

3M Technical Data Sheet

3M™ Fire Barrier Pillows

The 3M™ Fire Barrier Pillow is a self-contained, highly intumescent firestop product for use in through-penetration firestops. Simple to install, compressing pillows prior to insertion secures them in the opening, no wire mesh required. 3M Fire Barrier Pillows offer excellent performance achieving Fire Resistance Ratings of up to 3 hours.

Product Features

- Graphite free composition
- Available in three sizes
- Easy to install
- Easy retrofit – remove and reuse pillows as needed
- Easy to inspect
- Testing in accordance with AS1530.4, AS4072.1, AS4072.1, EN1366, and ASTM E814 (UL Listed).



Physical Properties

Typical Physical Properties	
Colour	3M Red with white label
Density	95kg/m ³
Heat Expansion Begins	200°C (392°F)
Significant Expansion Begins	280°C (536°F)
Volume Expansion	18% (Calculated)

Availability

3M™ Fire Barrier Pillows are available from Authorised 3M Fire Protection Products Distributors.

Product	Packaging (Unit/Case)
3M Fire Barrier Pillow Small 249	24
3M Fire Barrier Pillow Medium 269	16
3M Fire Barrier Pillow Large 369	20
3M Fire Barrier Self Locking PILLOW Small 249	24
3M Fire Barrier Self Locking PILLOW Medium 269	16
3M Fire Barrier Self Locking PILLOW Large 369	20

Maintenance

Inspection: Installations should be inspected periodically for subsequent damage. Replace any damaged pillows.

Recommended: Store in a dry warehouse environment. Pallets should not be stacked.

Performance Specifications for Installers

Table 1

Australian Standard FRL's			Fire Resistance Level (FRL)			
3M Fire Barrier System	Building Element	Penetration Size	Blank (Unpenetrated) Seal	PVC Insulated Cables, Cable trays and Cable bundles*	Copper or Steel Pipes Small 15mm diameter or smaller 0.9mm Wall thickness or thicker*	Steel Pipes Small 34mm diameter or smaller 3.5mm wall thickness or thicker*
3M™ Fire Barrier Pillows	Floor: Concrete slab. <i>Minimum 120mm thickness</i>	Maximum opening 425mm by 300mm Maximum Area 0.128m ²	-/120/90	-/180/30	-/180/30	-/180/30
	Wall: Plasterboard Dry Wall, solid masonry, hollow masonry or concrete construction. <i>Minimum 116mm thickness</i>	Maximum opening 600mm by 800mm Maximum Area 0.480m ²	-/120/30	-/120/30	-/120/30	-/120/30

In order to achieve the above FRLs you must ensure that the Fire Barrier Pillows are installed as per the Installation Techniques and the building element you are installing into has an FRL performance equal to or better than that of the Fire Barrier Pillows. The Installation Techniques can be found on the final page of this document.

What does FRL mean?

FRL stands for 'Fire Resistance Level'. For example, an FRL of '-/120/90' indicates:

- **Structural Adequacy.** The first dash '-' indicates that

Fire Barrier Pillows are non load bearing

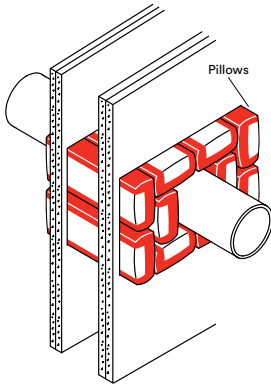
- **Integrity.** The middle number '120' indicates for how many minutes the Fire Barrier Pillows can resist the passage of flames and hot gasses
- **Insulation.** The last number '90' indicates how many minutes it takes the unexposed face to heat up by more than 140°C.

*Where the FRL of the firestopping system requires an insulation value greater than that given in table 1, the use of additional insulating wraps can be employed - see Appendix A.

Performance Specifications for Installers

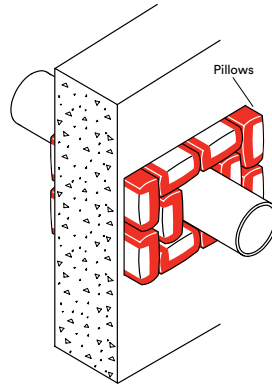
Metal Pipes*

* With or without up to 19mm Armaflex insulation



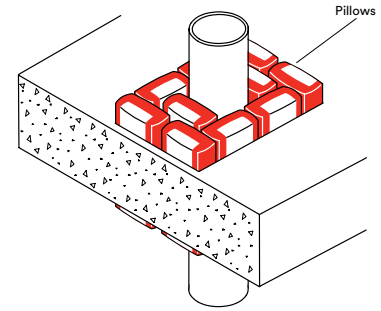
Dry Wall 116mm

Copper: 15mm dia, 0.91mm wall: FRL: -/120/30
Steel: 34mm dia, 3.5mm wall: FRL: -/120/30



Solid Masonry, Hollow Masonry or
Concrete Wall 116mm

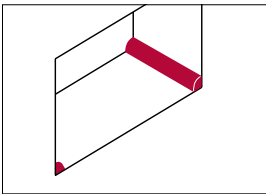
Copper: 15mm dia, 0.91mm wall: FRL: -/180/30
Steel: 34mm dia, 3.5mm wall: FRL: -/180/30



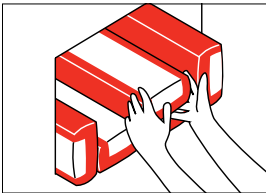
Concrete Floor 120mm

Copper: 15mm dia, 0.91mm wall: FRL: -/180/30
Steel: 34mm dia, 3.5mm wall: FRL: -/180/30

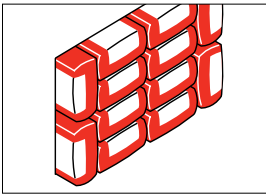
Installation Techniques:



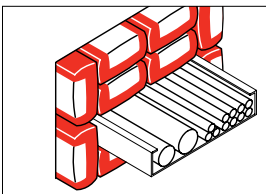
Apply 3M™ Fire Barrier Mouldable Putty in all corners.



Install pillows lengthwise through the opening, make sure that the label side is placed directly against the framed opening.



Completely fill the penetration compressing pillows prior to insertion to lock them in place. The 3M Red logo should be visible to the installer on each pillow.



The smaller-sized pillows are used for smaller voids and spaces created by cable trays and pipes. 3M™ Fire Barrier Mouldable Putty is used to seal any small openings greater than a few millimetres between pillows, cables, cable trays or pipes.

3M™ Fire Barrier Pillows are completely reusable. Simply remove the desired pillow(s) by inserting fingers on both sides, compress and release pillows, then reuse as required.

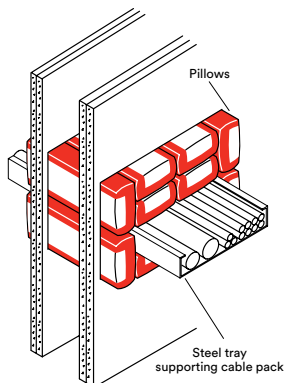
To protect each different service through the penetration: Please refer to the related 3M Fire Protection Approval, for various installation options.

To view all current 3M Fire Protection Approvals: www.3M.com.au/fireprotection

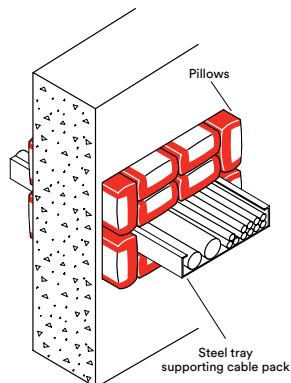
Performance Specifications for Engineers and Specifiers

3M™ Fire Barrier Pillows have been tested in accordance with AS1530.4 and assessed in accordance with AS4072.1. The following illustrations provide a summary of the test results for D1 and D2 cable configurations, metal pipes and blank (unpenetrated) openings with Fire Barrier Pillows installed as per the Installation Techniques. Specifications for standard D1 and D2 cable configurations can be found in AS1530.4 Appendix D.

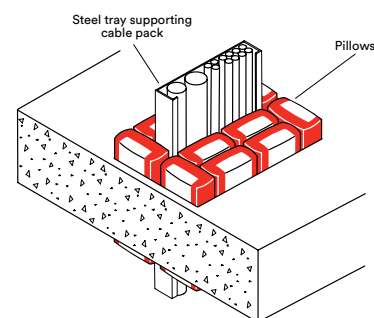
D1 Cable Pack – Power Transmission Cables.



Dry Wall 116mm – FRL: -/120/30

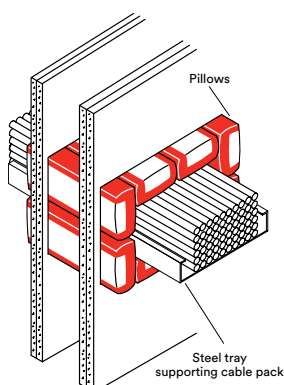


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

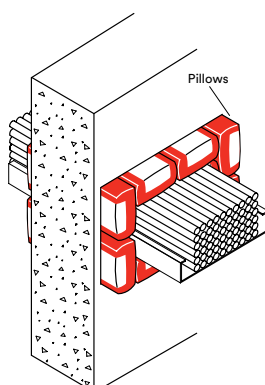


Concrete Floor 120mm – FRL: -/180/60

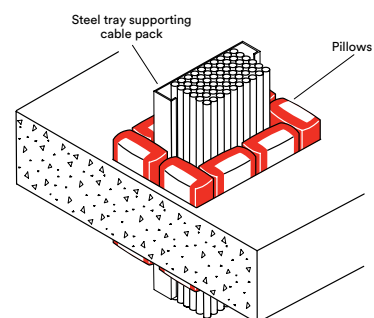
D2 Cable Pack – Telecom Cables.



Dry Wall 116mm – FRL: - /120/30

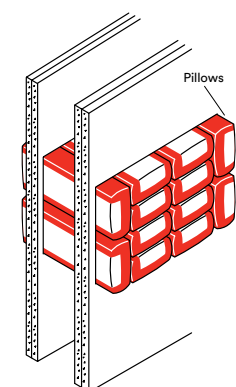


Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

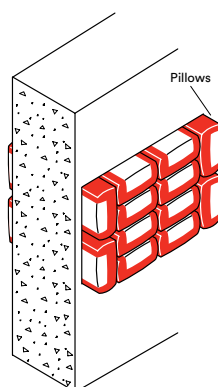


Concrete Floor 120mm – FRL: -/180/30

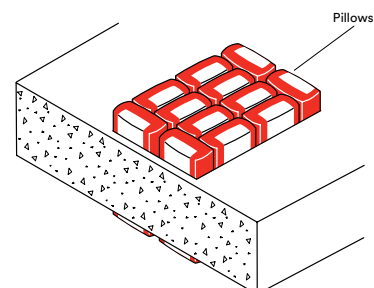
Blank Openings (unpenetrated)



Dry Wall 116mm – FRL: -/120/30



Solid Masonry, Hollow Masonry or
Concrete Wall 116mm – FRL: -/120/30

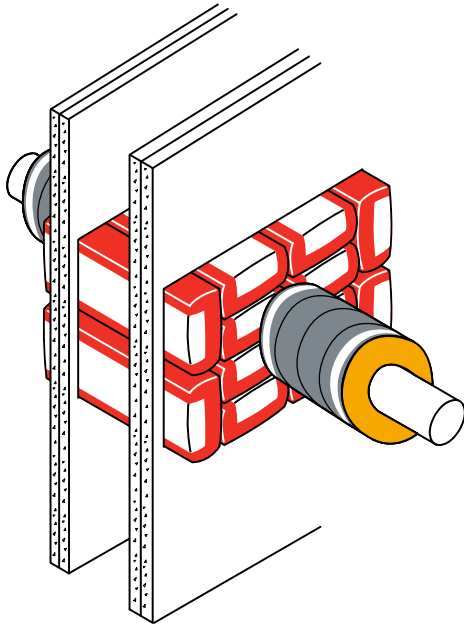


Concrete Floor 120mm – FRL: -/120/90

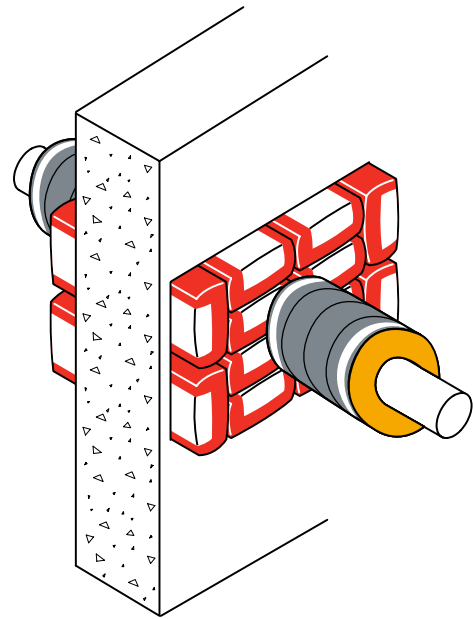
Appendix A - Insulation Upgrade* with 100mm Wrap System

FRL - / 120 / 120

116mm flexible wall systems



116mm solid wall systems



100mm Wrap System:

Single Cables

Diameters up to 20mm

16mm² multi-core cable

3M™ Fire Barrier Packing material PM4

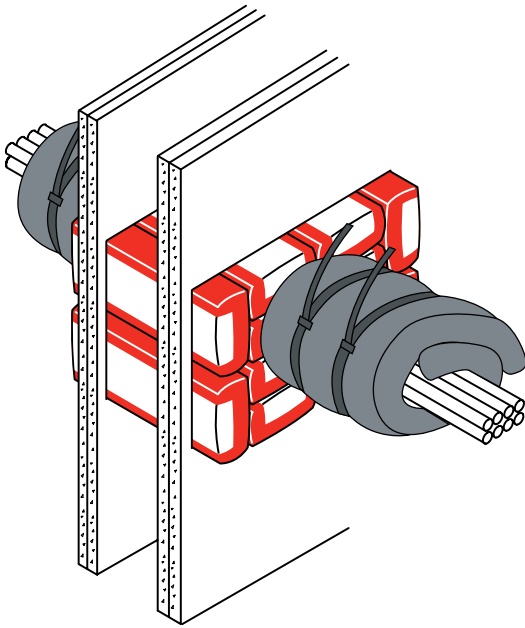
Scotch® Fire-Retardant Electric Arc Proofing Tape 77, fastened at each end with Scotch® Glass Cloth Tape 27.

*3rd Party Fire Testing to AS 1530.4 & AS 4072.1 completed. Revised Regulatory Information Report (RIR) in progress.

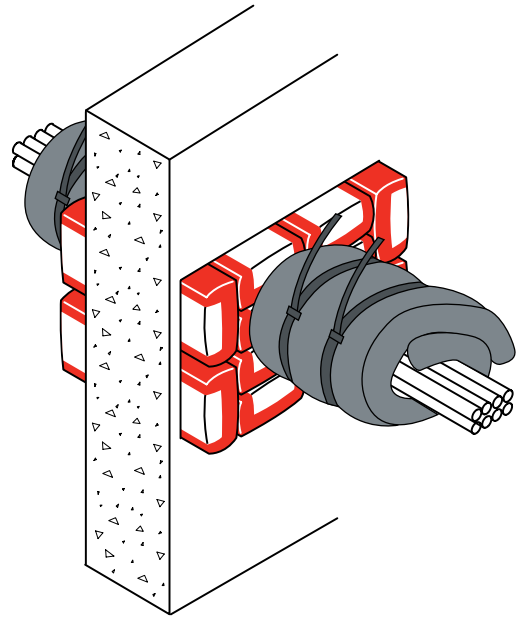
Appendix A - Insulation Upgrade* with 150mm Wrap System

FRL - / 120 / 120

116mm flexible wall systems



116mm solid wall systems



150mm Wrap System:

Cable Bundles

Diameters up to 20mm

Up to 8 Cables / Bundle

3M™ Fire Barrier Duct Wrap Collar 615+ System

Scotch® 8981 Filament Tape as an assembly aid, and Metal Cable Ties, at spacing of 100mm.

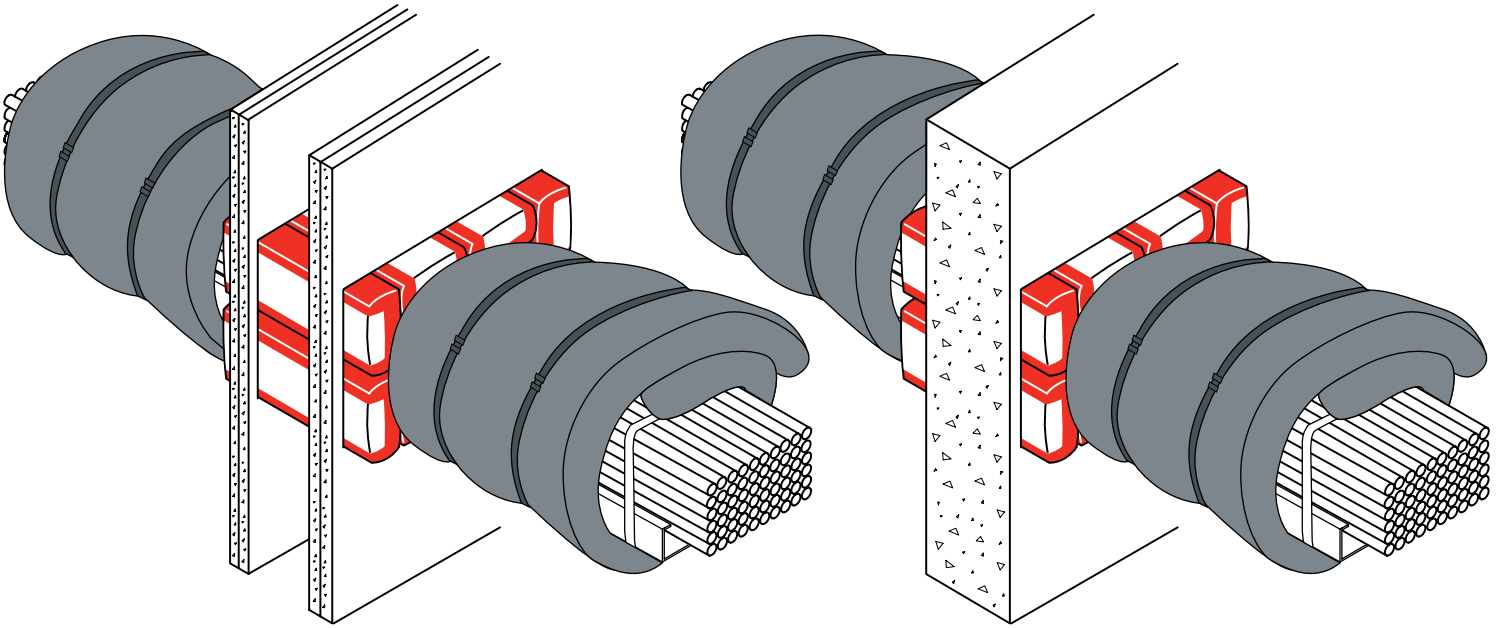
*3rd Party Fire Testing to AS 1530.4 & AS 4072.1 completed. Revised Regulatory Information Report (RIR) in progress.

Appendix A - Insulation Upgrade* with 600mm Wrap System

FRL - / 120 / 120

116mm flexible wall systems

116mm solid wall systems



600mm Wrap System:

**Cable Bundles & Trays & Metal Pipes, as per related Regulatory Information Report (RIR)*
All diameters and configurations, in accordance with AS 1530.4 and AS 4072.1**

3M™ Fire Barrier Duct Wrap 615+ System

Scotch® 8981 Filament Tape as an assembly aid, and Metal Cable Bands, at spacing of 200mm.

*3rd Party Fire Testing to AS 1530.4 & AS 4072.1 completed. Revised Regulatory Information Report (RIR) in progress.



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