Certifire Approval No CF 427

The Passive Fire Protection Handbook

Chapter 7: Penetration Seals - Promat PROMASEAL® Fire Pillow

PRODUCT DESCRIPTION

Promat PROMASEAL® Fire Pillows can provide permanent protection from the spread of fire, but they are particularly useful when only temporary protection is required.

Promat PROMASEAL® Fire Pillows have been successfully fire tested up to 120 minutes.

APPLICATIONS

Promat PROMASEAL® Fire Pillows are used to maintain the fire resistance of walls and floors where openings for services are located. They are typically installed around cables which need to be regularly altered.

FIRE PERFORMANCE

Promat PROMASEAL® Fire Pillows have been tested in accordance with the principles of BS 476: Part 20: 1987.

When exposed to fire the pillow contents expand to fill even the smallest gaps around services, creating a rigid barrier against the spread of smoke, toxic gases and fire.

ADVANTAGES

- Fire protection for up to 120 minutes in walls and 120 minutes in floors
- Simple installation
- Re-usable
- Waterproof
- No additional material required
- Suitable for clean room applications
- Maintenance free
- Allows rearrangement of services
- Non-toxic
- Attractive, professional appearance
- Resistant to vermin and rot

INSTALLATION

Promat PROMASEAL® Fire Pillows are normally installed by laying in courses to completely fill the gaps around penetrations. Where required to form adequate overlap, the smaller sized pillow, 330mm x 200mm x 25mm, may be used at ends of layers of pillows.

Where, for example, non-combustible pipes or cables penetrate the Promat PROMASEAL® Fire Pillows installation, care should be taken to ensure that a good seal is formed around such penetrations by the use of smaller Promat PROMASEAL® Fire Pillows compressed into the gaps.

When installing the final layer of Promat PROMASEAL® Fire Pillows it is advisable to insert it between the previous two layers by pulling it into position using the flap located at one end of each pillow. This provides a tighter seal than trying to insert the final layer as the uppermost layer.

Chapter 7: Penetration Seals - Promat PROMASEAL® Fire Pillows

Promat PROMASEAL® Fire Pillows should be positioned either vertically or horizontally with their 330mm length at right angles to the wall. After consultation with Promat Technical Services Department it may be possible to adjust the orientation of the pillows to provide the most economical use of the pillows. It is however important to ensure that pillows overlap by at least 50mm. It is normally advisable to ensure that any services are supported within 500mm of the wall.

PENETRATION SEALS ON FLOORS, SLABS OR WALLS

Promat PROMASEAL® Fire Pillows consist of quality woven envelopes enclosing high temperature, fire resistant granulated material. They are simple to install, are re-usable and maintenance free.

The pillows are used to maintain the fire resistance of walls and floors, where openings for services are located. They are typically installed around cables which need to be regularly altered.

DELIVERY FORM

330mm x 200mm x 45mm (large fire pillow)
330mm x 200mm x 25mm (small fire pillow)
330mm x 50mm x 20mm (finger pillow)

TECHNICAL DATA

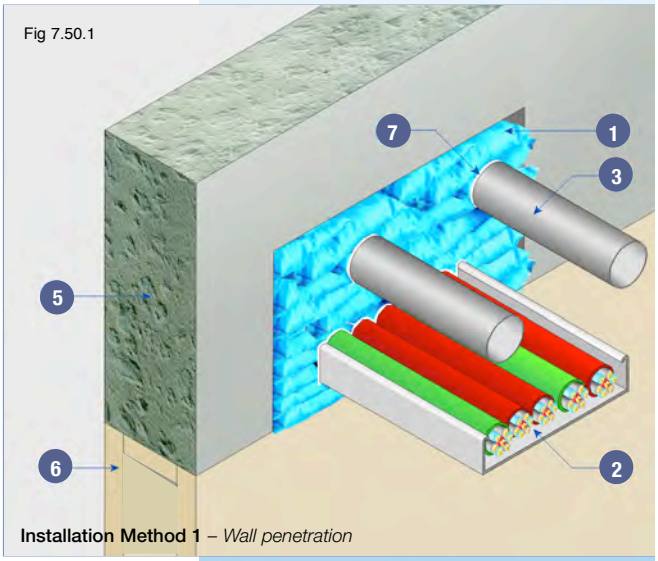
120 minutes fire rating, integrity in accordance with the criteria of BS 476: Part 20: 1987.

1. Promat PROMASEAL® Pillows.
2. Electrical cables and cable tray.
3. Steel pipes.
4. Telecommunication cables.
5. Wall or floor elements.
6. Lightweight partition.
7. Gap seal with Promat PROMASEAL® Intumescent Acrylic Sealant.

NOTE: *To ensure a smoke tight construction, any visible gaps between pillows should be filled with Promat PROMASEAL® Sealant. All services passing through the pillows should be sealed using Promat PROMASEAL® Sealant to prevent the passage of smoke.*

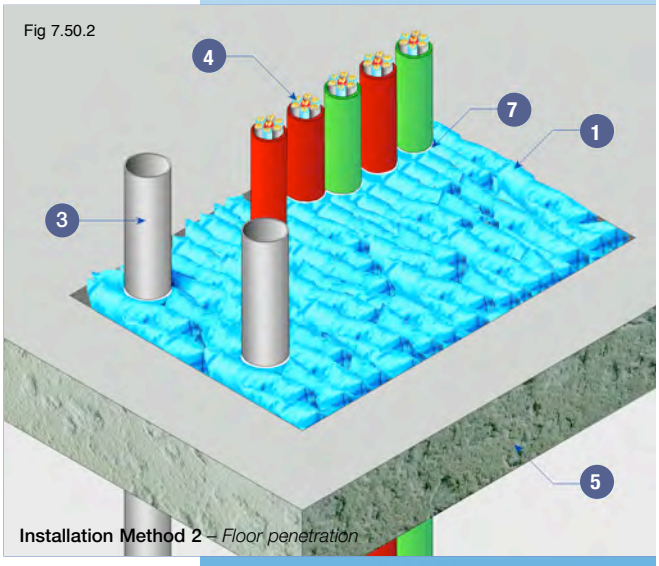
For semi permanent installation, enclose with steel wire mesh or seal with Promat PROMASEAL® Sealant. For further details, please contact the Promat Technical Services Department.

Fig 7.50.1



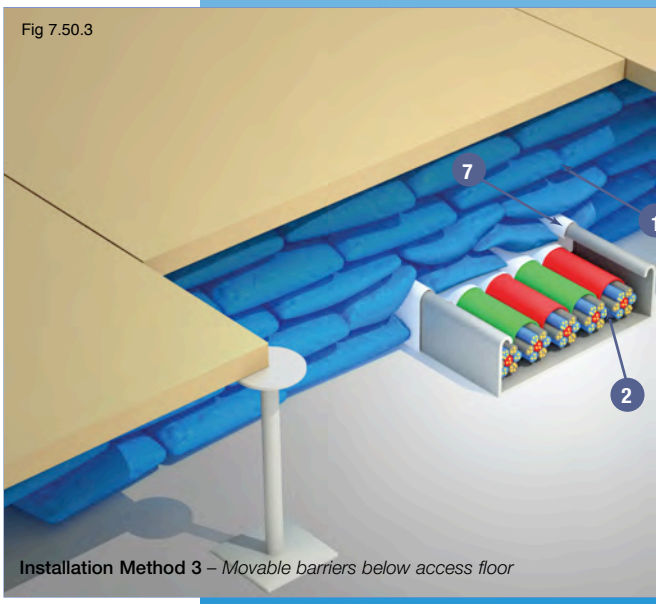
Installation Method 1 – *Wall penetration*

Fig 7.50.2



Installation Method 2 – *Floor penetration*

Fig 7.50.3



Installation Method 3 – *Movable barriers below access floor*

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Certifire Approval No CF 427

Table 7i Promat PROMASEAL® Fire Pillows - Approval Matrix

Orientation	Services	Integrity/Insulation	Required Pillow Thickness for Fire Resistance Period (minimum)			
			30 mins	60 mins	90 mins	120 mins
Floor	No	Int. & Ins.	150mm	150mm	200mm	200mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	150mm	150mm	200mm	200mm
Wall	No	Int. & Ins.	150mm	180mm	250mm	300mm
	Yes	Int. & Ins.	150mm	200mm	250mm	300mm
	Yes	Int. only	180mm	180mm	250mm	300mm

Penetrating Services:	Cable ladders and communication cables
Maximum Aperture:	1000mm by 1000mm
Wall/floor Thickness:	The floors and walls shall be a minimum of 100mm thick for periods of up to 60 minutes fire resistance and 150mm (floor) and 200mm (wall) thick for periods of 90 minutes and 120 minutes fire resistance. The minimum density for the concrete of the floor or wall is 780kg/m³ and for walls made of concrete blocks is 600kg/m³.
Application Technique:	**Floors:** Steel mesh (50mm square with 5mm wire) is mechanically fixed either to the soffit of the floor or within the reveal of the aperture via vertical returns at the edges of the mesh. The fire pillows are tightly packed into the opening and around the services. **Walls:** The fire pillows are tightly packed into the opening and around the services (no mesh is required).
Service Coat-Back:	Not required
Service Support Requirements:	Services should be rigidly supported via steel angles, hangers or channels, not further than 500mm from the surface of the sealing system on both faces.

NOTE:

The concrete floors and/or masonry or concrete walls shall be at least as thick as the sealing system as shown in the Approval matrix and have at least the same fire rating as that required for the penetration seal.
The services which may be fitted through the seals are cable ladders of various sizes and communication cables.

A safety data sheet is available from the Promat Technical Services Department and, as with any other materials, should be read before working with the product. The product is not classified as a dangerous substance and so no special provisions are required regarding the carriage and disposal of the product to landfill. This can be placed in an on-site skip with other general building waste which should be disposed of by a registered contractor.