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Assessment of Production

Proposed Quality Plan

for

Various Kingspan products and Certificate details - please see page 2

Revision No	Reason for re-issue	Date				
1	Page 3 about name Goldsmith/Evonik Page 7 label to include weight of product.	08Sept2011				
2	Following last surveillance visit: Note that the Certificate 97/3364 (TR20) has been removed from this qp because it is currently being manufactured at the Holland location. Please if this location is under BBA surveillance or is a new location.	12 Dec 2011				
3	Changes included such as change of Resin's supplier name, density range, need to include the compressive strength for each K product which has been missed, all these following inspection 15 Dec.2012.	12 June 2012				
(A. Edw	these following inspection 15 Dec.2012. This document contains BBA requested details and made by BBA Inspection Services (A. Edwards) following a Certificate Surveillance Inspection carried out on the 13-06-2012 The amendments, which are shown in Yellow highlighted text, will require examination and formal endorsement by BBA S2 Sections and the client.					

Document reference	Kingspan Pembridge AQP
Date of issue	12 June 2012
BBA Section responsible	Physics
BBA Project Manager	Gayetree Ramkorun
Other products covered by	
BBA Certificates	
manufactured on this site:	

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List of BBA Certificates and Kingspan products for this location:

- 94/2992 Kingspan Thermawall TW50
- 94/3047 Kooltherm K8 Cavity Board
- 94/3061 Kooltherm K7Sarking Board
- 95/3126 Kingspan Thermapitch TP10 (Pitched Roof Insulation)
- 97/3366 Kingspan Purlboard Plasterboard Laminate/Kingspan Thermawall TW52
- 01/3813 Kingspan Thermafloor TF73
- 06/4372 Kingspan Thermaroof TR27 / TT47
- 06/4384 Kingspan Thermaroof TR21
- 07/4450 Kingspan Thermafloor TF70
- 08/4522 Kooltherm K3
- 08/4582 Kooltherm K15
- 08/4590 Kingspan Thermawall TW55
- 08/4615 Kooltherm K12
- 09/4675 Kooltherm K10
- 10/4798 Kooltherm K17 & K18
- TBC Kingspan Thermaroof TR26 / TT46 (M1/40854)

For information only: (Products made for other Certificate holders)

Kingspan Thermawall TW53 - supplied to holders of BBA Certificate for external wall insulation systems

MR Board – supplied to Alumasc Exterior Building Products Limited for their Swisslab Phenolic and M.R. S Finishes External Wall Insulation Systems

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Product name:

PIR Line 2 (Hennecke) and Line 4 (OMS)

Kingspan Thermawall TW50 (Wall Insulation) Kingspan Thermapitch TP10 (Pitched Roof Insulation) Kingspan Purlboard Plasterboard/Kingspan Thermawall TW52 (TR27 foam blanks for TW52) Kingspan Thermaroof TR27 / TT47 Kingspan Thermaroof TR21 Kingspan Thermafloor TF70 Kingspan Thermaroof TR26 / TT46 Kingspan Thermawall TW55 (Wall Insulation)

Bonding line

Kingspan Purlboard Plasterboard Laminate / Kingspan Thermawall TW52 Kingspan Thermafloor TF73

Line 3 (Phenolic)

Kooltherm K8 Partial Fill Cavity Wall Insulation Boards Kooltherm K7 Sarking Boards Kooltherm K3 Floorboard Kooltherm K15 Rainscreen Insulation Board Kooltherm K12 Framing Board Insulation Kooltherm K10 Soffit Insulation Kooltherm K17 Insulated Dry Lining Boards Kooltherm K18 Insulated Dry Lining Boards MR Board - Swisslab External Wall Insulation Systems

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Product range:

Products comprise a pale yellow rigid PIR core of density > 27.0 kgm⁻³ with plain edges and triply foil facings

Name	Certificate	Application	Facing	Length (mm)	Width (mm)	Thickness (mm)
TVV50	94/2992	A partial fill cavity wall insulation board	Trilaminate foil	450 600	1200	15 to 150
TP10	95/3126	A sarking insulation board for pitched roofs.	Trilaminate foil	2400	1200	25 to 150
TW52	97/3366	TR27 foam blank for bonding to plasterboard – insulated dry lining	Coated Glass facing	2400	1200	25 to 150
Thermaroof TR27/TT47 LPC/FM	06/4372	Insulation for flat roofs	Coated Glass facing	2400 600	1200	25 to 150
Thermaroof TR21	06/4384	Insulation for flat roofs	Glass Reinforced Facing	2400 600	1200	25 to 150
TF70	07/4450	Insulation for floors	Trilaminate foil	2400	1200	20 to 150
TW55	08/4590	A walling insulation board for use between timber studs or a san insulation sheathing on timber studs	Trilaminate foil	2400	1200	25 to 150
Thermaroof TR26 LPC/FM	TBC	Insulation for flat roofs	Low emissivity composite foil facing on both sides	2400	1200	45 to 160

PIR Line 2 (Hennecke) and Line 4 (OMS)

⁽¹⁾ supplied to holders of BBA Certificate for external wall insulation systems

Bonding Line

Name	Certificate	Application	Components	Length (mm)	Width (mm)	Thickness (mm)
			TR27 polyurethane foam blank			25, 30, 35, 40, 45, 50
Thermawall TW52	97 <i>1</i> 3366	An insulating 97/3366 plasterboard laminate	TK80 polyurethane foam blank	2400	1200	15, 20
			Plasterboard, Type 1			9.5, 12.5
Thermafloor	01/3813	A floor insulation	Extruded polystyrene >300 kPa compressive strength an 0.029 Wm ⁻¹ K ⁻¹ thermal conductivity	2400	600	25, 30, 40, 50, 60, 80
TF73	01/3013	Type P5 moisture resist	Type P5 moisture resistant chipboard with tongue-and- grooved edges	2400		18

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Line 3 (Phenolic)

Name	ne Certificate Application Components		Length (mm)	Width (mm)	Thickness (mm)	
K8	94/3047	A foil-faced phenolic foam core board for cavity wall insulation	International Converters composite foil facing on both sides >65mm Lamtec reinforced foil facing on both sides.	1200	450	20-140
K7	94/3061	A foil-faced phenolic foam core sarking board	International Converters composite foil facing on both sides >65mm Lamtec reinforced foil facing on both sides.	600 600 1200	1200 2400 2400	20-140 (in 1 mm increments)
Kooltherm K3 Floorboard	08/4522	Glass-tissue faced floor insulation	Appledorn glass tissue facing to both sides	2400	1200	20-140
Kooltherm K15	08/4582	Foil faced rain screen cladding insulation	Lamtec reinforced foil facing to both sides.	1200	600	20-140
Kooltherm K12	08/4615	Foil faced timber/steel framing board	International Converters composite foil facing on both sides	2400	1200	20-140
Kooltherm K10	09/4675	Tissue / foil faced soffit insulation	Lamtec reinforced foil facing on one side and Aopledorn glass- tissue to the other	2400	1200	25-140
K17	10/4798	A glass-tissue facer phenolic foam for plaster dab bonding	Blank is K9 bonded to 12.5mm plasterboard and to glass-tissue facing	2400	1200	20-140
K18	10/4798	An exposed foil facer for mechanically fixed plaster board	Blank is K9 bonded to 12.5mm plasterboard and to foil facing	2400	1200	20-140
MR Board (for information only)	n/a ⁽¹⁾	Kooltherm K5 tissue faced external wall insulation Board	Appledorn glass tissue facing to both sides	1200	600	20-140

Medium to high density phenolic foam core faced with tissue or foam

⁽¹⁾ supplied Swisslab External Wall Insulation Systems

Production location:

Kingspan Insulation Limited
Pembridge Leominster Herefordshire
HR6 9LA

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Contact:	Doug Lloyd	Gwyn Davies
Title:	Quality Assurance Manager	Technical Manager
E-mail:	doug.lloyd@insulation.kingspan.com	gwyn.davies@insulation.kingspan.com
Is the above production	site covered by ISO 9001 : 2008 Registrat	ion? Yes
If YES, Registration No:	388 <mark>Issue 4</mark>	
Assessed by (organisati	on): BRE Certification Limited	
Scope of assessment:	polyurethane, polyisocyanurate	ulated and fire rated flat and tapered rigid and phenolic thermal insulation boards. f pre-mitred tapered roof systems.

Purchasing data & receiving inspection and testing:

Note. The implications for the raw material table have not been considered following the closure of line 1. Some amendments to this table may be required. Please advise if that's the case.

All materials are purchased to agreed specifications. For each delivery of bulk chemicals, ie Polyol, MDI and blowing agent, a Certificate of Analysis is also provided. Other materials are visually checked and processed in accordance with Works Procedure No 4 latest version and similar Certificates are received on a random basis. If a delivery of any material does not appear to meet the specification set out in the Raw Material Database, then a concession is raised and authorised by the Production Manager.

Incoming product, raw materials and Components	Identification (type, class, grade, specification, etc)	Original supplier	Acceptance limits
	Terate 2541V	Invista	Spec No 263
	PS2412	Stepan	Spec No 256
Polyol	PS 1812	Stepan	Spec No 532
	Daltolac R585	Huntsman	Spec No 90
	T7541L	Invista	Spec No 433
	Desmodur 44V70L	Bayer	Spec No 136
MDI	M647	Dow Chemicals	Spec No 264
	Suprasec 2085	Huntsman	Spec No 109
	M70R	BASF	Spec No 175

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Incoming product, raw materials and Components		ldentification (type, class, grade, specification, etc)	Original supplier	Acceptance limits	
		Cyclo/iso IP85/15 Pentane	BOC Gases	Spec No 291	
			Haltermann	Spec No 292	
Blowing Agents		V156	BOC Gases	Spec No 291	
		Isopropyl-chloride	Sasol Solvents	Spec No 506	
		lso Pentane	BOC	Spec No 507	
		PS9881 D	Elé Europe Ltd	Spec No 266	
Surfactar	nt	L6900 = L5162	Momentive	Spec No 133	
		Tegostab B8871	Goldschmidt	Spec No 458	
		Toyocat - DT	Tosoh Corp	Spec No 108	
		Polycat 5	Air Products	Spec No 108	
		Polycat 8	Air Products	Spec No 10	
Catalyst		Catalyst LB	Huntsman	Spec No 14	
		Pel Cat 9650A – V153	Ele Europe Ltd	Spec No 257	
		Catalyst 9865-V138	Ele Europe Ltd	Spec No 211	
		K-Zero 3000	Momentive	Spec No 523	
Flame Re	etardant	TMCP (antiblaze) – V172	Albemarle	Spec No 277	
	Hennecke/OMS	Triply (TP10)	International Converter	Spec No 246	
	products	Triply (TR26)		Spec No 255	
	TR27	Coated Glass Facing	Atlas Roofing	Spec No 348	
Facing :	TDOO	Bitumen Glass facing V70	Silcart roofing company	Spec No 275	
	TR20	Bitumenised felt glass facer	ESHA	Spec No 355	
	TR21	Glass Reinforced Facing	Atlas Roofing	Spec No 260	
Foam bla	nks ⁽¹⁾	TK80 ≤ 20 mm thick	Kingspan Insulation Ltd (Castleblayney)	As specification	
		TR27 > 20 mm thick	In-house		
Plasterbo	pard ⁽¹⁾	9.5mm Square edge 9.5mm Tapered edge 12.5mm Square edge 12.5mm Tapered edge	British Gypsum	Spec No 40 :of 1/7/96 Spec No 37: of 1/7/96 Spec No 35: of 1/7/96 Spec No 33: of 1/7/96	
Adhesive	(dry lining) ⁽¹⁾	A9368	Apollo Chemicals	Spec No 474	
Hot melt	glue	XP 2337	CAS	Spec No 461	
Phenolic	resin ⁽¹⁾	J6014	Hexion (who were Borden) Chemicals.	Spec No 386	
Phenolic	resin ⁽²⁾	R330UF-1	Momentive	Spec No 550	
Extruded	polystyrene ⁽¹⁾	700-4 Styrofoam H300	DOW	- Spec 539	
		Glascofoam IV	Poliglas SA		

Incoming product, raw materials and Components	Identification (type, class, grade, specification, etc)	Original supplier	Acceptance limits
Chipboard ⁽¹⁾	Kitemarked Type P5 -to BS 7916 : 1998, BS EN 312-1 : 1997 and BS EN 312-5 : 1997	Sonae 18mm TandG	Spec No 406
Adhesive (floor laminate)	XP2337	CAS	Spec No 461
(1)	A9368	Apollo Chemicals	Spec No 474
Acid ⁽³⁾	E398	Cromogena	Spec No 372
Acid ⁽³⁾	NAXCAT MOD-35	NEASE CORP	Spec No 524
	Lamtec Reinforced Foil	Lamtec	Spec No 466
Aluminium foil facing ⁽⁵⁾	Facer		Spec No 469
	ICC Foil / Kraft	International Converters	Spec No 465
Tissue facing ⁽⁵⁾	OCF Glass Veil	Owens Corning	Spec No 349

⁽¹⁾ The raw materials are checked before offloading as per Works Procedure 3 and 4 latest issues. Any raw materials that are outside of specification are dealt with as per Works Procedure 24 latest issue.

Phenolic resin is delivered and put into bulk tank. Each batch is accompanied by a Certificate of Analysis.
Acid is delivered by bulk tanker and transferred into the acid bulk store. Each delivery the C of A is checked for conformance which is retained on file.

⁽⁴⁾ Pentane is delivered in bulk. Deliveries are accompanied by a Certificate of Analysis that are checked for conformance, which is retained on file.

⁽⁵⁾ RM codes for the facing materials are held on file and have the basic information in them about the various materials. The specifications for these and all materials are agreed with the suppliers. This is normally done by Head Office with the agreement of the technical and Plant Manager.

Details of incoming bulk raw materials are recorded on internal document on QAP2 and QAP12 Details of incoming facings are recorded on internal document

Product identification and traceability:

Every order that is placed is given an Order Number. The Production Programmes (QSP8a for Line 3, QSP8ph for Line 2 QSP8h for the Line 4 high speed laminator and QSP8p for the Pla Ma Line) are then formulated to incorporate all the necessary orders, quoting the respective Order Numbers.

Product identification and traceability: Line 2 and 4

The Order Number is itself used to identify the boards. The Raw Material Goods Issue Usage Transaction Sheet SAP Based MIGO Sheet and Works Order Report can be used to identify which consignment of chemicals was used to produce each board.

All blank boards are inkjet printed on one face with the date and time of manufacture. This allows traceability to the production records for that board through the Production Program held in SAP System. Ref. ZWL PIR for PIR Boards and ZWL PHL for Phenolic Boards.

Product identification and traceability: Bonding Line

All blank boards that are made in house are inkjet printed on the edge with product type, date and time of manufacture. This allows traceability to the production records for that board.

Product identification and traceability: Line3

A run number is issued to cover production. This is a cumulative number issued by the production department. Each pack is also marked with a relevant pallet number which indicates the time or production. A daily production diary also records the products manufactured under that number.

Method of production and process control:

PIR

Polyol blend

Bulk ingredients (ie pure polyols) are pumped from their respective storage tanks to the day tanks on the Line 2 and Line 4 These polyols are then metered to the dynamic mixer.

Line 2 and 4 high speed laminator

Additives are transferred to designated run tanks (RT) from which the required output is pumped directly into a dynamic mixer where the other additives and blowing agent Pentane and polyols are fed. The resulting emulsion is fed to the high pressure pumps. The above operation is computer controlled by the OMS computer software.

The polyol blend is injected under high pressure with MDI at the correct output (defined by the SOP) and ratio in accordance with the line speed to produce the specified product.

Bonding Line

Plasterboard/chipboard is lifted with suction pads and placed onto the horizontal conveyor. From the loading station, the board is conveyed into a laydown area where the prescribed amount of single part moisture cured adhesive and hot melt adhesive is applied to the substrate. Insulation panels are manually placed onto the adhesive coated plasterboard/chipboard. These composite boards pass through a mechanical press, at

a defiened line speed. The boards then enter the pick and place area where they are automatically placed onto a pallet according to the packing sheet.

Line 3

Board Production: Before use, phenolic resin is taken from the bulk tank and pumped into the resin day tank. The acid, blowing agent and resin are pumped at a pre-set rate to the mixing head. When a stable flow is achieved the machine goes from recirculation to dispense and foam exits the dispense nozzles onto the base substrate. The top layer of substrate is also supplied from a roller at the rear of the lay down. This layer is applied to form the top of the substrate. The whole of the 'wet end' is controlled by a fully automated system

The board then passes into a fixed gap conveyor contained within an oven between 50 and 75°C (depending on thickness). The partially cured board then passes through a second oven to complete curing.

After packing/wrapping, the stacked boards are placed in temperature controlled curing chambers and left to condition for a minimum period of 48 hours a representative sample is placed with each produced product.

Process Control:

Line 2 and 4 PIR high speed laminators

Line 2 and 4 laminators are fully computerised control device which governs speed, output, and formulation (as laid out in the SOP).

The chemicals are injected using high pressure dosing machine. The chemical is laid down using three heads, each having a number of individual streams. The chemicals react and rise with the top facer being introduced on entrance to the conveyor. It is the height of the gap in the conveyor that determines thickness of the resulting board. The additives can be changed on the run by manual control. The continuous board moves at high speed to the trim saws and then the cross cut saws, the boards are then printed with the inkjet printer. The boards are then stacked and sent down to the band saw to be cut to the desired length.

Each production run has a specific works order number. This number is used on all paperwork for full traceability. The machine operators are given a standard operating procedure to run the machine. The machine operators set the machine conditions and chemical outputs using this information.

A computer record complete with (SAP Based Production Program viewed in QA 33) is given and every 30 minutes checks are carried out to determine dimensions and density. Values are recorded on the computerised record.

The OMS software will highlight if control inverters are >1% from and will fault out if >2% the norm on input. A computer print-out of polyol blend (material yield) and line conditions can be raised.

Respective blend recipe (controlled document) is made available for reference. Prescribed ingredient proportions are controlled by weight, and are entered into either the Line 2 or Line 4 computers by the Laydown Operative.

Line 3

The production line is set-up in accordance the Line 3 Machine SOP latest issue and the relevant Work Instructions detail the initial process settings for the production line which are used as standards for all products. These settings are only varied to optimise production and any changes made are recorded on the process control sheet. Process data is recorded on the Line 3 Process Sheet. There is a sheet for each product and thickness.

Production line controls:

Bonding Line

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The process is fully described in Works Procedure No 10 Latest Issue.

Line 3

Board Cutting: The boards ex cure tunnel are cut to the required dimensions by a two-stage operation:

- (1) Side trimming: by use of a hogging cutter in conjunction with a scoring blade. The unit is adjusted manually to achieve the correct width.
- (2) Cut to length: by use of a traversing cross cut saw which moves in relation to the board. control of the unit is via a digital meter which the operator sets to the required length

In-process inspection and testing:

As per QMS Procedure QP04.

Results are recorded on form - SAP based PI Sheet viewed through SAP QA33 format.

Property measured	Method used	Frequency	Acceptance limits	Action upon rejection
Density	Line side weigh scale		35-44 kgm ⁻² (Line 3) 27-33 kgm ⁻² (Lines 2 and 4)	
Width				
Length	Steel Tape	Every 30 minutes		
Squareness			As detailed in relevant SAP based	Inform Team
Thickness	Vernier		PI Sheet within each Master Recipe /QC11 form	Leader
Visual Quality	Visual inspection	100% but recorded every 30 minutes.		
Compression	Instron	Once per run Hourly		

Machine cut length and width slightly bigger than required to allow for shrinkage during curing.

Laminated Board Inspection and Testing online.

All boards are cut by an automatic saw and are simply monitored. The thickness adjusted by a mixture of the flow rates and the line speed. The rise height is partially limited by the height of the top belt of the line. Checks on the end of the line are instantaneous. The cut boards are measured with a vernier calliper and, if results are outside of the warning limits, wet end operators are informed immediately. When necessary, process notes are recorded on the back of the production paperwork.

Bonding Line

Property measured	Method used	Frequency	Acceptance limits	Action on rejection
Adhesive	Line side weigh scale	At start up	50-60gsm (nominal for TW52)	Inform Team
coating		and hourly	60-80gsm (nominal for TF73)	Leader

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Weight				
Width	Steel tape	Every 30	600 ± 3 mm 1200 ± 3mm	
Length	- Oleen lape	minutes	2400 ± 5mm	
Alignment	Visual inspection	Continuous	Visual	
Interlaminate Strength	Tensile test	1 per shift	No set pass/fail criteria.	

Acceptance limits are also specified in forms QC11 and SAP based In Line Inspection & QC Lab based Quality Plans.

Final inspection and testing:

Line 2 and 4

The methods of test are described in Works QMS Procedure QP06. Test results are entered onto the computer database. Samples from each blend are taken and tested usually off line for the following tests.

Property measured	Method used	Frequency (minimum)	Acceptance limits	Action upon out of spec
Compressive Strength Dimensional Stability Thermal Conductivity Wm ⁻¹ K ⁻¹ @ 10°C mean temp (before ageing) Calculated $\lambda_{90/90}^*$ (EN 13165 and EN 13166) @ 10°C mean temperature *: (90/90 calculation needs to be checked every three months)	Hounsfield compressive machine Humidity chamber Freezer FOX 314	Line 2 and 4 - per thickness or every 2 hours (whichever is sooner)	>140kPa (TP10, TW50, TW55, TF70) >150kPa (all others) < 1.5% for 24 hr @ 70 °C 95% RH Visually acceptable TP10,TR26,TF70, TW50 TW55: Max 0.0210 (initials) TR27 : Max 0.0218 (initials) Other products: Max 0.025 TP10 & TW55 : $\lambda_{90/90} < 0.022$ TF70 : $\lambda_{90/90} < 0.023$ TW 50: For thickness t ≤ 30 mm : $\lambda_{90/90} < 0.022$ For t > 30 mm : $\lambda_{90/90} < 0.023$ TR27 & TT47 : t < 80 mm : $\lambda_{90/90} < 0.026$ 80mm \leq t < 120mm: $\lambda_{90/90} < 0.025$ t ≥ 120 mm: $\lambda_{90/90} < 0.024$ K3, K7, K8, K10, K12, K15, K17 and K18. All : 15 < t < 25mm: $\lambda_{90/90} < 0.021$ T ≥ 45 mm : $\lambda_{90/90} < 0.021$ T ≥ 45 mm : $\lambda_{90/90} < 0.020$ (from the last report assessment done for Kingspan phenolic product) TW 52**: t < 80 mm : $\lambda_{90/90} < 0.027$ 80mm \leq t < 120mm: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.029$ TR21: t < 80 mm : $\lambda_{90/90} < 0.027$ 80mm \leq t < 120mm: $\lambda_{90/90} < 0.027$ 80mm \leq t < 120mm: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.029$ TR21: t < 80 mm : $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$ TW53: same as TR27 and TR21 TF 73: $\lambda_{90/90} < 0.025$	Either reject or concess
Water Submersion test ⁽¹⁾	Water bath	Once per run	No delamination of foil based boards	Reject

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⁽¹⁾ All foil faced products

** as per existing Certificates.

Further tests are carried out on an infrequent basis such as freezer stability, bitumen stability as detailed in Works Procedure no 11 Latest Issue.

Line 3

Property measured	Works	Frequency	Acceptance limits	Action upon
	procedure	(minimum)		rejection
Thermal conductivity			Max 0.0210 Wm ⁻¹ K ⁻¹	
taken from the production line			(before ageing)	
			K5 ≥175 kPa	
	QC11p	One per production	K7 ≥125 kPa	Board rejected
			K8 ≥100 kPa	
			K9 ≥100 kPa	
Compressive strength			<mark>K10 ≥100 kPa</mark>	
		run	K12 ≥100 kPa	
			<mark>K15 ≥100 kPa</mark>	
	-		<mark>K17≥100 kPa</mark>	
			<mark>K18≥100 kPa</mark>	
Density			None (result recorded)	Board
				downgraded

For example:

For the determination of compressive strength of K7, the following arrangements currently apply:

Samples are taken directly from the production line at a frequency of 1 per batch of material made (or works order).

Calibration:

Calibration procedures are described in QMS Procedure QP08 Calibration of Equipment. latest issue. 04/06/07

Packaging:

Boards are automatically stacked and polyethylene shrink-wrapped. Each pack bears a label showing relevant information regarding product description and traceability; including works order number, and bearing the appropriate BBA identification mark (where applicable). Phenolic boards packed with corner protectors.

Bonding Line

Number of laminates per stack is in accordance with Works Procedure No 9 Latest Issue. Each palletised stack employs cardboard corner protectors, polythene shrink wrapping and a label which bears manufacturers name, dimensions and date of manufacture.

Line 3

Works procedure No. 33 SAP based PI Sheet within each Master Recipe

Labelling:

Packs are labelled with a product identification label showing the following information:

- Thickness of product
- Product name
- Board dimensions

- No of boards per pack
- Batch No
- Production date ⁽¹⁾

⁽¹⁾ Lamination date where applicable

Use of the BBA symbol:

On marketing literature and labels.

Training:

Training procedures are described in IMS 07 Competancy Training Procedures Resource Management and IHSEPM Latest issues. 04/06/07

Complaints:

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Complaints procedures are described in QMS Procedure QP09 Customer Complaints Procedure latest issue. 01/04/06

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Quality policy: We undertake to have the product produced and placed on the market as described above. We will advise the BBA of any changes and receive agreement from the BBA before the changes are implemented.

Signed

Dated

Title

End of Quality Plan

For BBA internal use o	nly		
BBA Cert(s):	94/2992, 94/3047, 94/3061, 95/3126, 97/3366, 01/3813, 06/4372, 06/4384, 07/4450, 08/4522, 08/4582, 08/4590, 08/4615, 09/4675	Approved by:	Date:

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