</b>	spare blades for tube slitter-knife (50x6 pcs)	50x6
<b>BLADES-PCS</b>	spare blades for tube slitter-knife (6 pcs)	6
<b>CERAMIC KNIFE</b>	knife with ceramic blade (10 cm) and rubber grip (9 cm)	1
<b>CUTTING-SET</b>	Armaflex knife-set (3 knives + 1 sharpening stone)	1
<b>GLUEM-BRUSH11MM</b>	Gluemaster extra brush points with cap (11mm diameter)	5x4
<b>GLUEM-BRUSH17MM</b>	Gluemaster extra brush points with cap (17mm diameter)	5x4
<b>GLUEMASTER B</b>	Armaflex Gluemaster (adhesive pump)	12
<b>PEN-SILVER/10</b>	silver pens	10
<b>SLITTER</b>	special tube slitter-knife	10

## Armaflex Ultima 700 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>AHU-700/1,0</b>	Armaflex Ultima Adhesive 700, 1 liter cans	12

## Armaflex Ultima SF990 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>AHU-SF990/0,8</b>	Armaflex Ultima Adhesive SF990, 0,8 liter cans	12

## Armaflex 520 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>ADH520/0,25E</b>	Armaflex® adhesive 520, 0,25 liter cans (with brush)	24
<b>ADH520/0,5E</b>	Armaflex® adhesive 520, 0,5 liter cans	12
<b>ADH520/1,0E</b>	Armaflex® adhesive 520, 1,0 liter cans	12
<b>ADH520/2,5E</b>	Armaflex® 520 adhesive, 2,5 litre cans	8

## Armaflex HT625 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>ADH-HT625/0,25</b>	Armaflex HT625 one-component adhesive, 0,25 litre cans (with brush)	40
<b>ADH-HT625/0,5</b>	Armaflex HT625 one-component adhesive, 0,5 litre cans	12
<b>ADH-HT625/1,0</b>	Armaflex® HT625 one-component adhesive, 1,0 litre cans	12

## Armaflex RS850 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>ADH-RS850/0,5</b>	Armaflex Adhesive RS850, 0,5 liter cans	6

## Armaflex SF990 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>ADH-SF990/0,8</b>	Armaflex Adhesive SF990, 0,8 liter cans	12

## Armaflex Cleaner cleaner



Code	Article description	Pieces/carton
<b>CLEANER/1,0</b>	Special cleaner for use with Armaflex® Adhesive 520 and Armaflex® Adhesive HT625.	4

## Armaflex SF Cleaner cleaner



Code	Article description	Pieces/carton
<b>SF-CLEANER/1,0</b>	Solvent-free cleaner for use with Armaflex	6

## ArmaFinish 99 paint



Code	Article description	Pieces/carton
<b>FINISH/GY-2,5</b>	protective coat for Armaflex, silver grey (RAL-Nr. 7037), 2,5 liter buckets	4
<b>FINISH/WH-2,5</b>	protective coat for Armaflex, white (RAL-Nr. 9001), 2,5 liter buckets	4

## ArmaFlex Toolbox accessories



Length 570,0 mm, Width 325,0 mm, Thickness 160,0 mm, Aluminium Toolbox

Code	Article description	Pieces/carton
<b>Toolbox</b>	Case containing tools to install Armaflex	1

## ArmaFlex 525 [Adhesive] adhesive



Code	Article description	Pieces/carton
<b>ADH-525/0,5</b>	ArmaFlex 525 Glue 0,5 litre can	12
<b>ADH-525/1,0</b>	ArmaFlex 525 Glue 1,0 litre can	12
<b>ADH-525/2,5</b>	ArmaFlex 525 Glue 2,5 litre can	8

# General information

## Order and delivery details

- Please check that the goods are complete as soon as you receive them. Any deviation such as over or under delivery must be noted on the freight papers and signed by the driver.
- All items in this price list which are not held in stock in our warehouse and items which are made to your requirements cannot be returned.
- We reserve the right to over or under deliver quantities by up to 6 % in the case of items which are custom made for you.
- You will be charged for the handling costs resulting from returns.



Armacell is a member of the UN initiative Global Compact. The participants of the GlobalCompact commit themselves to promoting the implementation of ten fundamental principles regarding the general protection of human rights, compliance with labour standards, environmental protection and combating corruption within their sphere of influence. They also undertake to advocate publicly for the objectives of the pact.

Local information

## Pipe diameter

Pipe max. Outside-Ø [mm]	Copper pipes Cu		Steel Pipes Fe			Plastic pipes
	Outside-Ø [mm]	Outside-Ø [inch]	Inches	Outside-Ø [mm]	Nominal diameter DN	Outside-Ø [mm]
3	3			3,0		3
6	6	¼		6,0		
8	8			8,0		
10	10	⅜	⅜	10,2	6	
12	12	½		12,0		
13	13			13,0		13
15	15	⅝	¼	13,5	8	14
16						16
18	18	¾	⅝	17,0	10	
20				20,0		20
22	22	⅞	½	21,3	15	
25	25	1		25,0		25
28	28	1 ⅛	¾	26,9	20	
30				30,0		
32				32,0		32
35	35	1 ⅜	1	33,7	25	
38				38,0		
40	40			40,0		40
42	42	1 ⅝	1 ¼	42,4	32	
45				44,5		
48			1 ½	48,3	40	
50						50
54	54	2 ⅛		54,0		
57				57,0		
60			2	60,3	50	
64	64			63,5		63
67						
70	70			70,0		
73	73	2 7/8"		73,0		
76	76	3	2 ½	76,1	65	75
80	80	3 ⅛				
89	89	3 ½	3	88,9	80	90
90						
102				101,6		
108	108	4 ¼				
110						110
114			4	114,3	100	
125				125,0		125
133	133					
140			5	139,7	125	
154				152,4		
160	159					
165			6	165,1		
168				168,3	150	
180						
204						200
219	219			219,1	200	
254						250
267	267					
273				273,0	250	
306						300
324				323,9	300	
356				355,6	350	
406				406,4	400	
457				457,0	450	
508				508,0	500	
610				610,0	600	

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