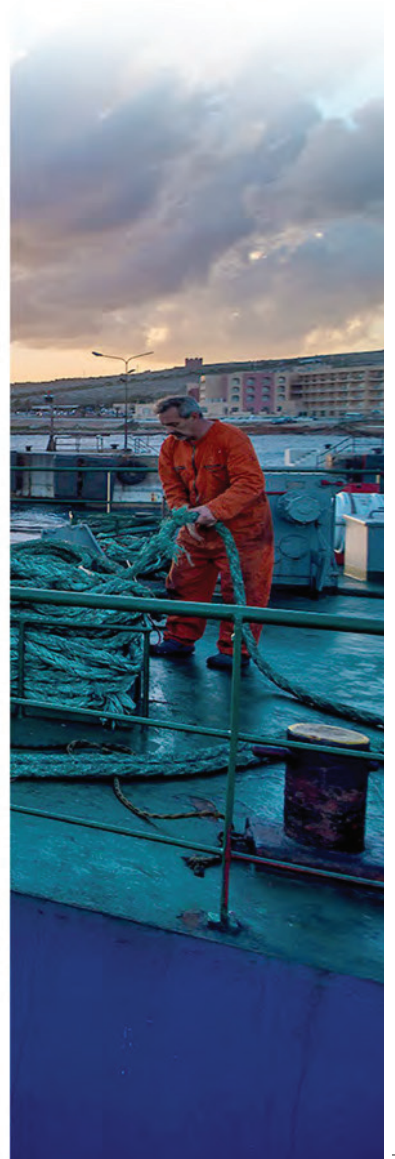
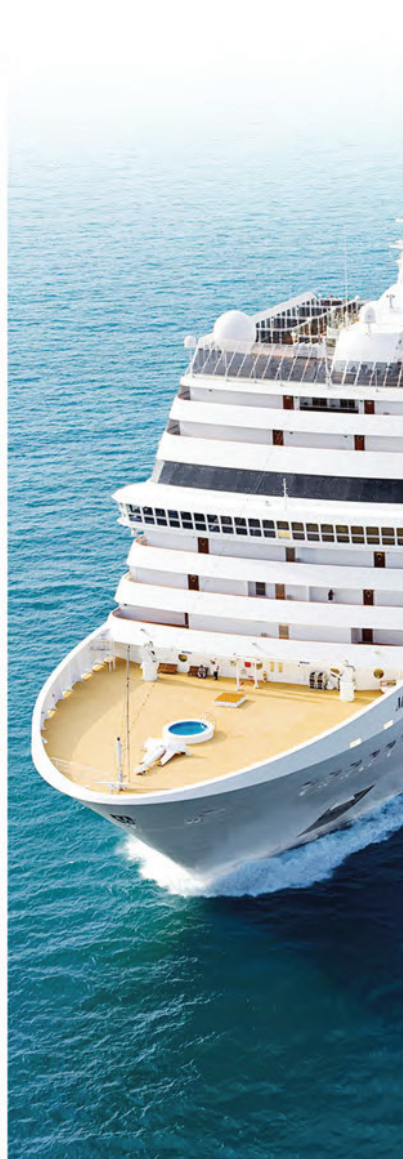




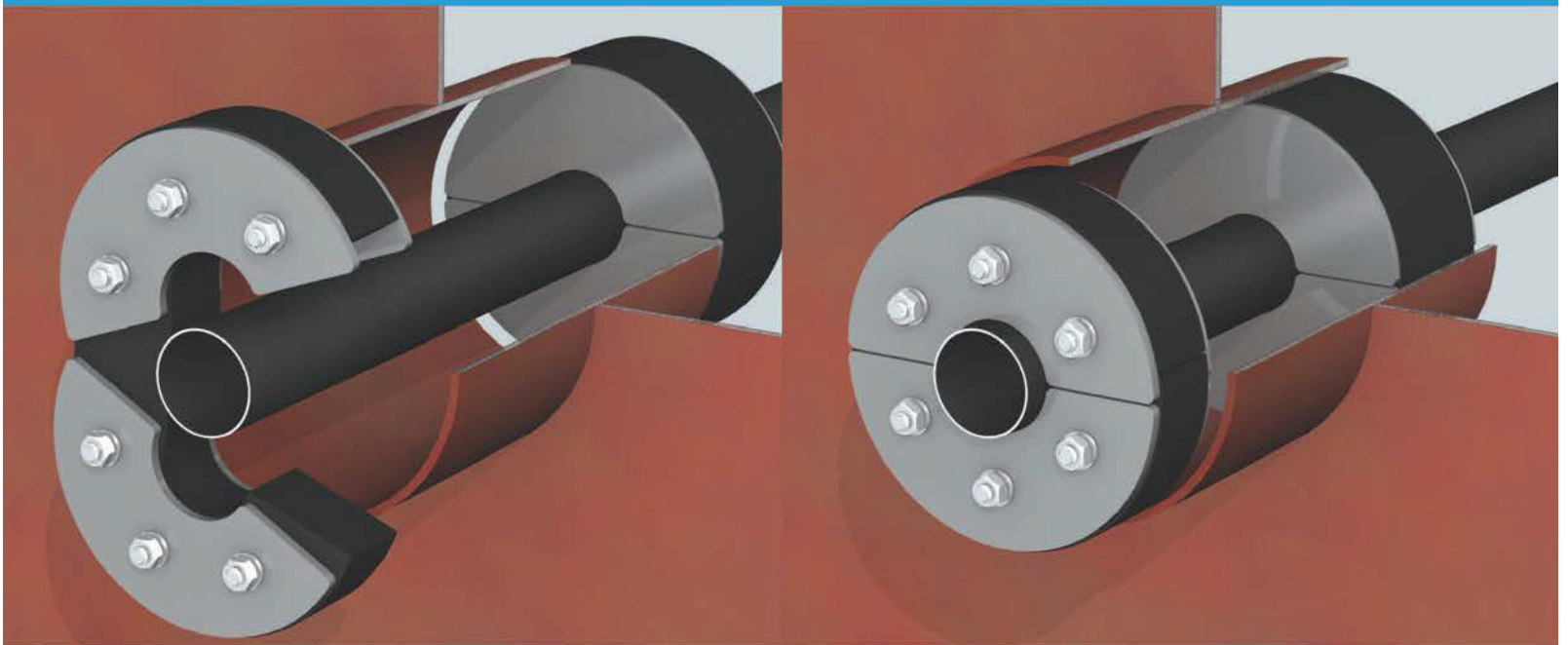
MARINE & OFFSHORE SEALING SYSTEMS



H.P.S. FIRE SEAL

The ultimate fire resistant sealing
system for pipe penetrations

IMO A754(18) A0-A60

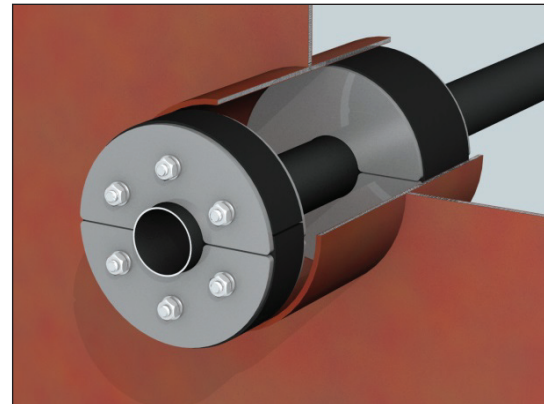
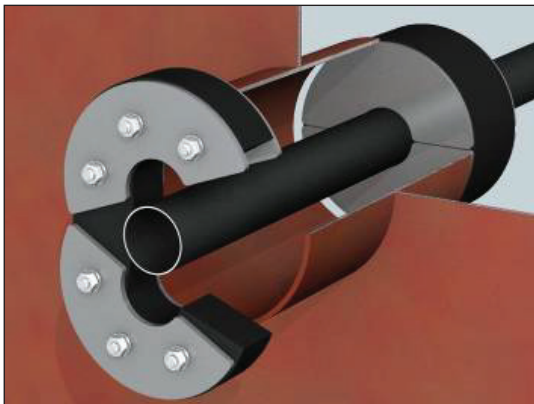


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IBMO[®]

► Fire Seals

- Functionality for pipe penetrations
- Available in all shapes and diameters.
- All metals are made of stainless steel
- Suitable for shipbuilding and offshore industry

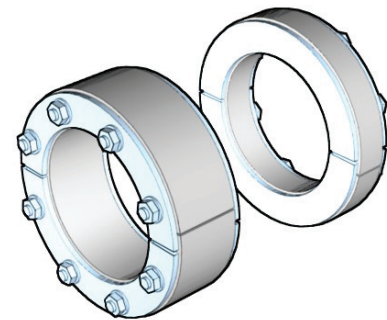


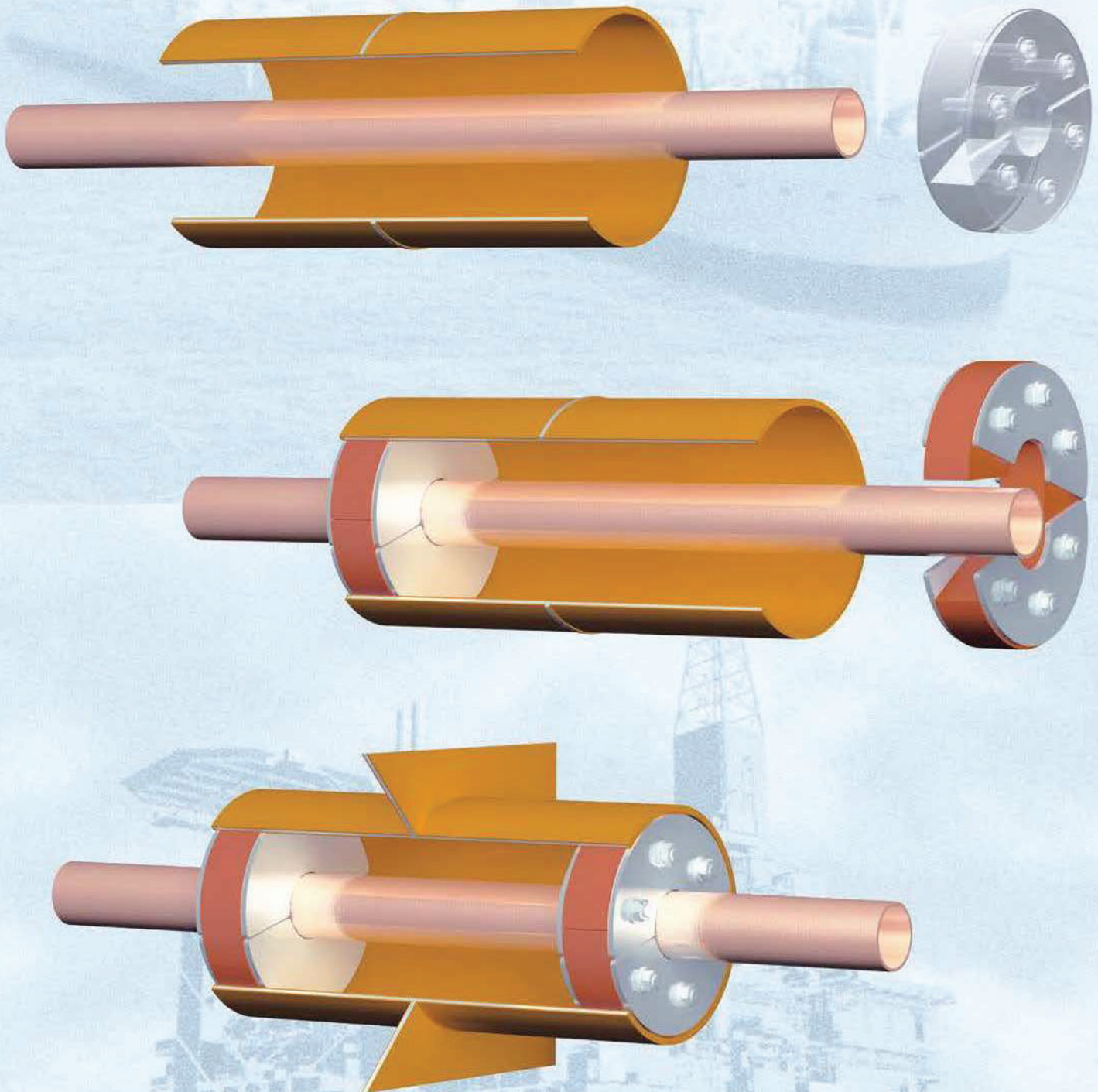
► Installation:

- When the fire seal is installed at the same time as the pipes, a closed version can be used.
- If the pipes are already installed, a parted version is required.

► Advantages:

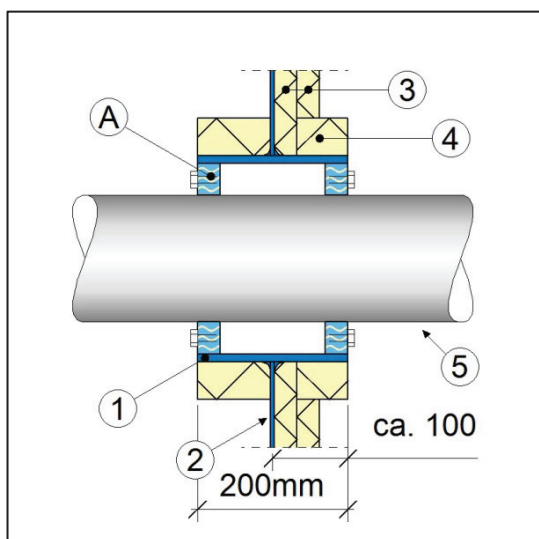
- For pipe's or tubes in various measurements.
- Possible to install after pipes are installed.
- Gastight **4 bar** and watertight up to **6 bar** and **2.5 bar** blast-pressure.
- Sound-, isolating and shockproof.
- A bigger effectiveness by shorter assemblytime.





**CLASSIFIED for
FIRE-RATED WATER-GAS TIGHT
BULKHEADS and DECKS**

Bulkhead Penetration



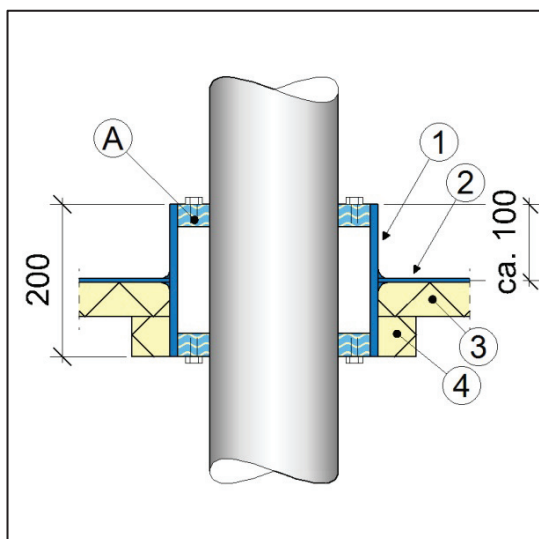
FIRE SEAL

Approved pipe penetration sealing system for deck and bulkhead penetrations.

Type of use

Fire resistant sealing system suitable for pipe penetrations.

Deck Penetration

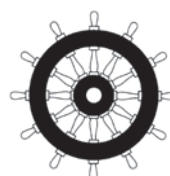


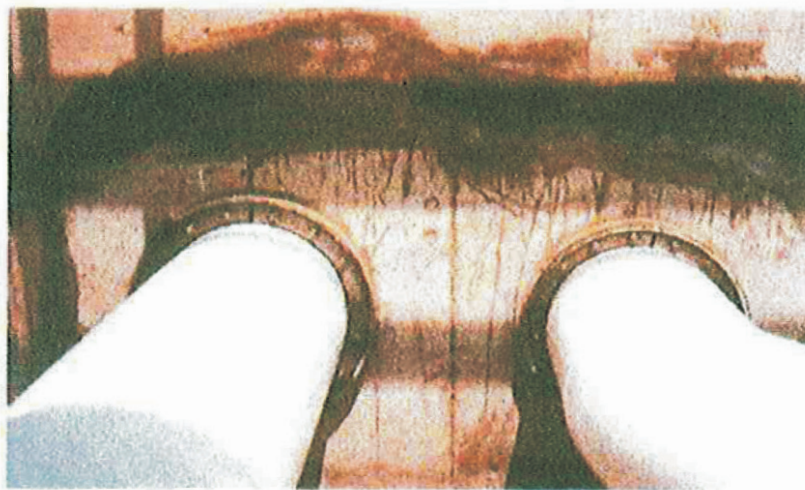
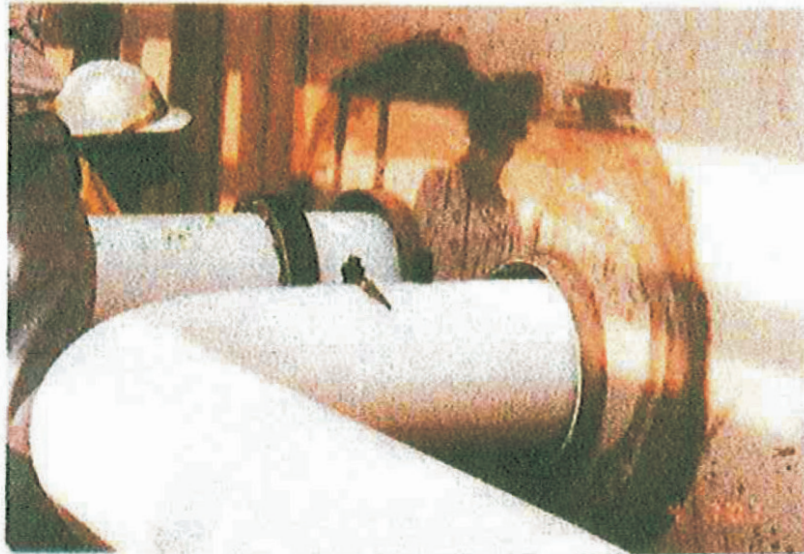
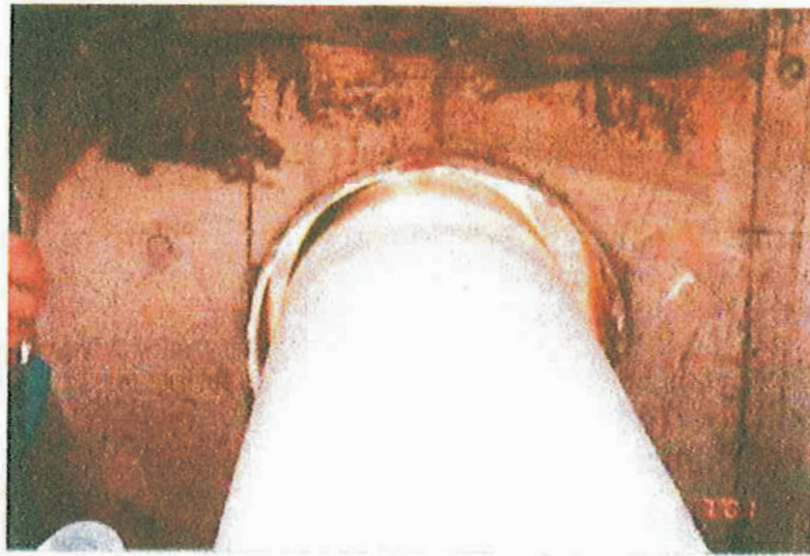
Properties

- Available in every size required
- Very easy and quick to install
- No special tools required
- Tested according to IMO A754(18)
- A0 – A60, H0, H60, H120 & J120 Rated.
- 2.5 bar blast pressure
- Water tightness 6 bar

Legend:

- A. Fire Seal
- 1. Steel coaming
- 2. Steel Plate
- 3. Deck: 50mm insulation
Bulkhead: 2 x 30mm insulation
- 4. Insulation
- 5. Steel Pipe





H.P.S. Fire Seal installation Kertih Terminal, Terengganu - Dialog E&C Sdn Bhd

Wrap Around System

IBMO's wrap around systems have been independently tested at accredited third party test houses. For hydrocarbon fire applications, test criteria is governed by the Mobil high rise hydrocarbon fire time vs. temperature curve for periods of two hours, in accordance with the requirements of the Department of Energy, the International Conference on the Safety of Life at Sea (SOLAS), and the International Maritime Organisation (IMO). For jet fire hazard scenarios, testing is carried out in accordance with the international standard BS ISO 22899-1:2007, formerly governed by the HSE test standard OTI 95 634.

Throughout testing, IBMO's wrap around systems have maintained their integrity, stability and insulation properties and accordingly carry certification issued by either Lloyds Register of Shipping, Det Norske Veritas or the American Bureau of Shipping. In addition to fire testing, the range of penetration seal systems have been subjected to independent blast over pressure testing and have proved their ability to maintain stability and integrity in blasts of up to 1.35 bar.

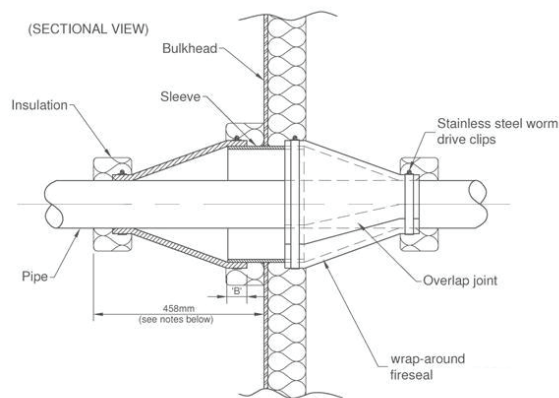


Fig. 1, Standard Pipe Penetration Wrap Around A60 – H120 Bulkhead

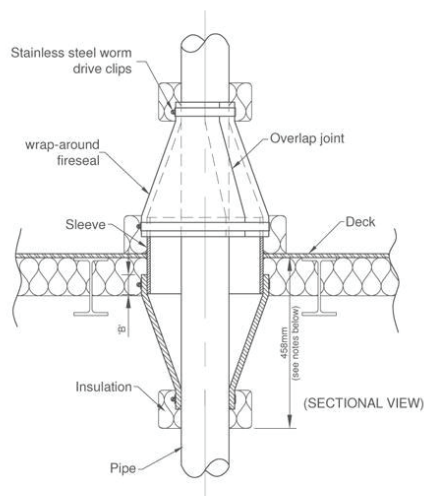


Fig. 2, Standard Pipe Penetration Wrap Around A60 – H120 Deck

Health & Safety

Seals and enclosures, and our metallic enclosure systems are multi-component systems made up from high temperature resistant cloths, glass cloths, insulation felts and blankets, metal foils, silica-aerogel panels and high grade stainless steels. Silicate fibre products are employed which have a patented fibre formulation giving enhanced solubility characteristics in the human body. COSHH data sheets are available covering all system component parts and for the special adhesives and sealants used in site jointing of wrap around retrofit seals.

To provide protection against the harsh environmental conditions such as those experienced offshore, IBMO's rigid enclosures employ high grade 316 stainless steel and for flexible enclosures and fire seal systems, heavy weight silicone coated glass cloths are employed for the outer encapsulation components.

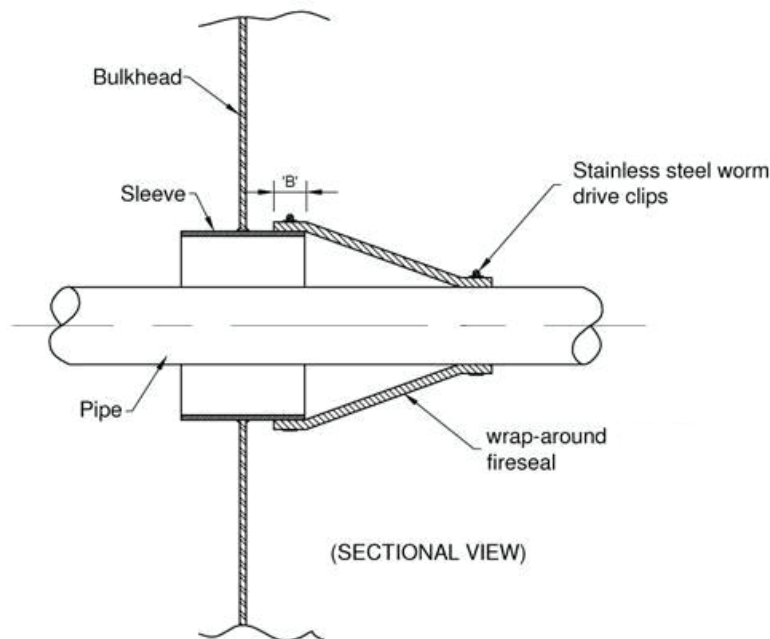


Fig. 3, Standard Pipe Penetration Wrap Around A0 & H0 Bulkhead

Pyro Putty



For specifications please see our Safety Data Sheet.

Pyro Putty

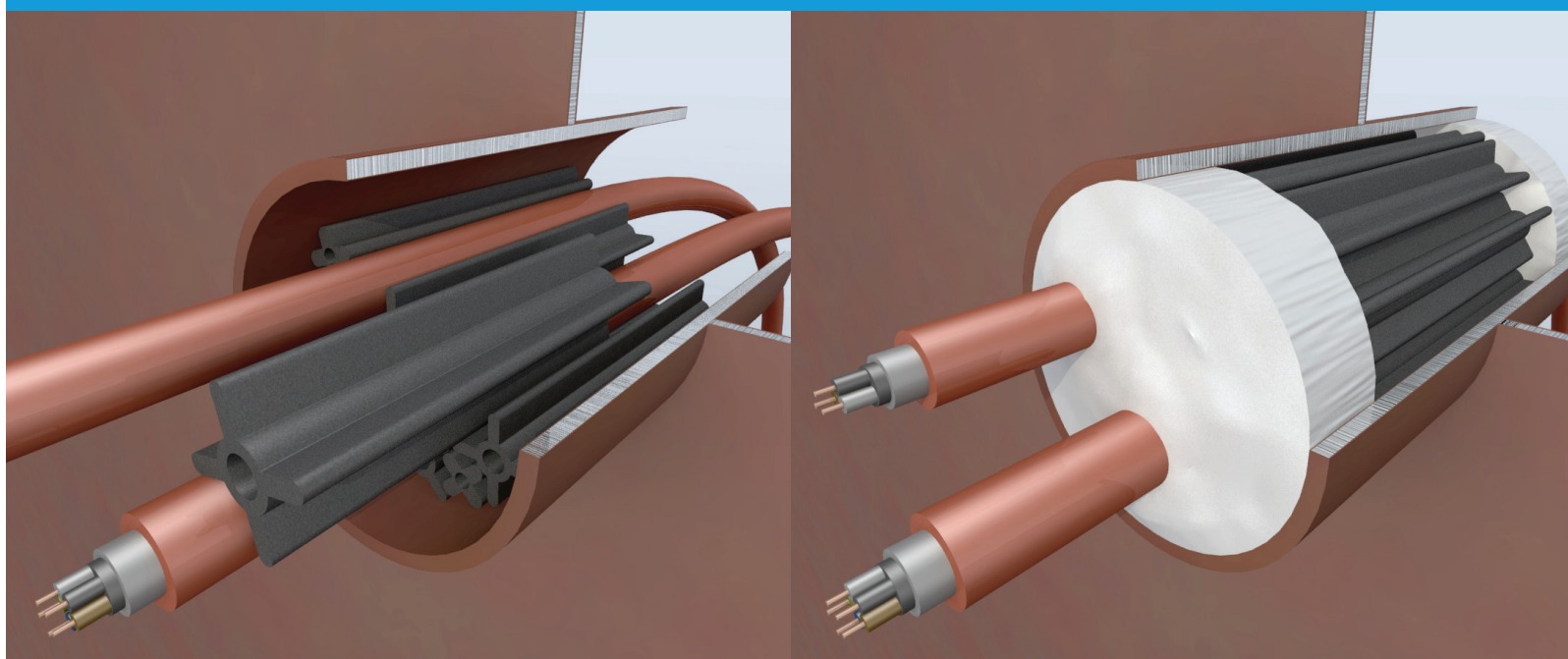
<u>Properties:</u>	<u>Standard code:</u>	<u>Values:</u>
<u>Fire Class:</u>	A60, A30, A15 and A0	
<u>Color:</u>	White	
<u>Cartridge:</u>	in 310ML	
<u>Specific weight:</u>	DIN/EN 52 451	1.50 g/cm ³
<u>Tack-free time</u>		approx 20-30min. after 1 day 2mm after 7 days 5mm
<u>Volume change:</u>	DIN/EN 52451	- 2%
<u>Joint movement:</u>		Capability 25%
<u>Elastic modules:</u>	100%	0.3N/mm ²
<u>Tensile strength:</u>	DIN/EN 28 339	0.6N/mm ²
<u>Elongation at break:</u>	DIN/EN 28 339	350%
<u>Elastic recovery:</u>	DIN/EN 27 389	>95%
<u>Application temperature:</u>		+5°C + 40°C
<u>Temperature resistance:</u>		-50°C+ 150°C
<u>Extremely resistance:</u>	DIN/EN 540-F	
<u>Weathering and ageing:</u>	DIN/EN 545-E	
<u>Transport:</u>		
<u>Special Documents:</u>		Non
<u>IMO/DOT:</u>		Non
<u>Liquids:</u>		Non
<u>Material:</u>		100% solid
<u>Shelf life:</u>		12 months



M.P.S. MULTIPLE PROFILE SYSTEM

The MPS-system, is the ideal fire resistant sealing system for cable and pipe penetrations

IMO A754(18) A0-A60

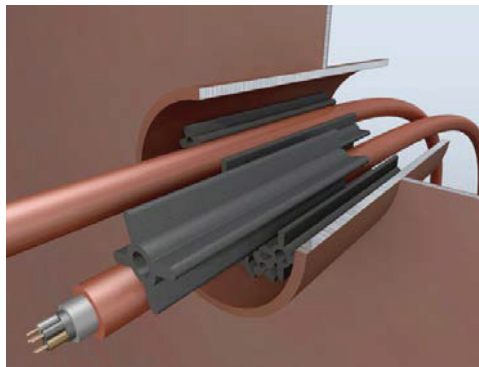


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MPS Multiple Profile System

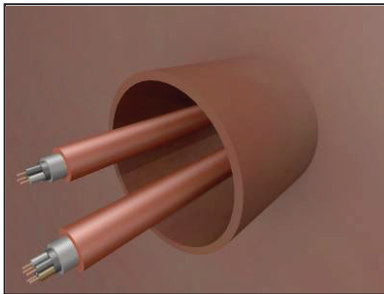
The MPS system is the ideal fire resistant sealing system for deck and bulkhead cable and pipe penetrations. One of the main advantages of the system is that only one type of profile is required no matter the size of the pipe or cable. This will save precious time.



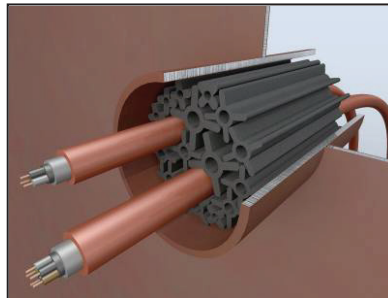
- Profiles can be used for sealing of pipe penetrations
- Profiles can be used for sealing of cable penetrations
- Tested according to IMO A754 (18) A-0 - A-60 rating
- No special tools required for installation
- Easy to insert or remove additional cables
- Gastight to 1.5 bar

When exposed to fire, the intumescent character of the profiles will expand to close the gap and eliminate further spread of smoke and fire.

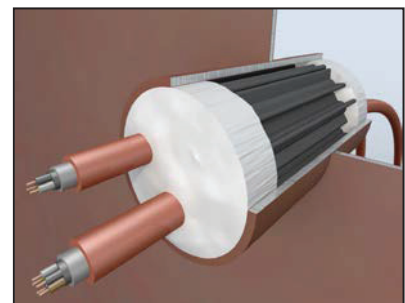
MPS Deck and Bulkhead Sealing System



Cable pipe ready to be filled up with profiles

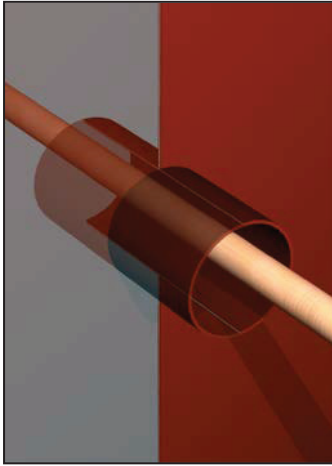


Pipe filled up with profiles

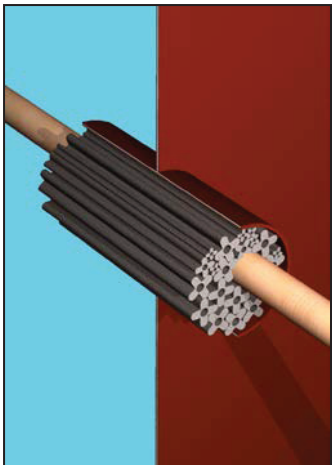


Both end of the pipes filled up with Pyro Putty sealant.

Installation

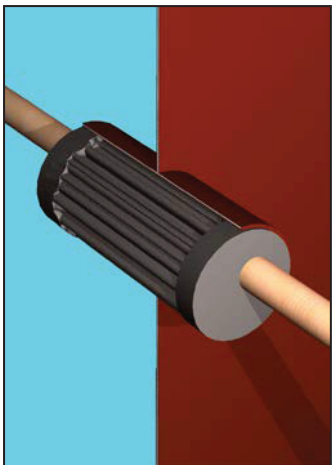


Pipe or cables can be installed through the welded in pipe sleeve.



Fill the penetration with IBMO profiles.

The length of the profiles depends on the length of the welded in pipe sleeve minus 40mm. Leave 20mm space on each side of the coming.

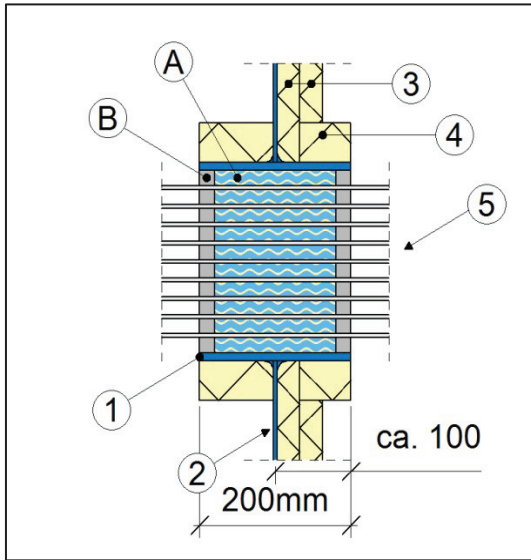


Fill up the space on both sides of the penetration with Pyro Putty sealant and a fire- and watertight penetration is created.

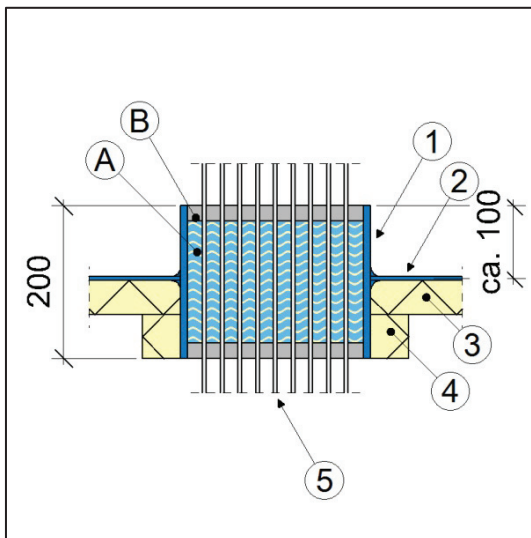
MATERIAL SAFETY DATA SHEET**IBMO HF PROFILES**

Material name	: Multiple Profile System
Material color	: Grey to Black
Product processing	: Extrusion contains no Formaldehyde
Product type	: Star/Clover Profile in various lengths
Composition	: Halogen Free Rubber Compound
Special additives	: 10 – 15% by weight
Color Material	: 20 – 25% by weight
Ozone properties	: Good to Excellent
Flame retardant/Fire Resistance	: Good
Toxicity	: Non Toxic
Stability Stable	: When stored at 40 deg C. Safe in normal conditions
Hazard identifications	: Non Hazardous, no special warning required
First aid measure	: Special measures not required
Transport	: Special arrangements not required
DOT-IMO	: Special identification or documents not required
Handling	: Additional safety not required
Shelf Life:	: Not Applicable

Bulkhead penetration



Deck penetration



Legend:

- A. Profiles
- B. Pyro Putty 20 thk
- 1. Steel coaming 200 long
- 2. Steel plate
- 3. Deck: 50mm insulation
Bulkhead: 2 x 30mm insulation
- 4. Insulation
- 5. Cables

MPS SYSTEM

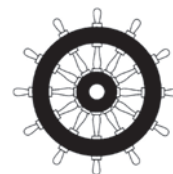
Approved sealing system for cable and pipe penetrations.

Type of use

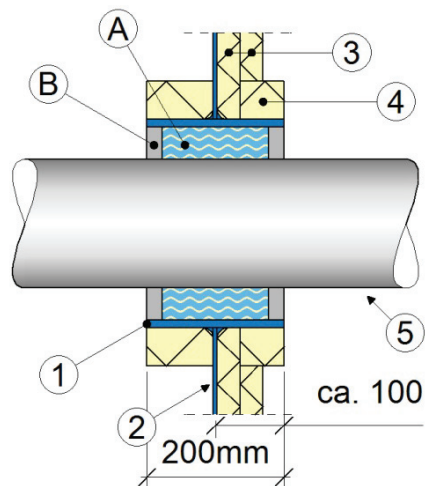
Fire resistant sealing system for deck and bulkhead cable and pipe penetrations.

Properties

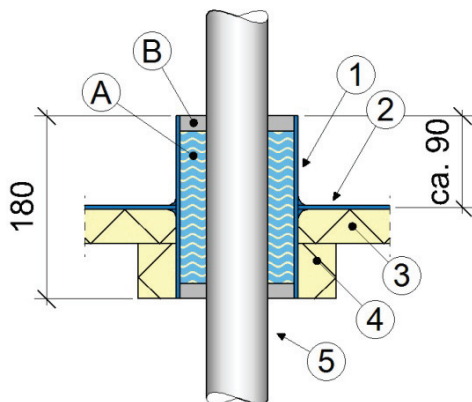
- Maintenance can be easily done
- No special tools required
- Only one type of profile for all cable sizes
- Tested according to IMO A754(18)
- A0 – A60 rated
- Filling rate 40%
- Water tightness 3,5 bar



Bulkhead penetration

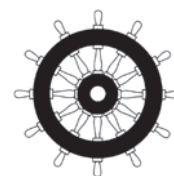


Deck penetration



Legend:

- A. Profiles
- B. Pyro Putty 20 thk
- 1. Steel coaming 200 long
- 2. Steel plate
- 3. Deck: 50mm insulation
Bulkhead: 2 x 30mm insulation
- 4. Insulation
- 5. Cables



MPS SYSTEM

Approved sealing system for cable and pipe penetrations.

Type of use

Fire resistant sealing system for deck and bulkhead cable and pipe penetrations.

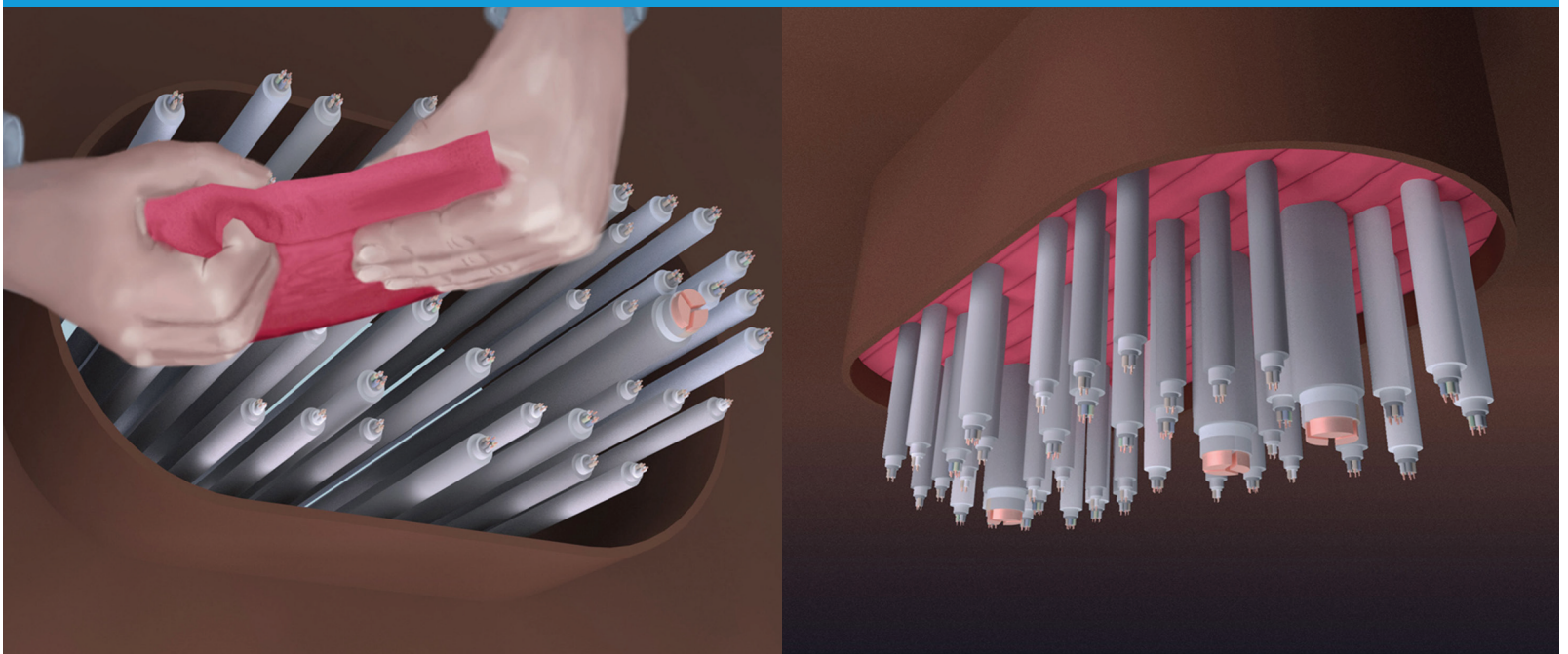
Properties

- Maintenance can be easily done
- No special tools required
- Only one type of profile for all cable sizes
- Tested according to IMO A754(18)
- A0 – A60 rated
- Filling rate 40%
- Water tightness 3,5 bar

E.I.S. EASY INSTALLATION SYSTEM

The flexible and fast solution for safe sealing
of deck- and bulkhead penetrations

IMO A754(18) A0-A60



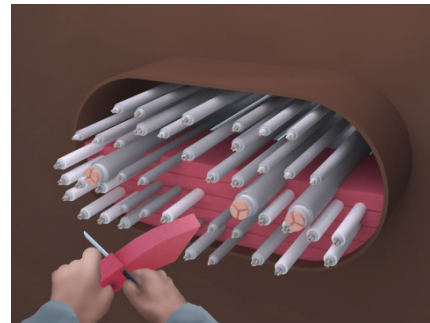
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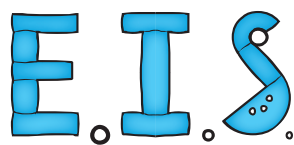
E.I.S. Easy Installation System

The EIS sponge slabs are specially developed for single and multiple cable penetrations. All components are halogen free, and applicable in deck- or bulkhead situations.



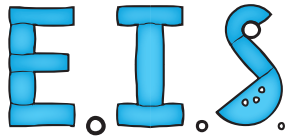
When exposed to fire, the foam expands to 100 % of his original volume, cracks and openings automatically will be sealed and eliminate further spread of smoke and fire.

EIS safe foam plates are very easy to handle, no special engineering is needed, quick to install, easy to maintain and gives the installer simple access to add or remove cables in a later stage without damaging the conduit opening.



Advantages:

- Easy and simple installation
- No special tools required
- Maintenance can be easily done
- Tested according to IMO A754(18)
- Fire Rating A0, A15, A30 & A60
- No sealant required above the waterline
- Water tightness 1,5 bar and gas tight 1 bar

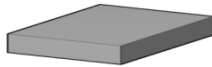


Dimensions Sponge Slabs:



Art. no	Dimensions
FC 12	1000x150x25

Dimensions Sponge Stones



Art. no.	Size in mm
NL 01	220x150x50

Dimensions Ø Sponge Stops:

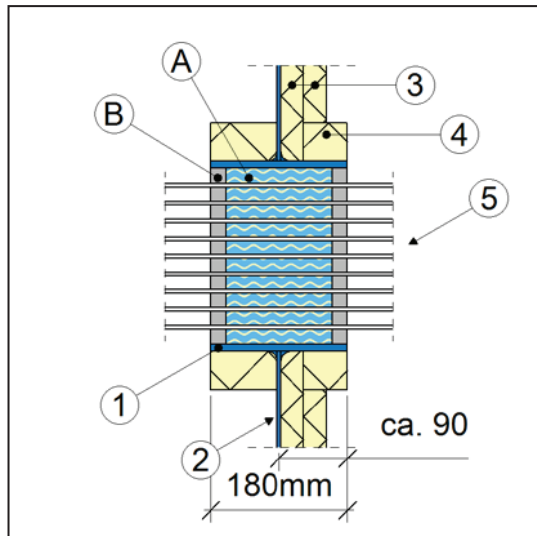


Art. no.	Opening Ø mm	Diameter tolerance D1/D2 mm	Height in mm
FS 01	50	55/70	70
FS 02	80	85/100	70
FS 03	100	105/120	70
FS 04	125	130/145	70
FS 05	150	155/170	70
FS 06	200	205/220	70

Specification:

Material	IBMO flexible pre carbon – foam
Color	Red
Density	240± 10kg.m ³
Expanding properties in case of fire	More than 100%
Fire test	Tested IMO A754 (18) A0, A15, A30, A60

Bulkhead Penetration



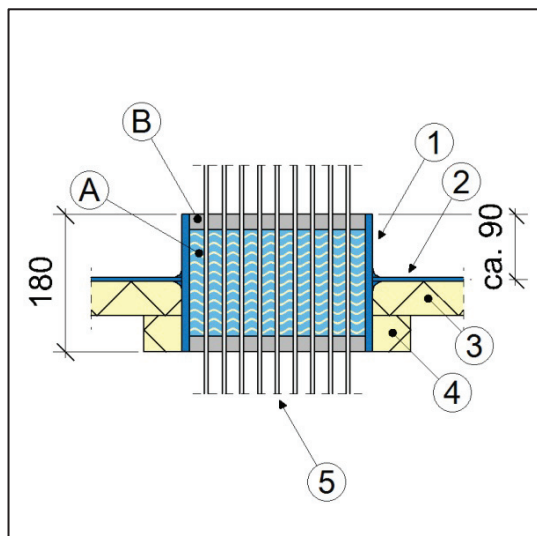
EIS SYSTEM

Approved flexible and fast Firestop of expandable foam material

Type of use

Flexible and fast solution for safe sealing of deck- and bulkhead cable penetrations.

Deck Penetration

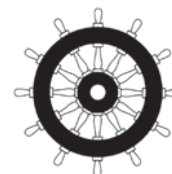


Properties

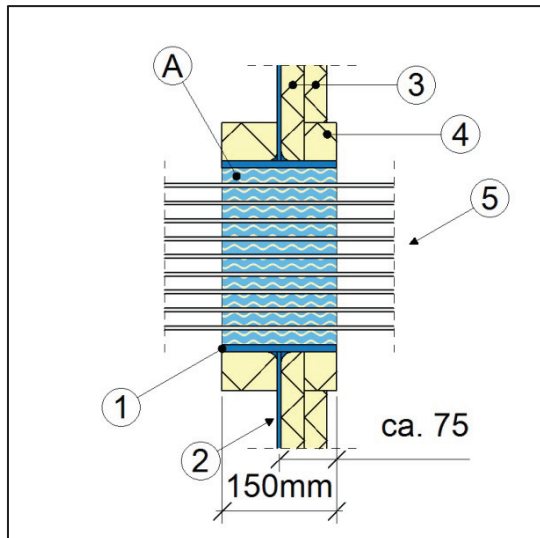
- Easy installation
- No special tools required
- Maintenance can be easily done
- Tested according to IMO A754(18)
- A0 – A60 rated
- No sealant required above the waterline
- Filling rate 40%
- Water tightness 1,5 bar

Legend

- A. Flexible sponge material 150mm
- B. Pyro Putty 15mm
- 1. Steel Coaming 180 long
- 2. Steel Plate
- 3. Deck: 50mm insulation
Bulkhead: 2 x 30mm insulation
- 4. Insulation
- 5. Cables



Bulkhead Penetration



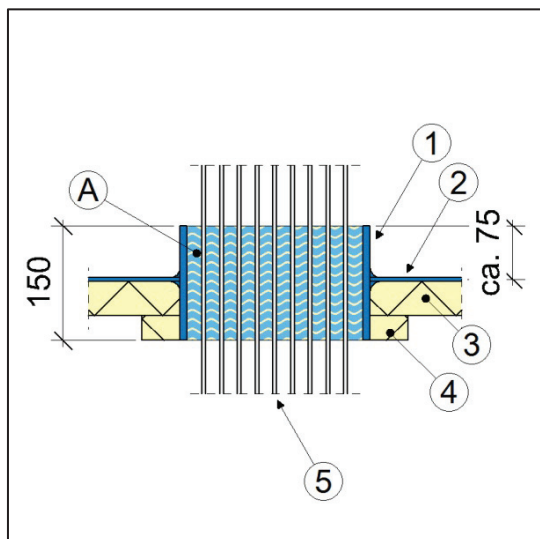
EIS SYSTEM

Approved flexible and fast Firestop of expandable foam material

Type of use

Flexible and fast solution for safe sealing of deck- and bulkhead cable penetrations.

Deck Penetration

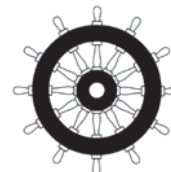


Properties

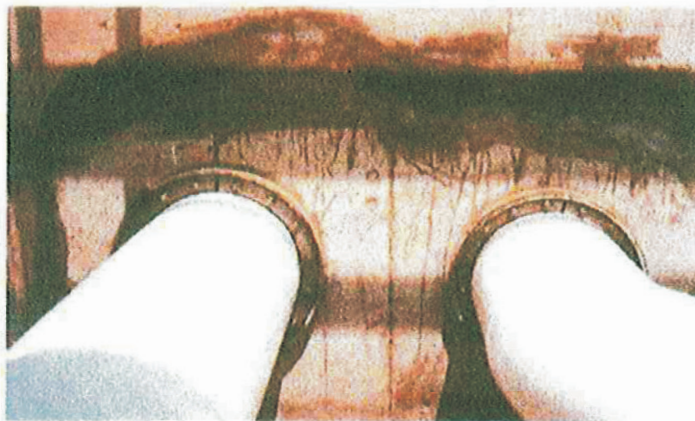
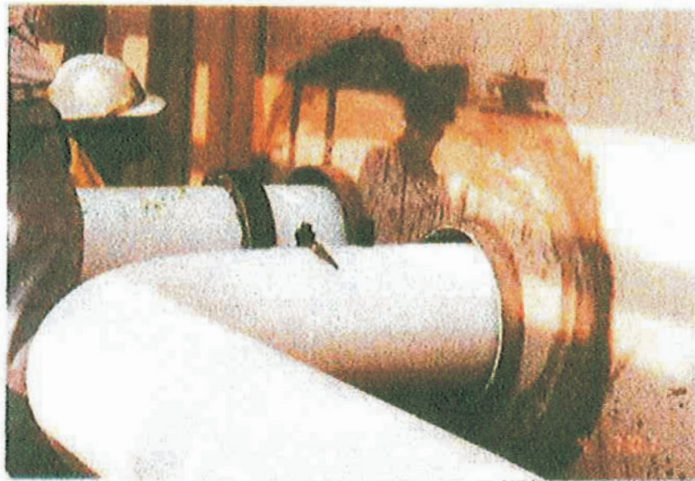
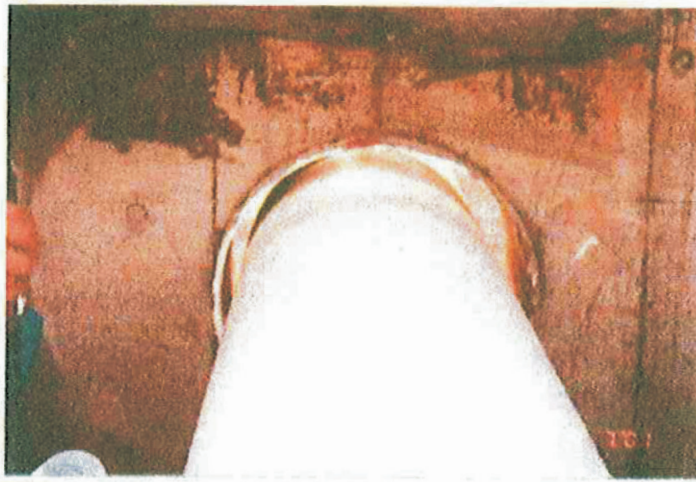
- Easy installation
- No special tools required
- Maintenance can be easily done
- Tested according to IMO A754(18)
- A0 – A60 rated
- No sealant required above the waterline
- Filling rate 40%

Legend

- A. Flexible sponge material 150mm
- 1. Steel Coaming 150 long
- 2. Steel Plate
- 3. Deck: 50mm insulation
Bulkhead: 2 x 30mm insulation
- 4. Insulation
- 5. Cables







Sole Distributor



Noble Mount Sdn Bhd (1090271-V)

Group Of Companies



Noble North Sdn Bhd (1428374-X)

Noble South Sdn Bhd (1534119-D)

Noble East Sdn Bhd (1534153-D)

Business Correspondence

**No. 1-3B, Jalan Harmoni Indah 1, Taman Harmoni Indah,
Seri Kembangan, 43300 Selangor Darul Ehsan.**

T : 03-8958 5621

M : 012-639 9448

E : noble.mount.sb@gmail.com

www.noblemount.com.my