Promat

PROMASEAL® Pillows
Various Penetration Seals

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etex building performance

PROMASEAL® Pillows are manufactured from treated cloth filled with a high density, granulated fire seal mineral wool. When exposed to fire, the pillows remain in place and char, thus forming a fire barrier of a solid mass of insulating material.

If theory, PROMASEAL® Pillows are probably the simplest of all Promat fire stopping products to use. They are one of the most economic products if material costs alone are factored into usage/ purchase and scale of budget decisions.

Between 100 and 130 are needed for every square metre of open area. But they are very easy to install and can be placed in many openings where it would be impossible to install other products. Often it is economical to use this system only because few pillows may be required to achieve the appropriate performance requirements, especially if labour costs can be kept low.

PROMASEAL® Pillows have been tested up to 180 minutes with various penetrations seals in concrete/masonry floors or walls and lightweight partitions (with an equal or greater fire resistance level).

In many buildings, power cables are continuously added and removed, typical are telecommunication and informaton technology cables. PROMASEAL® Pillows enable this process to be carried out with the minimum of mess and inconvenience. It is a simple matter to thread a new cable through a PROMASEAL® Pillows system and then re-seal using PROMASEAL®-A Acrylic Sealant.

If pillows need to be removed (e.g. for retrofitting of services), empirical evidence suggests that many authorities are opposed to the use of pillows simply because they are concerned that the pillows will not be correctly replaced after rectification work is completed.

There is understandable concern and it is also quite common for authorities to insist on the pillows being physically held in place with steel mesh to prevent removal. Another method is to apply a coating of PROMASEAL®-A Acrylic Sealant in a thin film over the surface of the pillows. This is seen to at least be a warning to people that the pillows are there for a reason. It also makes them more difficult to remove and makes it easier to observe when they have been removed and not replaced correctly.

Promat recommends a nominal 1-2mm thick of PROMASEAL®-A Acrylic Sealant to be brush applied over the surface of the pillows after they are installed.

PROMASEAL® Pillows are non loadbearing. It is advisable to place a visible warning sign near all barriers to identify its characteristics/ inherent properties, with wording similar as follows:

> WARNING: THIS IS A FIRE RESISTANT BARRIER. DO NOT DISTURB. DO NOT WALK OR PLACE ANY LOADS ON OR AGAINST THE BARRIER. IF THE BARRIER IS DAMAGED CONTACT ..... (name of installer) IMMEDIATELY.

It is important that the user be aware of the type of services and the dimensions of the gaps that will be left around the services that are to be sealed. Valid supporting evidence that the proposal consists of a tested system may be required. This may vary from country to country, depending upon the way the test results are interpreted and how local regulations are applied. Applications that have been tested in concrete/ masonry floors or walls and lightweight partitions (with an equal or greater fire resistance level) include:

- Electrical cables in bundles or supported with steel cable tray
- Copper, brass and steel pipes up to 150mm nominal diameter
- Telecommunication cables
- Electrical busbar (through floors only)

General application considerations

PROMASEAL® Pillows can be used as a temporary measure during construction or where buildings have been fully or partially occupied or where fit out work is continuing or has to be carried out, and when authorities insist that compartmentation is maintained during this period. PROMASEAL® Pillows can also be used as a permanent barrier.

PROMASEAL® Pillows are used around services that penetrate floor and wall barriers through oversize openings that are too large to be sealed with PROMASEAL®-A Acrylic Sealant.

This is generally the case when a wall or floor has not been neatly cored for services to pass through and a large opening remains. Such openings must be correctly reinstated to maintain the fire resistance of the floor or wall.

A typical application is within a floor in service shafts. If the service shaft is not fire resistant and does not have fire resistant doors at each level, then the floor itself must be sealed at each level. Usually PROMASEAL® Mortar will be used for such an application but on occasion PROMASEAL® Pillows are the better solution, primarily due to access problems.

PROMASEAL® Pillows are used in power stations and large industrial complexes where cables are carried en masse through service tunnels. In such areas of industrial activity, diligent observance and enforcement of regulations is understandable because the company as well as its insurer will have substantial financial exposure, not only on the building but also from business interruption that could follow an unconfined fire.

Applications are common in hospitals, care facilities for the aged and universities, especially if they operate laboratories. Services are generally directed along corridors, above ceilings and pass through fire resistant barriers above fire doors. It is difficult to reinstate block work around the services and the use of PROMASEAL® Mortar often proves to be too awkward in these situations.

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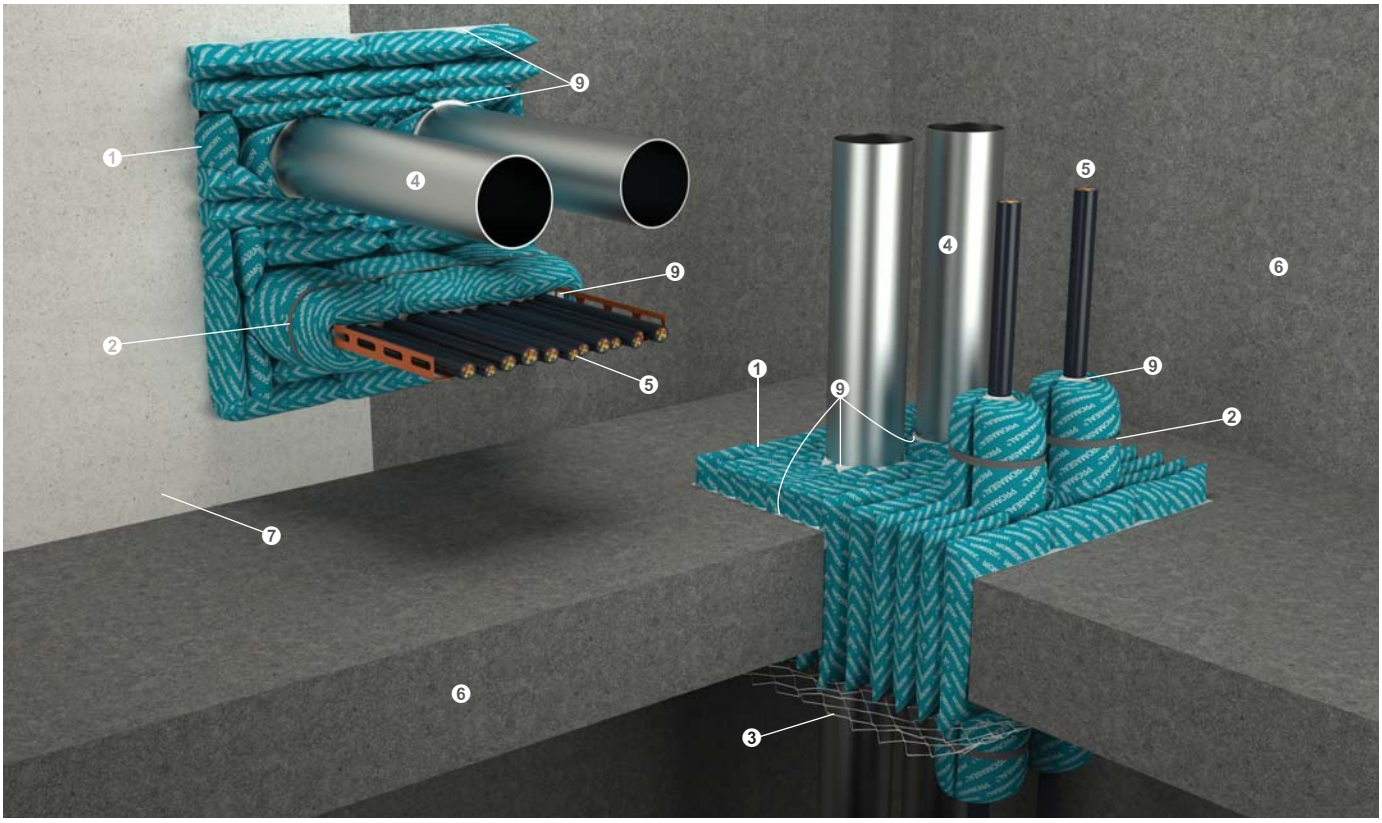

Up to -/180/180 fire resistance in accordance with the requirements of BS 476: Part 20: 1987, BS EN 1366: Part 3: 2009 and/or AS 1530: Part 4: 2014, depending on applications and types of penetrating elements; insulation time is the measured time to insulation failure on surface of the PROMASEAL® Pillows

In some instances, where insulation measured upon the penetrating elements is the required criteria, this time to insulation failure can be substantially shorter, e.g. metal pipes penetrating the floors or walls. If insulation measured upon the penetrating elements is a specified performance criteria, please consult Promat about the use of extra large PROMASEAL® Pillows (nominal 250mm x 600mm x 40mm thick)

1. PROMASEAL® Pillows
2. Metal strap or wire
3. Optional steel wire mesh to support the pillows in a horizontal orientation
4. Non combustible metal pipes
5. Electrical cables with or without supporting cable tray/ steel trunking
6. Fire resistant concrete/masonry floors or walls
7. Fire resistant steel/timber framed lightweight partitions
8. Fire resistant raised access floors
9. All joints and contact points caulked with PROMASEAL®-A Acrylic Sealant to prevent cold smoke ingress and water passage from natural building or thermal movement

Dimensions

Standard size PROMASEAL® Pillows are available:

- Extra large 600mm x 250mm, 10 pillows per box
- Large 300mm x 250mm, 15 pillows per box
- Medium 200mm x 250mm, 20 pillows per box
- Small 100mm x 250mm, 30 pillows per box

Promat provides a wide range of systems for compartmentation, fire resistant air and cable ducts, structural steel protection, fire stopping and partitions. For assistance with any passive fire protection problems, contact the nearest Promat office.

The opening may be reduced in size using PROMASEAL® Mortar or with the same material that has been used for the wall, e.g. bricks or lining boards, but where the final sealing around the services would be too difficult to realise with other products, PROMASEAL® Pillows are an effective solution.

PROMASEAL®-A Acrylic Sealant will be needed to ensure that gaps around and between services, and close to walls are sealed.

For steel or timber framed lightweight partitions, the number of services passing through the opening can mean that the board installer will not be able to reinstate the lining close enough to the services to allow the use of PROMASEAL®-A Acrylic Sealant alone. In this type of construction, PROMASEAL® Pillows are one of the most economical methods of sealing the opening.

PROMASEAL® Pillows are especially useful under computer flooring where masses of electrical cables not only often pass through or beneath compartment walls but are frequently subject to change.

Installation

Penetration seals in concrete/masonry floors

The basic PROMASEAL® Pillows sealing system is up to 180 minute fire resistance performance when applied to unpenetrated situations in floors. Various types of service penetrations have been evaluated within the system and achieve a range of fire resistance levels. Please consult Promat for full information.

Maximum dimension for floor openings is 0.25m² or 500mm x 500mm. If the height is less than 180mm, the width of the opening can be unlimited. For openings greater than these dimensions, either use PROMASEAL® Mortar or fix a structural element across the opening to create apertures of acceptable dimensions.

If this structural member is formed from a steel member, it may also need fire protection. Please consult Promat for more information on the steel fire protection.

PROMASEAL® Pillows must be very tightly packed into openings, starting at one edge and moulded to overhang the perimeter of the floor slab for support. Place the PROMASEAL® Pillows along one full side of the opening and gradually work into the centre of the opening.

All subsequent layers of PROMASEAL® Pillows must be staggered (overlapped), similar in manner to the way bricks or blocks are laid. Ensure the pillows are packed very firmly into position, using a rubber or wooden mallet or similar implement.

Ensure all gaps near the services or edge of the penetration are fully and properly sealed with PROMASEAL®-A Acrylic Sealant.

To prevent removal of the pillows, it is recommended to seal the top side of the installed pillows with 1-2mm of PROMASEAL®-A Acrylic Sealant or fix a wire mesh under the floor opening.

Penetration seals in concrete/masonry walls

The basic PROMASEAL® Pillows sealing system is up to 180 minute fire resistance performance when applied to unpenetrated situations in floors. Various types of service penetrations have been evaluated within the system and achieve a range of fire resistance levels. Please consult Promat for full information.

Maximum dimension for wall openings is up to 1000mm wide x 600mm high. If the height is less than 180mm, the width can be unlimited. For openings greater than these dimensions, either use PROMASEAL® Mortar or fix a structural element across the opening to create apertures of acceptable dimensions.

If this structural member is formed from a steel member, it may also need fire protection. Please consult Promat for more information on the steel fire protection.

PROMASEAL® Pillows must be very tightly packed into openings, starting at the bottom and ensuring the pillows overhang both sides of the wall. All subsequent layers of PROMASEAL® Pillows must be staggered (overlapped), similar in manner to the way bricks or blocks are laid. Ensure the pillows are packed very firmly into position, using a large rubber or wooden mallet or similar implement.

Ensure all gaps near the services or edge of the penetration are fully and properly sealed with PROMASEAL®-A Acrylic Sealant.

In steel or timber framed lightweight walls, the edges of the wall lining around the opening must be restrained by trimming out with additional framing and lining.

To prevent removal of the pillows, it is recommended to seal the top side of the installed pillows with 1-2mm of PROMASEAL®-A Acrylic Sealant or fix a wire mesh over the wall opening.

Use of extra large PROMASEAL® Pillows and mesh guard

Where cable trays or bunches of cables pass through fire resistant barriers, extra large PROMASEAL® Pillows can be used directly in contact with the penetrating services to provide insulation criteria as well as integrity. The pillows need to be held on to the services with metal straps. If the opening is larger, other size pillows can be used to fill in the rest of the opening. For other services such as metal pipes, it is advisable to use PROMASEAL® Wrap or PROMASEAL® SupaWrap.

Alternatively, a mesh guard can be applied to cable trays or bunches of cables. The guard will need to be kept 50mm away from the services at the following lengths: 100mm for cable trays, 100-150mm for steel pipes and 150-500mm for copper pipes.

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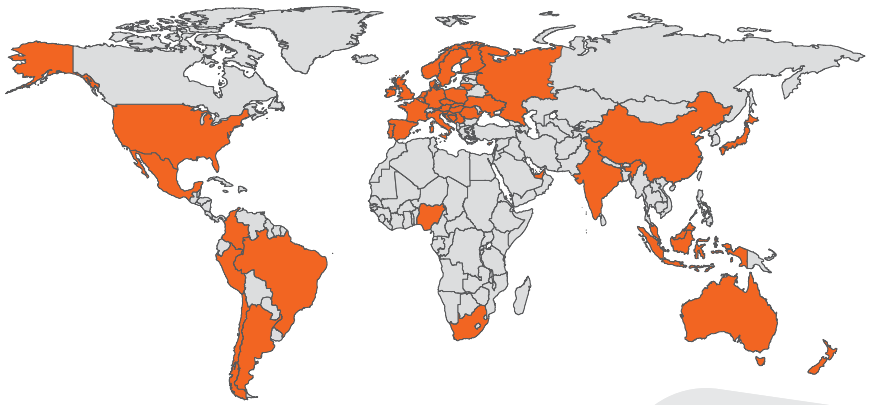
Etex is a Belgian industrial group that specialises and markets high quality building materials and systems. Founded since 1905 and headquartered in Brussels, Belgium, Etex currently operates in 107 factories and 102 subsidiaries across 42 countries, employs more than 15,000 people and is one of the largest fibre cement producers in the world.

Through its subsidiaries, the group offers an extensive range of products: small and large roofing materials, cladding and building boards, passive fire protection systems.

Etex aims to be a professional, solid partner for all kinds of building projects.



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