Promat Australia Contractors' Guide

☐ **FOR BUILDERS**
☐ **FOR ELECTRICIANS**
☐ **FOR HVAC**
☑ **FOR PLUMBERS**

Introduction

This Promat Australia Contractors' Guide for Plumbers is one in a series of four documents produced specifically for use within the Australian construction industry. The purpose of these guides is to assist you, the contractor, to choose the most appropriate product and system to enable you to fulfil fire performance requirements of the BCA regulations. The guides include the products and systems deemed most relevant to a particular trade practice but omitting those items less likely to be of interest. Therefore, other trade or discipline specific guides are available, under the following titles:

- Promat Australia Contractors' Guide for Builders
- Promat Australia Contractors' Guide for Electricians
- Promat Australia Contractors' Guide for HVAC

These guides have been updated to include the most recent product and system developments Promat Australia has to offer. All reference is made to the relevant Australian standards only. Therefore some systems which may be of interest have been excluded if the certification is to codes other than Australian standards.

The Promat organisation has offices, factories and workshops all over the world, forming a global network of specific knowledge centres concerning fire protection and high temperature insulation. This Promat organisation is part of the well known worldwide Belgian organisation, the Etex Group. Specialising in the manufacture of materials used by the building industry, Etex offers a support structure of knowledge, production and research and development.

Fire Safety In The Building Industry

A good building is a safe building, and an important factor is fire safety. Most countries have developed elaborate legislation regarding fire safe construction. Therefore, one of the important tasks for Promat is to disseminate knowledge and understanding of the specific rules in each country and in so doing helping to close the gap between regulations and real life applications. Promat does this by providing a free advice service while assisting interested parties within the building industry to make the right choices to realise true safety. Promat technical staff are engaged in a constant search for solutions to contractors' problems.

Research & Development

Fire resistant constructions are seldom put to a real life test simply because, fortunately, not every building burns down. Similarly, during a blaze, fire resistant constructions allow people to reach safety but few have the inclination to actually stop to measure the performance of a fire resistant construction. So the only way to find out if Promat constructions work is to test them, and this is what Promat is doing continuously. Various products are integrated into realistic systems which are then fully tested and relevant certification obtained through independent laboratories. Good examples are CSIRO in Sydney, WFRA in Melbourne and BRANZ in New Zealand.

Quality

All Promat materials are manufactured in accordance with accredited ISO9000 quality management systems. Comprehensive testing of all Promat products and systems has been carried out by independent and nationally approved laboratories around the world in order to meet the relevant sections of AS1530: Part 4 and many other international test standards. Furthermore, Promat actively works towards implementing the environmental standard ISO14001 and OSHAS 4801 across all their manufacturing operations. Quality and excellence, refined over 50 years of experience gives you, the end user the confidence to specify Promat products and systems to suit any fire protection application.

In conjunction with this guide and various other documents, Promat technical and sales support teams are available to provide information and assistance to help in the design and installation of all Promat fire protection solutions. As this document can only provide basic construction details for most applications likely to be required on a project, it is inevitable there will be situations requiring more detailed information. In this event, please contact our Technical Services Department, one of the Promat team will be pleased to assist you.

Services

As a leading worldwide manufacturer of fire protection products and systems, Promat is well-positioned to provide solutions for most *proactive fire protection* requirements. Our know-how is available to you free of charge at any time.

1. Advice from specialists.

2. Project related fire protection solutions.

3. Detailed technical drawings.

4. Comprehensive user back up when applying for approval.

5. List of installation companies.

6. Innovative fire protection technology, research and development.

7. Technical presentations to Certifiers, Fire Safety Engineers etc.

8. Hands-on training courses.

9. Safety based on over 50 years of experience in the field of fire protection.

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Contents

It has been shown that plastic pipes penetrating compartment walls or floors or other fire barriers represent potential for fire to pass from one compartment to another when the plastic melts and burns away. All building regulations specify that the fire resistance of the separating element of construction between compartments must not be impaired by services that pass through them.

The acceptable methods of maintaining this fire resistance will vary between countries and authorities. However, by far the most common method is to install fire collars around the plastic pipes. All fire collars are designed to prevent the spread of fire where plastic pipes and cables penetrate fire rated elements thus maintaining the Fire Resistance Level (FRL) of the element. They all consist of intumescent compounds which, exposed to fire, expand under pressure to seal off penetrations. The unique and patented opening mechanism of Promat retrofit collars allows installation before or after pipe work is installed. These collars contain no asbestos, fibres or solvents and are unaffected by water and atmospheric conditions.

It is of particular importance to note that for plastic pipe penetrations, care must be exercised when accepting test reports or assessments. Research has shown that different types of plastics behave in different ways under fire conditions. Test data should reflect the following:

1. The Type of Plastic

Building materials made of different type of plastics, such as high density polyethylene (HDPE), polyvinyl chloride (PVC), unplasticised polyvinyl chloride (uPVC), polyethylene (PE), polypropylene (PP), acrylonitrile butadiene styrene (ABS) etc, are commonly used in modern buildings. These plastics soften, melt or burn at different rates and temperatures. Fire stopping products particularly collars have to be shown capable of coping with all variables, including the full range of diameters, in all different plastic thicknesses, in both horizontal and vertical orientations.

2. The Diameter of Pipe

The bigger the pipe the more difficult it is to seal, mainly due to the rate of the intumescent reaction for the fire stopping material to seal the openings.

3. The Orientation of Pipe (Wall or Floor)

Pipes tested in a floor will not necessarily behave in the same manner when tested in a wall and the reverse equally applies.

4. The Wall Thickness of Pipe

Thin wall pipes collapse fast and fire collars have to react swiftly to close the opening. Thick walled pipes collapse slowly and fire collars have to retain sufficient expanded intumescent product to seal openings over a longer period of time.

5. The End Conditions During The Test

Pipes that have been fire tested with both the end inside and the end outside of the test furnace and capped (sealed) must only be protected with these fire collars when the end conditions on site are similar.

It is generally accepted that if a pipe is tested with the end inside the furnace capped, and the end outside the furnace uncapped, that this test would cover storm waste, sewage and water supply. If pipes are tested with both ends capped, this would represent a less onerous position, e.g. pipes that have taps or valves or water traps in line.

The Promat range of fire collars are purpose made of plastic (cast-in) painted steel shells (retrofit) with integral mounting points, containing a specially formulated intumescent material. They prevent the passage of fire through gaps in compartment walls and floors caused by the collapse and/or melting of combustible services in the event of fire. It is essential that the correct fire collars are specified and that they are installed in accordance with Promat instructions.

As a general rule there are THREE (3) types of collars:

Surface Mounted (Retrofit) Type

Surface mounted collars (also known as retrofit collars) are fixed around the plastic pipe, onto the surface of a building element. For floor slabs this is on the underside of the slab. For walls, they are generally placed on both sides to protect against fire exposure from either direction.

If it can be shown that the fire can only come from one side, then the fire collar may be placed on the fire risk side of the wall provided that test data is available to prove the application achieves the required fire rating. PROMASTOP® UniCollar® (with the code of UC) and PROMASEAL® fire collars (with the code of CFC, FC or FCS) can all be used as retrofit collars.

For surface mounted (retrofit) type collars, please refer to pages 3 to 7 for installation details.

Insert Type

Insert collars are placed around the pipes, within the thickness of the wall or floor. Generally, only one collar is required to protect from either direction for walls.

PROMASEAL® Wall Collars (with code FCW) can be used as insert-wall collars. These collars sit within the cavity of lightweight partitions, ideal for use where space is at a premium. This is particularly useful for work in shafts or any area where access for installation is restricted to one side.

PROMASTOP® UniCollar® may also be used on some types of pipe for these applications.

For insert type collar, please refer to page 8 for installation details.

Cast-in Type

Cast-in collars are used only in floor slabs and are placed into position, on the formwork, before a slab is poured. This method means accurate setting out of all plumbing work is vital.

PROMASEAL® fire collars (with the code of Hi-Blu, Green or PSS), can be used as cast-in collars. For use with floor waste, there are two special collars, PROMASEAL® cast-in type collar (FWS) and retrofit type collar (FWR).

For cast-in type collars, please refer to pages 9 to 13 for installation details.

Recommended Specification

Where appropriate, the specified plastics penetrations through floor/wall openings should be properly fire stopped using a PROMASTOP®/PROMASEAL® collar capable of providing fire resistance of -/240/-, -/240/240, -/180/180 or -/120/120 or as specified in the appropriate regulations or by the relevant regulatory body, when tested and assessed in accordance with AS1530: Part 4. BCA 2008 no longer allows the waiving of insulation criteria for plastic pipe penetrations as a Deemed to Satisfy solution. Such waiving is now treated as an alternate solution. Installation of any fire stopping product should be carried out according to the manufacturer's recommendations. Please consult Promat for further details.

IMPORTANT: Because of the diversity of applications and Promat's on-going test programme, the above information and the following notes in this section are of a general nature only and it is essential to confirm that the fire collar specified or being installed is approved for use on the size and type of plastic pipe, the orientation and type of service. Always contact Promat to confirm the specification is correct.

PROMASTOP® UC UniCollar®

PROMASTOP® UC Unicollar® is one of a new generation of fire collars designed to protect uPVC, HDPE, PP and other plastic pipes which pass through fire resistant elements of construction. The product has been tested and approved to the relevant criteria of most international standards which include AS1530: Part 4, BS476: Part 20 and has UL Certification for FRL up to 240 minutes. Tests in accordance with EN standards are available upon request.

PROMASTOP® Unicollar® is packed in a box which contains a 2250mm length of collar (150 segments). The box has the installation details printed on one face. Fixing accessories are included. The collar is designed so that it can be cut and snapped in segments of 15mm. For instance, one box is the equivalent of 5 times x 110mm (pipe outer diameter, OD) collars. For a guide to the approximate number of collar sizes per strip, please refer to the chart on page 4. Note that at the time of publication, test data is available for pipe sizes up to 200mm. Please consult Promat Technical Department for more details.

Installation Guide

Removing the casing and accessories from the box

The box contains the fixings and accessories required to install the collar. Open the box at the position clearly marked with an arrow (⇨). Remove the box of accessories. The end of the collar can now be pulled and the strip will uncoil. Ensure the soft Grafitex faces up. The collar strip has snapping perforations at 15mm centres.

NOTE: Only pull out sufficient strip for the collar length required, e.g. approximately 600mm of strip is ample for a 110mm diameter collar.

Cutting and snapping the strip

Identify the outside diameter of the plastic pipe. On the cover of the box is a table which gives the number of segments for each size pipe and the length of strip required. Either count the number of (15mm) segments required or measure the strip. Cut through the Grafitex at the appropriate position, e.g. for a 110mm OD pipe, cut at the segment marked 29.

Hold the strip with a finger and thumb on each side of the cut and as close to the cut as possible, fold in a downward direction as far as possible. Repeat this folding until the steel snaps.

Fixing the collar

The ends of the Grafitex, once cut, will be square. For case of installation, cut these square ends to a slight angle. Shape the strip to the approximate diameter of the pipe. If the pipe is small (e.g. under 75mm) pay extra attention to the ends of the strip to ensure they have been shaped correctly. Push one of the prongs of a bracket through the notch at one end of the strip. Fold the strip around the pipe and push the second prong through the notch on the other end of the strip. (The bracket can be gently hammered in to position if pushing is difficult). Attach the bracket to the wall or floor as described below and as shown on the box drawings. Fix the other bracket(s) as required (see the table on page 4).

If it is difficult to position the first bracket due to an obstruction, turn the collar and locate the bracket where it is convenient to secure the collar. Ensure the correct number of brackets are used and ensure the two ends of the strip are always joined using a connecting bracket.

Floors

The unique, patented PROMASTOP® UniCollar® has been tested for up to 240 minutes in a range of pipe sizes up to 200mm diameter, bolted to the soffit of a floor slab using the 20mm x 5mm steel anchors provided, through the holes in the brackets provided. The fire resistance achieved depends upon the size and type of pipe. **If uncertain of performance requirements and use of a particular product, please consult Promat.** Always use the recommended number of fixing brackets for the size of collar being used (see the table on page 4). The concrete must be in a condition that will ensure the anchors hold securely. Larger steel fixings may be used if deemed appropriate. Back fill any gap between the pipe and concrete greater than 8mm wide with PROMASEAL® Mortar or a commercial grade mortar mix. PROMASEAL® AN Acrylic Sealant may be applied around the pipe on the topside of the floor slab if a water seal is required. If there is a possibility of pipe movement occurring that will cause cracks in the seal between the pipe and mortar mix (if used), it is advisable to seal the pipe with PROMASEAL® AN Acrylic Sealant to prevent the passage of cold smoke. This however is not required for the fire resistance to be achieved. If the gap between the pipe and slab is less than 8mm, apply a bead of PROMASEAL® AN Acrylic Sealant approximately 8mm deep into the gap at the soffit.

Walls

The unique, patented PROMASTOP® UniCollar® has been tested for up to 240 minutes in a range of pipe sizes up to 200mm diameter, fixed to a wall. The fire resistance achieved depends upon the size and type of pipe. **If uncertain of performance requirements and use of a particular product, please consult Promat.** Always use the recommended number of fixing brackets for the size of collar being used (see the table on page 4). For framed walls, use the 40mm x No.10 laminating screws provided. For masonry walls, use the 20mm x 5mm steel anchors provided. The wall or floor must be in a condition that will ensure the anchors hold securely. Larger steel fixings may be used if deemed appropriate. Ensure the annular gap between the wall and pipe is minimal and seal this gap with a bead of PROMASEAL® AN Acrylic Sealant. Attach a collar to both faces of the wall. Fire tests were conducted with two brackets on pipes 69mm and under. For framed walls, three brackets are recommended if framing studs are not available for fixing into.

Using off cut strips

Off cuts from the strip may be used so long as they are attached to the main collar with additional brackets. Restrictions apply to the length of off cuts that can be used. Please consult with Promat Technical Department for more details before use.

PROMASEAL® CFC Conduit Collar

PROMASEAL® CFC Conduit Collar is designed for retrofitting around small (<32mm) plastic conduit pipes that pass through fire walls or floor slabs. It comes in one size (32mm) and can be used on smaller diameter conduits without modification.

Installation Guide

Suitable for conduits up to 32mm, the collars are either attached to both sides of the wall or to the underside of a floor slab. Any gaps between the pipe and the wall or floor should be sealed with PROMASEAL® AN Acrylic Sealant.
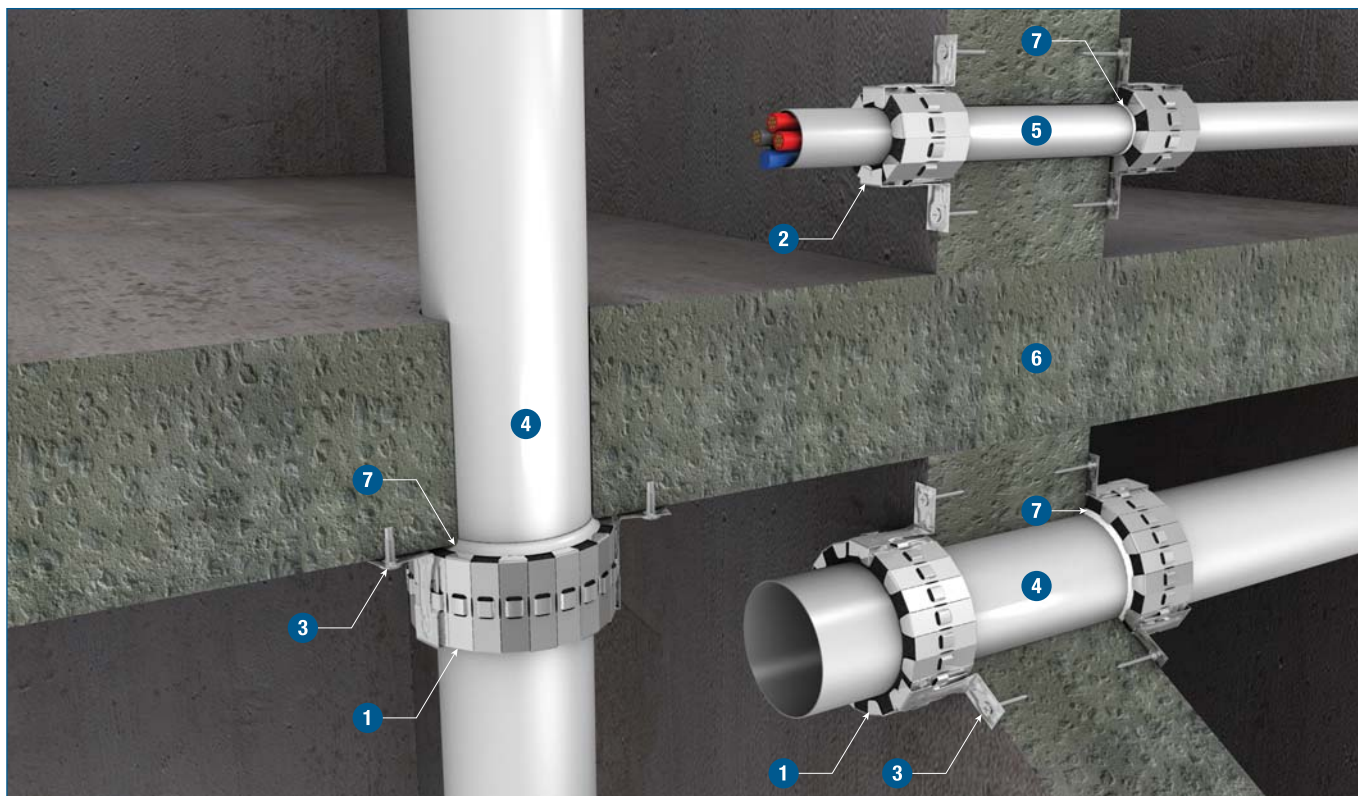
TECHNICAL DATA

For FRL up to -/240/240, insulation criteria will vary depending on type and sizes of the pipes, and the type of penetrating elements.

1 PROMASTOP® UC UniCollar®

2 PROMASEAL® CFC Conduit Collar

3 Bracket fixed by attachment with suitable anchor, i.e. steel expanding fasteners, or laminating screws when fixing to drywall construction.

4 Plastic piping, e.g. HDPE, uPVC etc.

5 Conduit pipe with or without cables

6 Masonry or concrete floor slab/wall or drywall construction

7 PROMASEAL® AN Acrylic Sealant to act as a seal against the passage of cold smoke (not required for fire performance if the movement of cold smoke is not being considered)

## Dimensions Guide

PROMASTOP® UC UniCollar®

Pipe size (mm) nominal (OD) (inches)	43 1.24	50 1.5	56 –	63 2	69 –	75 2.5	83 –	90 3
Casing segments	15	17	18	19	20	21	22	24
Approx. collars per box	10	8.5	8	7.5	7.5	7	6.5	6
Brackets per collar	2*	2*	2*	2*	2*	3	3	3

Pipe size (mm) nominal (OD) (inches)	110 –	114 4	125 –	140 5	160 6	200 –
Casing segments	25	29	30	33	36	40
Approx. collars per box	6	5	5	4.5	4	3.75
Brackets per collar	3	3	3	5	5	5

All figures in the above table are tested on both floor and wall applications.
*3 brackets are recommended for framed walls if framing is not available to screw into.

PROMASEAL® CFC Conduit Collar

See illustrations at right.
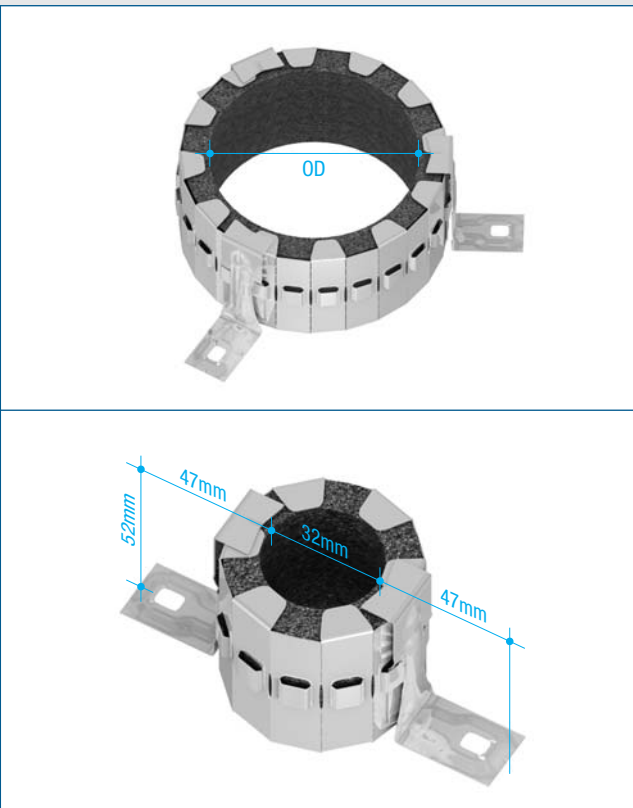
Dimensions of PROMASTOP® UC UniCollar® and PROMASEAL® CFC Conduit Collar

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Promat

PROMASEAL® Retrofit Collars
(Square/Circular Base)

FC/FCS

91.24.1/
92.24.1

PROMASEAL® FC Retrofit Collar (square base)

PROMASEAL® FC Retrofit Collars are multi-purpose collars designed for use with concrete slabs, masonry and lightweight walls and lined ceilings.

These split type collars can be retrofited where necessary. They are available in a range of sizes to suit plastic pipes up to 315mm *outside diameter**. The collars have been tested for up to 240 minutes FRL in accordance with the criteria of AS1530: Part 4 and AS4072: Part 1 with various types and sizes of plastic pipe.

PROMASEAL® FC Retrofit Collars above 200mm have a circular base, not square as are smaller diameters.

*It should be noted that the FRL for some of the larger collars is restricted in some types of application, therefore before using any collar with a diameter in excess of 110mm, please consult Promat to ensure the proposed application and requisite FRL can be achieved.

PROMASEAL® FCS Retrofit Collar (circular base)

PROMASEAL® FCS Retrofit Collars are designed to be fitted around installed pipes that pass through floor slabs and have been tested with uPVC, HDPE and ABS pipes in accordance with the criteria of AS1530: Part 4 and AS4072: Part 1, on pipes up to 150mm diameter.

The larger opening within the collars will accommodate pipes (and UPVC pipe fittings) that have differing outside diameters.

The collars should be unclipped, placed around the pipe, re-clipped and pushed tight to the substrate.

PROMASEAL® FCS Retrofit Collars have been tested for FRL of up to 240 minutes in floors with uPVC pipes and ABS pipes, and 180 minutes in floors with HDPE pipe (except 100mm which is tested to 240 minutes), and on floors and walls for Post Mix drink lines for 120 minutes.

Both PROMASEAL® FC and FCS Retrofit Collars are split to enable them to be retrofitted or relocated when necessary.

Installation Guide

PROMASEAL® FC/FCS Retrofit Collar
For pipes up to 315mm/162mm diameter with mortar

PROMASEAL® FC and FCS Retrofit Collars are to be fixed to the under side of the floor slabs. Ensure all fixing points are used. Maximum diameters of pipes for FC type is up to 315mm and FCS type up to 162mm.

For FRL of up to 240 minutes with pipes up to 225mm outside diameter, the collars are bolted to the soffit of a floor slab using 38mm steel expanding anchors or steel wedge anchors. Fixings for collars up to 162mm diameter may be 25mm steel sleeve anchors. Pipes with 315mm outside diameter can achieve up to 120 minutes fire resistance in this application.

FC type collars greater than 250mm are for un-vented pipes.

PROMASEAL® AN Acrylic Sealant may be applied around the pipe on the top side if a water seal is required. If there is a possibility of pipe movement occurring that will cause cracks or fissures in the seal between the pipe and mortar mix, it is advisable to seal around the pipe with PROMASEAL® AN Acrylic Sealant to prevent cold smoke leakage. This, however is not required for the fire resistance to be achieved.

If there is a gap greater than 12mm between the pipe and cored hole, backfill with PROMASEAL® Mortar. For gaps less than 12mm, seal with PROMASEAL® AN Acrylic Sealant. See illustration on for example.

PROMASEAL® FC Retrofit Collar
For uPVC pipes up to 110mm diameter

For FRL of up to 120 minutes in masonry or lightweight walls for uPVC pipes up to 110mm* diameter.

For FRL of up to 120 minutes on calcium silicate, masonry and plasterboard walls for pipes up to 110mm outside diameter. Minimum wall thickness is 116mm. The collars must be on both faces for lightweight timber or steel framed walls.

Fix the collar to a masonry wall using 50mm Tapcon "Hi Lo", course thread screws suitable for masonry fixing or use steel masonry anchors. Fix the collars with No.10 x 40mm laminating screws to lightweight timber or steel framed walls.

*For specific installation for collars over 110mm diameter and single-sided application, please contact Promat.

See illustration on for example.

PROMASEAL® FC Retrofit Collar
For pipes up to 162mm diameter

FC PROMASEAL® Retrofit Collars can be cast into floor slabs for uPVC pipes up to 162mm diameter for FRL of up to 120 minutes. The collar should be installed to the soffit side of the floor. See PROMASEAL® Hi-Blu Collar and PROMASEAL® Green Cast-in Collar for general cast in applications. See PROMASEAL® FWS and FWR Collars for floor waste applications.

Nail the collar to the formwork. Cut a length of the pipe and push it firmly into the collar until it touches the formwork. Ensure the pipe is cut square so that the pipe sits on the formwork level.

It should be noted that this collar type is not designed to take a pipe fitting. For such an application use a Hi-Blu or Green collar.

See illustration on for example.

PROMASEAL® FC Retrofit Collar
For pipes up to 162mm diameter with mortar

FC PROMASEAL® Retrofit Collars can also be installed into a cored hole with PROMASEAL® Mortar used to back fill for a flush fit. This application is for uPVC pipes up to 162mm diameter.

For FRL up to 120 minutes with pipes up to 162mm outside diameter, bolted to the soffit of a floor slab using 25mm steel expanding anchors. Ensure all fixing points are used. Back fill the hole in the slab with PROMASEAL® Mortar or commercial grade mortar mix.

See illustration on for example.

PROMASEAL® FC Retrofit Collar
For pipes up to 162mm diameter with acrylic sealant on ceiling

FC PROMASEAL® Retroft Collars can be installed to uPVC and HDPE pipes in 60 or 120 minutes fire resistant ceilings. Use PROMASEAL® AN Acrylic Sealant to seal edges, provide additional framing to support the collar. This application is for pipes up to 162mm diameter.

60 and 120 minutes applications with pipes up to 162mm outside diameter, screw fixed to the framing grid to the underside of a ceiling system that provides a similar fire rating. The gap between the pipe and the opening through the ceiling liner board must be no more than 15mm and should be filled with PROMASEAL® AN Acrylic Sealant to the full depth of the lining board. Specific details are available for various ceiling systems on request.

See illustration on for example.

IMPORTANT: Always check with the Promat Technical Department to ensure the collar type under consideration is appropriate for the type, diameter, and thickness of the plastic pipe and the application and orientation are covered by relevant certification.
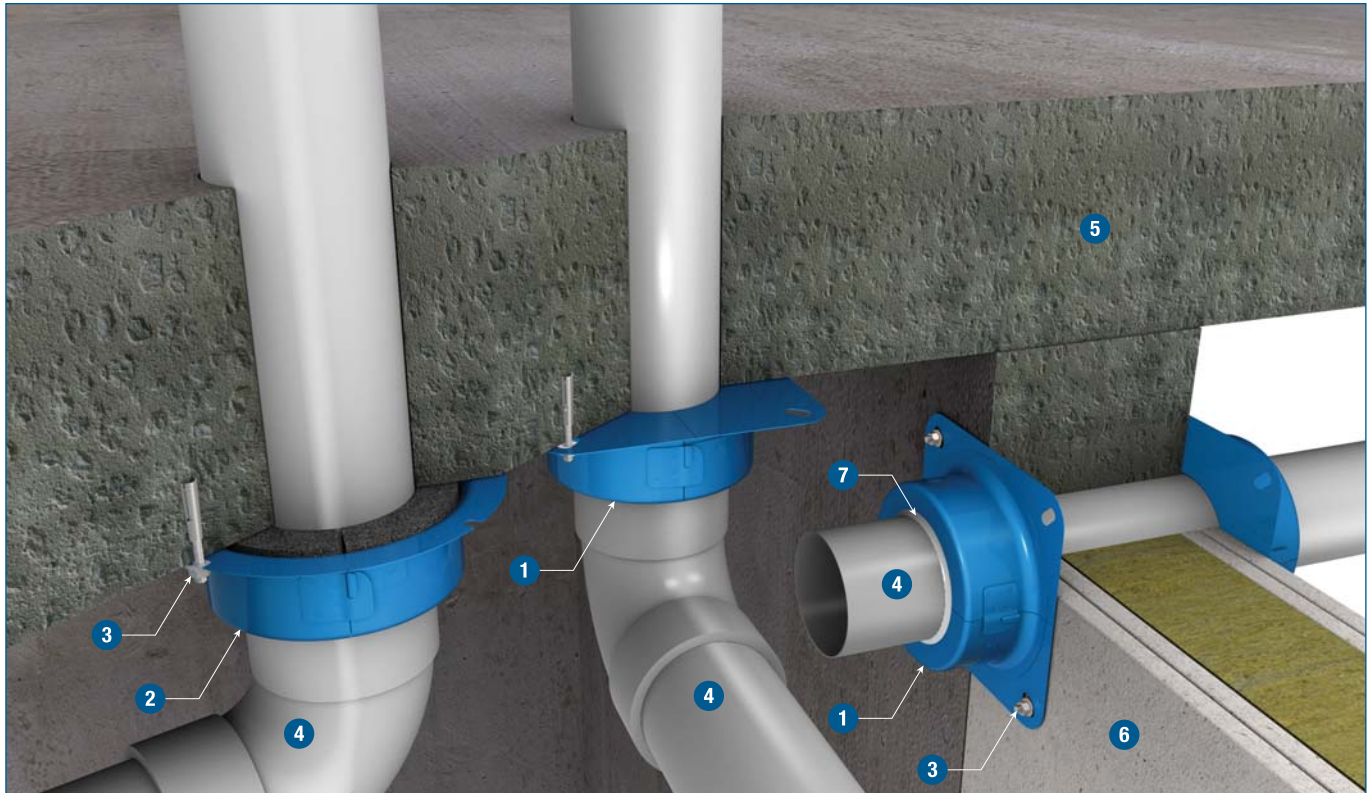
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PROMASEAL® Retrofit Collars
(Square/Circular Base)

FC/FCS

91.24.1/
92.24.1

TECHNICAL DATA

For FRL up to -/240/240, insulation criteria will vary depending on type and sizes of the pipes, and the type of penetrating elements.

1 PROMASEAL® FC Retrofit Collar (square base)

2 PROMASEAL® FCS Retrofit Collar (circular base)

3 Fixing with suitable anchor, i.e. steel expanding fasteners or laminating screws.

4 Plastic piping, e.g. HDPE, uPVC etc.

5 Masonry or concrete floor slab/wall

6 Existing fire resistant wall, constructed from masonry or concrete, timber or steel framed lightweight partition.

7 PROMASEAL® AN Acrylic Sealant to act as a seal against the passage of cold smoke (not required for fire performance if the movement of cold smoke is not being considered)

NOTE: FCS collars allow for fittings and couplings to go within the collar depth, thus allowing pipes to fit closer to the substrate.

Dimensions Guide

PROMASEAL® FC Retrofit Collar (square base)

Code no.	Pipe nom. (mm)	Body (mm)			Flange (mm)
		H	D1	D2	D3
FC 40	40	43	45	77	112
FC 50	50	43	58	90	125
FC 65	65	43	71	103	138
FC 80	80	43	85	123	158
FC 100	100	53	112	150	185
FC 125	125	63	127	165	197
FC 150	150	73	162	200	235
FC 200*	200	100	204	264	330 Ø
FC 225*	225	100	228	290	364 Ø
FC 250*	250	120	254	316	380 Ø
FC 300*	300	160	318	402	466 Ø

*FC with circular base

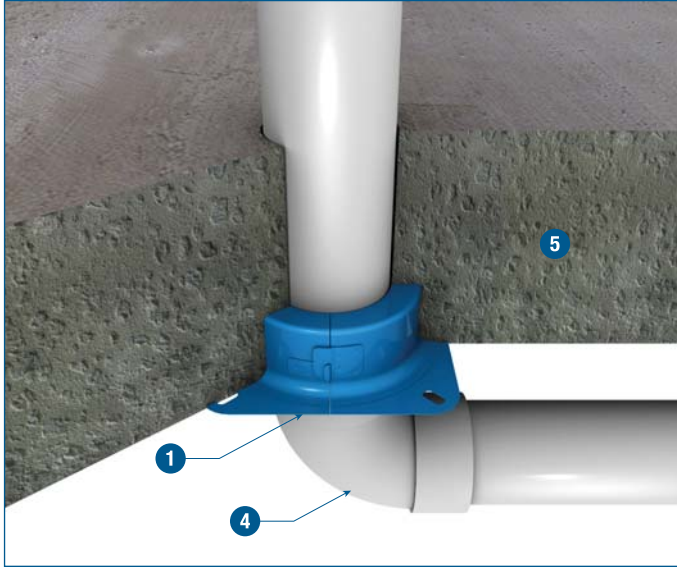**PROMASEAL® FCS Retrofit Collar** (circular base) – For floors only

Code no.	uPVC pipe nom. (mm)	HDPE pipe nom. (mm)	ABS pipe nom. (mm)	Body (mm)			Flange (mm)
				H	D1	D2	D3
FCS 40	40	50	40	43	56	84	131
FCS 50	50	56	50	43	70	98	145
FCS 65	65	75	–	43	84	113	161
FCS 80	80	90	80	43	98	138	186
FCS 100	100	100	100	53	127	167	214
FCS 150	150	150	–	70	172	212	259
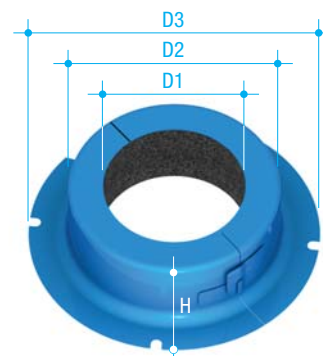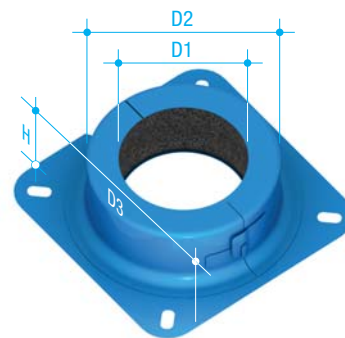
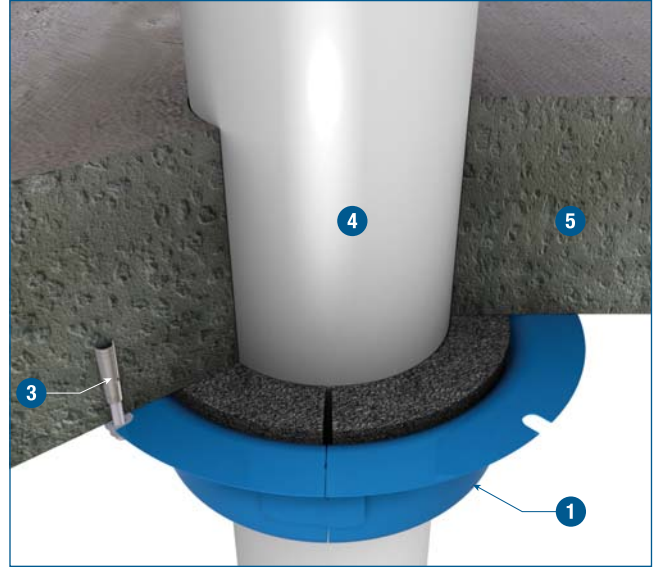Dimensions of PROMASEAL® Retrofit Collar, FC (square) and FCS (circular) types.

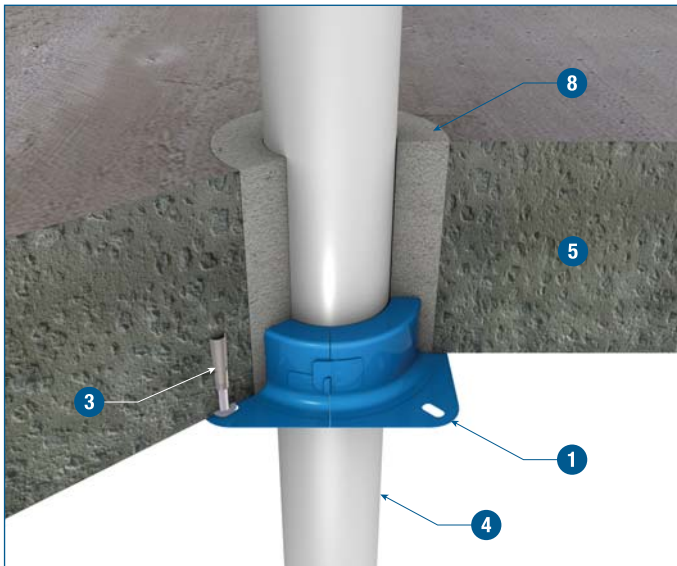## PROMASEAL® FC Retrofit Collar
For pipes up to 162mm diameter

PROMASEAL® FC Retrofit Collar (>200mm diameter with circular base)
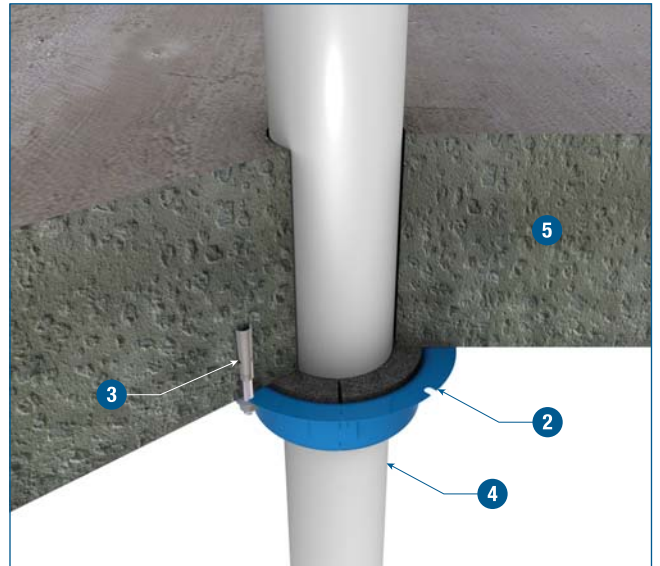**For pipes up to 315mm diameter**

PROMASEAL® FC Retrofit Collar
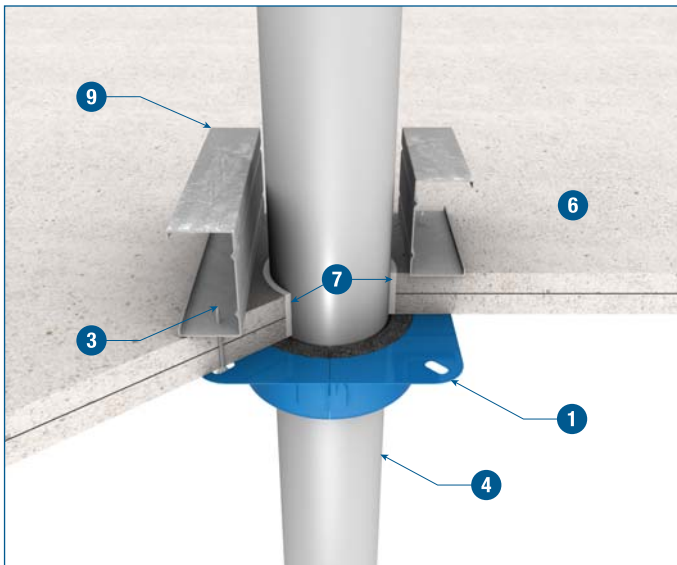**For pipes up to 162mm diameter with mortar backfill**

PROMASEAL® FCS Retrofit Collar
For pipes up to 162mm diameter

## PROMASEAL® FC Retrofit Collar
For pipes up to 162mm diameter with acrylic sealant on ceiling

TECHNICAL DATA

For FRL up to -/240/240, insulation criteria will vary depending on type and sizes of the pipes, and the type of penetrating elements.

1. PROMASEAL® FC Retrofit Collar (square base)
2. PROMASEAL® FCS Retrofit Collar (circular base)
3. Fixing with suitable anchor, i.e. steel expanding fasteners or laminating screws.
4. Plastic piping, e.g. HDPE, uPVC etc.
5. Masonry or concrete floor slab
6. Existing fire resistant ceiling, constructed from lightweight boards
7. PROMASEAL® AN Acrylic Sealant to act as a seal against the passage of cold smoke (not required for fire performance if the movement of cold smoke is not being considered)
8. PROMASEAL® Mortar
9. Steel backing channels at fixing position
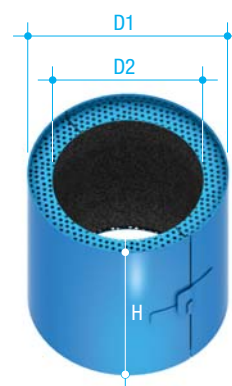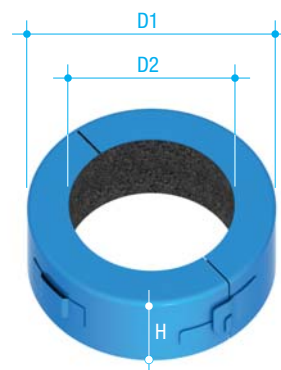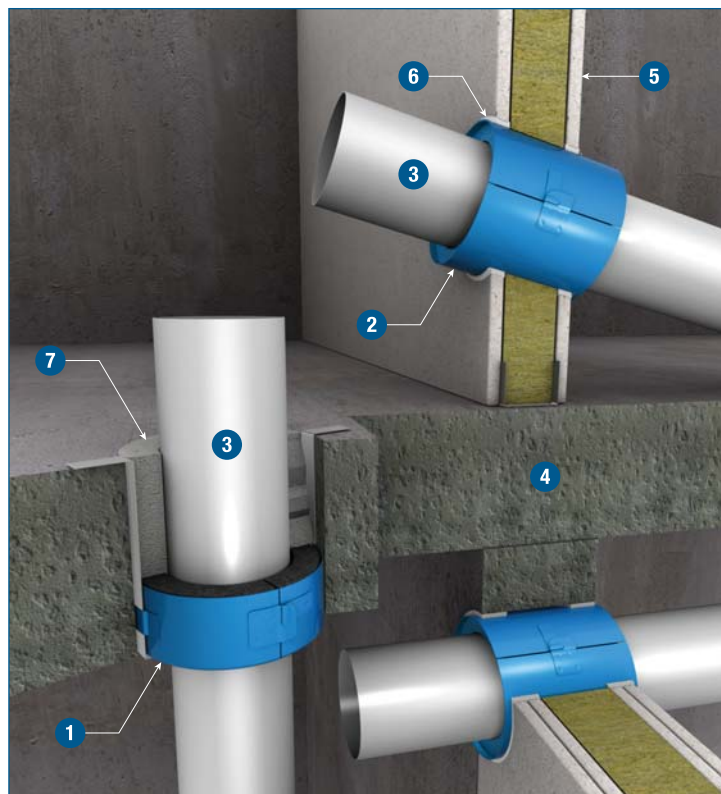
Dimensions of PROMASEAL® FCW Wall Collar and PROMASEAL® FCD Drop-in Collar

TECHNICAL DATA

1 For FRL up to -/240/240 PROMASEAL® FCD Drop-in Collar

2 For FRL up to -/120/120 PROMASEAL® FCW Wall Collar

Insulation criteria will vary depending on type and sizes of the pipes, and the type of penetrating elements.

3 Plastic piping, e.g. HDPE, uPVC etc.

4 Fire resistant masonry or concrete wall

5 Fire resistant wall timber or steel framed lightweight partition

6 PROMASEAL® AN Acrylic Sealant

7 PROMASEAL® Mortar

PROMASEAL® FCD Drop-in Collar is designed for insertion into cored holes from either top or underside of floor slab, and using metal straps to locate flush with the soffit. It has been tested and achieved a fire rating of up to 240 minutes in accordance with AS1530: Part 4.

PROMASEAL® FCW Wall Collar is designed for insertion into wall elements made of calcium silicate, plasterboard, concrete or masonry, and has been tested on uPVC and HDPE pipes for up to 120 minutes fire rating in accordance with AS1530: Part 4 and AS4072: Part 1. Similar to FC or FCS, this is a split type collar enabling retro fitting where necessary.

Dimensions Guide

PROMASEAL® FCD Drop-in Collar

Code no.	Pipe nom. (mm)	Body (mm)		
		H	D1	D2
FCD 40	40	43	80*	45
FCD 50	50	43	93*	58
FCD 65	65	43	106*	71
FCD 80	80	43	126*	85
FCD 100	100	53	153*	112
FCD 150	150	73	203*	162

*Additional allowance of 7mm for clip

PROMASEAL® FCW Wall Collar

Code no.	Pipe nom. (mm)	Body (mm)		
		H	D1	D2
FCW 40	40	120	80*	47
FCW 50	50	120	93*	60
FCW 65	65	120	107*	75
FCW 80	80	120	126*	89
FCW 100	100	120	153*	116
FCW 150	150	120	203*	164

*Additional allowance of 3mm for clip

Installation Guide

PROMASEAL® FCD Drop-in Collar

Attach the steel straps to the clips on either side of the PROMASEAL® Drop-in Collar body, lower the collar with straps attached into the cored hole until the bottom of the collar is level with the soffit of the slab. Bend over the two support straps and if the collar does not stay in place in the cored hole, fix them into the top of the floor slab. Ensure the "closed" end of the collar faces down. Back fill the hole to the top of the slab with PROMASEAL® Mortar or commercial grade mortar mix.

PROMASEAL® FCW Wall Collar

PROMASEAL® Wall Collars have been tested on uPVC and HDPE pipes up to 162mm diameter in walls and will achieve a 120 minutes fire resistance, when installed in plasterboard, calcium silicate, concrete or masonry walls. It should be noted that the substrate into which any penetration seal is installed, must have a FRL at least equal to that requirement of the sealing system.

Fill any gaps between the collar shell and wall with PROMASEAL® AN Acrylic Sealant to a depth of 32mm. The gaps should be no more than 20mm wide.

Maximum wall thickness should be 128mm. If the wall thickness is greater than this, two wall collars may be used ensuring the outside face of the collar is set in no more than 14mm in from the faces of the wall. It is permissible for the collar body to extend beyond the face of the wall.

Minimum wall thickness for a single collar is 48mm for pipes up to 110mm diameter, and 57mm for pipes up to 162mm diameter.

Locate the wall collar centrally in the wall and ensure any gaps (less than 20mm) between the wall and collar shell are fully sealed with PROMASEAL® AN Acrylic Sealant. If the gap is in excess of 20mm, reduce the size of the gap using the same material from which the wall is built or with PROMASEAL® Mortar.

Do not obstruct the perforated mesh at the ends of the collar when sealing any gaps.

PROMASEAL® Wall Collars can be positioned at an angle providing the exposure is the same as in the original test. Please contact Promat for details.
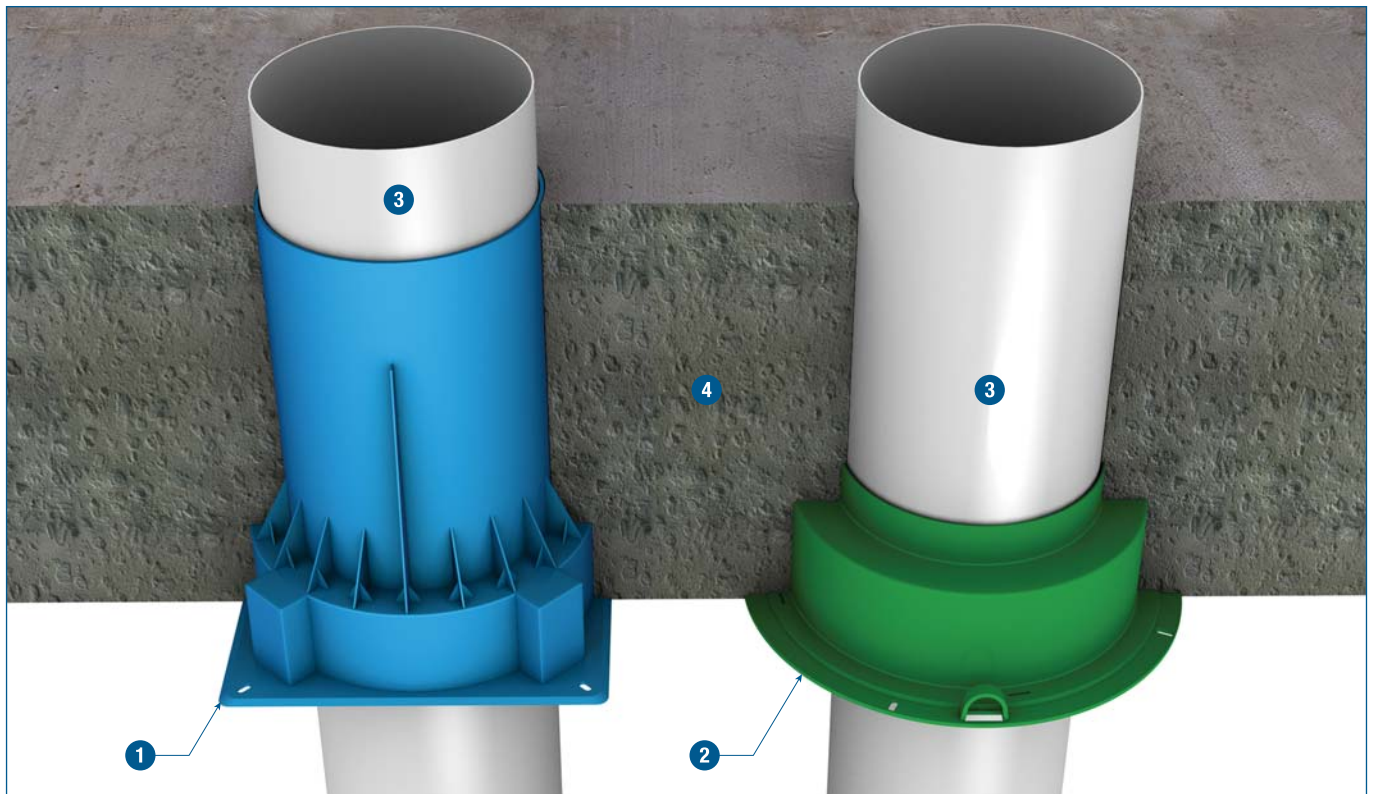
TECHNICAL DATA

1 For FRL up to -/240/180 (uPVC) and -/240/120 (HDPE), insulation criteria will vary depending on type and sizes of the pipes, and the type of penetrating elements.
PROMASEAL® Hi-Blu Collar

2 For FRL up to -/240/240
PROMASEAL® Green Cast-in Collar

3 Plastic piping, e.g. HDPE, uPVC etc.

4 Masonry or concrete floor slab

PROMASEAL® Hi-Blu Collar

PROMASEAL® Hi-Blu Collar is designed to be fixed to formwork prior to pouring of concrete floor slabs. It has been tested with various uPVC and HDPE pipes achieving a fire resistance up to 240 minutes in accordance with AS1530: Part 4 and AS4072: Part 1. Hi-Blu comes in THREE sizes: 1) Small, for pipes up to a nominal 65mm; 2) Medium, for pipes up to a nominal 100mm; and 3) Large, for pipes of a nominal 150mm.

Please check with Promat before installing the collar to ensure the size and type of pipe being installed can be used with the particular size and type of collar.

PROMASEAL® Green Cast-in Collar

PROMASEAL® Green Cast-in Collar is designed to be fixed to formwork prior to pouring of concrete floor slabs. The collar accommodates the uPVC pipe fitting inside the soffit of the slab, enabling significant space savings to be achieved.

PROMASEAL® Green Cast-in Collar will close both pipe and pipe fitting in the event of fire. The collar has been tested for up to 240 minutes in accordance with AS1530: Part 4 and AS4072 with uPVC and some HDPE pipes. The collar provides integrity only criteria when tested to AS1530: Part 4 and AS4072: Part 1 for uPVC floor waste traps of 50mm and 80mm diameters. BCA 2008 no longer allows the waiving of insulation criteria for plastic pipe penetrations as a Deemed to Satisfy solution. Such waiving is now treated as an alternate solution.

For slabs that use lost formwork or are less than 120mm thick, please contact Promat Technical Department.

Promat

**PROMASEAL® Hi-Blu Collar/
PROMASEAL® Green Cast-in Collar**

**Hi-Blu/
Green**

91.24.1

Dimensions Guide

PROMASEAL® Hi-Blu Collar

Code no.	Body (mm)						Flange (mm)
	H	H1	H2	D1	D2	D3	D4
Hi-Blu 65	250	45	205	95	132	97	154
Hi-Blu 100	250	57	193	140	178	142	198
Hi-Blu 150	250	57	193	194	232	197	253

PROMASEAL® Green Cast-in Collar

Code no.	uPVC pipe nom. (mm)	Body (mm)			Flange (mm)
		H	D1	D2	D3
Green 40	40	49 + 30*	43	115	160
Green 50	50	49 + 30*	56	115	160
Green 65	65	49 + 20*	69	115	160
Green 80	80	60 + 20*	83	163	210
Green 100	100	60 + 20*	110	163	210

*Additional height of upright pipe grip

Installation Guide

PROMASEAL® Hi-Blu Collar

PROMASEAL® Hi-Blu Collars accommodate the pipe fitting inside the soffit of the slab enabling height space savings to be achieved.

Place the collar on the formwork. Secure the collar into position with 20mm x 3mm flat head clouts, nailed through the notches provided. DO NOT SKEW THE NAILS. After the formwork has been stripped and the pipe is ready to be placed into position, knock out the cap from the top of the collar and insert the pipe section through the collar.
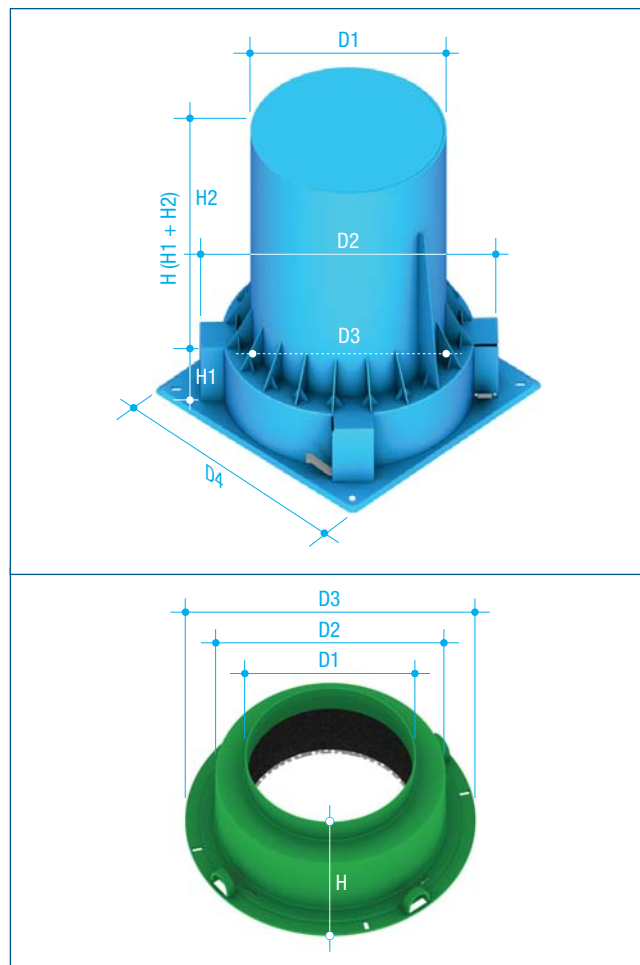
It should be noted that if the pipe is pushed in from the top, the rubber seal will be forced downwards. Lift the pipe slightly to ensure that the rubber seal projects upwards. Any gap between the pipe and the collar must be back filled with concrete or commercial grade mortar mix.

PROMASEAL® Green Cast-in Collar

Nail or screw the collar to the formwork through the slots in the flange of the collar.
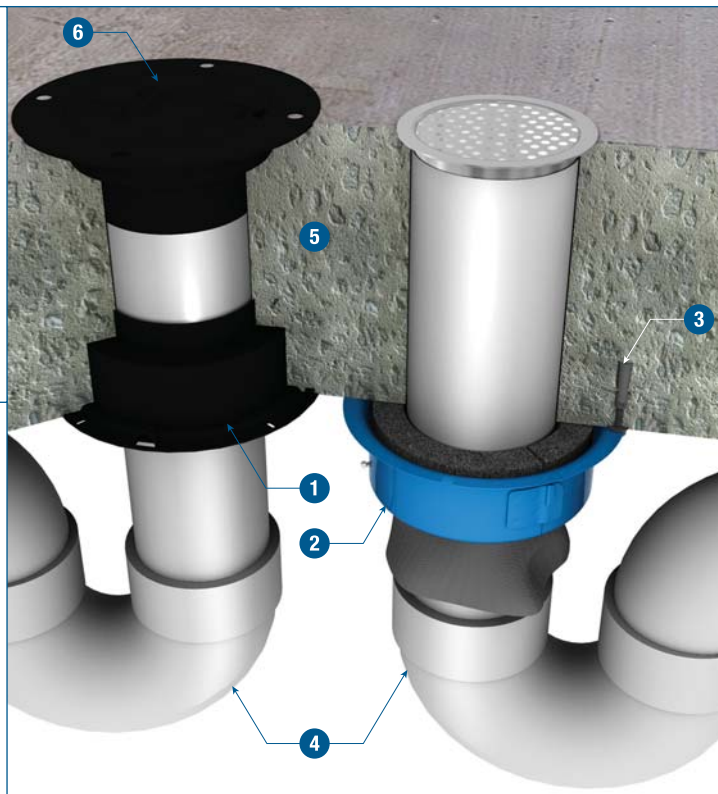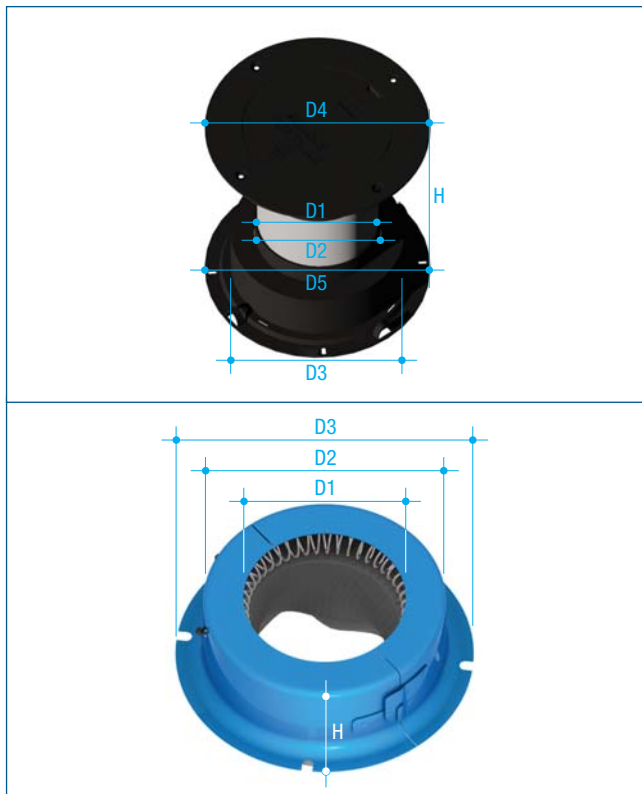
The collar sizes range from pipe OD 43mm to 110mm for fire ratings up to 180 minutes with uPVC and HDPE pipe. Different collar designs for various applications have FRL's ranging up to 240 minutes.

PROMASEAL® Green Cast-in Collars have been tested for 240 minutes with 50mm and 80mm uPVC floor waste systems for integrity only in accordance with the provisions of the BCA (insulation criteria waived). For 100mm floor waste pipes, please contact Promat for information to enable compliance with the provisions of the BCA.

Dimensions of PROMASEAL® Green Cast-in Collar and Hi-Blu Collar.

Example of installation of Hi-Blu/Green Cast-in Collar and FWR Cast-in Floor Waste Collar

Hi-Blu or Green

FWR (see opposite page)

Dimensions of PROMASEAL® FWR Retrofit and PromaSnap® Cast-in Floor Waste Collars.

TECHNICAL DATA

1. **For FRL up to -/120/120**
   PromaSnap® Cast-in Floor Waste Collar

2. **For FRL up to -/240/180**
   PROMASEAL® FWR Retrofit Floor Waste Collar

3. **Fixing with suitable steel masonry anchor**

4. **uPVC or HDPE plastic piping for PromaSnap® Cast-in Floor Waste Collar, uPVC plastic piping for FWR Retrofit Floor Waste Collar.**

5. **Masonry or concrete floor slab**

6. **Outer cap of PromaSnap® for keeping concrete, water and rubbish out of the pipe work during construction**

Floor waste collars help prevent the passage of fire and smoke through openings in compartment floors in the event of a fire. For installation of collars on permanent formwork and in thin floor slabs applications, always contact Promat. These collars are available in various models and the type used depends on the mode of certification required for a particular building.

PromaSnap® Cast-in Floor Waste Collar

PromaSnap® Floor Waste Collar is designed to provide an effective, simple solution for waterproofing and the levelling of screed for tiling and water flow of the floor when tested to AS1530: Part 4 and AS4072: Part 1 for 120 minutes with uPVC pipe.

PROMASEAL® FWR Retrofit Floor Waste Collar

PROMASEAL® FWR Retrofit Floor Waste Collars are surface mounted (retrofit) collars that provide integrity and insulation criteria when tested to AS1530: Part 4 and AS4072: Part 1 for uPVC floor waste traps of 50mm, 80mm and 100mm diameters, all using the FWR 100 model.

Dimensions Guide

PromaSnap® Cast-in Floor Waste Collar

Code no.	uPVC pipe pipe nom. (mm)	Body (mm)				Flanges (mm)	
		H	D1	D2	D3	D4	D5
FWS 100	100	122	110	116	160	220	210

PROMASEAL® FWR Retrofit Floor Waste Collar

Code no.	uPVC pipe nom. (mm)	Body (mm)			Flange (mm)
		H	D1	D2	D3
FWR 100	100	70	110	167	209

Installation Guide

PromaSnap® Cast-in Floor Waste Collar

Nail or screw the PromaSnap® base to the formwork. Cut a piece of 100mm diameter uPVC pipe to length, 75mm (+0mm/-3mm) less than the finished floor slab depth, and fix the pipe to the spigot on the underside of the PromaSnap® collar using standard plumbers glue. Ensure both ends of this pipe are square and that the pipe sits firmly on to the formwork when it is pushed in to the base. The distance from the formwork to the top edge of the PromaSnap® should now be equal to the base concrete slab depth.

The outer cap remains in place until the Water Proofing membrane is applied. This membrane should be applied in accordance with the manufacturer's instructions and should continue over the flanges and into the trough of the puddle flange.

The "inner core" of the puddle flange can now be raised to a level to accommodate the proposed tiled or floor screed level. Apply the screed ensuring it is packed into the trough around the inner core. The inner cap is removed only when the floor grate is fitted. The inner and outer caps should be placed in the site recyclables waste bin or returned to Promat.

### PROMASEAL® FWR Retrofit Floor Waste Collar

These collars are manufactured using Promat intumescent technology, and are designed to provide fire resistance where floor wastes penetrate wet areas. The collar has been tested with 100mm, 80mm and 50mm uPVC pipes (in the appropriate thickness slab) and achieved an FRL up to -/240/180.

Unclip the collar at the joint and pull apart the two sections far enough that the collar can be placed around the pipe. Close the collar and re-clip. Fix the collar to the floor slab with minimum 4 pieces of 35mm x 6.5mm steel masonry anchors. The cloth skirt seen inside the collar must be pulled down to its full extent.

The FWR 100 type collar is designed to accommodate pipe fittings within the body of the collar.

Typical Specification

Where plastic pipes used for floor waste systems are to be fire resistant, use PromaSnap® or PROMASEAL® FWR Retrofit Floor Waste Collars as tested to AS1530: Part 4 and AS4072: Part 1 to maintain the FRL of the element. All work to be certified in an approved manner.
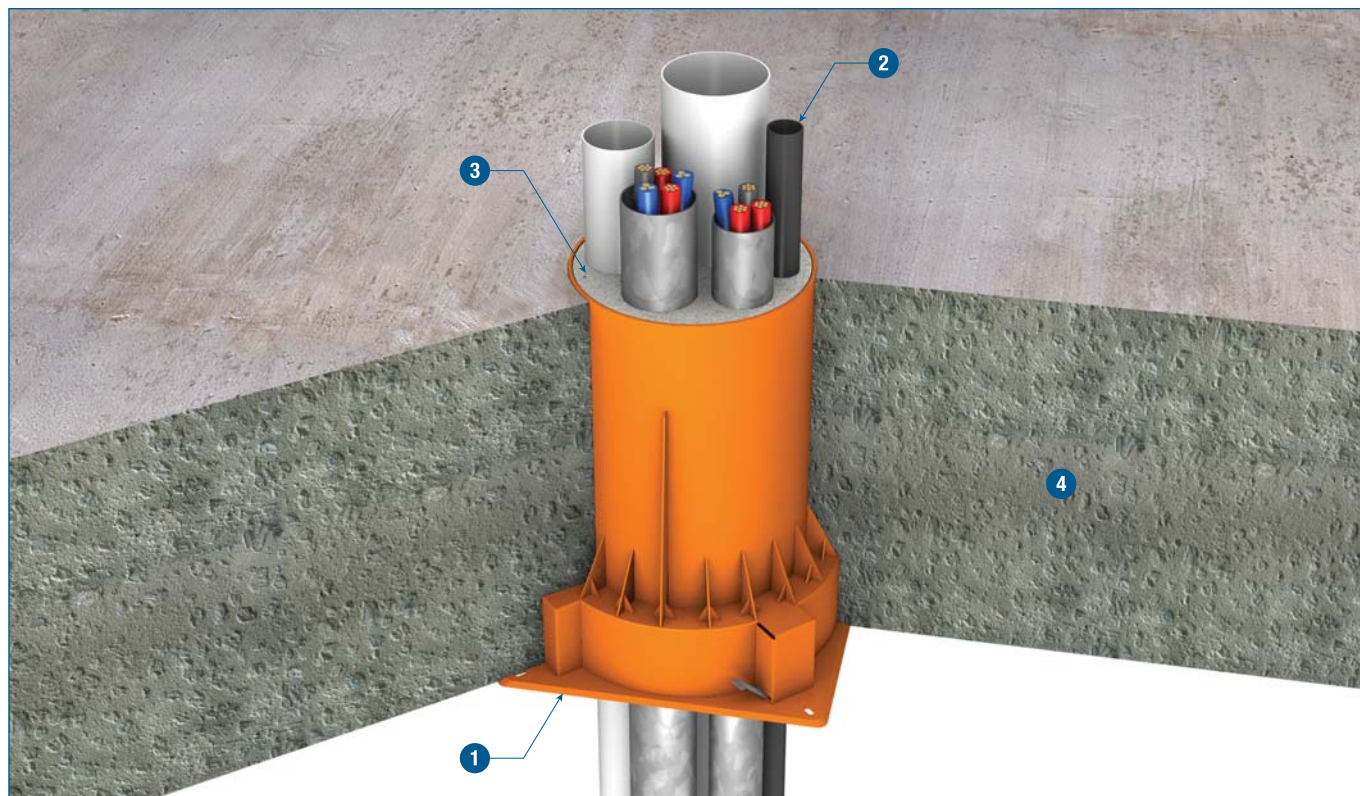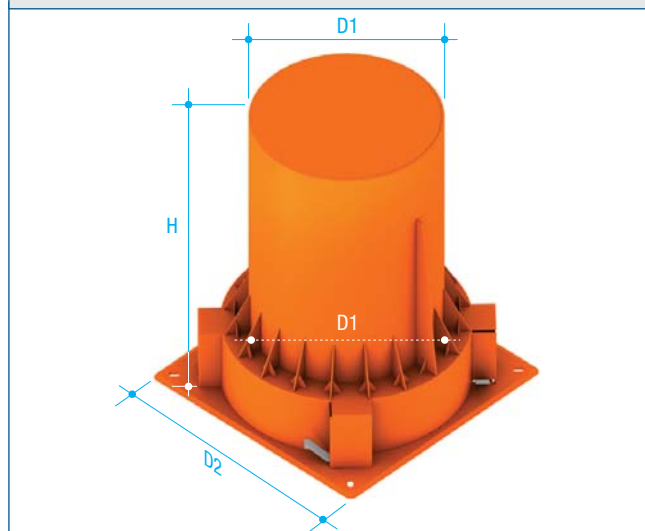
TECHNICAL DATA

1 **For FRL up to -/180/120**
PROMASEAL® PSS Fire Resistant Services Seal Collar

2 Various services, e.g. electrical cables etc.

3 PROMASEAL® Mortar

4 Masonry or concrete floor slab

Dimensions of PROMASEAL® PSS Fire Resistant Services Seal Collar

PROMASEAL® Fire Resistant Services Seal Collar (PSS) is designed to be fixed to the formwork prior to pouring concrete floor slabs to provide openings in floor slabs for various combustible service penetrations. The collar is available in ONE size only, PSS 100, to accommodate multiple or single services.

Dimensions Guide

Code no.	Max. services (mm)	Body (mm)		Flange (mm)
		H	D1	D2
PSS 100	120*	250	140	198

*Allowance of 10mm for backfill around service.

Installation Guide

PROMASEAL® Fire Resistant Services Seal Collars can sit firmly in position while the concrete floor slab is poured. To install, firstly ensure the collar sits flat on the formwork and then nail the collar to the formwork through slots in the flange. This eliminates the necessity to core through the floor slab, saving time and money.

PROMASEAL® Fire Resistant Services Seal Collars leave a neat appearance after stripping and prevent the exposure and cutting of the steel reinforcement caused by coring. Trim off any part of the collar that extends above the slab. After the installation of the services, backfill the collar with a mortar mix to the full height of the floor slab.

PROMASEAL® Fire Resistant Services Seal Collars have been tested to AS1530: Part 4 in conjunction with the following combustible services and achieved an FRL of -/180/120:

• 19mm copper pipes with 20mm Armaflex FR Insulation,

• Electrical cables,

• 40mm uPVC pipe,

• 20mm uPVC electrical conduit.

Please check with the Promat Technical Department to ensure the intended services meet the relevant fire resistance certification.
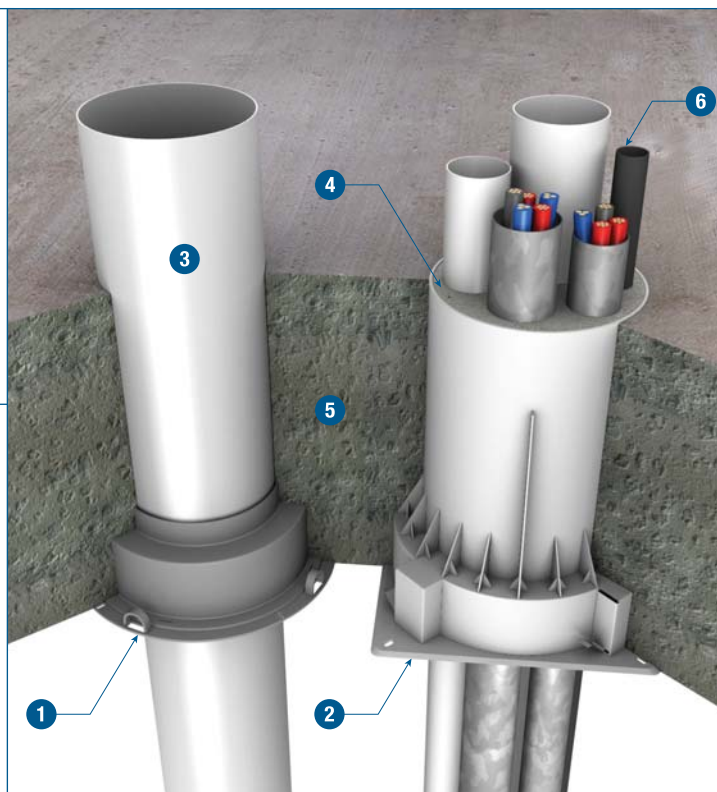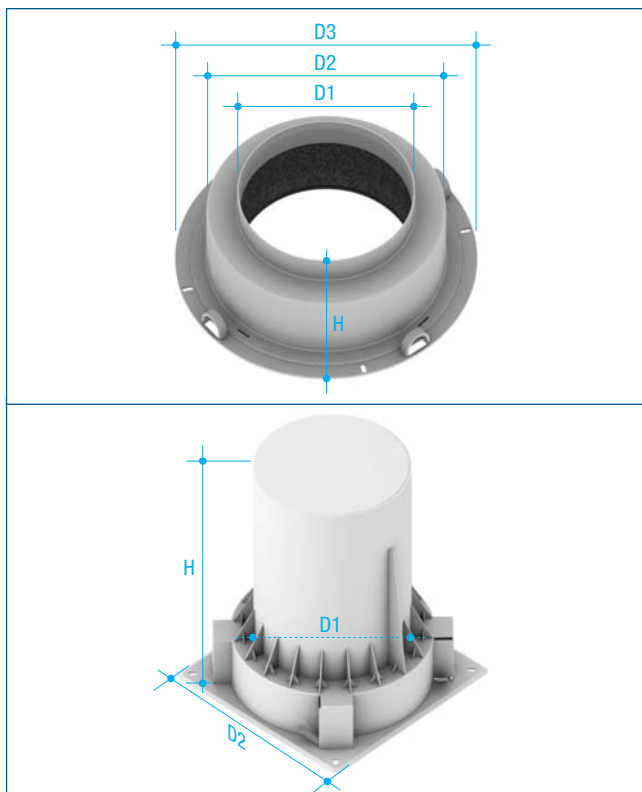
TECHNICAL DATA

1 PipeSeal® PPS Slab Penetration Collar

2 MultiSeal® MS Cast-in Slab Penetration Collar

3 Plastic piping, e.g. HDPE, uPVC etc.

4 PROMASEAL® Mortar

5 Masonry or concrete floor slab

6 Various services, e.g. electrical cables etc.

PipeSeal® PPS Slab Penetration Collar is designed to be fixed to the formwork prior to pouring concrete floor slabs to provide openings in floor slabs for non fire-rated plastic pipe penetrations. The collar is available in FIVE (5) sizes to accommodate pipes with an outside diameter (OD) of 43mm, 55mm, 69mm, 83mm or 110mm.

MultiSeal® MS Cast-in Slab Penetration Collar is designed to be fixed to the formwork prior to pouring concrete floor slabs to provide openings in floor slabs for multiple service penetrations. The collar is available in THREE (3) sizes: 1) MSS, to accommodate services up to nominal 75mm, 2) MSM, to accommodate services up to nominal 120mm diameter and 3) MSL, to accommodate services up to nominal 170mm diameter.

Dimensions Guide

Promat PipeSeal® PPS Slab Penetration Collar

Code no.	Pipe OD (mm)	Pipe nom. (mm)	Body (mm)			Flange (mm)
			H	D1	D2	D3
PPS 40	43	40	78	43	115	160
PPS 50	55	50	78	55	115	160
PPS 65	69	65	68	69	115	160
PPS 80	83	80	78	83	163	210
PPS 100	110	100	78	110	163	210

Promat MultiSeal® MS Cast-in Slab Penetration Collar

Code no.	Max. services (mm)	Body (mm)		Flange (mm)
		H	D1	D2
MSS	75*	250	95	155
MSM	120*	250	140	198
MSL	170*	250	190	253

*Allowance of 10mm for backfill around service.

Installation Guide

Promat PipeSeal® PPS Slab Penetration Collar

After the formwork has been stripped, the piece of pipe may be removed from the PipeSeal® collar leaving an opening in the floor ready for the installation of the service.

PipeSeal® Slab Penetration Collars leave a neat appearance after stripping and prevents the exposure of the steel reinforcement caused by coring.

PipeSeal® collars are designed to provide openings in cast slabs. This product will NOT provide a seal in the event of a fire and has no FRL classification.

Promat MultiSeal® MS Cast-in Slab Penetration Collar

MultiSeal® Cast-in Slab Penetration Collars leave a neat appearance after stripping and prevents the exposure of the steel reinforcement caused by coring. Trim off any of the part that extends above the slab.

After the installation of the services, backfill the MultiSeal® collar with a mortar mix to the full height of the floor slab.

MultiSeal® collars are designed to provide openings in cast slabs. This product will NOT provide a seal in the event of a fire and has no FRL classification.

PROMASEAL® AN Acrylic Sealant (SA-AN) is a gunable sealant designed for the sealing of joints and services penetrations against the spread of fire, smoke and hot gases for up to 240 minutes fire resistance when tested to AS1530: Part 4, AS4072: Part 1 and BS476: Part 20. In addition, PROMASEAL® AN Acrylic Sealant may be used as acoustic sealant due to its density and flexibility.

PROMASEAL® AN Acrylic Sealant should be used in conjunction with all penetration sealing systems to provide a secure cold smoke seal. Where the location of a fire is some distance from a penetration seal, there will be insufficient heat to activate an intumescent material. As such, cool smoke can rapidly pass through buildings, creating a toxic, life threatening environment.

While the use of a cold smoke seal is not needed for meeting fire resistance performance requirements, it should be considered as a necessity to prevent smoke movement through buildings via penetrations, and is therefore highly recommended.

PROMASEAL® AN Acrylic Sealant can be supplied in:
• 300ml cartridges,
• 600ml foil packs.

Installation Guide

Penetration seals

PROMASEAL® AN Acrylic Sealant is used to seal around small gaps, with or without penetrating elements. The sealant is ideal for sealing around metal pipes, cables, conduits, busways and ducts which penetrate walls or floors. See illustrations on pages 15 and 16.

This product bonds to masonry, concrete, calcium silicate board, plasterboard, metal and cable coverings and remains flexible after curing, thus accommoding building movement.

The fire resistance achieved will be limited to the fire resistance of the building element through which the service passes. The size of the gaps around services that can be protected with PROMASEAL® AN Acrylic Sealant has limitations.

For metal pipes passing through floors the gap between the pipe and floor should be no greater than 38mm, for walls no greater than 20mm. For bundles of cables passing through floors, the maximum opening should be no greater than Ø50mm (approximately 2000mm^2) and through walls, Ø38mm (approximately 1100mm^2).

For cables on steel cable trays passing through walls, the maximum opening size should not exceed 70mm high x 440mm wide. In some installations when gaps are at the upper end of the range, sealant may be inclined to slump. In such cases the use of PROMASEAL® IBS™ may be the better solution. Please refer to pages 18 to 21.

Control joints

When specifying or sourcing a sealant for a control joint, it is essential that the characteristics of each control joint are taken into account. Control joints are provided either within or between elements of construction to allow for differential movement caused by a number of factors including shrinkage, thermal expansion, service loads, creep or as a means of joining pre cast units. See illustrations on pages 15 and 16.

Adhesion is excellent to most types of surface. For optimum performance the surfaces of the building element must be free of any dust or grease and be suitably primed. Once applied, they cure in air naturally to form a non-hardening, tack-free seal. Please contact Promat for details.

PROMASEAL® AN Acrylic Sealant varies in its movement capabilities. As a general rule, Acrylic Sealant has low movement properties (typically around ±12.5% movement) and should not be used where movement is a high priority.

Recommended Specification

Where appropriate, the specified joints and gaps within floor/wall openings should be properly fire stopped using PROMASEAL® AN Acrylic Sealant capable of providing a fire resistance up to -/240/- or -/240/240 when tested and assessed in accordance with AS1530: Part 4. Installation of any fire stopping product should be carried out according to the manufacturer's recommendations. Please consult Promat for more details.
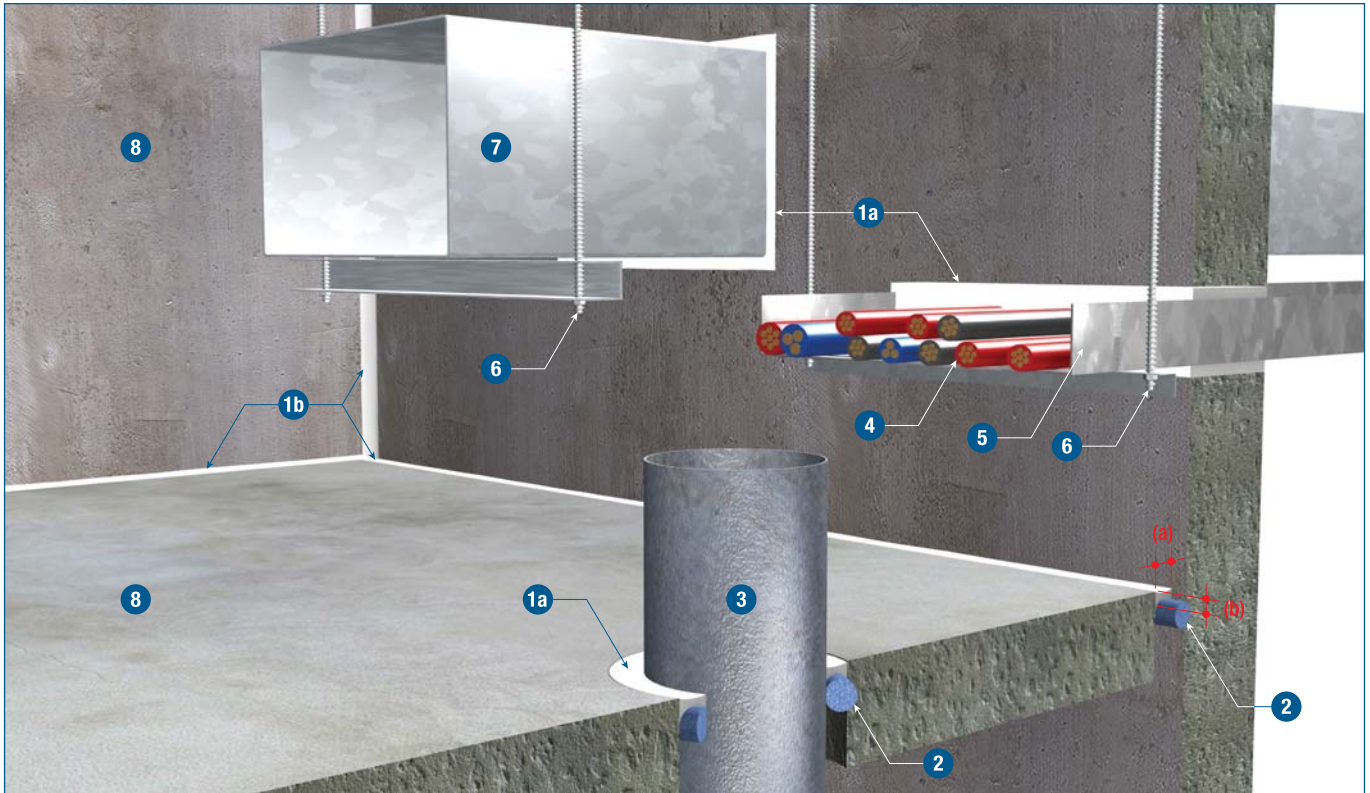
TECHNICAL DATA

1a For FRL up to -/240/- in floor penetrations and up to -/180/- in wall penetrations, depending on application and types of the services and penetrating elements. Insulation criteria may need to be waived on some services.* Please contact Promat for details before installation.
PROMASEAL® AN Acrylic Sealant

1b For FRL up to -/240/240 in control joints
PROMASEAL® AN Acrylic Sealant, sealing depth for control joints as below. Please check with local Promat office to ensure the correct use of the sealant specified.

2 Polyethylene backing strip

3 *Cast-in type for FRL of -/240/- or cored hole-fixed type for FRL of -/120/- Metal pipe up to 150mm diamater

4 Electrical cables

5 Steel cable tray

6 Services support system to be within 300mm on the barrier side

**7** Steel ventilation duct

8 Masonry or concrete floor slab/wall

For FRL of -/120/120 (Minimum 120mm element thickness)

Gap width (a)	10mm	20mm	30mm	40mm	50mm
Fire side only (b)	10mm	10mm	15mm	#	#
Non fire side	10mm	10mm	#	#	#
Both sides	10mm	10mm	15mm	20mm	20mm

For FRL of -/180/180 (Minimum 150mm element thickness)

Gap width (a)	10mm	20mm	30mm	40mm	50mm
Fire side only (b)	10mm	10mm	15mm	#	#
Non fire side	10mm	10mm	#	#	#
Both sides	10mm	10mm	15mm	20mm	20mm

For FRL of -/240/240 (Minimum 170mm element thickness)

Gap width (a)	10mm	20mm	30mm	40mm	50mm
Fire side only (b)	20mm	20mm	20mm	#	#
Non fire side	10mm (FRL -/240/180)	10mm (FRL -/240/180)	#	#	#
Both sides	10mm	10mm	15mm	20mm	20mm

# Please refer to PROMASEAL® IBS™ on **pages 18 to 21**.
NOTE: Typical floor and wall element thicknesses are 120mm, 150mm, 170mm for 2, 3, 4 hours respectively.

USAGE: To calculate the sealant volume, multiply joint width (mm) x depth (mm) x length (M) and divide by the container volume (ml).
For example, 20mm x 10mm x 50M ÷ 600ml = 17 foil packs of PROMASEAL® AN Acrylic Sealant.
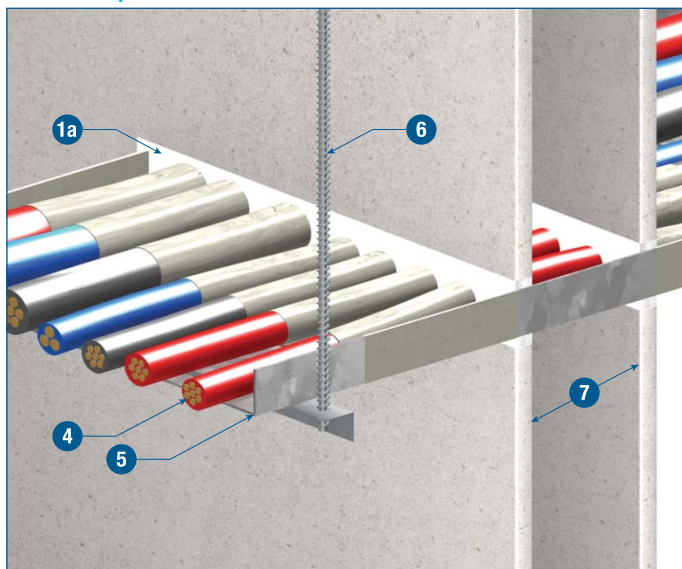
Electrical cables through masonry or concrete floor
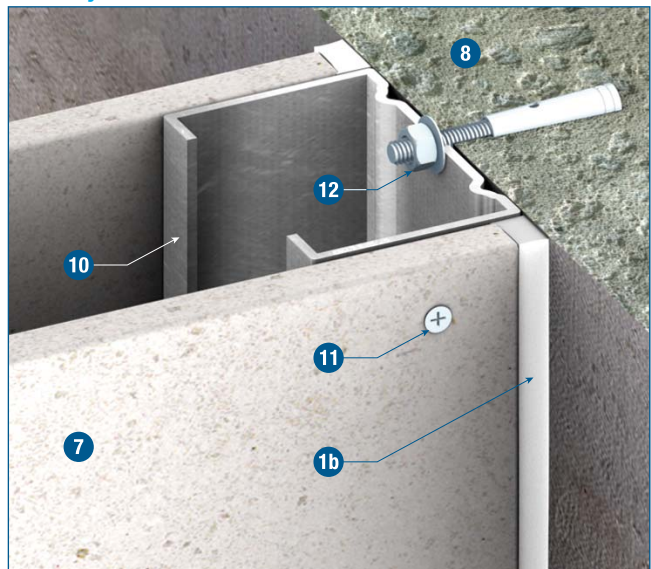*For FRL up to -/120/-
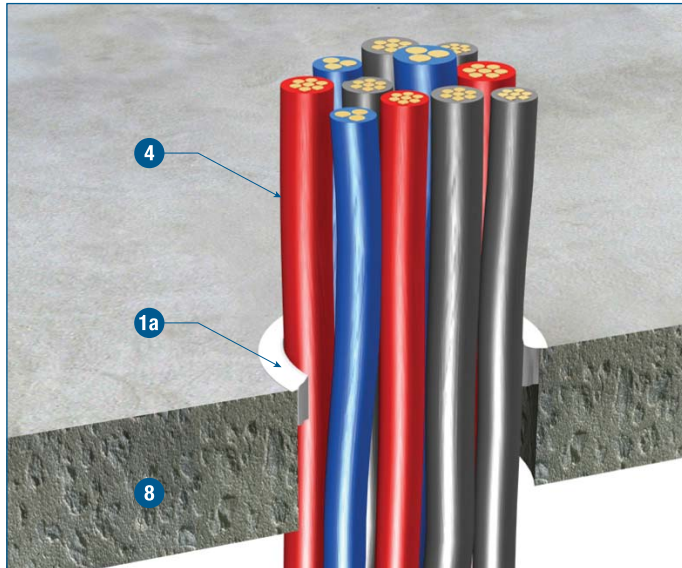
Control joints for gaps in masonry or concrete floor or wall
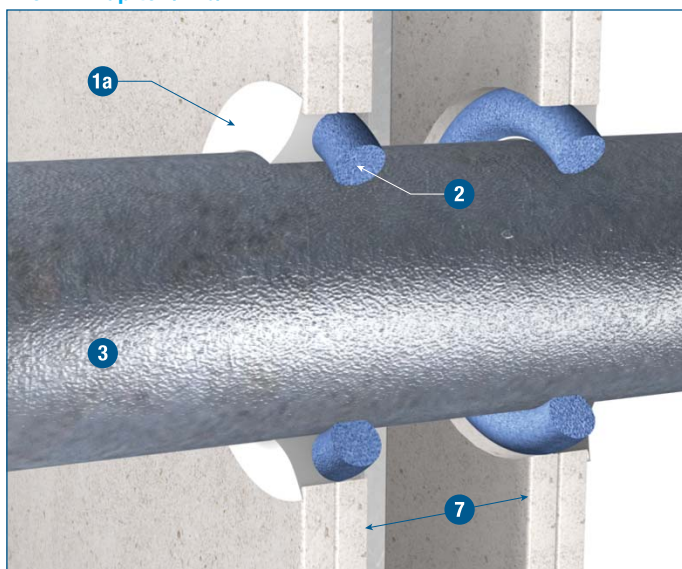Clockwise: 1-sided in floor, 1-sided in wall, 2-sided in wall and big gap in wall
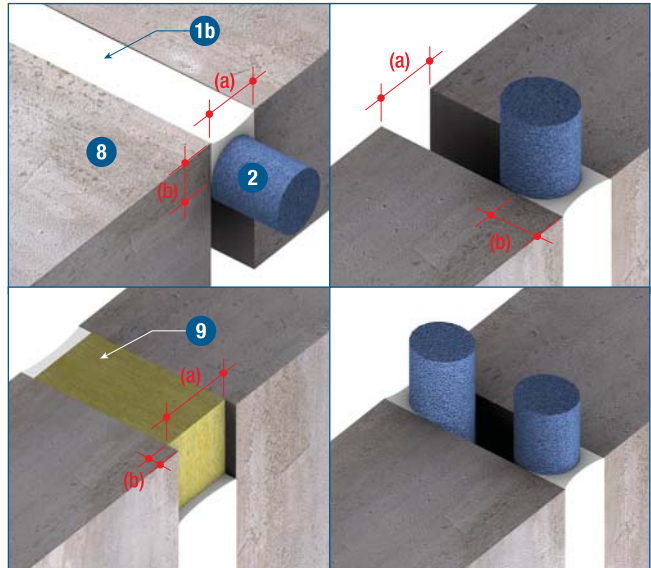
Cable tray through lightweight partition
*For FRL up to -/180/-

## Junction of lightweight partition to masonry or concrete substrate

Metal pipe through lightweight partition
*For FRL up to -/120/-

TECHNICAL DATA

1a For FRL up to -/240/- in floor penetrations and up to -/180/- in wall penetrations, depending on application and types of the services and penetrating elements. Insulation criteria may need to be waived on some services.* PROMASEAL® AN Acrylic Sealant

1b For FRL up to -/240/240 in control joints PROMASEAL® AN Acrylic Sealant, sealing depth for control joints as per page 15.

2 Polyethylene backing strip

3 Metal pipe up to 150mm diamater

4 Electrical cables

5 Steel cable tray

6 Threaded steel hanger rods

7 Lightweight partition

8 Masonry or concrete floor slab/wall

9 Mineral wool

10 Steel channel

11 Drywall type self-tapping screws

12 Anchor fixing
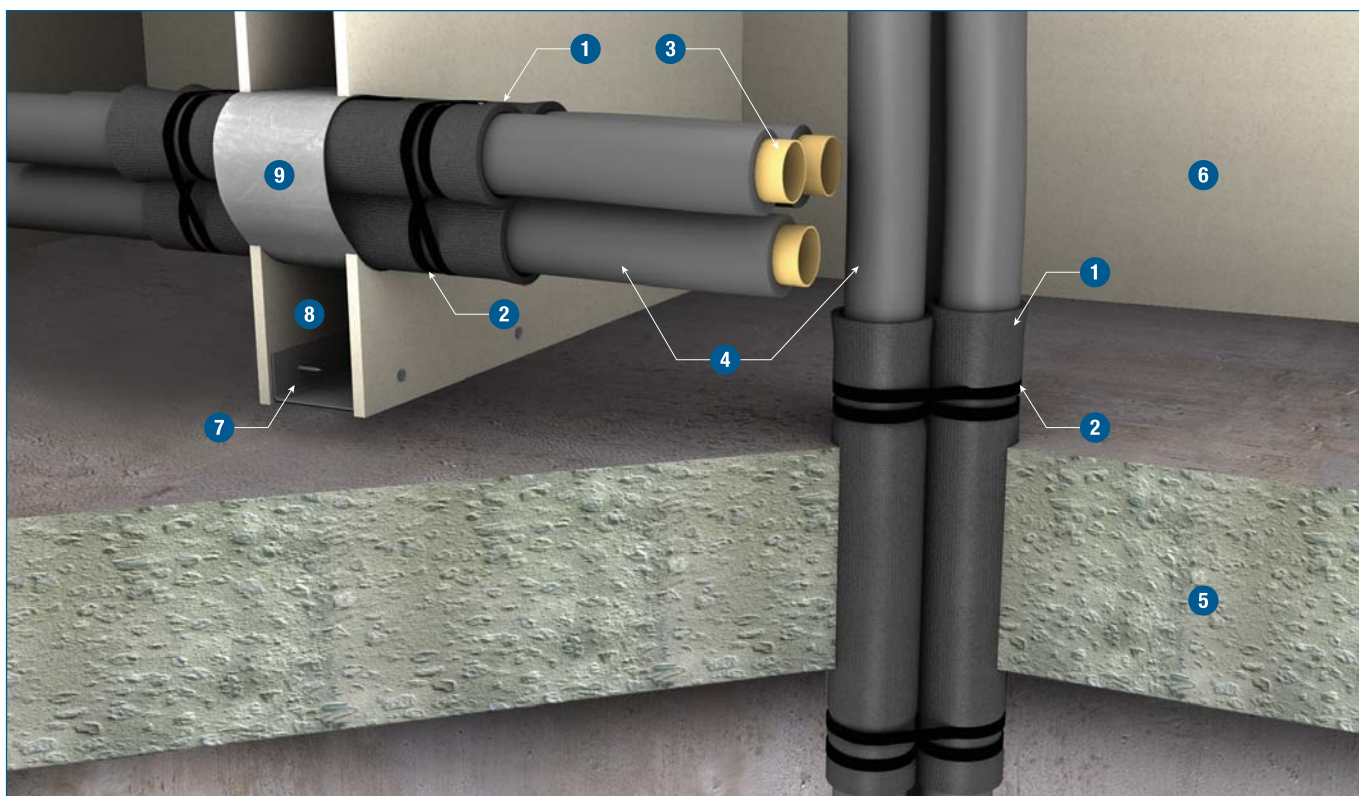
TECHNICAL DATA

1 For FRL up to -/240/120
PROMASEAL® FlexiWrap

2 Cable tie

3 Copper pipes

4 Combustible insulation layer

5 Masonry or concrete floor slab, with fire resistance greater than or equal to that of the installed system.

6 Lightweight partition system

7 Partition framing system

8 Where PROMASEAL® FlexiWrap is used to clad pipes passing through a lightweight partition, the cavity must be closed off by passing a steel sleeve through both lining boards and sealing the cavity.

9 Steel sleeve

NOTE: PROMASEAL® AN Acrylic Sealant to be liberally applied to all joints and contact points between the barrier and services, and the barrier and the substrate (not shown above). PROMASEAL® FlexiWrap is not for use on plastic pipes.

It is common that some services such as copper pipes for air-conditioning units are wrapped with a layer of insulation in order to improve the thermal efficiency of the units. The insulation in general is made of a combustible material and as such, when penetrating fire resistance elements such as walls and floors, it could present a risk of fire and smoke breaching the integrity of the system.

Manufactured by using Promat Grafitex® Technology, PROMASEAL® FlexiWrap (SFW) is designed to provide fire resistance where combustible insulation is used as a thermal lagging around metal pipes.

PROMASEAL® FlexiWrap is supplied in sheet form of 450mm x 1125mm x 6mm thick.

PROMASEAL® FlexiWrap has been successfully tested and assessed to AS1530: Part 4 for both walls and floors, achieving a fire resistance level of up to 120 minutes. For higher fire resistance please consult Promat Technical Department.

Installation Guide

For either floor or wall applications, the installation method is simple. If the penetration involves only one insulated pipe, simply wrap the pipe with PROMASEAL® FlexiWrap and secure with cable ties, minimum one at either end. Note that the wraps should protrude a minimum of 50mm from each face of the substrate. If groups of insulated pipes are involved, individually wrap each pipe with one layer of PROMASEAL® FlexiWrap. To ensure the wrap stays in place provide ties to two locations, one each side of the penetration.

Once wrapped, the area where pipes penetrate the substrate can be backfilled with PROMASEAL® Mortar or other fire stopping methods if necessary, depending on the size of opening and the type of substrate. For close fitting openings, the sealing can be completed using PROMASEAL® AN Acrylic Sealant.

NOTE: Where pipes pass through a lightweight partition construction, the cavity must be closed off using a steel sleeve.

Recommended Specification

Where appropriate, the specified insulated penetrations through floor/wall should be properly fire stopped using PROMASEAL® FlexiWrap capable of providing fire resistance of -/120/120 when tested and assessed in accordance with AS1530: Part 4. Installation of any fire stopping product should be carried out according to the manufacturer's recommendations. Please consult Promat for more details.

PROMASEAL® IBS™ (SI) is a flexible fire protection foam strip used for sealing joints and gaps within walls or floors. It has excellent versatility, second only to sealant especially dealing with fire stopping for joints, gaps, building and services movement etc. PROMASEAL® IBS™ can be used as a stand alone product or with a cover of PROMASEAL® AN Acrylic Sealant where required.

PROMASEAL® IBS™ is supplied in rolls and is available in the following dimensions:

Shape type	Manufacturing Code	Dimension	Length
Tube	IBS 16	16mm Ø	150 metres
	IBS 22	22mm Ø	100 metres
	IBS 29	29mm Ø	60 metres
	IBS 38	38mm Ø	300 metres
Rectangular	IBS 5020	50mm x 20mm	50 metres
	IBS 5010	50mm x 10mm	500 metres
	IBS 100X10	100mm x 10mm	500 metres

Tested up to 240 minutes fire resistance according to AS1540: Part 4 and AS4072: Part 1. The fire resistance level of PROMASEAL® IBS™ will vary and applications are dependent on the barrier and the type and size of service.

Areas of application to be considered include cable and pipe penetrations, deflection heads of partitions and walls and joints within walls, around fire dampers, floor joints, cable trays, control joints etc. PROMASEAL® IBS™ is also supplied as a component part of lightweight fire and acoustic wall systems which have been developed to satisfy the ever growing demand for noise abatement in residential and commercial applications. These wall systems are primarily used for partitions, corridors and shaft walls in high rise apartments, multi-residential developments, hotels and commercial construction. For more details on this type of wall system, please contact Promat Technical Department.

Installation Guide

Joint sealing in floors and walls

PROMASEAL® IBS™ is easy to install simply by compressing and inserting it into the joint or gap. For joints up to 18mm insert the IBS™ into the centre of the wall or floor or 10mm back from the fire side. The addition of sealant is optional if installed in this manner. For joints over 18mm wide, please follow the directions in the **Performance Table** at right. Where joints or gaps are uneven, the maximum gap width is to be taken and matched to the nominal IBS™ size. If through gaps still occur because of uneven surfaces, these gaps should be sealed with PROMASEAL® AN Acrylic Sealant.

- For gaps up to 30mm wide with the system applied to the non fire side, set the IBS™ 12mm below the surface. The use of a sealant is optional in this application. See the **Performance Table** at right for applicable sealant thicknesses.

- For gaps up to 30mm wide with the system applied to the centre of a masonry or concrete wall (top block must be solid or concrete filled), compress the IBS™ no less than 20%. Sealant is optional in this application.

- FRL up to -/240/240 can be achieved in a 240 minutes fire rated separating element.

- Where butt joints occur in the IBS™ and sealant is not used, the FRL of the system can be maintained by applying an additional 50mm long strip of IBS™ over the joint on either the exposed or unexposed face. Alternatively, apply sealant over the butt joint to a depth of 5mm with a minimum of 5mm coverage on either side of the butt joint.

- Intermediate sizes for IBS™ and sealants may be interpolated.

Lightweight and acoustic partitions

PROMASEAL® IBS™ is supplied as a component of Promat lightweight and acoustic partitions systems. These partitions are primarily used for corridors and shaft walls, in high rise apartments, multi-residential developments, hotels and commercial construction.

In order to maintain the fire resistance level of the systems, PROMASEAL® IBS™ must be installed above any deflection head detail. The IBS™ is positioned at the head of the panel (or blockwork system) and compressed as the panels are fixed in place. See illustrations on page 20. The installation of IBS™ may vary between different manufacturers' systems and should be checked prior to installation.

Metal pipes penetration seal

PROMASEAL® IBS™ is of particular use where the large dimension of an opening around pipes and services would result in the slumping of a stand alone sealant. It can be used to form a slip joint at penetrations so that when pipes/services move, the integrity of the opening is maintained. See illustrations on page 21.

PROMASEAL® AN Acrylic Sealant should be used for joins in IBS™ or where there may be uneven surfaces. Where joints or gaps are uneven, the maximum gap width is to be taken and matched for the nominal IBS™ size. Please contact Promat for more details.

Performance Table

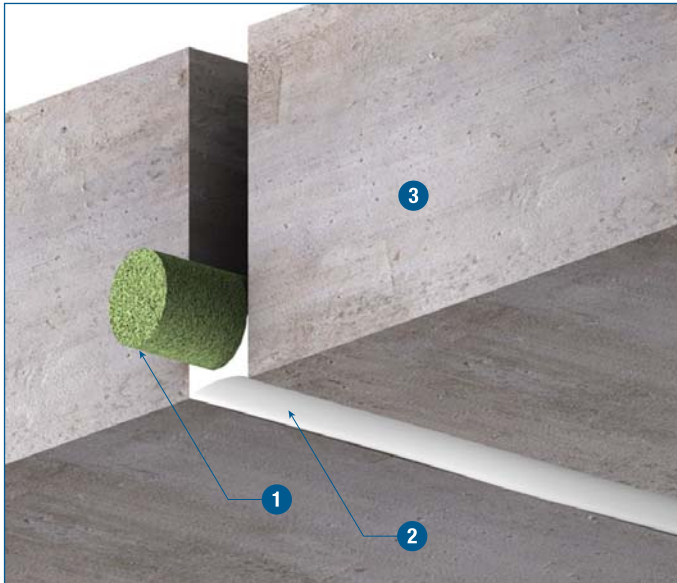| Configuration	Maximum joint width	PROMASEAL® IBS™ nominal thickness	Minimum sealant thickness	Maximum FRL
For non fire side only	18mm	22mm	9 (optional)*	-/240/120
	30mm	38mm	12 (optional)*	-/240/120
	35mm	38mm	12	-/240/120
	54mm	60mm	18	-/180/120
	65mm	80mm	20	-/180/120
For fire side only	18mm	22mm	9**	-/240/240
	35mm	38mm	12	-/240/240
	54mm	60mm	18	-/240/240
	65mm	80mm	20	-/240/240
For mid-depth of wall slab	18mm	22mm	Not required	-/240/120

*If sealant is not used in this application, the FRL achieved will be -/180/90.
**If sealant is not used in this application, the FRL achieved will be -/240/180.

Recommended Specification

Where appropriate, the specified joints and gaps within floor/wall openings should be properly fire stopped using PROMASEAL® IBS™ capable of providing a fire resistance of -/180/120, -/240/120 or -/240/240 when tested and assessed in accordance with AS1530: Part 4. Installation of any fire stopping product should be carried out according to the manufacturer's recommendations.
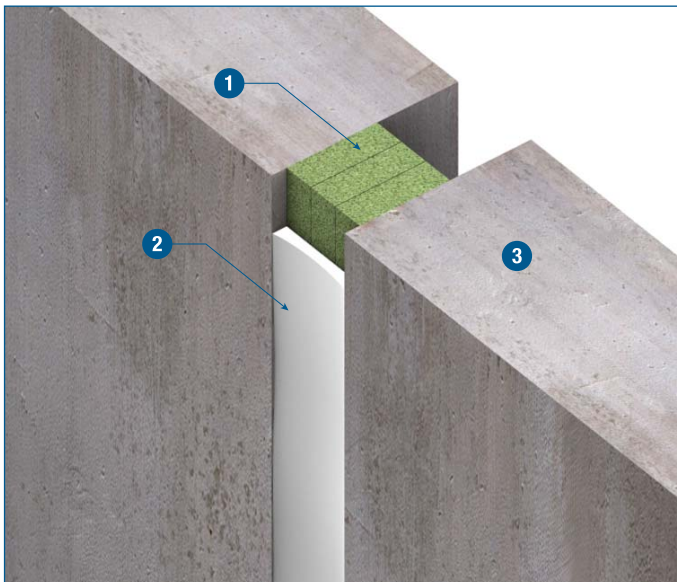
Joint sealing in masonry or concrete floors

Joint sealing for wide gap in masonry or concrete walls

Joint sealing in masonry walls

Joint sealing in head deflection of masonry walls (Multiple strip)

Joint sealing in head deflection of masonry walls (Single strip)

19

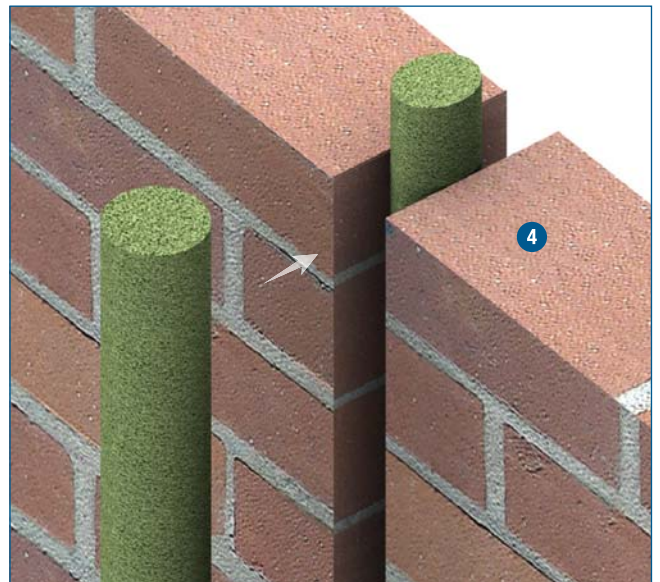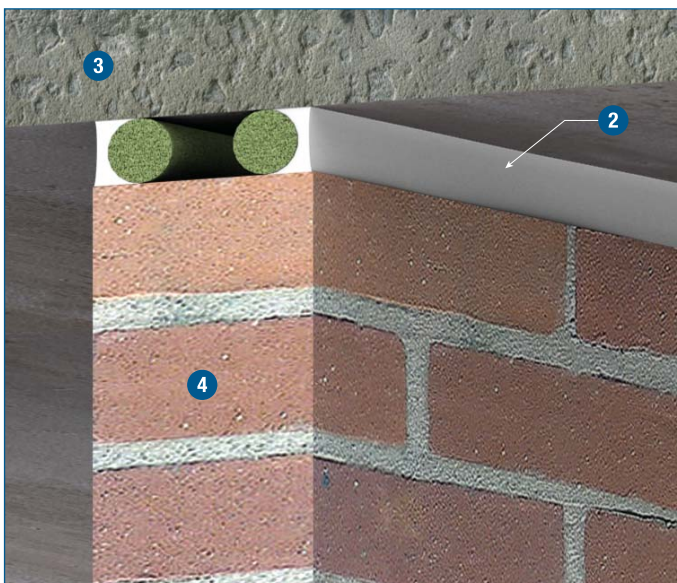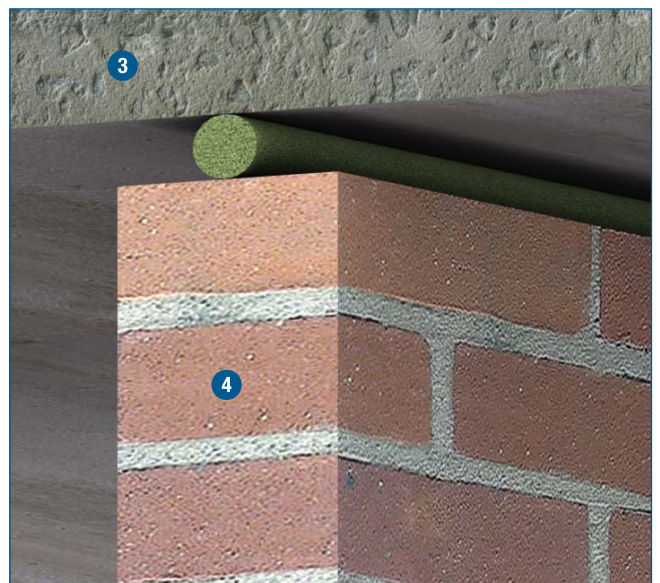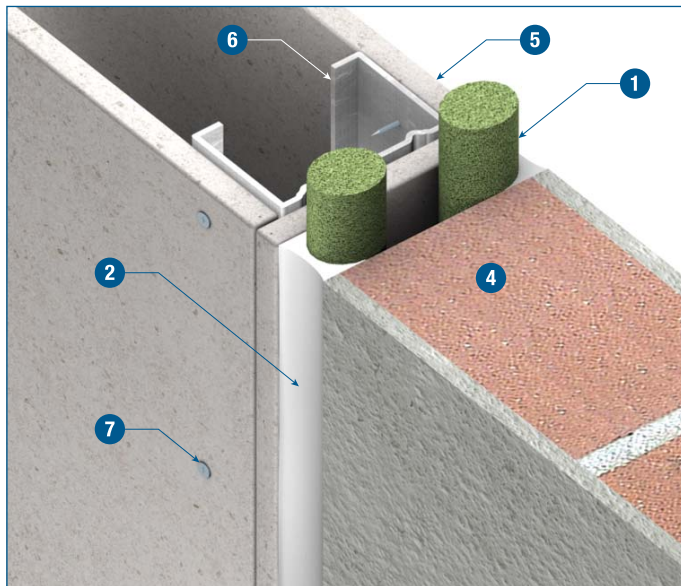## Joint sealing in intersection of masonry walls and partitions

TECHNICAL DATA

1 For FRL up to -/240/240, this will vary depending on application and types of the penetrating elements. PROMASEAL® IBS™, thicknesses in accordance with Performance Table on **page 18**.

2 Gaps filled with PROMASEAL® AN Acrylic Sealant, thicknesses in accordance with Performance Table on **page 18**.

3 Concrete floor slab

4 Masonry wall

5 Lightweight partition system

6 Partition framing system

7 Proprietary anchor fixing for partition framing system

Joint sealing in masonry or concrete walls (Double strip)
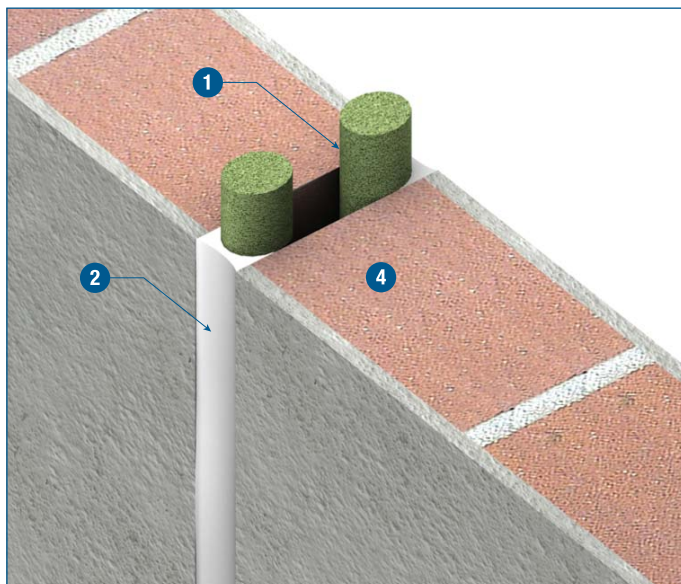
Joint sealing in masonry or concrete walls (Single strip)

Joint sealing in head deflection of double lining layer partitions

Joint sealing in head deflection of single lining layer partitions

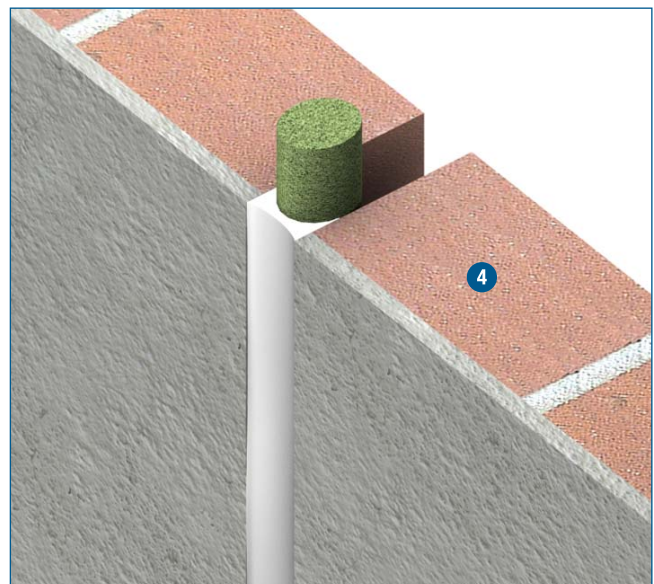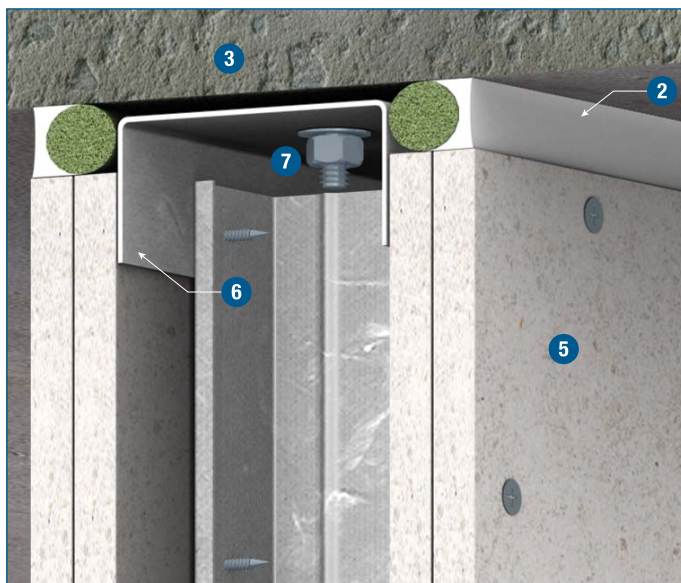**Steel pipe penetration seal in concrete floors**

TECHNICAL DATA

1. For FRL up to -/240/- this will vary depending on application and types of the pipes and penetrating elements. PROMASEAL® IBS™, thicknesses in accordance with Performance Table on **page 18**.

2. Gaps filled with PROMASEAL® AN Acrylic Sealant, thicknesses in accordance with Performance Table on **page 18**.

3. Concrete floor slab

4. Steel pipes

5. Lightweight partition system

6. Steel sleeve to close off cavity

7. Steel wire mesh to maintain distance from combustible materials, where insulation criteria is required. Please consult Promat for details.

8. Cable trunking or similar passing through masonry or concrete wall

9. Top and bottom steel angle collars on either side of a wall for wide gaps

Steel pipe penetration seal in concrete floors with protective steel wire mesh to ensure no combustible material can come into contact with a non inuslated penetration
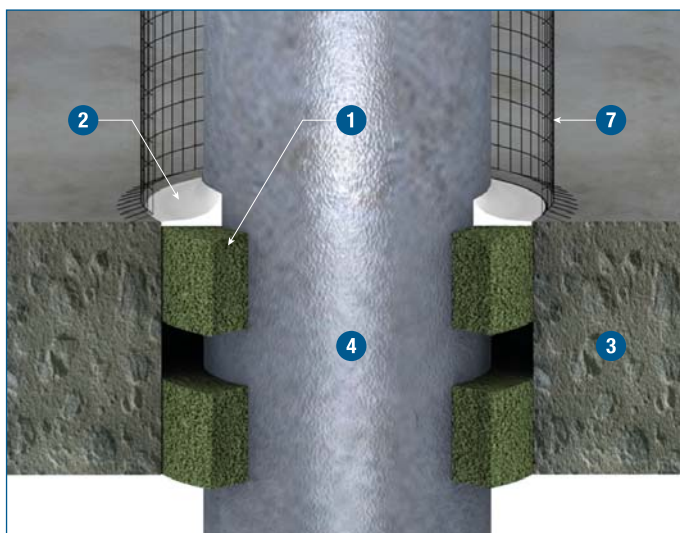
Penetration seal around trunking passing through masonry or concrete walls

Steel pipe penetration seal in lightweight partitions

TECHNICAL DATA

1 For FRL up to -/240/180*, insulation criteria will vary depending on application and types of the services and penetrating elements. **PROMASEAL® Mortar**

*Insulation is the time to failure measured on the surface of the PROMASEAL® Mortar. In some instances, where insulation measured upon the services is the required criteria, this time to insulation failure can be substantially shorter, e.g. for a steel or copper pipe passing through the barrier. If insulation measure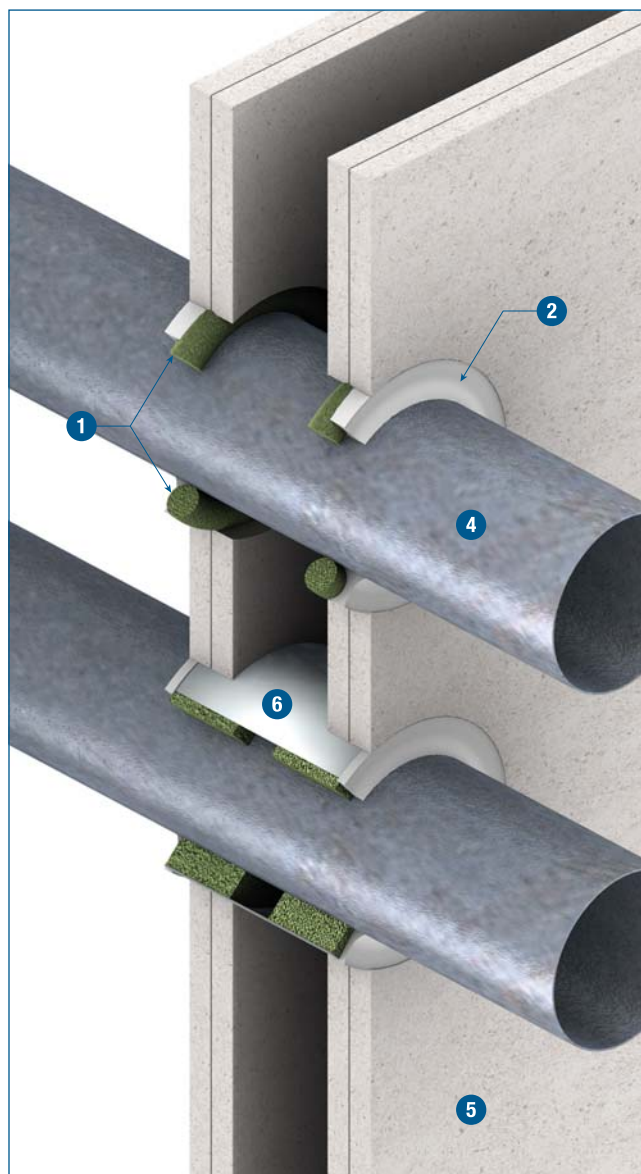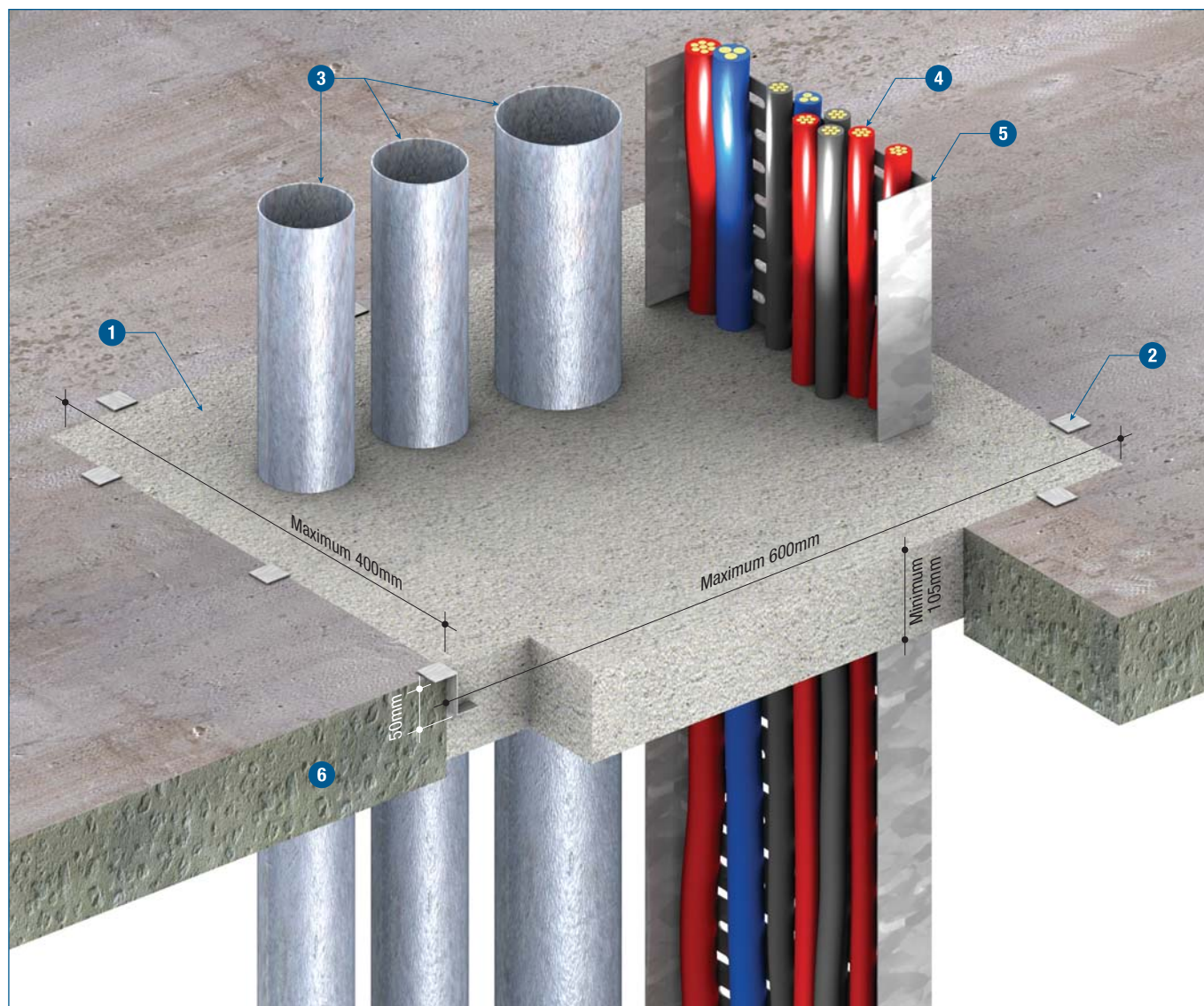d upon the services is the relevant criteria for a specific project, please consult Promat Technical Department to ensure the appropriate performance can be obtained.

2 25mm wide steel Zed clips at nominal 300mm centres

3 Metal pipes

4 Electrical cables

5 Steel cable tray

6 Masonry or concrete floor slab

NOTE: PROMASEAL® AN Acrylic Sealant to be liberally applied to all joints and contact points between the barrier and services, and the barrier on the substrate (not shown above).

PROMASEAL® Mortar (SM) is a specially formulated, lightweight (density approximately 700kg/m³), hydraulic cement composition supplied as a premixed dry powder. It can be trowelled into position for sealing of openings required for the passage of services such as electrical cables/pipes, busways and busbars, telecommunication cables/conduits etc. through floors and walls, thus maintaining the fire resistance of building elements that have been penetrated. It can also be used to seal openings after services have been removed or where no services are present.

PROMASEAL® Mortar has been successfully tested and assessed to AS1530: Part 4 for fire ratings up to 240 minutes depending on service penetration. Insulation criteria will vary depending upon the penetrating services.

PROMASEAL® Mortar is grey in colour and is packaged in convenient 20kg bags. It can be mixed with varying quantities of clean water for different consistencies.

Installation Guide

Maximum sizes of openings for PROMASEAL® Mortar without the need for additional framing are:

Floors: Maximum 600mm x 400mm
Walls: Maximum 600mm x 600mm

For larger openings, please consult Promat Technical Department.

For floors, 25mm wide Zed clips of 30mm x 50mm x 30mm x 1mm thick must be placed around the top of the opening at 300mm centres. Where the mortar abuts a wall this clip is replaced with 25mm wide L-angle of 100mm x 30mm x 1mm thick fixed to the wall, ensuring that at least 50mm is below the top level of the mortar.

Recommended Specification

Where appropriate, with or without service penetrations, the specified floor/wall openings should be properly fire stopped using PROMASEAL® Mortar capable of providing fire resistance of -/240/- when tested and assessed in accordance with AS1530: Part 4. Installation of any fire stopping product should be carried out according to the manufacturer's recommendations. Please consult Promat for more details.
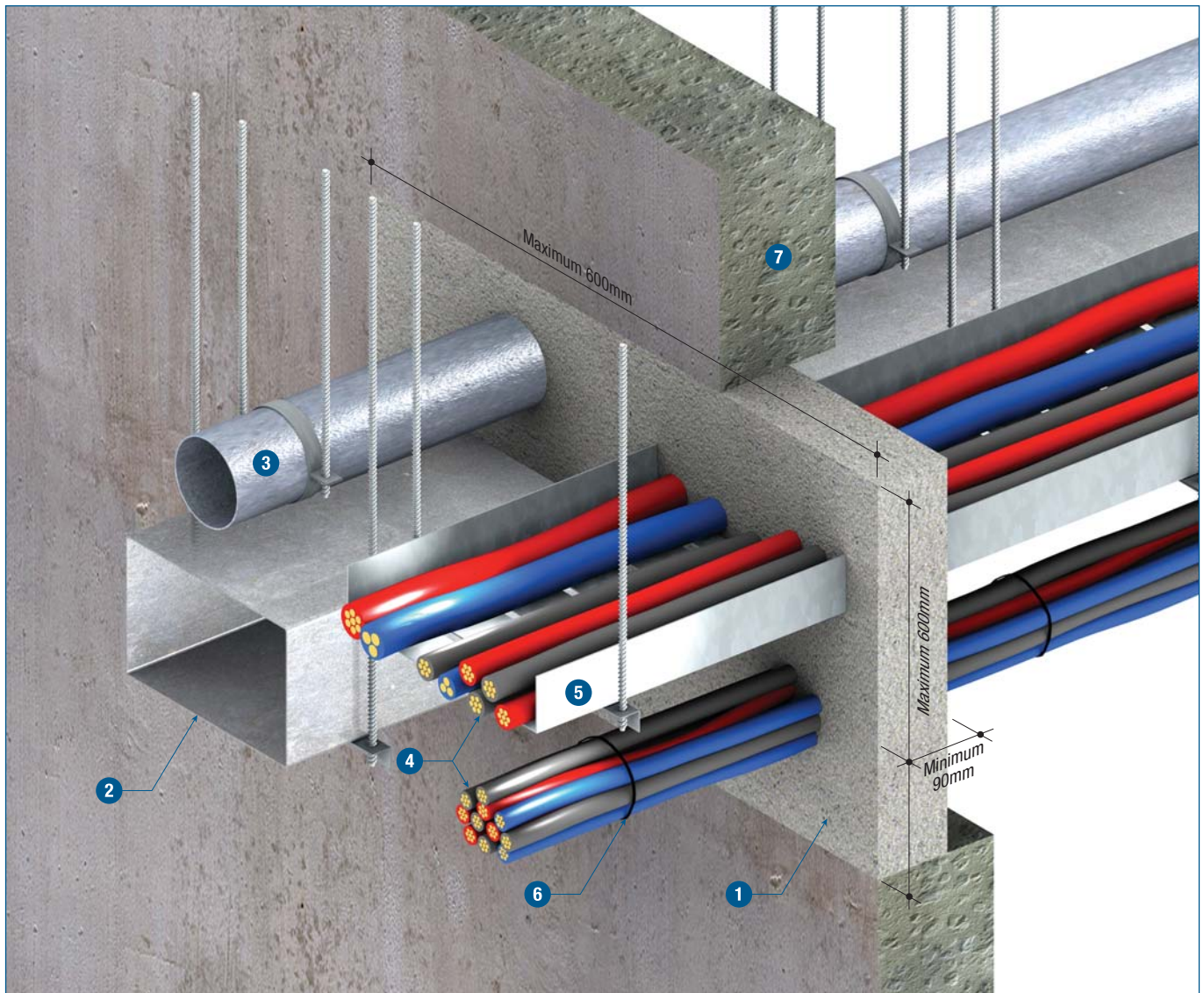
TECHNICAL DATA

1 For FRL up to -/240/240*, insulation criteria will vary depending on application and types of the services and penetrating elements. PROMASEAL® Mortar

  *See same note on opposite page

2 Steel ventilation duct with appropriate support

3 Metal pipe with appropriate support and damper where required

4 Electrical cables

5 Steel cable tray with appropriate support

6 Cable tie

7 Masonry or concrete wall

NOTE: PROMASEAL® AN Acrylic Sealant to be liberally applied to all joints and contact points between the barrier and services, and the barrier on the substrate (not shown above).

Coverage & Mixing Guide

When mixed with 12 to 16 litres of water, 20kg of the powder will produce approximately 35 litres of mix which will fill an area approximately 0.35m² of clear opening at 100mm depth. This equates to approximately 3 x 20kg bags of PROMASEAL® Mortar per 1m² of clear opening at 100mm depth or around 30 bags per m³.

PROMASEAL® Mortar can be mixed to a consistency to suit the application. For floors, if the services are close together and difficult to access, it may be necessary to make a wet pouring mix. However if the PROMASEAL® Mortar can be easily installed, use a medium dry mix. If the mortar has to be stacked in a wall opening, make a dry mix. The following may be used as a guide in preparing the required mix:

• Dry (packing) mix: 10 litres of water to 20kg of powder;

• Medium dry mix: 12 litres of water to 20kg of powder;

• Wet (pourable) mix: 16 litres of water to 20kg of powder.

Care should be taken on the order of mixing. Water should be added into the PROMASEAL® Mortar powder.

PROMASEAL® Mortar can be premixed and kept for several hours in a plastic bucket with an air tight lid. This enables an installer to do a number of small openings in a building without have to make several mixes on the site. The mix may set within a few hours of installation. However, setting time is dependent on weather conditions.

In some applications it may be necessary to provide bond breakers around services that may move as a result of natural building or thermal movement. This can be achieved using PROMASEAL® IBS™. Always apply a bead of PROMASEAL® AN Acrylic Sealant at the junction of the services and PROMASTOP® Cement as this will provide an effective smoke, water and movement seal.

GREEN

CHEM ALERT REPORT
Summary Report

PRODUCT NAME	**PROMASEAL AN SEALANT**
SUPPLIER	**PROMAT AUSTRALIA PTY LTD Ph:(08) 8352 6759 Emerg. Ph:(08) 8352 6759**

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA
NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	None Allocated	**Hazchem Code**	None Allocated	**Pkg Group**	None Allocated
DG Class	None Allocated	**Subsidiary Risk(s)**	None Allocated	**EPG**	None Allocated
Poison Schedule	None Allocated				

HEALTH HAZARDS

Eye	Low irritant. Contact may result in irritation and lacrimation.
Inhalation	Low irritant. Over exposure at high levels may result in mucous membrane irritation of the nose and throat with coughing. Due to the low vapour pressure of this product an inhalation hazard is not anticipated.
Skin	Low irritant. Prolonged or repeated contact may result in mild irritation.
Ingestion	Low toxicity. Ingestion of large quantities may result in nausea, vomiting and gastrointestinal irritation.

FIRST AID

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia wide) or a doctor (at once). If swallowed, do not induce vomiting.

PRECAUTIONS

Flammability	Non flammable - combustible when dry. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.
Reactivity	Incompatible with oxidising agents (e.g. hypochlorites, peroxides), acids (e.g. nitric acid), heat and ignition sources. VOC < 1gms/L when tested to USEPA Method 8260 and the methodology in South Coast Air Quality Management District Rule 1168(California).
Ventilation	Use with adequate natural ventilation. Open windows and doors where possible. In poorly ventilated areas, mechanical extraction ventilation is recommended.

PERSONAL PROTECTIVE EQUIPMENT

Wear splash-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear: coveralls. Where an inhalation risk exists, wear: a Type A (Organic vapour) respirator.

CHEM ALERT

Promat

Chem Alert Report -
Collars For Plastic Pipes / PROMASEAL® FlexiWrap

UC/CFC/FC/FCS/
FCD/FCW/Hi-Blu/
Green/FWS/FWR/
PSS/SFW

GREEN

CHEM ALERT REPORT
Summary Report

PRODUCT NAME	**FYRECOLLAR/GRAFITEX**
SUPPLIER	PROMAT AUSTRALIA PTY LTD Ph:(08) 8352 6759 Emerg. Ph:(08) 8352 6759

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	None Allocated	**Hazchem Code**	None Allocated	**Pkg Group**	None Allocated
DG Class	None Allocated	**Subsidiary Risk(s)**	None Allocated	**EPG**	None Allocated
Poison Schedule	None Allocated				

HEALTH HAZARDS

Eye	Exposure considered unlikely. Due to product form, irritation is not expected unless cut or heated and dusts generated.
Inhalation	Exposure considered unlikely. An inhalation hazard is not anticipated unless this material is cut, drilled or sanded with dust generation, which may result in mucous membrane irritation of the upper respiratory tract with over exposure.
Skin	Low irritant. If dust is generated, prolonged exposure may result in irritation, itching, redness, rash and possible dermatitis.
Ingestion	Exposure considered unlikely. Due to product form, ingestion is considered highly unlikely.

FIRST AID

Eye	Flush gently with running water. Seek medical attention if irritation develops.
Inhalation	If over exposure occurs, leave exposure area immediately. Seek medical attention if symptoms develop.
Skin	(Dust). Gently flush affected areas with water. Seek medical attention if irritation develops.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor. Ingestion is considered unlikely due to product form.

PRECAUTIONS

Flammability	Non flammable. No fire or explosion hazard exists.
Reactivity	Compatible with most commonly used materials. VOC is zero when tested to USEPA Method 8260B.
Ventilation	Do not inhale dust/ powder. Use with adequate natural ventilation. Where a dust inhalation hazard exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment is not required under normal conditions of use. If cutting or sanding with potential for dust generation, wear dust-proof goggles, a Class P1 (Particulate) Respirator and cotton or leather gloves.

CHEM ALERT
Chemical Safety Management Services

GREEN

CHEM ALERT REPORT
Summary Report

PRODUCT NAME	**IBS**			
SUPPLIER	PROMAT AUSTRALIA PTY LTD Ph:(08) 8352 6759 Emerg. Ph:(08) 8352 6759			

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	None Allocated	Hazchem Code	None Allocated	Pkg Group	None Allocated
DG Class	None Allocated	Subsidiary Risk(s)	None Allocated	EPG	None Allocated
Poison Schedule	None Allocated				

HEALTH HAZARDS

Eye	Due to product form and nature of use, an eye hazard is not anticipated. Product may only present a hazard if dust is generated. Contact may result in mechanical irritation.
Inhalation	Exposure considered unlikely. An inhalation hazard is not anticipated unless this material is cut, drilled or sanded with dust generation, which may result in mucous membrane irritation of the upper respiratory tract with over exposure.
Skin	Low irritant. Prolonged or repeated exposure to dust may result in irritation and dermatitis.
Ingestion	Ingestion is considered unlikely due to product form.

FIRST AID

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

PRECAUTIONS

Flammability	Non flammable. May evolve toxic gases if strongly heated.
Reactivity	Incompatible with oxidising agents (e.g. hypochlorites, peroxides) and acids (e.g. nitric acid). VOC 0gms/L when tested to USEPA Method 8260 on uncured sample and the methodology in South Coast Air Quality Management District Rule 1168 (California).
Ventilation	Use with adequate natural ventilation. If sanding, drilling or cutting, use appropriate local extraction ventilation. Maintain dust levels below the recommended exposure standard.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment is not required under normal conditions of use.If cutting or sanding with potential for dust generation, wear: dust-proof goggles, leather or cotton gloves, coveralls and a Class P1 (Particulate) respirator.

CHEM ALERT

AMBER

CHEM ALERT REPORT
Summary Report

PRODUCT NAME **PROMASEAL MORTAR**

SUPPLIER PROMAT AUSTRALIA PTY LTD Ph:(08) 8352 6759 Emerg. Ph:(08) 8352 6759

CLASSIFIED AS HAZARDOUS ACCORDING TO ASCC CRITERIA

NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No.	None Allocated	**Hazchem Code**	None Allocated	**Pkg Group**	None Allocated
DG Class	None Allocated	**Subsidiary Risk(s)**	None Allocated	**EPG**	None Allocated
Poison Schedule	None Allocated				

HEALTH HAZARDS

Eye	Corrosive - irritant. Severe irritant upon contact with powder/ dust. Over exposure may result in pain, redness, corneal burns and ulceration with possible permanent damage.
Inhalation	Slightly corrosive. Over exposure may result in severe mucous membrane irritation & bronchitis. Hexavalent chromium is reported to cause respiratory sensitisation, however due to the trace amount present, a hazard is not anticipated under normal conditions of use.
Skin	Slightly corrosive. Contact with powder or wetted form may result in rash and dermatitis. Potential sensitising agent.
Ingestion	Slightly corrosive. Ingestion may result in burns to the mouth and throat, nausea, vomiting and abdominal pain. Ingestion is considered unlikely due to product form.

FIRST AID

Eye	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a doctor.
Ingestion	For advice, contact a Poison Information Centre on 13 11 26 (Australia wide) or a doctor (at once). If swallowed, do not induce vomiting.

PRECAUTIONS

Flammability	Non flammable. May evolve toxic gases if strongly heated.
Reactivity	Incompatible with oxidising agents (e.g. hypochlorites, peroxides), ethanol, acids (e.g. hydrofluoric acid) and interhalogens (e.g. chlorine trifluoride). water contact may increase product temperature 2°C to 3°C. VOC < 1gms/L when tested to USPEA Method 8260 and the methodology in South Coast Air Quality Management District Rule 1168 (California).
Ventilation	Do not inhale dust/powder. Use with adequate natural ventilation. Where a dust inhalation hazard exists, mechanical extraction ventilation is recommended. Maintain dust levels below the recommended exposure standard.

PERSONAL PROTECTIVE EQUIPMENT

Wear dust-proof goggles and PVC or rubber gloves. When using large quantities or where heavy contamination is likely, wear: coveralls. At high dust levels, wear: an Air-line or a Full-face Class P3 (Particulate) respirator. Where an inhalation risk exists, wear: a Class P1 (Particulate) respirator.

CHEM ALERT

Promat

For latest information of the Promat Asia Pacific organisation,
please refer to **www.promat-ap.com**

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