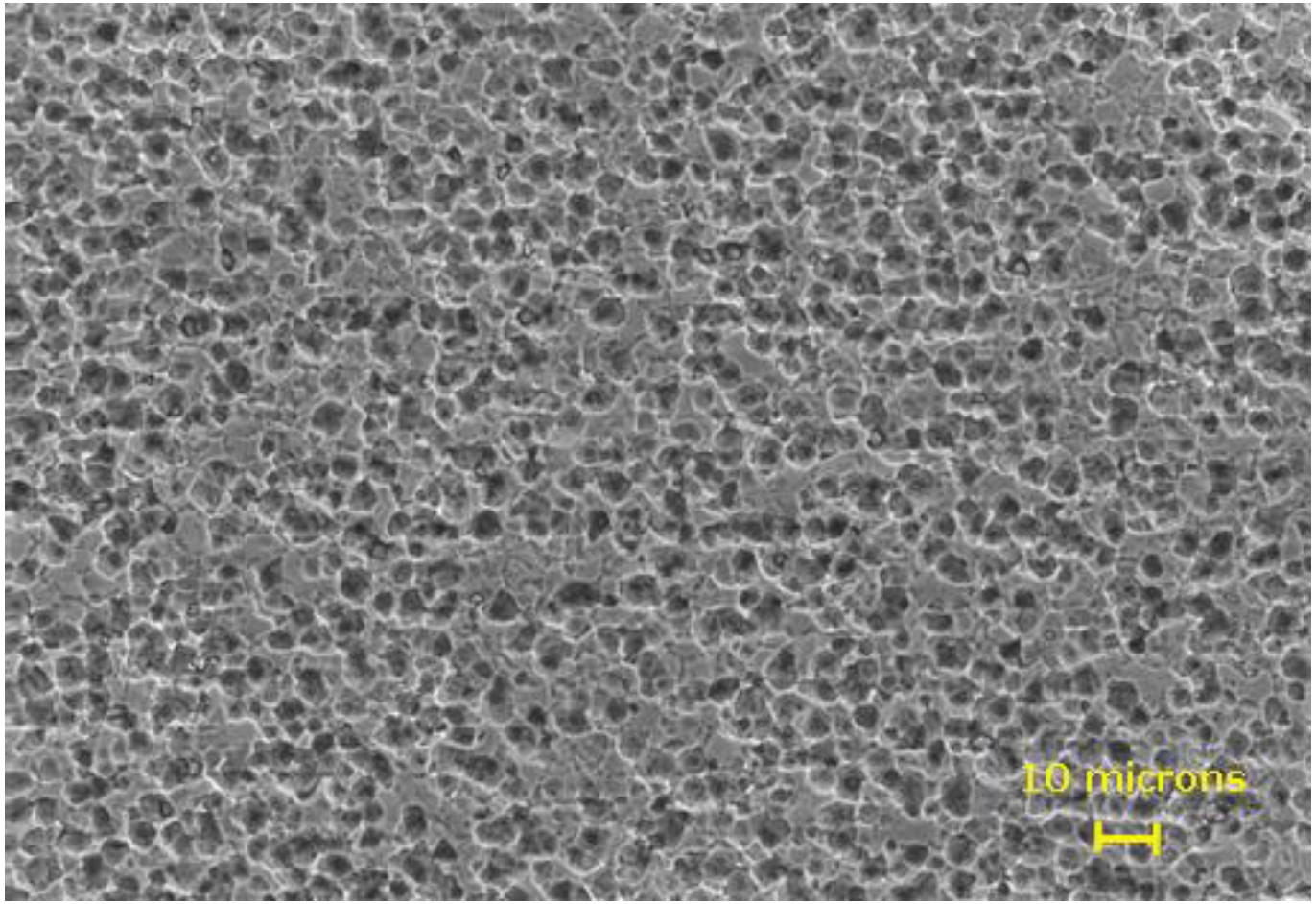
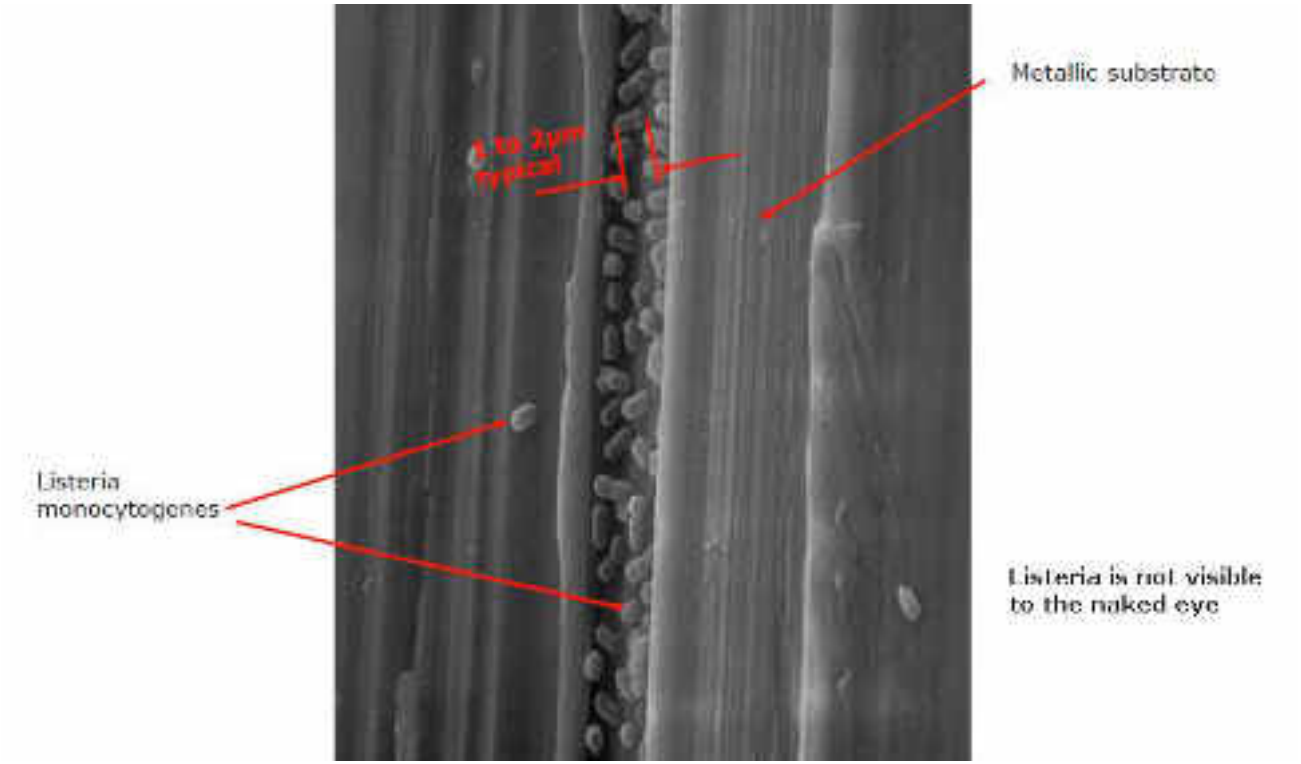
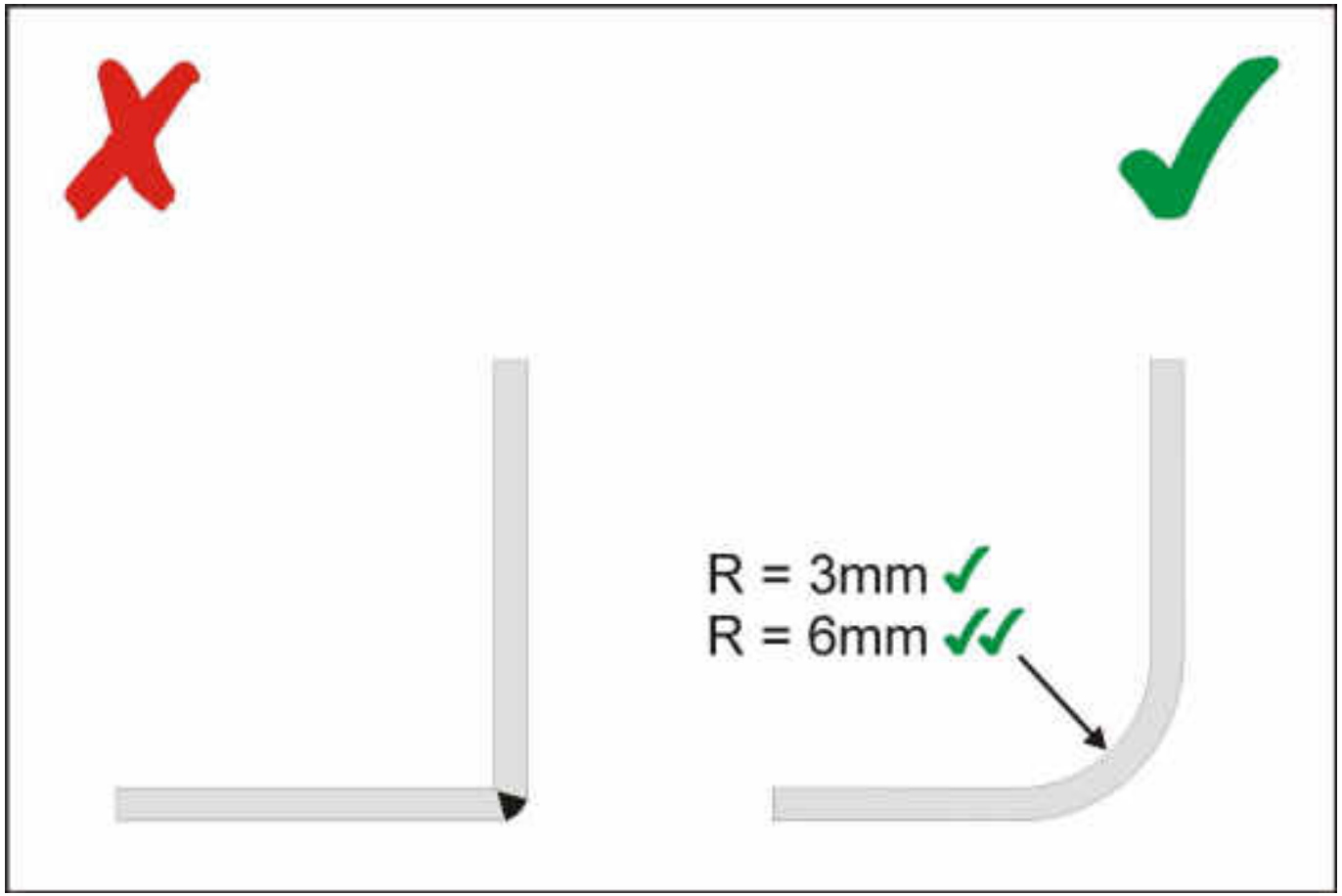
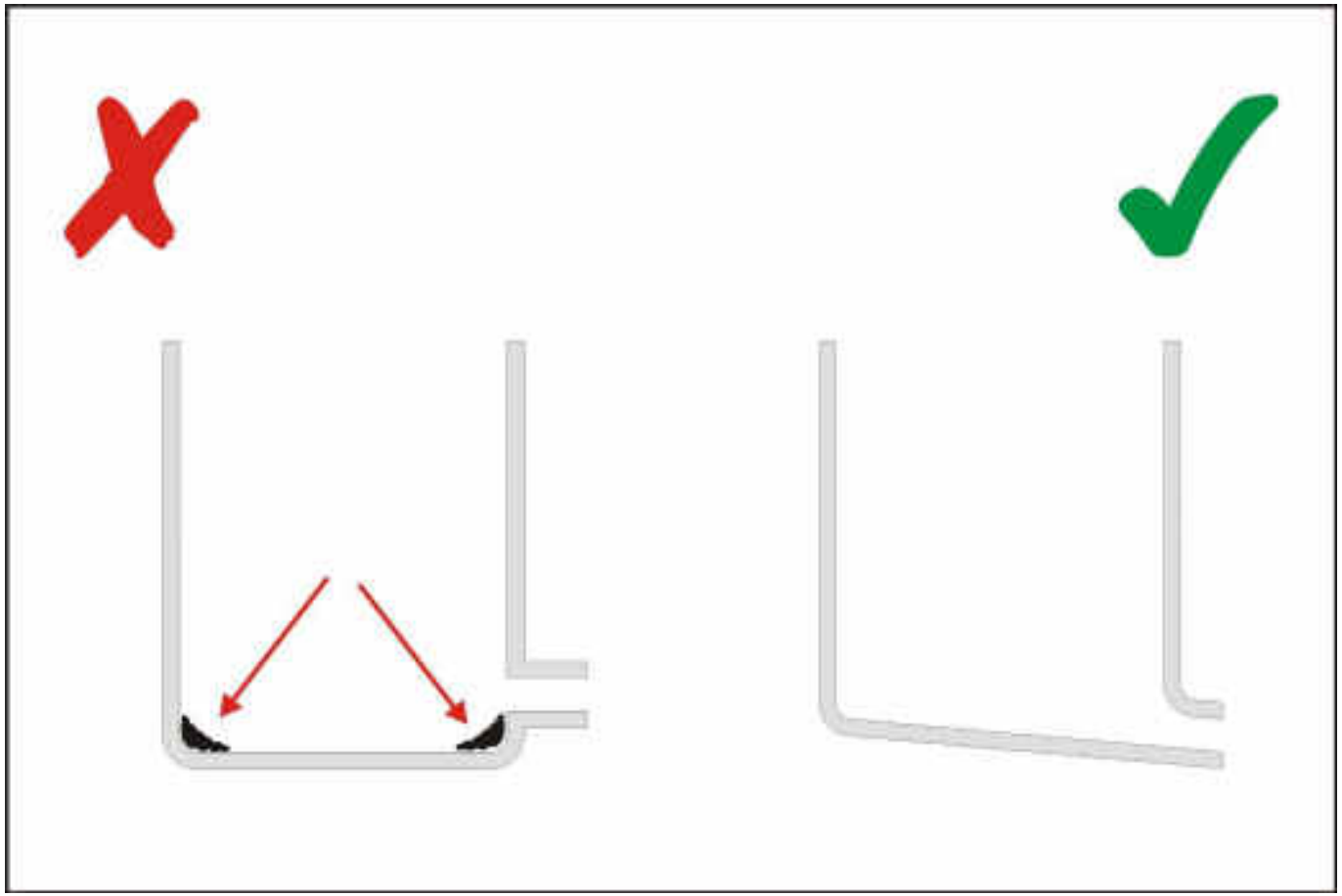
What is hygienic design and why is it important?

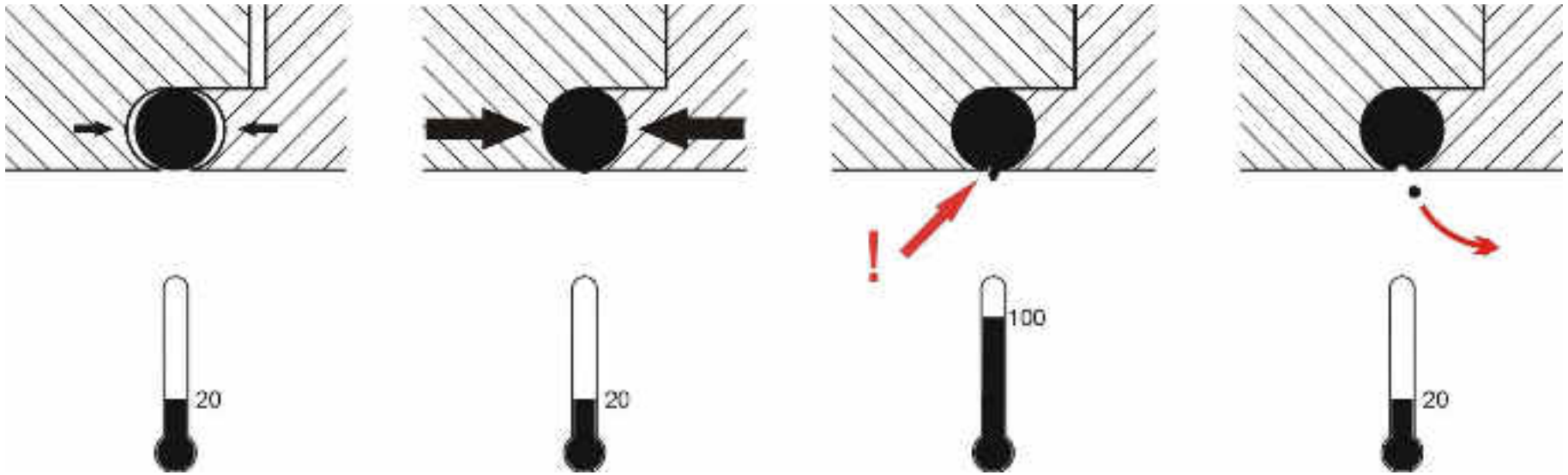
Eric Partington
European Consultant to the Nickel Institute of Toronto
Chairman of the European Hygienic Engineering and Design Group's Regional Section serving the UK and Ireland

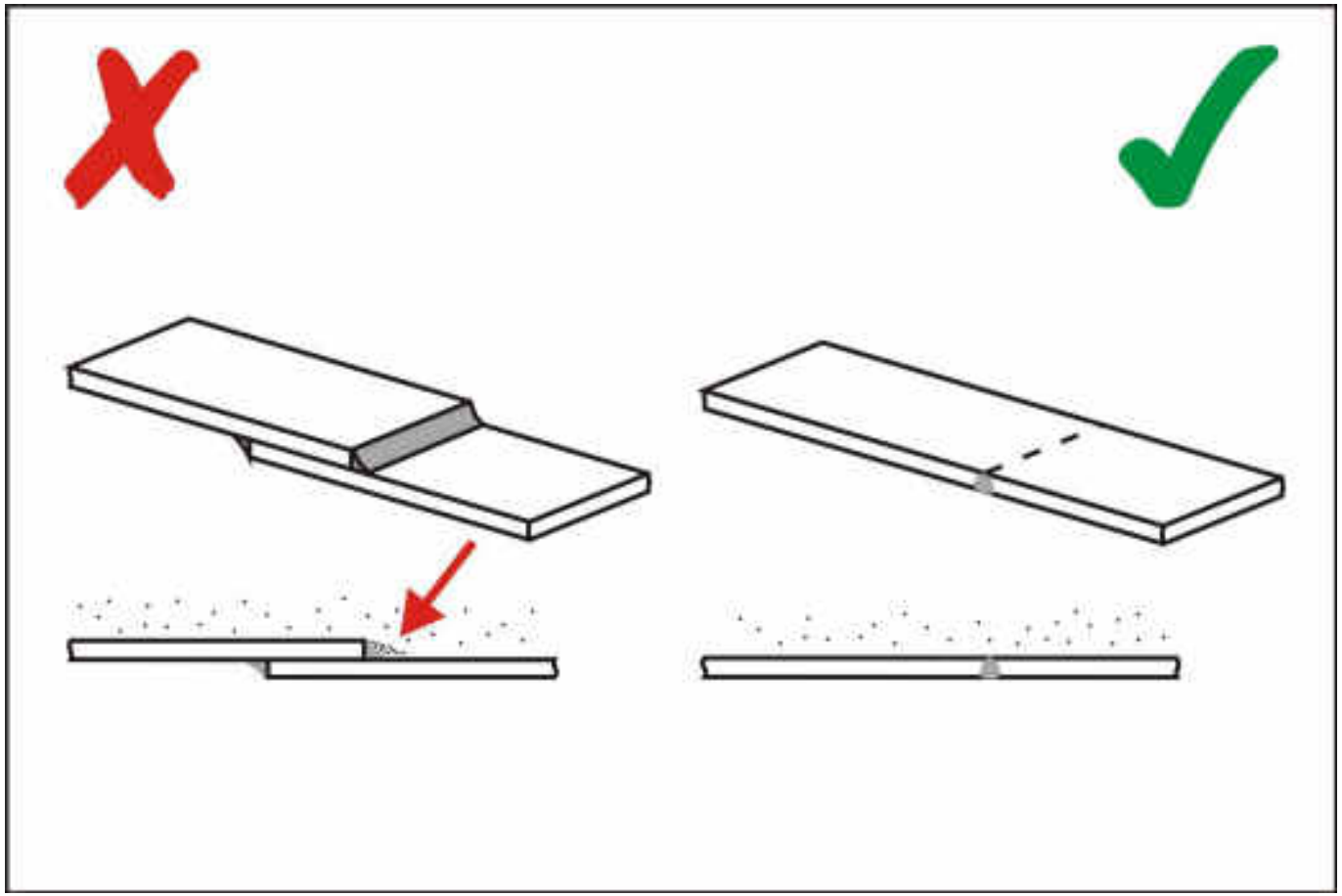

10 microns

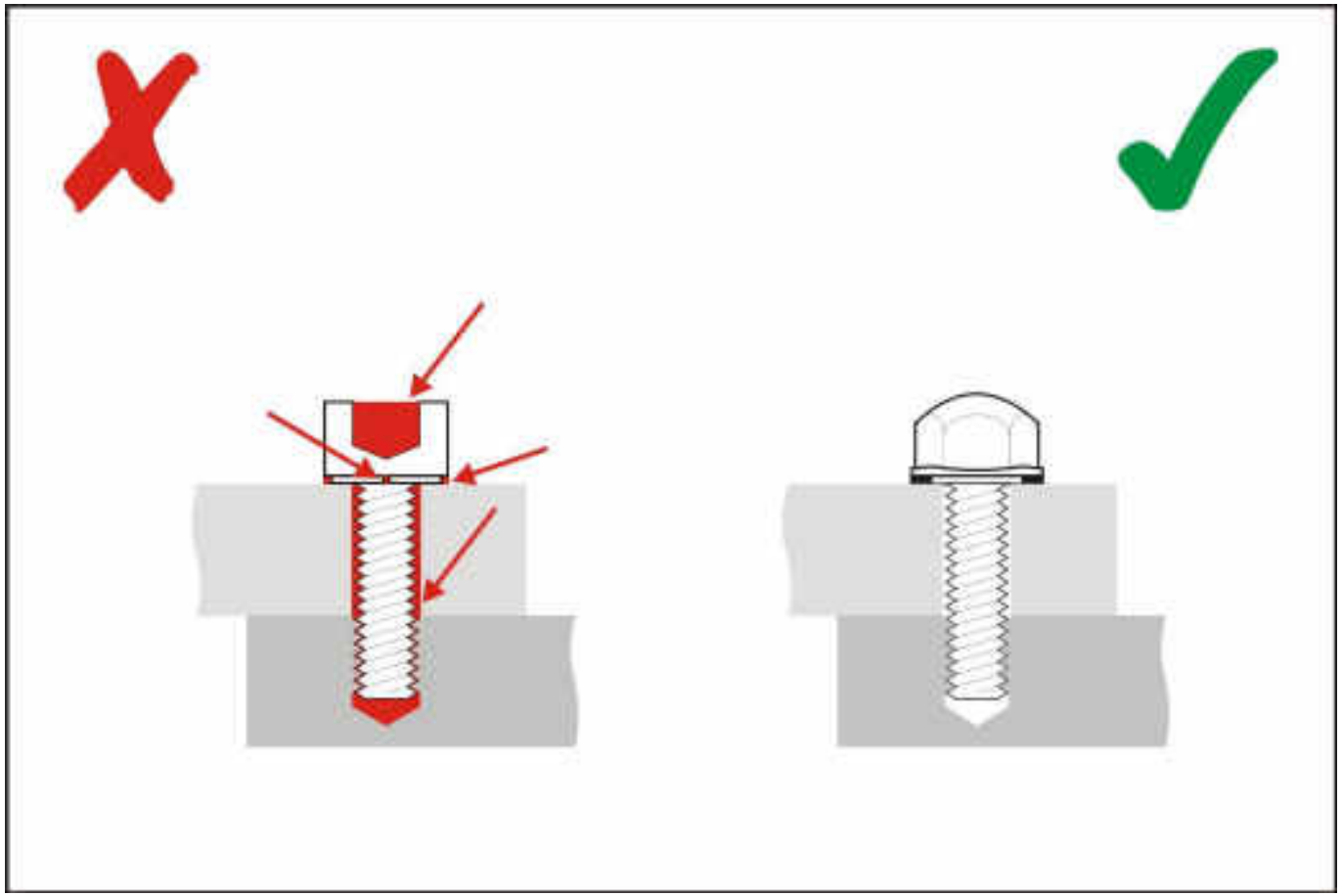

Metallic substrate
1 to 2µm typical
Listeria monocytogenes
Listeria is not visible to the naked eye

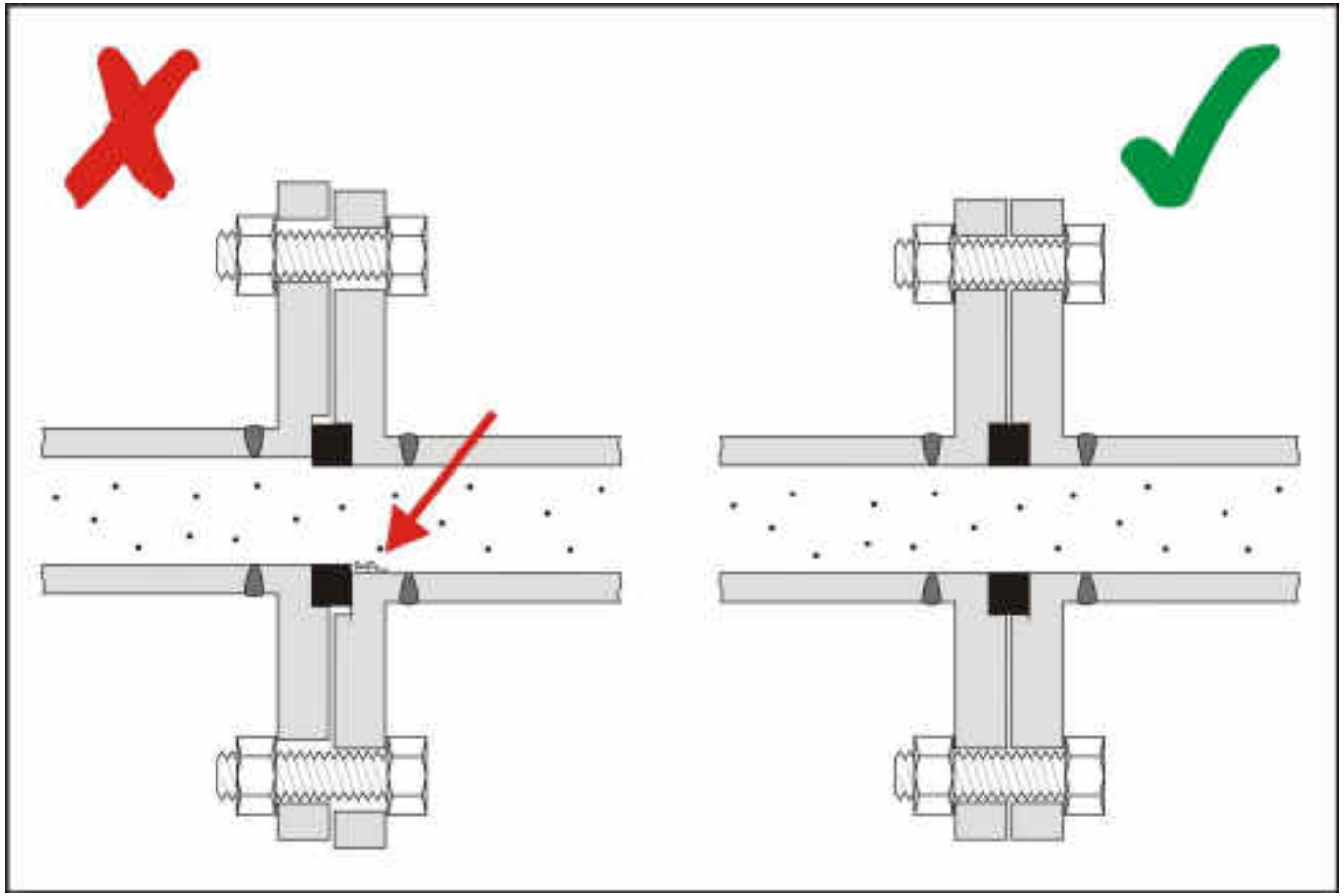

R = 3mm
R = 6mm




20
20
!
100
20

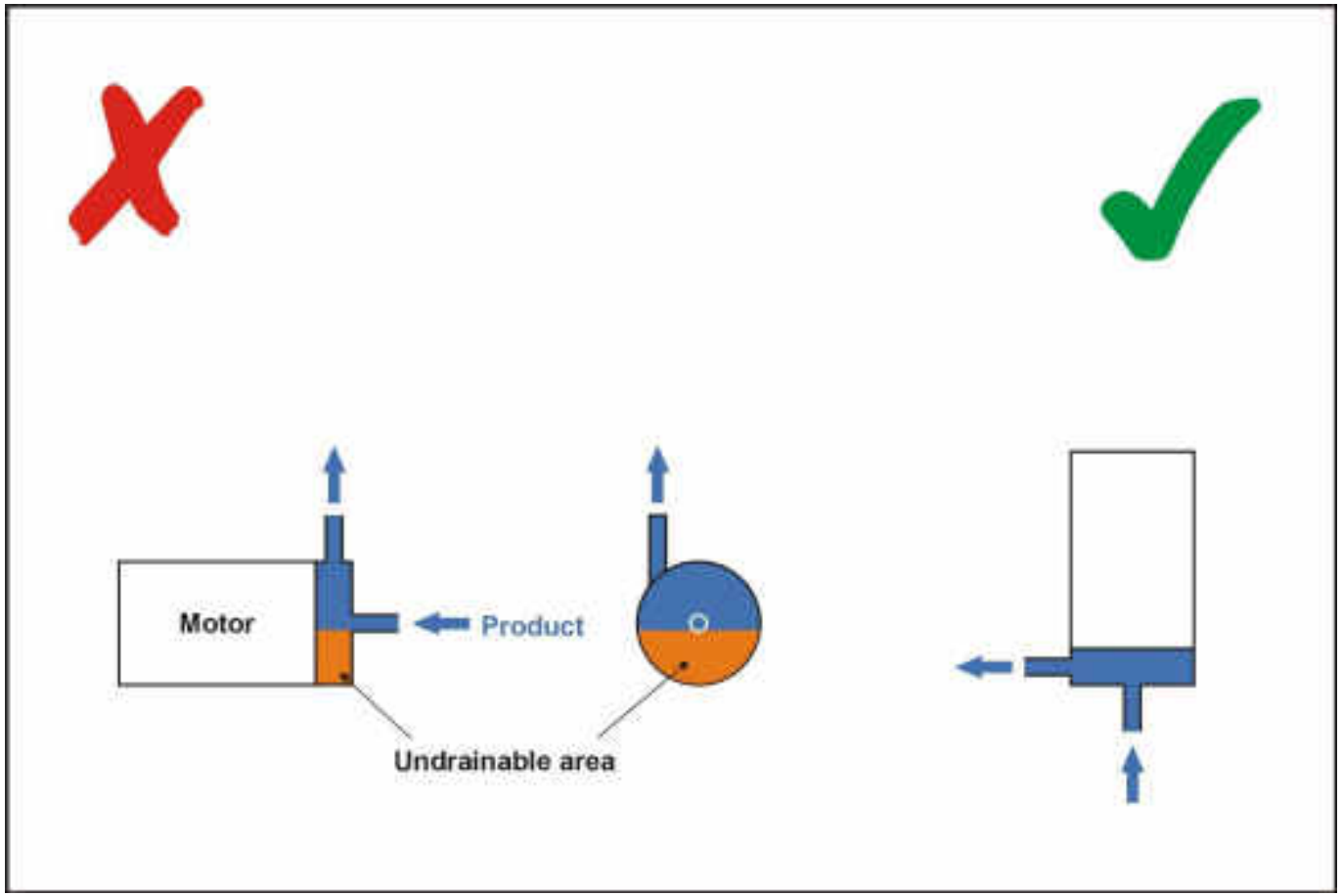






It is important to achieve perfect mating of the boars.

Hilde Knossen


Motor
Product
Undrainable area


EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP
EHEDG


Unilever

1 Microbiologically safe continuous pasteurisation of liquid food
2 A method for assessing the in-place cleanability of food processing equipment
3 Microbiologically safe aseptic packing of food products
4 A method for the assessment of in-line pasteurisation of food processing equipment
5 A method for the assessment of in-line sterilisability of food processing equipment
6 The microbiologically safe continuous flow thermal sterilisation of liquid foods
7 A method for the assessment of bacteria-tightness of food processing equipment
8 Hygienic equipment design criteria
9 Welding stainless steel to meet hygienic requirements
10 Hygienic design of closed equipment for the processing of liquid food
11 Hygienic packing of food products
12 The continuous or semi-continuous flow thermal treatment of particulate foods
13 Hygienic design of equipment for open processing


GEA
Tetra Pak
PROTECTS WHAT'S GOOD
SPX
Nestlé
Sealed Air
KRONES
ECOLAB
Unilever
Cargill
novozymes
Mondelēz International
Heinz
KHS
marel
BÜHLER
Sidel
DUPONT
ARYZTA
MICARNA
INTERROLL
Ammeraal Beltech
STORK
AVENTICS
MULTIVAC
BETTER PACKAGING
Endress+Hauser
CEDERROTH
FESTO
SKF


HOLCHEM
FREUDENBERG
INNOVATING TOGETHER
ACO
SKF
wirebelt.
Vikan
ADVANCING HYGIENIC CLEANING
xylem
Let's Solve Water


PURDUE
UNIVERSITY
Campden BRI
food and drink innovation
ainia
centro tecnológico

The EHEDG Secretarial team

with the 2006-2015 EHEDG President, Knuth Lorenzen

Johanna Susanne Jana

EHEDG Secretariat, c/o VDMA
Lyoner Strasse 18
60528 Frankfurt am Main
Germany

Susanne Flenner (Office Manager)
Jana Huth
Johanna Todsen

secretariat@ehedg.org
Phone:
+49 69 6603-1217 / -1430 / -1882

www.ehedg.org

EHEDG Certification

EHEDG offers two main types of equipment certification:

Type **EL** for **E**quipment cleaned with **L**iquids

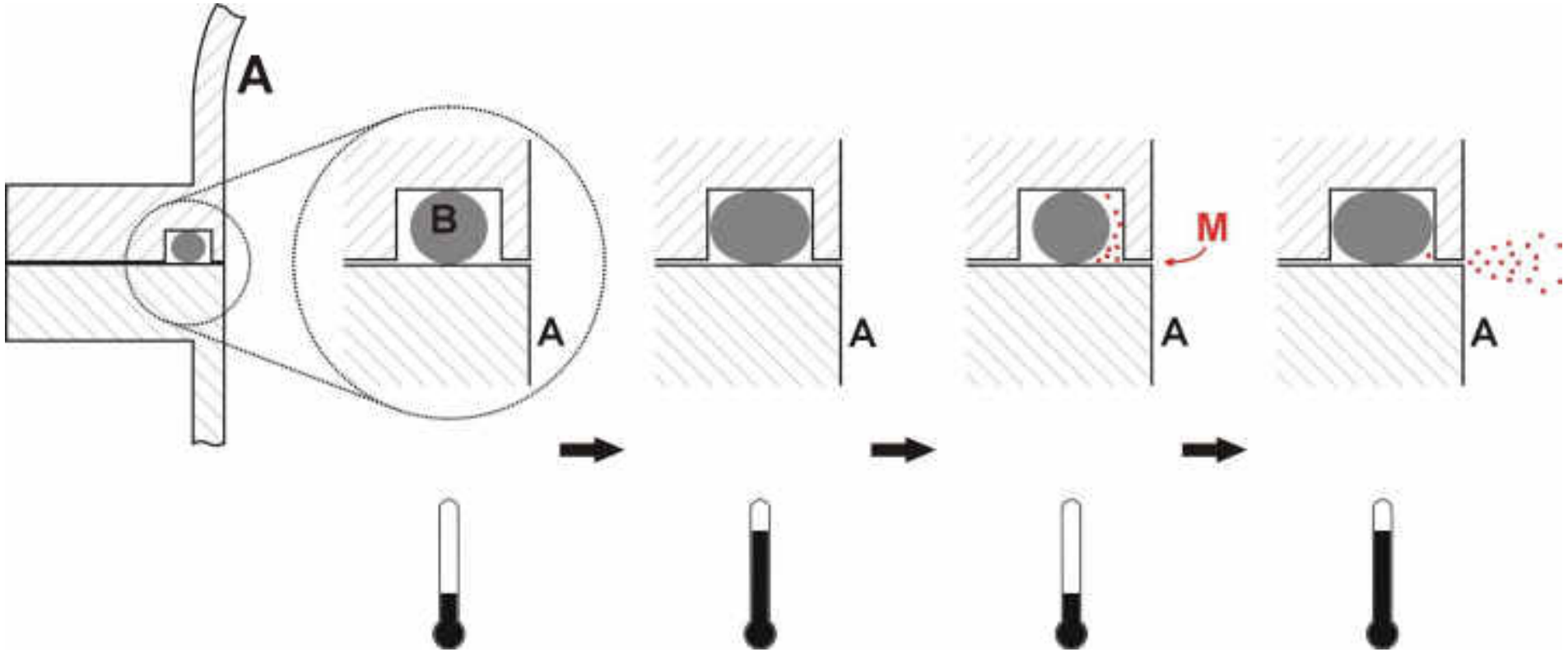
Type **ED** for **E**quipment **D**ry cleaned only


NSF
NSF International


The Symbol
of Assurance
3A

1 Microbiologically safe continuous pasteurisation of liquid food (1992)
2 A method for assessing the in-place cleanability of food processing equipment (2007)
3 Microbiologically safe aseptic packing of food products (1993)
4 A method for the assessment of in-line pasteurisation of food processing equipment (1993)
5 A method for the assessment of in-line sterilisability of food processing equipment (2004)
6 The microbiologically safe continuous flow thermal sterilisation of liquid foods (1993)
7 A method for the assessment of bacteria-tightness of food processing equipment (2004)
8 Hygienic equipment design criteria (2004)
9 Welding stainless steel to meet hygienic requirements (1993)
10 Hygienic design of closed equipment for the processing of liquid food (2007)
11 Hygienic packing of food products (1993)
12 The continuous or semi-continuous flow thermal treatment of particulate foods (1994)
13 Hygienic design of equipment for open processing (2004)
14 Hygienic design of valves for food processing (2004)
15 A method for the assessment of in-place cleanability of moderately sized food processing equipment (1997)
16 Hygienic pipe couplings (1997)
17 Hygienic design of pumps, homogenizers and dampening devices (2013)
18 Chemical Treatment of Stainless Steel Surfaces (2014)
19 A method for assessing the bacterial impermeability of hydrophobic membrane filters (2012)
20 Hygienic design and safe use of double-seat mix-proof valves (2000)
21 Challenge tests for the evaluation of the hygienic characteristics of packing machines for liquid and semi-liquid products (2000)
22 General hygienic design criteria for the safe processing of dry particulate materials (2014)

23 Production and use of food-grade lubricants, Part 1 and 2 (2009)
24 The prevention and control of Legionella spp. (incl legionnaires disease) in food factories (2002)
25 Design of mechanical seals for hygienic and aseptic applications (2002)
26 Hygienic engineering of plants for the processing of dry particulate materials (2003)
27 Safe storage and distribution of water in food factories (2004)
28 Safe and hygienic water treatment in food factories (2004)
29 Hygienic design of packing systems for solid foodstuffs (2004)
30 Guidelines on air handling in the food industry (2005)
31 Hygienic engineering of fluid bed and spray dryer plants (2005)
32 Materials of construction for equipment in contact with food (2005)
33 Hygienic engineering of discharging systems for dry particulate materials (2005)
34 Integration of hygienic and aseptic systems (2006)
35 Hygienic welding of stainless steel tubing in the food processing industry (2006)
36 Hygienic Engineering of Transfer Systems for Dry Particulate Materials (2007)
37 Hygienic Design and Application of Sensors (2007)
38 Hygienic Engineering of Rotary Valves in Process Lines for Dry Particulate Materials (2007)
39 Design Principles for Equipment and Process Areas for Aseptic Food Manufacturing (2009)
40 Hygienic Engineering of Valves in Process Lines for Dry Particulate Materials (2010)
41 Hygienic Engineering of Diverter Valves in Process Lines for Dry Particulate Materials (2011)
42 Disc Stack Centrifuges - Design and Cleanability (2013)
43 Hygienic Design of Belt Conveyors for the Food Industry (2015)
44 Hygienic Design Principles for Food Factories (2014)

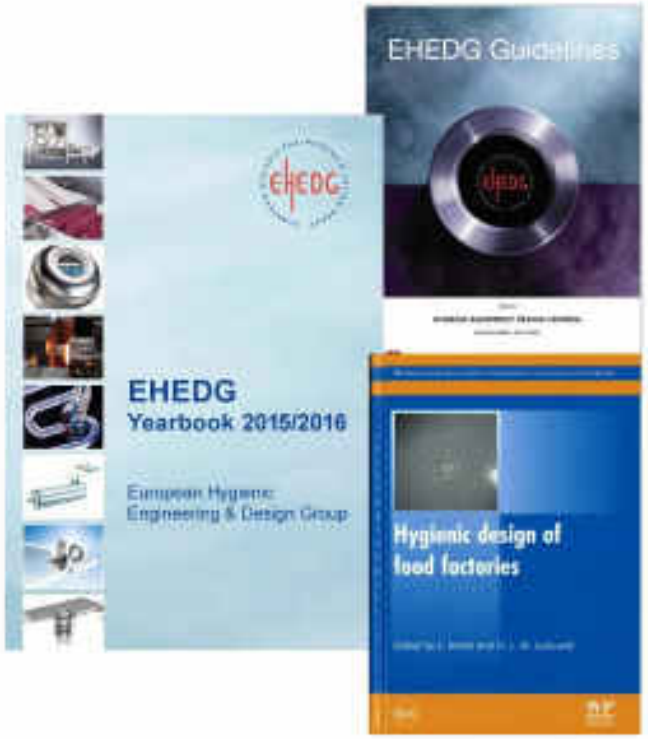

A
B
A
A
M
A
A

Yearbook – new issue 2015/2016

Handbooks:

- *Hygienic Design of Food Factories**
- *Hygiene in Food Processing **
- *Handbook of Hygiene Control in the Food Industry **

Articles in technical press and Selected journals: *New Food, Food Engineering, Journal on Hygienic Engineering & Design and others*



Regional Sections

EHEDG is growing world wide and has members in 55 countries today

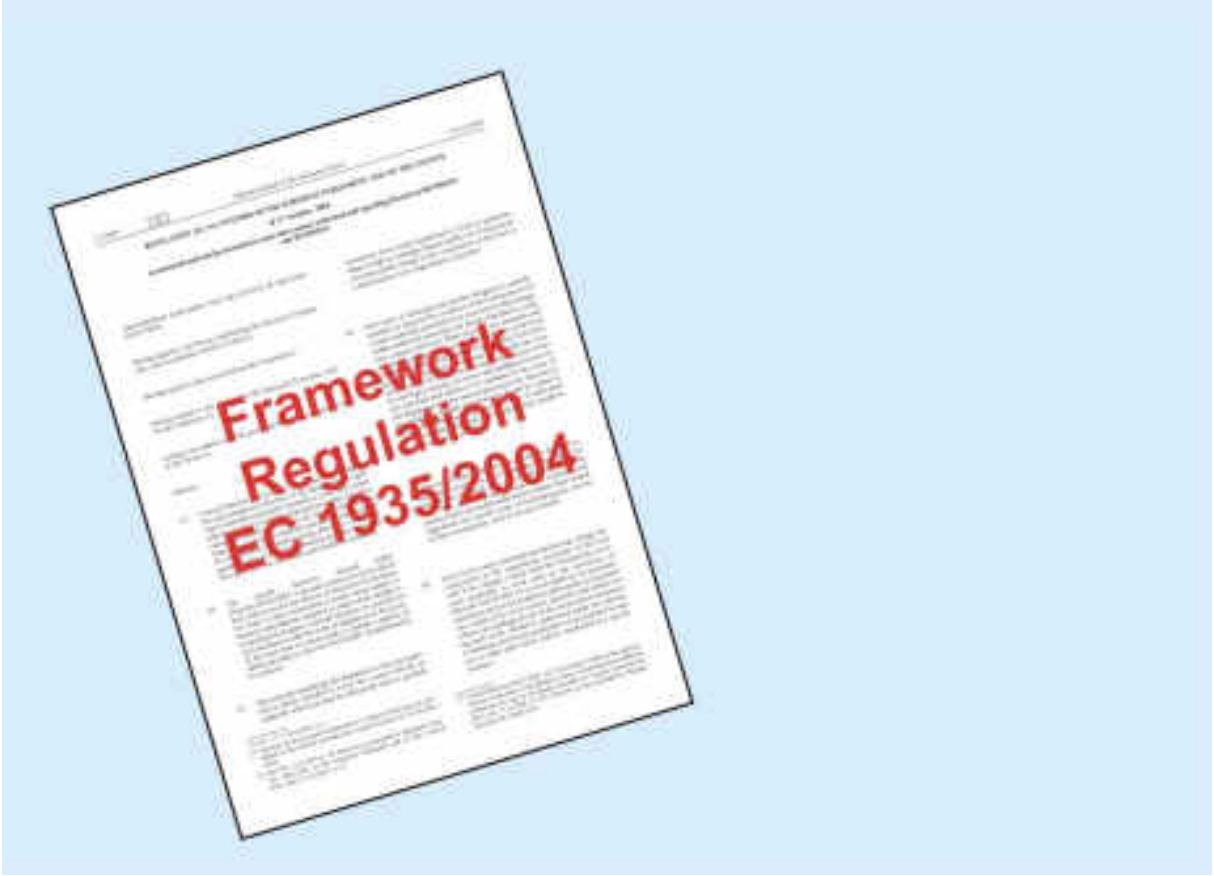
Existing Regional Sections (24):

Armenia, Belgium, Croatia, Czech Republic, Denmark, Germany, France, India, Italy, Japan, Lithuania, Macedonia, Mexico, Netherlands, Nordic (FI, S, NO), Poland, Russia, Serbia, Spain, Switzerland, Taiwan, Thailand, Turkey, Ukraine, U.K., Uruguay

Coming soon:

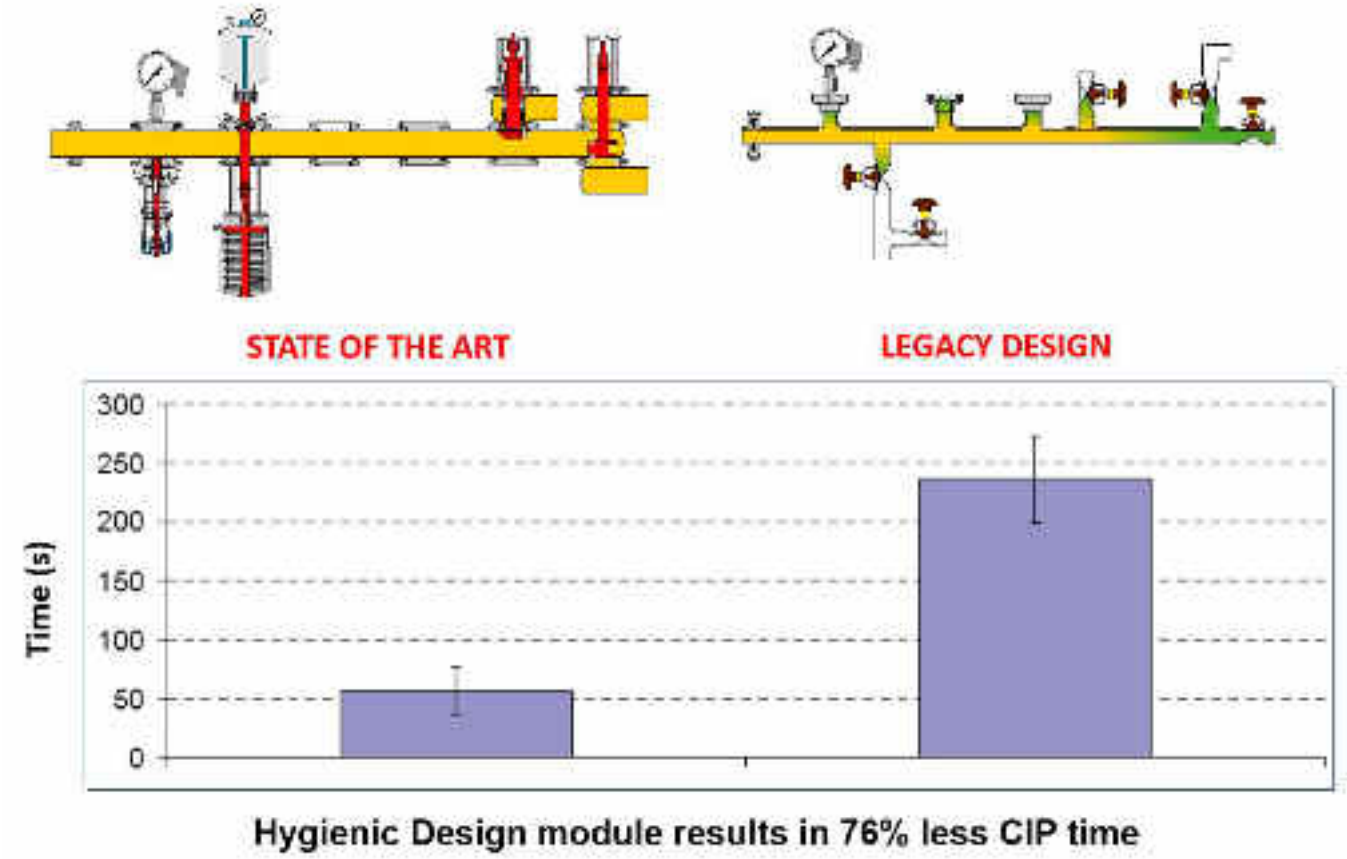
Argentina, Brazil, China


HYGIENIC ENGINEERING & DESIGN GROUP
EUROPEAN
EHEDG


Framework
Regulation
EC 1935/2004


Machinery
Directive
EC 2006/42


Machine
Directi
EC 200
Food Hygiene
Regulations
EC 852/2004


STATE OF THE ART
LEGACY DESIGN
300
250
200
150
100
50
0
Time (s)
Hygienic Design module results in 76% less CIP time


Chicago Tribune
ConAgra to pay $11.2M to settle salmonella criminal case

5NEWS NEWS SPORTS HEALTH TRAFFIC ON-AIR CONTESTS EVENTS WEATHER

Peanut Company Owner Faces Life Sentence For Salmonella Outbreak

POSTED 11:43 AM, SEPTEMBER 21, 2015 BY CNN WIRE

FACEBOOK 481 TWITTER GOOGLE PINTEREST LINKEDIN EMAIL

Courtesy Wiki Commons

(CNN) — Even after his mom died, Jeff Almer bought a Mother's Day card splashed in pastels and bearing the sweetest of words. He tucked a photo of his mother inside the card and addressed it to Stewart Parnell, the man who owned and ran Peanut Corporation of America.

Inside, Almer wrote: I did not know where to send this to since my mother is no longer alive, so I am sending it to you, the person who is responsible for where she is today.

Shirley Mae Almer, 72, survived lung cancer and a brain tumor, but not one of America's favorite foods: peanut butter. Parnell's company, PCA, had manufactured the creamy stuff that she slathered on her toast at a nursing home in Minnesota. It was laced with deadly salmonella.

Almer died a few days before Christmas in 2008. Her son sent the Mother's Day card to

YOU MAY LIKE Promoted Links by Taboola

Mercy Healthwatch

Your latest health news.


Food Hygiene
Regulations
EC 852/2004

What is hygienic design and why is it important?

Eric Partington
Chairman of the European Hygienic Engineering and Design Group's Regional Section serving the UK and Ireland