CABLE PENETRATIONS WITH SEALANT AND WRAP

ELECTRICIANS

FyreFLEX®

Sealant and TWRAP™

Trafalgar Fire's FyreFLEX® Sealant is a water based, low VOC and environmentally friendly fire-resistant acrylic sealant which is perfect for fire stopping power and data cables and cable tray penetrations through fire rated barriers. FyreFLEX is proudly Australian Made and Owned Certified, and is one of the most fire tested sealants in the market with more than 30 fire tests. This manual provides information on tested systems for fire sealing of cable services through a wide range of fire rated barriers, and were required the use of TWrap.

AUSTRALIAN MADE AND OWNED

NCC 2022 READY

KEY FEATURES

- Australian made, non-toxic, low VOC sealant
- Simple installation details
- Fire tested to AS1530.4:2014
- Fully encapsulated 25mm TWRAP™ material
- Tested in Hebel®, Speedpanel®, Plasterboard walls and more
- Top side only install for floors
- Maintains acoustic performance

APPLICATIONS

Cable Penetrations:

- Data/Comms
- Power
- Fire Cables
- Singles, Bundles, & Trays

This manual specifically covers electrical/ data cable penetrations, for details on plumbing service penetrations or control/ expansion joints with FyreFLEX® Sealant, contact Trafalgar Fire at technical@tgroup.com.au

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BENEFITS - FyreFLEX® SEALANT

WHAT IS FyreFLEX®?

FyreFLEX® Sealant is a proudly Australian Made water based, low VOC and environmentally friendly fire-resistant acrylic sealant with slight intumescent properties which makes it perfect for fire stopping cable and metal pipe penetrations through fire rated barriers. FyreFLEX® is one of the most fire tested sealants in the market with more than 40 fire and acoustic tests and assessments spanning over 30 years. FyreFLEX® has been approved for use in a large range of control joint or firestopping applications required under the National Construction Code (NCC).

This technical manual in particular relates to common electrical services, including data/comms cables and power cables, however FyreFLEX® sealant is used in many other applications including: control/expansion joints, plumbing services including copper and steel pipes, as well as acting as a seal for many of our other passive fire systems (FyreBOX™, FyreBOARD Maxilite® etc).

APPLICATIONS

Electrical and data:

- Power Cables
- Comms and Data Cables
- Cable Trays

Covered in the FyreFLEX® Plumbing Technical Guide:

- Copper Pipes
- Steel Pipes

Other:

- Smoke and Acoustic Seals
- Control/Expansion Joints

ACOUSTIC PERFORMANCE

Many fire-rated barriers also have a requirement for low sound transmission, as such service penetrations in fire rated walls can reduce the acoustic performance of the wall itself if not properly assessed. FyreFLEX® Sealant has been tested for its acoustic properties to ensure it is suitable for these applications. Tested in a typical arrangement (electrical penetration with a 10mm annular gap), it has been found that FyreFLEX® Sealant has no degradation of the acoustic performance of the following wall types:

- Single layer plasterboard wall acoustic rating of up to RW 50
- Double layer plasterboard wall acoustic rating of up to RW 54
- 140mm Concrete/Masonry wall acoustic rating of up to RW 45

Refer to tfire.com.au for a copy of the acoustic report, and contact technical@tgroup.com.au is you have any questions at all.

Note: For plastic pipe penetrations (PVC, PEX, etc.) refer to our technical manual for systems such as FyrePEX HP intumescent Sealant, or the FyreCOLLAR range.

BENEFITS - TWRAP™ INSULATION SYSTEMS

WHAT IS TWRAP™

TWRAP™ is a 25mm thick fully foil encapsulated, fire protection wrap engineered to provide insulation performance on service penetrations as required by the National Construction Code (NCC) and tested in accordance with AS1530.4-2014.

TWRAP™ must be used in conjunction with Trafalgar Fire's parent penetration sealing systems to provide the integrity and insulation rating, for services that conduct heat through fire barriers such as metal pipes and cables.

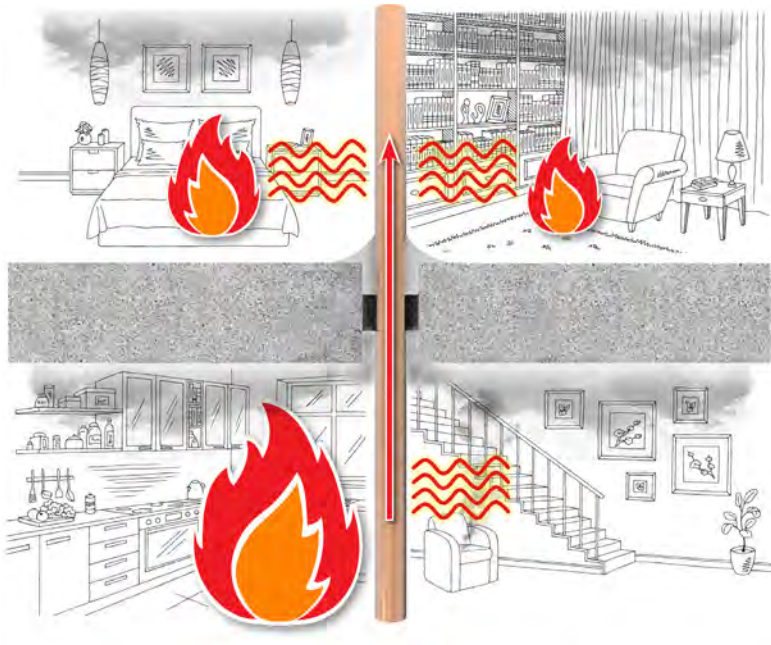
The aluminium foil, fiberglass-reinforced outside layer completely encapsulates the core and provides additional handling strength, protection from tearing and provides a high resistance to mould growth.

WHY IS TWRAP™ NEEDED?

If a fire were to break out within a fire compartment, the temperatures within that compartment can quickly reach 1000°C. This heat can be conducted through any metal service penetrations, typically pipes, cables and cable tray, into the adjoining fire compartment.

The increased temperatures can ignite any combustible materials in close proximity to the service penetrations, allowing the fire to spread without flames directly breaching the fire barrier.

Service penetrations are essential in all modern buildings, and the building code (NCC) requires these penetrations to be fire stopped for integrity as well as insulation performance which is where TWRAP™ is required.



SPECIFICATIONS

AUSTRALIAN MADE AND OWNED

FyreFLEX®

SPECIFICATIONS

Movement Capabilities	+/- 10% Movement
Colour	White- for service penetrations and easy painting Grey- colour matched to concrete or blockwork
Fire Testing	Tested and approved to AS1530.4-2014 and AS4072.1 in accordance with the National Construction Code (NCC) along with TWRAP™ as part of the tested system. FCO1579, FAS190382 & FAS220102.
Safety	Non-toxic, low VOC Please refer to the system MSDS for full safety information
Shelf Life	24 months from date of manufacture
Acoustics	Maintains acoustic performance of up to RW 54
Environment	Made using recycled materials, and has Green Star VOC rating

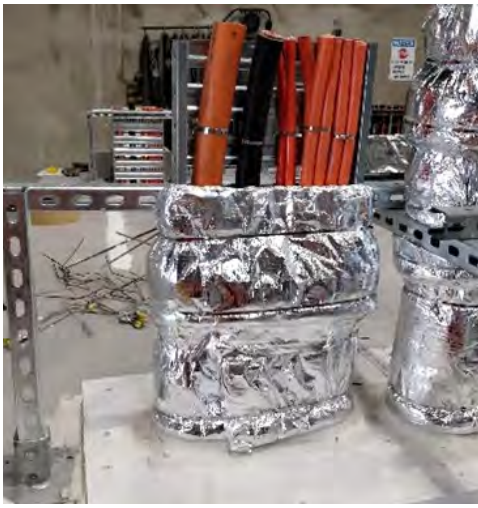
TWRAP™

SPECIFICATIONS

Description	TWRAP™ is a 25mm thick fully foil encapsulated, fire protection wrap engineered to provide insulation performance on service penetrations (i.e. reduce heat transfer).
Size	25mm thick, roll widths 300, 450, 600mm and 7.6m long
Fixing requirements	Stainless steel cable ties and Aluminium reinforced tape
Safety	Mould growth resistance, asbestos free
Testing	Tested and approved to AS1530.4-2014 and AS4072.1 in accordance with the National Construction Code (NCC) as part of the tested system with FyreFLEX® sealant. FCO1579.
Thermal Resistance	R value of 0.7 at 25mm

CABLE CONSTRUCTION AND SIZES

CABLE CONSTRUCTION AND SIZES



Fire testing approvals for different types of cables can be confusing, and it's often hard to know what is actually approved for use or what sizes are covered. When cables are fire tested to AS1530.4 they are reported based on their construction, not by their voltage or amperage rating, so the below information is written to clarify what our approvals can cover.

For service penetrations, the building code clause NCC C3.15 (now C4D1) requires the type of cables installed on a site to be identical to the type of cables that have been tested or approved for use in a fire test, however there are thousands of different cable types for different applications, so it is not always easy to find an identical tested system, and it is not practical to test every possible configuration.

Trafalgar Fire has taken a practical two-pronged approach with our fire testing:

1. Testing small bundles of small cables that can be sealed with FyreFLEX® sealant only, without needing additional thermal insulation (TWRAP™). This testing applies only to the cable and bundle sizes tested.
2. Testing larger power cables on cable trays as recommended in AS1530.4-2014, appendix D. These cables are much larger and cause significant heat transfer through a penetration and will require additional thermal insulation (TWRAP™) to meet the full FRL. For more information see below.

AS1530.4 – APPENDIX D POWER CABLES

Testing the AS1530.4 appendix D power cable in a penetration seal automatically gives you the largest range of cable coverage, which applies to all copper core conductor, XLPE or PVC sheathed/insulated cable constructions (reference AS1530.4-2014 section 10.12 "*permissible variations*").

Testing these cables is a good representation of large single core and multi core cables, as well as different bundle sizes on a steel cable tray and gives a good indication of the fire performance of these large penetration systems.

However, the permissible variations in AS1530.4 **DO NOT** give guidance on the maximum size of the cable bundles or trays that this actually applies to. This manual provides practical and conservative recommendations for the maximum size bundles and cable tray sizes based off what has physically been tested, without trying to predict performance of larger cable groupings.

ALUMINIUM CABLES

The cable systems tested in this manual only apply to copper core cables. Aluminium has a lower melting point than copper and requires a more aggressive intumescent system. For tested aluminium cable systems please refer to the Aluminium Cables Application Manual or contact Trafalgar Fire at technical@tfire.com.au for the most up to date fire testing approvals.

CABLE QUICK REFERENCE GUIDE

CABLE CONSTRUCTION - QUICK REFERENCE GUIDE

When reading though the fire testing and assessment reports, the different cable approvlas are described by their physical descriptions. Power cables are often described by the cross-sectional area of their core conductor(s), as well as their Outside Diameter (OD). Communications cables are often described by their approved application ratings (like Category 6 data cables) so the below table can act as a quick reference guide:

Common name	Common application (example only)	Maximum approved size* (based off cross sectional area)	Image
TPS	240v power-points, ceiling fittings etc	Copper core up to 2.5mm^2	
Firesense or fire cables	Fire/smoke alarm systems	These are also TPS cables, construction as above but typically have smaller copper cores	
CAT6	Ethernet/internet etc	7.1mm O.D.	
VRF	Variable Refrigerant Flow control cables are used in air conditioning systems	7mm O.D and 1.5mm^2	
RG6	TV and radio antenna	6.7mm O.D.	
Single core power	Higher current power systems (residential towers, commercial and industrial applications)	Copper core size up to 630mm² and/or up to 41.4mm OD	
2C+E (2 core and Earth)		Copper core size up to 185mm² and/or up to 53.8mm OD	
3C+E (3 core and Earth)			
Fibre Optic	NBN (usually run inside PVC conduits for mechanical protection)	Fibre optic cables in PVC conduits require a FyreCHOKE Conduit Collar. Bare fiber cables should be fire sealed with the FyreBOX™ or FyrePLUG® range	

*Maximum sizes based off the maximum sizes tested in the AS1530.4-2014 appendix D arrangements. Larger cables should be reviewed case by case, contact Trafalgar Fire at technical@tgroup.com.au for more information.

COMPLIANCE

NCC 2022 READY

COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE (NCC)

Where any service penetrates an internal fire barrier that has a set Fire Resistance Level (FRL) with respect to integrity and insulation, the installation must comply with the following:

A - A Fire Tested System – An identical prototype, installed in the same wall or floor system that has been tested/approved to the fire testing standard AS1530.4 and AS4072.1 which has achieved an FRL of equal to or greater than that required by the fire barrier.

B - An Assessed System – A system from an assessment report written by a NATA accredited lab, based on actual Fire Test data that allows variations within the limits of AS4072.1.

For example, if the site has a-/90/90 plasterboard wall system with an electrical cable penetration, the system used to seal the cables must have been fire tested at an approved laboratory *with* electrical cables *in* the same wall type *and* fire tested for at least 90 minutes without failing the integrity or insulation criteria.

Compliance will only be achieved when the installation on site mirrors the tested system. Refer to FCO1579 available on our website.

FyreFLEX® APPROVALS

Fire testing is a timely and expensive process, and it is impossible to test every single possible service configuration 'identically' in a practical sense.

Under the building code C3.15(a)(i)(B) (now C4D15) a testing authority is permitted to write a formal assessment confirming the likely fire performance (FRL) of the penetration. The guidelines for what can and can't be included in a formal assessment are outlined in AS4072.1.

Our FyreFLEX® sealant has various fire assessment reports for different applications (FCO1579, FAS190382 & FAS220102) which are written by expert Fire Engineers from a NATA approved laboratory which provides evidence of compliance under the NCC. The report summaries the decades of fire test data for FyreFLEX® sealant and allows for a large range of practical applications in various walls and floor penetrations. FCO 1579 is available for download at www.tfire.com.au/Test_Reports

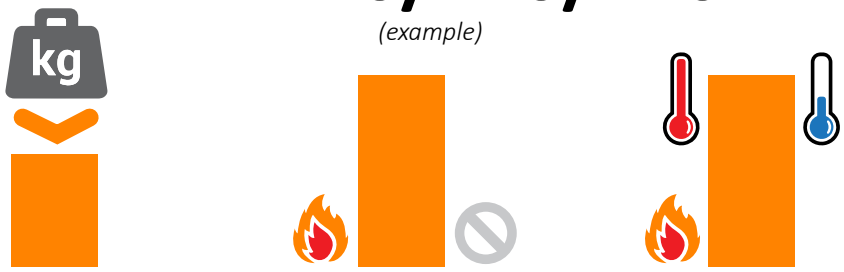
FIRE RESISTANCE LEVEL

FIRE RATING – HOW IS FIRE PERFORMANCE MEASURED?

An FRL (fire resistance level) is a handy way of summarising the performance of a building element. It consists of 3 numbers, all given in minutes:

FRL 240/240/240

(example)



Structural Adequacy

The ability of the building element to support the weight of adjacent building elements.

ie: a brick wall supporting a concrete floor slab above.

Integrity

The ability of an element to prevent the passage of flames and hot gasses.

ie: a plasterboard wall remaining intact and not allowing holes to form.

Insulation

The ability of an element to resist heat transfer from the exposed face to the unexposed face.

ie: a bundle of cables remaining below a set temperature limit on the unexposed side of the wall penetration system.

Penetrations are not required to have a Structural Adequacy rating and is usually expressed as a dash. For example, a penetration through a 4-hour load bearing wall would be written as -/240/240.

INTEGRITY

The FyreFLEX® system will achieve the integrity performance for up to 4 hours physically stopping the direct spread of fire, however the insulation performance of the penetration will be limited to the type of wall being used and conductivity of the services in the penetration.

INSULATION (TEMPERATURE RISE)

Heat transfer via conduction (or heat rise) will occur through the conductive parts of any penetration system. To limit the heat rise through the FyreFLEX® Sealant penetration systems, our 25mm thick TWRAP™ foil encased blanket can be wrapped around the services to achieve up to 2 hours of insulation performance. There are some applications that won't require any TWRAP™ to achieve the full FRL please refer to the tables in the coming pages for specific details.

PRE-INSTALL NOTES

ANNULAR GAP

The annular gap is the space between a service and the hole. Annular gaps are important as they allow for movement in the building and service.

FyreFLEX® sealant is used in the annular gap to form a seal to stop the spread of fire while allowing movement to prevent damage to the building and the service.

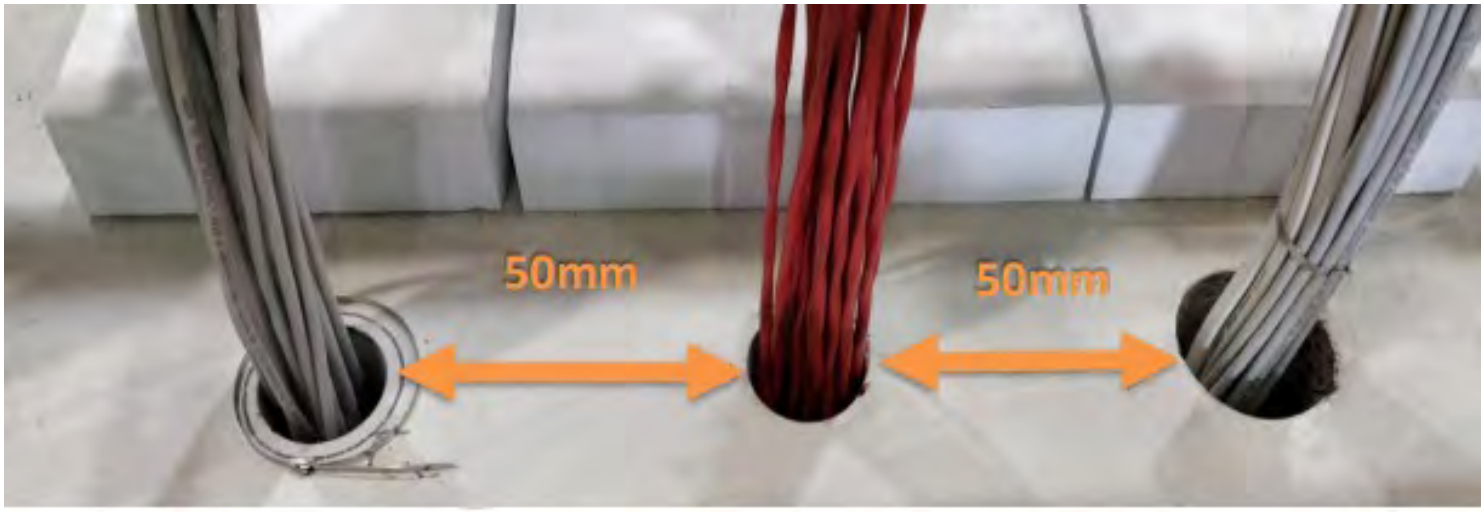
If an opening has already been formed and it is larger than what is prescribed here in this manual, Trafalgar Fire has several systems that can be used to close down the opening to the correct size:

- FyreBATT
- FyreBOARD Maxilite®
- FyreSET® Mortar
- FyrePLUG® Pillow

Refer to your preferred system technical manual for details on installation and approved barriers and services or, contact Trafalgar Fire at technical@tgroup.com.au for technical assistance.

SERVICE SEPARATION

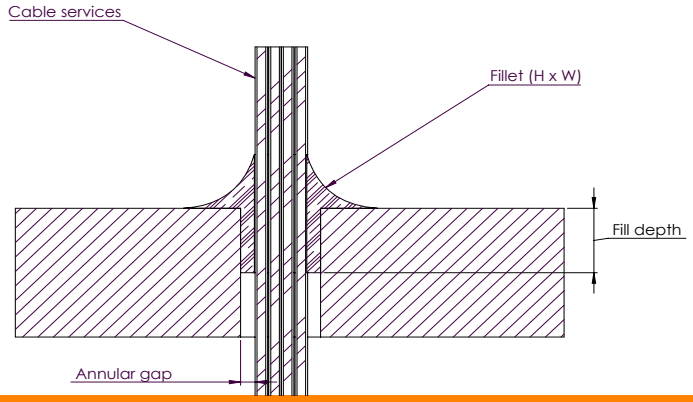
The distance between any two services can be a tricky topic of conversation. There are trade specific requirements (i.e. proximity of electrical services to gas services), but often asked is what are the requirements for compliance with fire stopping systems? FyreFLEX® Sealant and TWRAP™ for electrical cable penetrations is approved to have penetrations as close as 50mm away from one another (i.e. 50mm between openings, edge-to-edge).

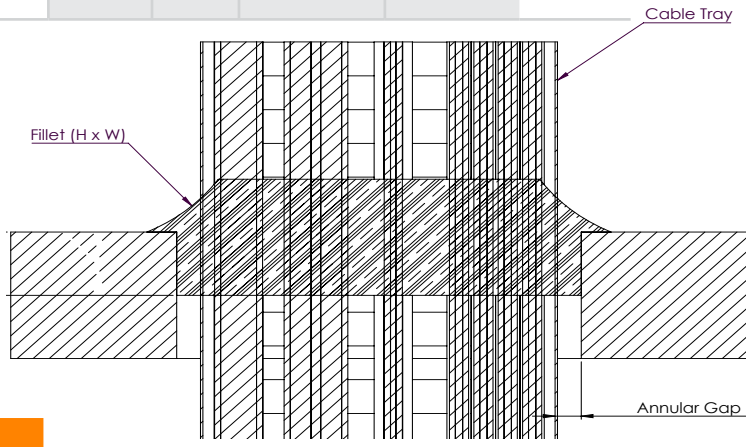


FLOOR PENETRATIONS

CONCRETE FLOOR SLABS

Floor Systems	Cable type	Approved cable construction	Max bundle size	Max Annular gap	Fill depth	Fillet	TWRAP™ length	FRL	Report #
Concrete Slabs minimum 120mm thick	Small cable bundles	Cat6 data cables	20x	Max 65mm diam hole (20mm annular gaps)	70mm	40 x 40mm	Wrap Free	**-/120/120**	FCO 1579
		Firesense cables 2.5mm²							
		TPS 2.5mm²							
	300mm wide cable trays with Appendix D cable Configuration (see below)*			50mm high slot x width to suit cable tray (gaps max 5-30mm)	60mm	50 x 50mm	300mm	**-/90/90**	
							450mm	**-/120/120**	
Concrete Slabs minimum 175mm thick	300mm wide cable trays with AS1530.4 Appendix D Cable Configuration (see below)*				60mm	50 x 50mm	450mm	**-/180/180**	
							2x 450mm	**-/240/240**	

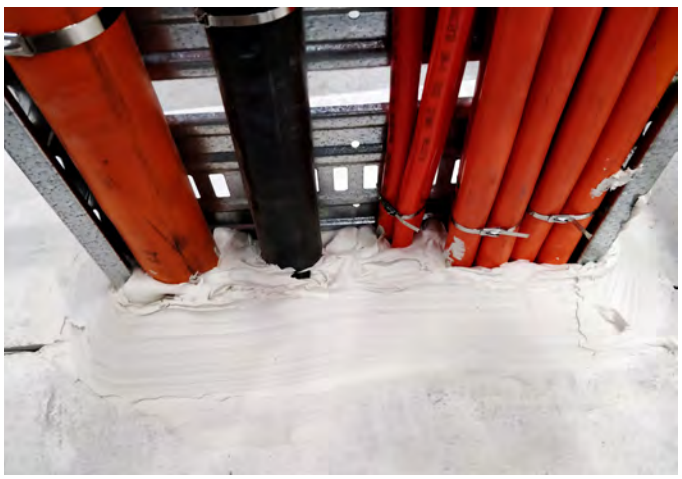




CABLE TRAYS

Cable type	Max Cable Size	Max bundle size on 300mm cable tray
Single Core Copper cables	41.4mm OD	1x
Three Core and Earth Copper Cables	53.8mm OD	1x
	16mm OD	3x
	20.4mm OD	8x

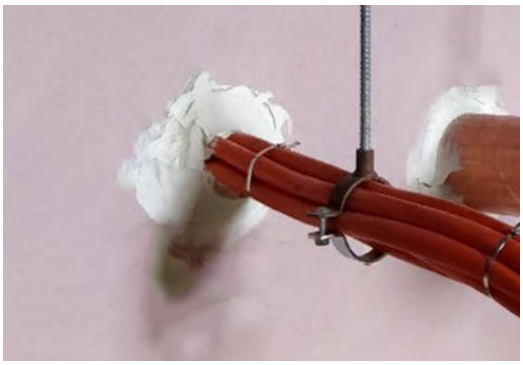
For larger cable bundles/trays, simply group the cables into separte bundles on the cable tray. The above cable configuration has been tested to AS1530.4, this is the Appendix D cable configuration. Refer to page 5 for details, however cables up to this size/bundle size can be treated to the above details.



*Based off AS1530.4-2014 appendix D1 standard cable sets, applies to copper core PVC and XLPE sheathed power cables.

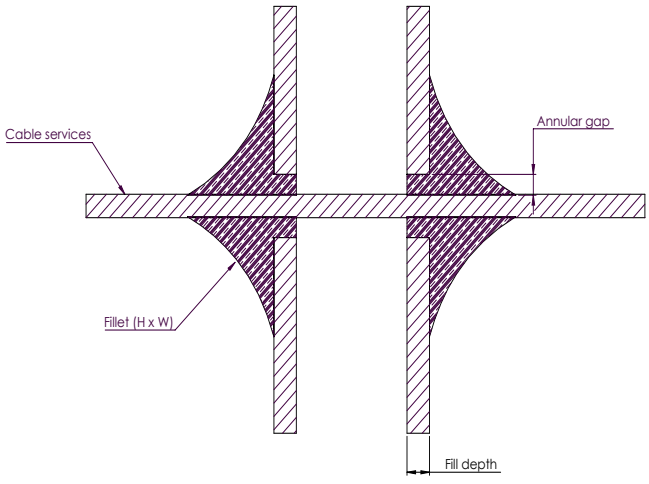
WALL PENETRATIONS

60-90 MINUTE PLASTERBOARD WALLS



Wall system (minimum spec)	Approved cable construction	Max bundle size	Hole size	Fill depth	Fillet	TWRAP™ length	FRL	Report #
Single layer 13mm plaster, both sides of a 64mm stud	TPS cables, 2.5mm²	3x	Max 30mm diam hole (5mm annular gaps)	Depth of plasterboard	50x 50mm	Wrap Free	-/60/60	FCO1579
	CAT6 data or VRF cables							
	Three-core and Earth 19mm OD, 16mm²							
	TPS cables 2.5mm² CAT6 data cables*	up to 3x TPS &/or 2x CAT6		Depth of plasterboard + patch (230x230x 13mm FR plasterboard)	30x 30mm			FAS220102
	RG-6 Coax cable	4x						FCO1579
Single layer 16mm plaster, both sides of a 64mm stud	TPS cables 2.5mm²	5x	Max 30mm diam hole (5mm annular gaps)	Depth of plasterboard	30x 30mm	Wrap Free	-/90/90	FCO1579
	CAT6 data or VRF cables							
	Three-core and Earth 19mm OD ,16mm²	3x				300mm		
	TPS cables 2.5mm² CAT6 data cables*	up to 3x TPS &/or 2x CAT6			30x 30mm	Wrap Free		FAS220102

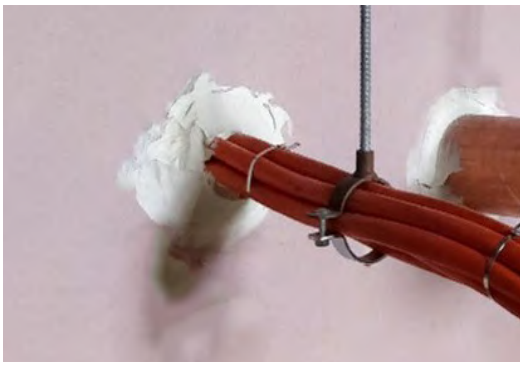
*Half wall system- Service entering and exiting the same side of the wall. Refer to drawing pages 32-33.



TWrap installed to correct length where specified in the above table.

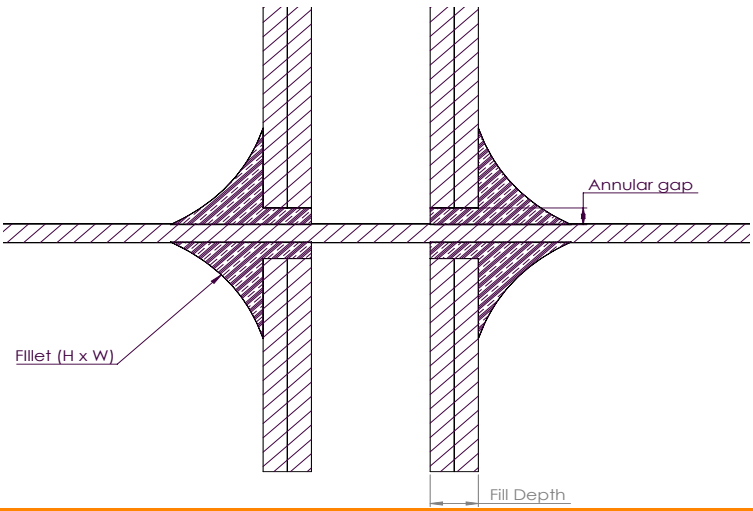
WALL PENETRATIONS

120 MINUTE PLASTERBOARD AND PLASTERBOARD SHAFT WALLS



Wall system (minimum spec)	Approved cable construction	Max bundle size	Annular gap	Fill depth	Fillet	TWRAP™ length	FRL	Report #
Double layer 13mm plaster, both sides of a 64mm stud	TPS cables 2.5mm² CAT6 cables	5x	Max 30mm diam hole (5mm annular gaps)	Depth of plaster-board	30x30mm	**Wrap Free**	**-/120/120**	FAS 190382
	TPS cables 2.5mm² CAT6 data cables*	up to 3x TPS &/or 2x CAT6						FAS 220102
	RG-6 Coax cables	4x			50x50mm	300mm		FCO 1579
	TPS cables 2.5mm²	10x	Max 80mm diam hole (20mm annular gaps)		15x15mm	300mm		
	CAT6 data cables							
	VRF cables	6x						
	Three-core and Earth 19mm OD 16mm²	8x			30x30mm			
1x 25mm shaft-liner installed in 64mm C-H studs, with 2x16mm plaster	TPS cables 2.5mm²	5x	Max 30mm diam hole (5mm annular gaps) 30mm hole	Depth of plaster-board and shaft-liner	50x50mm	**Wrap Free**	**-/90/90**	FCO 1579
	CAT6 data or VRF cables							
	Three-core and Earth 19mm OD ,16mm²	3x				300mm		
3x16mm plaster laminated on one side of a 64mm stud**	TPS cables 2.5mm²	5x		Depth of plaster	50x50mm	**Wrap Free**	**-/90/90**	FSP 2230

*Half wall system- Service entering and exiting the same side of the wall. Wall **stud required to be min. 64mm**. Refer to drawing pages 32-33.
** 60mm thick FyreBOARD Maxilite® patch required to achieve FRL on one side of wall.



TWrap installed to correct length where specified in the above table.

WALL PENETRATIONS

CONCRETE/MASONRY

Wall system	Cable type	Approved cable construction	Max bundle size	Max Annular gap	Fill depth	Fillet	TWRAP™ length	FRL	Report #
Concrete or Masonry walls minimum 96mm thick	Cable bundles	TPS cables, 2.5mm²	5x	Max 30mm diam hole (5mm annular gaps)	16mm depth on both sides	30 x 30mm	Wrap Free	-/90/90	FCO 1579
		CAT6 data or VRF cables							
		Three-core and Earth 19mm OD 16mm²	3x				300mm		
Concrete walls 120mm thick or **Masonry walls** minimum 130mm thick	Cable bundles	RG-6 coax cables	4x		40mm depth on both sides	30 x 30mm	Wrap Free	-/120/120	FCO 1579
		TPS cables or CAT6 cables	5x		30mm depth on both sides				FAS 190382
		TPS cables, 2.5mm²	10x	Max 80mm diam hole (20mm annular gaps)		15 x15mm	300mm		FCO 1579
		CAT6 cables							
		VRF Cables	6x						
		Three-core and Earth 19mm OD 16mm²	8x			30 x 30mm			
	Cable trays with AS1530.4 Appendix D Cable Configuration (see below)*			50mm high slot x width to suit cable tray (gaps max 5-30mm)		50 x 50mm	300mm	-/180/120	FCO 1579

*Based off AS1530.4-2014 appendix D1 standard cable sets, applies to copper core PVC and XLPE sheathed power cables.

CABLE TRAYS

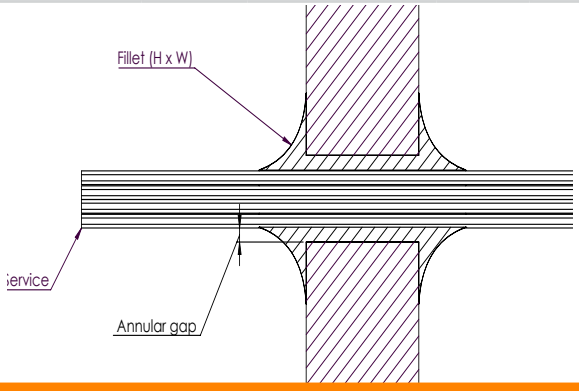
Cable type	Max. Cable Size	Max bundle size on 300mm cable tray
Single Core Copper core cables	41.4mm OD	1x
Three Core and Earth Copper core Cables	53.8mm OD	1x
	16mm OD	3x
	20.4mm OD	8x

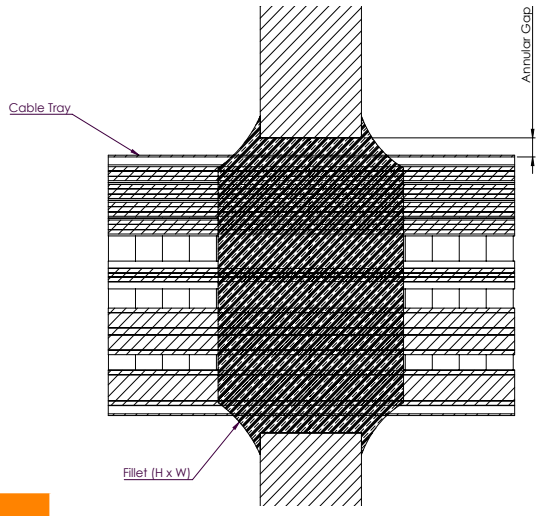
For larger cable bundles/trays, simply group the cables into separte bundles on the cable tray. The above cable configuration has been tested to AS1530.4, this is the Appendix D cable configuration. Refer to page 5 for details, however cables up to this size/bundle size can be treated to the above details.

WALL PENETRATIONS

HEBEL® WALSC AND SPEEDPANEL® WALLS

Wall system	Cable type	Approved cable construction	Max bundle size	Max Annular gap	Fill depth	Fillet	TWRAP™ length	FRL	Report #
Hebel® or Walsc® 75mm double cage AAC wall	Cable Bundle	TPS Cables 2.5mm² RG-6 Coax cables Cat6 or VRF Cables	4x	Max 30mm diam hole (5mm annular gaps)	Full depth of panel 75mm	30 x 30mm	**Wrap Free**	**-/90/90**	FCO 1579
	Cables and trays with Appendix D cable Configuration (see below)			50mm high slot x Width to suit cable tray (gaps max 5-30mm)		50 x 50mm	300mm	**-/120/120**	
78mm Speed Panel®	Cable Bundle	TPS Cables 2.5mm² RG-6 Coax cables Cat6 or VRF Cables	4x	Max 30mm diam hole (5mm annular gaps)	Full depth of panel 78mm	50 x 50mm	**Wrap Free**	**-/120/120**	FCO 1579
	Cables and trays with Appendix D cable Configuration (see below)*			50mm high slot x width to suit cable tray (gaps max 5-30mm)		50 x 50mm	300mm		





CABLE TRAYS

Cable type	Max Cable Size	Max bundle size on 300mm cable tray
Single Core copper bundles	41.4mm OD	1x
Three Core and Earth copper cables	53.8mm OD	1x
	16mm OD	3x
	20.4mm OD	8x

For larger cable bundles/trays, simply group the cables into separte bundles on the cable tray. The above cable configuration has been tested to AS1530.4, this is the Appendix D cable configuration. Refer to page 5 for details, however cables up to this size/bundle size can be treated to the above details.

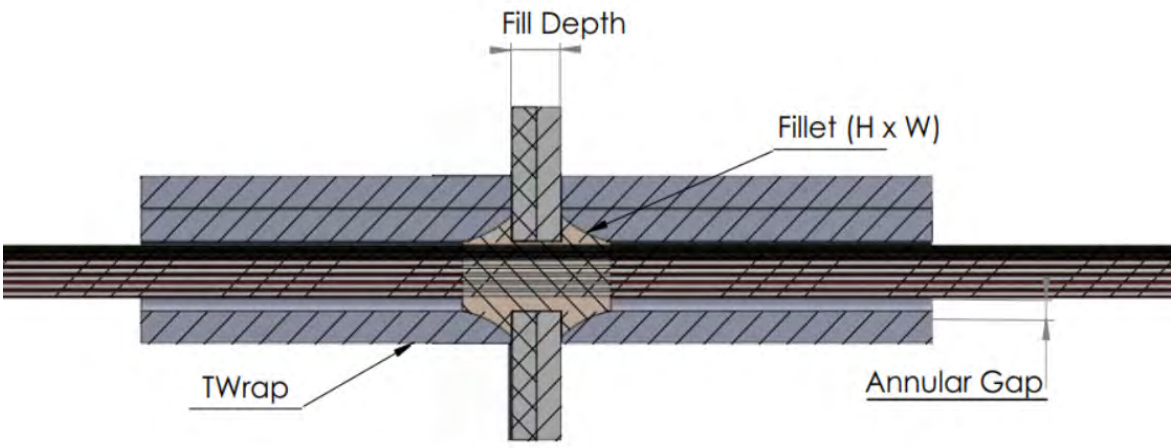
*Based off AS1530.4-2014 appendix D1 standard cable sets, applies to copper core PVC and XLPE sheathed power cables.

WALL PENETRATIONS

COREX WALLS

Corex board is a gypsum based plasterboard with a glass reinforced matt face, with superier impact resistance to paper faced plasterboard. 2x layers of Corex boards can be fixed to the outside of a 64mm steel stud frame to provide a 2-way FRL.

Wall system	Approved cable construction	Max bun-dle size	Max Annular gap	Fill depth	Fillet	TWRAP™ length	FRL	Report #
2x20mm Corex Board walls on one side of a 64mm stud	TPS Cables 2.5mm²	30x	Max 50mm diam hole (5mm annular gaps)	Full depth of Corex (40mm)	30 x 30mm	300mm	**-/90/90**	**FCO 1579**
	TPS Fire cables 1.5mm²							
	Cat6 data cables							
	VRF cables	5x						
	Three-core and Earth 19mm OD 16mm²	8x	Max 80mm diam hole (10mm annular gaps)					
2x25mm Corex Board walls on one side of a 64mm stud	TPS Cables 2.5mm²	30x	Max 50mm diam hole (5mm annular gaps)	Full depth of Corex (50mm)	30 x 30mm	300mm	**-/120/120**	**FCO 1579**
	TPS Fire cables 1.5mm²							
	Cat6 data cables							
	VRF cables	5x						
	Three-core and Earth 19mm OD 16mm²	8x	Max 80mm diam hole (10mm annular gaps)					



INSTALLATION

PLASTERBOARD WALLS UP TO -/120/120

STEP 1

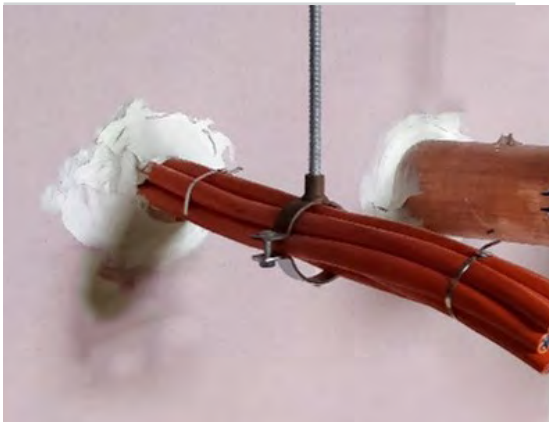
Form an opening appropriate for your service per the approvals table on page 12-13. Maintain 50mm between openings if multiple penetrations are

STEP 2

Run services through the holes formed, ensure the cable/s are centered in the opening as best as is practically possible.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3



Apply FyreFLEX® Sealant to the full thickness of the plasterboard, ensuring the correct size of fillet (or cone). **Sealant needs to be applied to both sides of a wall penetration.**

Tip: PE backing rods are tested and perfect for setting the depth prior to installing sealant.

STEP 4

If required, wrap the cables to the correct length ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See page 22 for technical drawings.

INSTALLATION

SOLID WALL APPLICATIONS

STEP 1

Form an opening appropriate for your service per the approvals table on pages 14-15. Maintain 50mm between openings if multiple penetrations are present. Follow wall manufacturers instructions when forming holes. **Remove any plastic pipe formers before applying sealant.**

STEP 2

Run services through the holes formed, ensuring the cables are centered in the opening as best as practically possible.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® sealant to the specified depth of the wall per the approvals page, ensuring the correct size of fillet (or cone).

Sealant needs to be applied to both sides of a wall penetration.

STEP 4

If required, wrap the cables to the correct length ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See page 22 for technical drawings.

INSTALLATION

CONCRETE FLOOR SLABS

STEP 1

Form an opening appropriate for your service per the approvals table on page 11. Maintain 50mm between openings if multiple pipes are present. **Remove any plastic pipe formers before applying sealant.**

STEP 2

Run services through the holes formed, ensure the pipes are centered in the opening as best as is practically possible.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® Sealant to the specified depth of the slab per the approvals page above, ensuring the correct size of fillet (or cone). **Sealant only needs to be applied to the top side of a floor penetration.**

STEP 4

If required, wrap the cables to the correct length on the top side of the floor ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See page 23 for technical drawings.

SYSTEM RANGE

AUSTRALIAN MADE AND OWNED

FyreFLEX

CLICKABLE CODES

Item Number	Description	Min Order Qty	Pallet QTY
FyreFLEX 300W FyreFLEX 300G	FyreFLEX® Sealant Cartridge 300ml White or Grey	20	1440
FyreFLEX 600W FyreFLEX 600G	FyreFLEX® Sealant Sausage 600ml White or Grey	18	810
FyreFLEX 10W FyreFLEX 10G	FyreFLEX® Sealant Pail 10L White or Grey	1	110

TWRAP

CLICKABLE CODES

Item Number	Description	Min Order Qty	Pallet QTY
TWRAP 300*	300mm wide, 25mm thick blanket	7620mm long roll	24
TWRAP 450*	450mm wide, 25mm thick blanket	7620mm long roll	12
TWRAP 600*	600mm wide, 25mm thick blanket	7620mm long roll	12
Tape	Foil tape, 95mm wide, 50m roll	1	N/A
Cable Tie SS 12 x 521	4.6mm wide x 521mm long	25	N/A
Cable Tie SS 12 x 910	4.6mm wide x 910mm long	25	N/A

** FyreWrap® can be substituted for TWRAP™*

FAQ

Q Do I need to wrap my services?

A This depends on the amount and type of services, check the approvals above, or email technical@tgroup.com.au for assistance.

Q Can I use FyreFLEX® for my plastic pipes or conduits?

A No, Trafalgar Fire has different solutions for plastic pipes such as FyreCHOKE Collars and FyrePEX HP Intumescent Sealant. Contact Trafalgar Fire at technical@tgroup.com.aufor details.

Q Can I paint over the sealant?

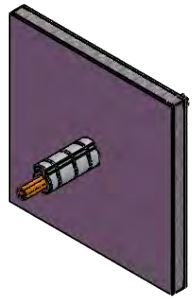
A Yes, the sealant can be painted over.

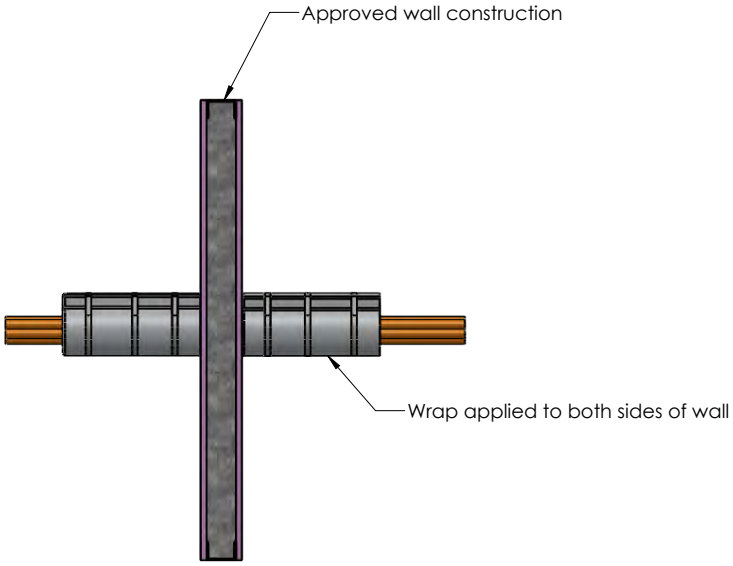
Q Is the FyreFLEX® sealant suitable for external use?

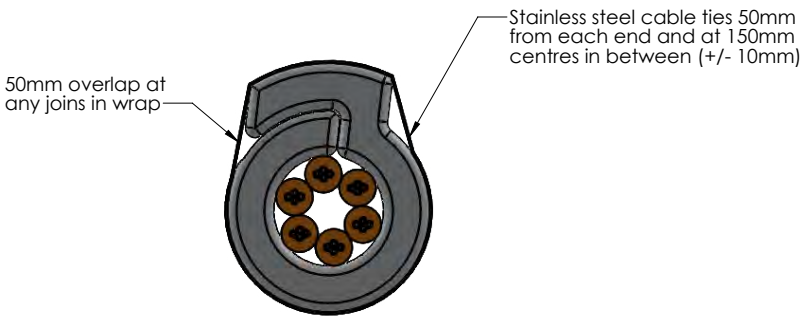
A FyreFLEX® is not recommended for standing water applications, however it can be used in external applications, we simply recommend covering FyreFLEX® with another sealant that is externally rated.

SOCIAL MEDIA

LinkedIn YouTube







SECTION A-A

Drawing Name: Walls - Single TWrap Length			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**	**NOTICE:**
Project Title: TWrap FCO1579			**Fire resistance level:**	**Drawn By:** SM			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No. : 1	**Sheet:** 1 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	TRAFALGAR FIRE

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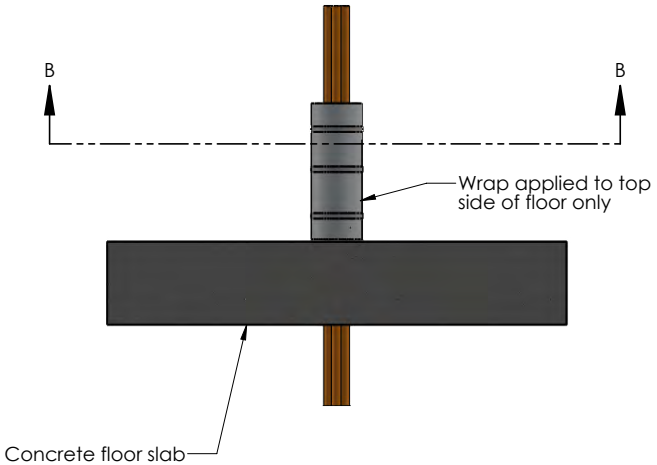

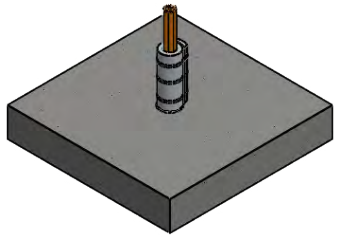

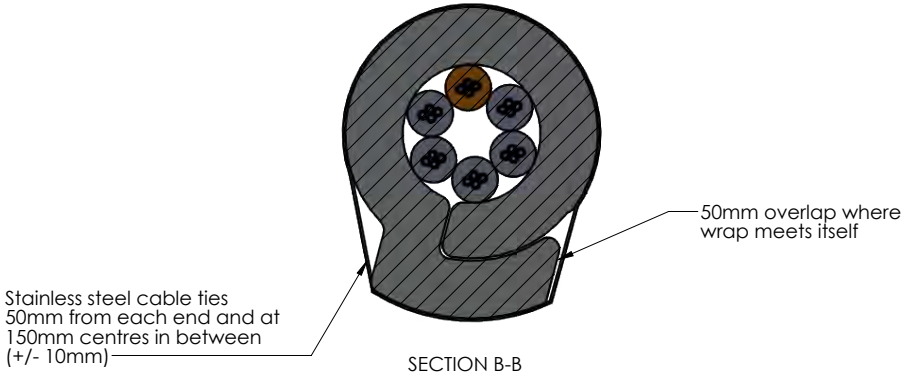

SECTION B-B

Drawing Name: Floors - Single TWrap Length			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:** NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Project Title: TWrap FCO1579			**Fire resistance level:**	**Drawn By:** SM			
Drawing No.: 2	**Sheet:** 2 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	TRAFALGAR FIRE

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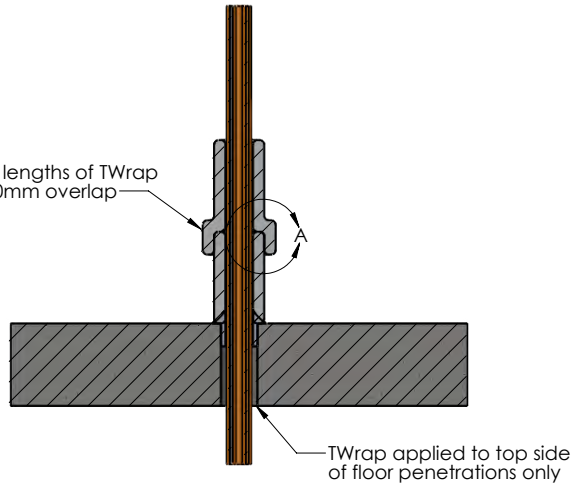
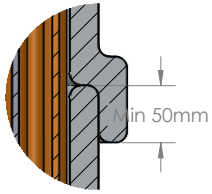
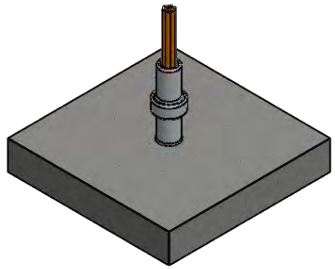
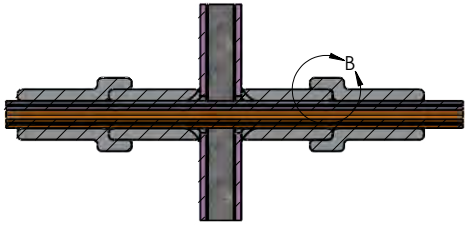


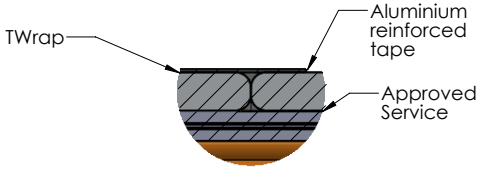


DETAIL A



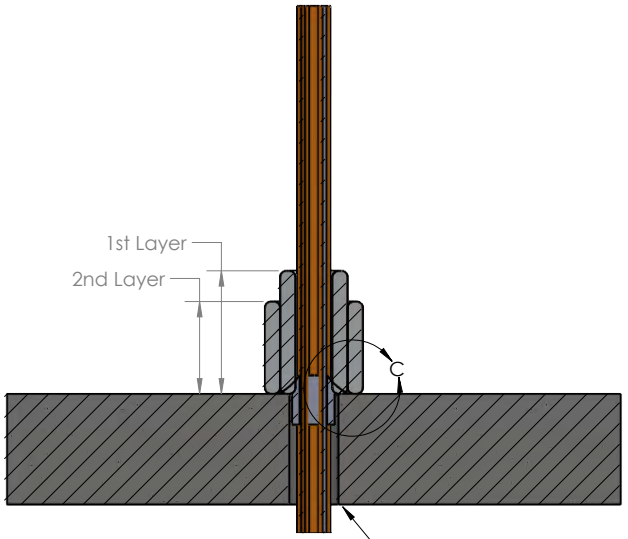


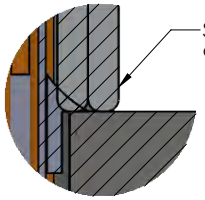
DETAIL B



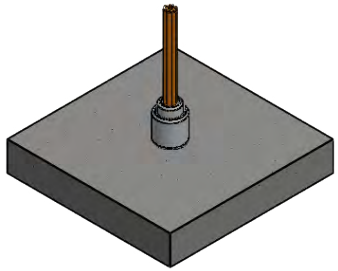
Note: Wrap can also be cut down both joining edges and taped together (top and bottom) to 'stitch' together two pieces. For this use 95mm aluminium reinforced tape.

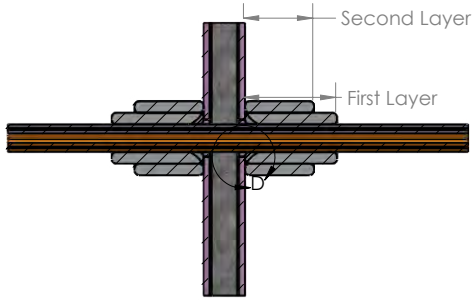
Drawing Name: TWrap - Extended Length		**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**	**NOTICE:**
Project Title: TWrap FCO1579		**Fire resistance level:**	**Drawn By:** SM			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 3	**Sheet:** 3 of 4 / **Date:** 15/06/2021 / **Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING		Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au

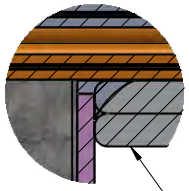




DETAIL C

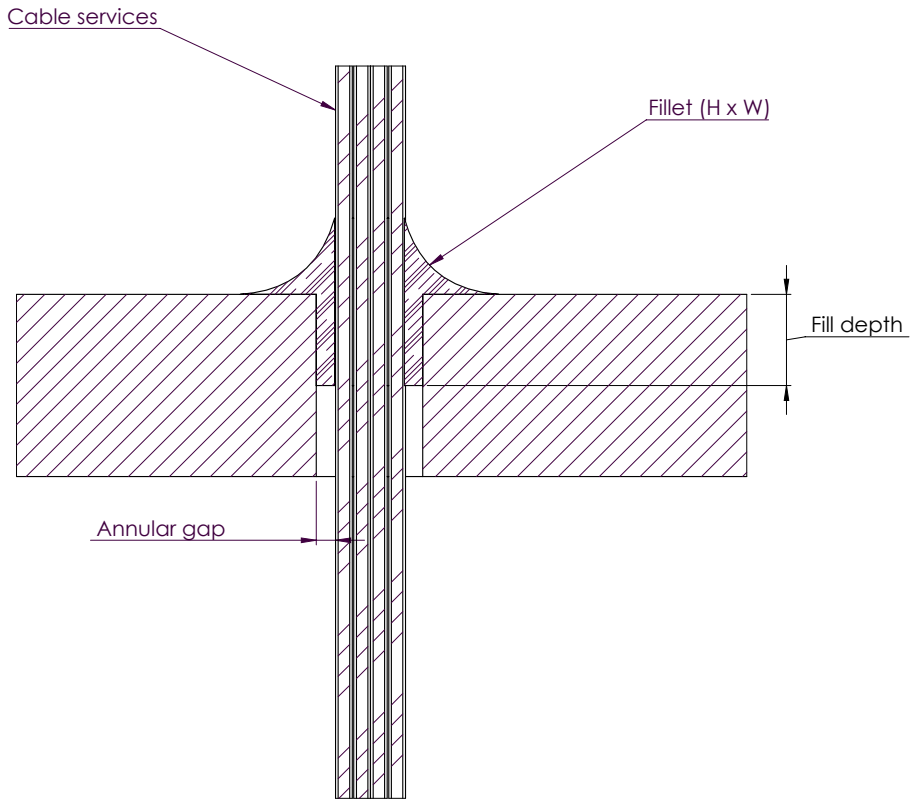






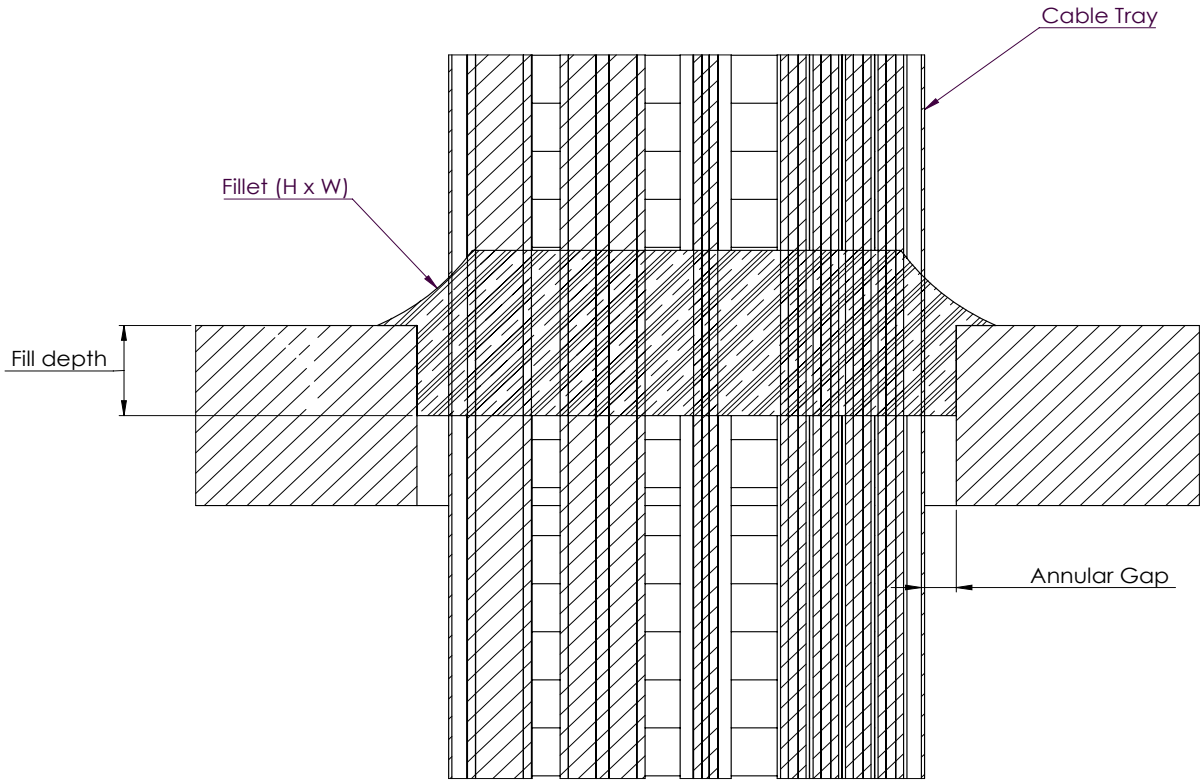
DETAIL D

Drawing Name: Double Layers			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:** NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Project Title: TWrap FCO1579			**Fire resistance level:**	**Drawn By:** SM			TRAFALGAR FIRE
Drawing No.: 4	**Sheet:** 4 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au



Drawing Name: Concrete Floor - Cable Bundle			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:**
Project Title: FyreFLEX FCO 1579			**Fire resistance level:**	**Drawn By:** RB			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No. : 2	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ **STANDARD DRAWING** ☐ **PROJECT DRAWING**	Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: info@tfire.com.au W: www.tfire.com.au

NOTE: Sealant drawing only (before TWRAP™ installation).



Drawing Name: Concrete Floor - Cable Tray			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**
Project Title: FyreFLEX FCO1579			**Fire resistance level:**	**Drawn By:** RB		
Drawing No. : 3	**Sheet:**	**Date:** 10/06/2020 / **Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	

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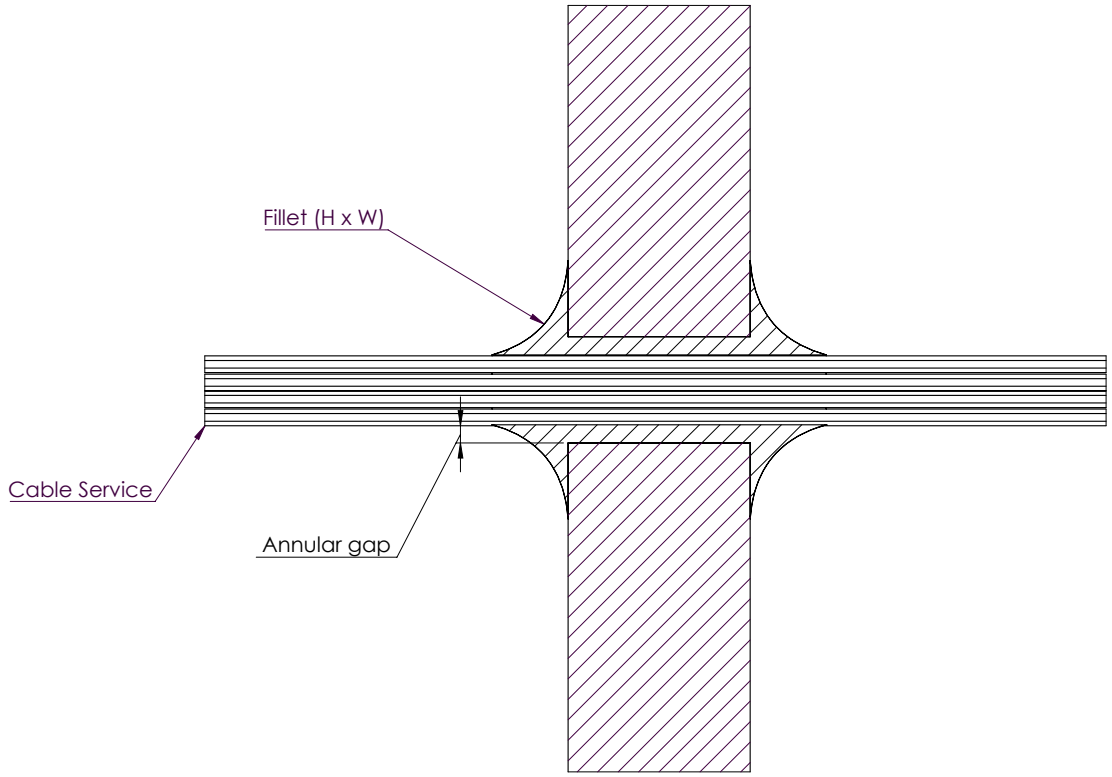

Drawing Name: Solid Wall - Cable Bundle				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**
Project Title: FyreFLEX FCO1579				**Fire resistance level:**	**Drawn By:** RB		
Drawing No.: 6	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	

NOTICE:

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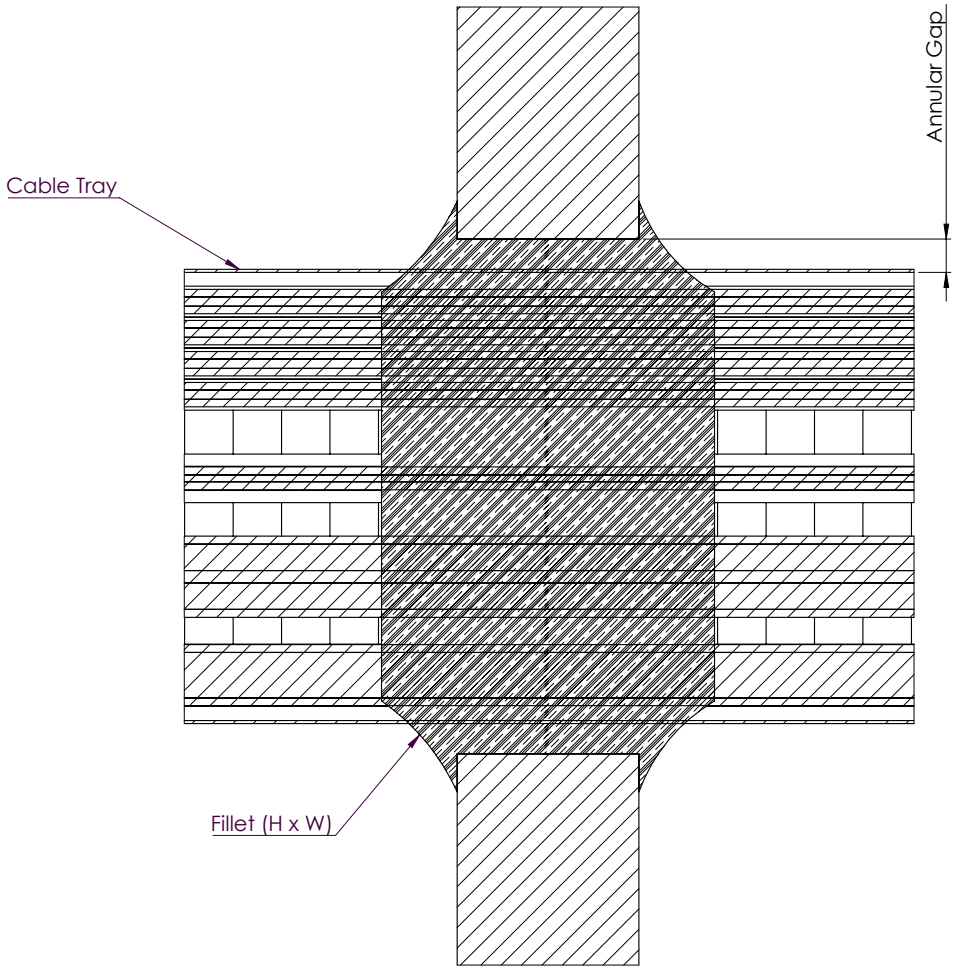
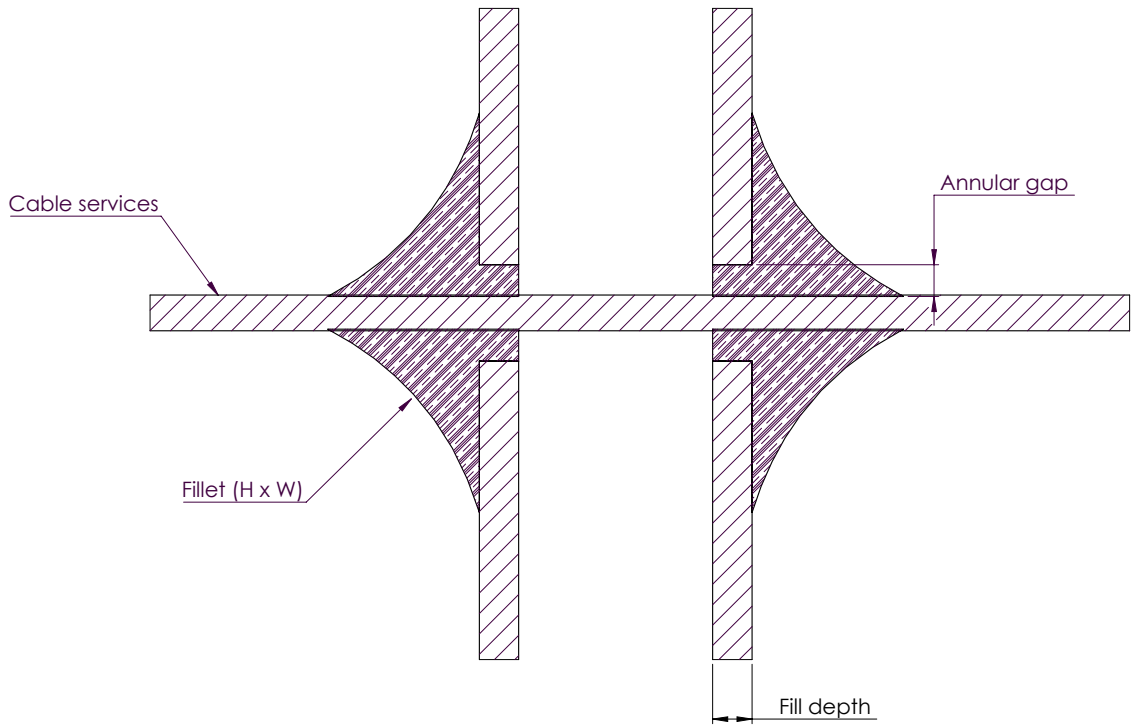
NOTE: Sealant drawing only (before TWRAP™ installation).



Drawing Name: Solid Wall - cable tray				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**	**NOTICE:**
Project Title: FyreFLEX FCO1579				**Fire resistance level:**	**Drawn By:** RB				NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 8	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING			Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: info@tfire.com.au W: www.tfire.com.au

NOTE: Sealant drawing only (before TWRAP™ installation).



Drawing Name: Single layer walls - Cables				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**
Project Title: FyreFLEX FCO1579				**Fire resistance level:**	**Drawn By:** RB		
Drawing No.: 10	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	

NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

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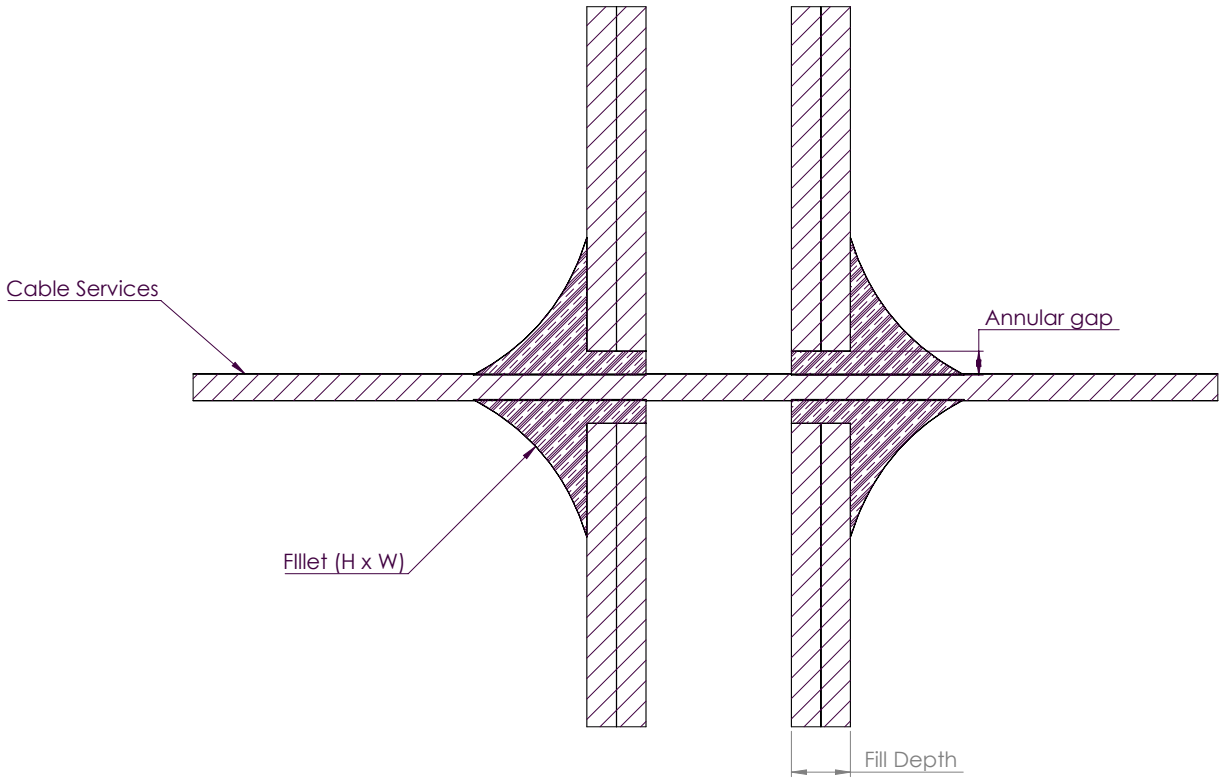
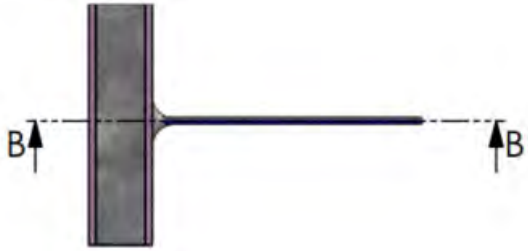
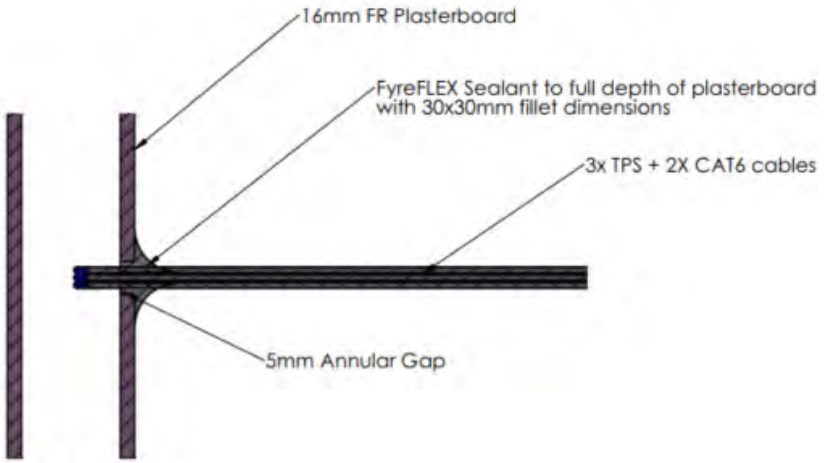
NOTE: Sealant drawing only (before TWRAP™ installation).



Drawing Name: Double layer plaster - cables				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**	**NOTICE:**
Project Title: FyreFLEX FCO1579				**Fire resistance level:**	**Drawn By:** RB				NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 12	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING			Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: info@tfire.com.au W: www.tfire.com.au

NOTE: Sealant drawing only (before TWRAP™ installation).





SECTION B-B

Drawing Name: Cable Penetration				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:**
Project Title: FRT 180358.1					**Drawn By:** DP			
Drawing No. : 2	**Sheet:** 2 of 3	**Date:** 12/04/2022	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING		

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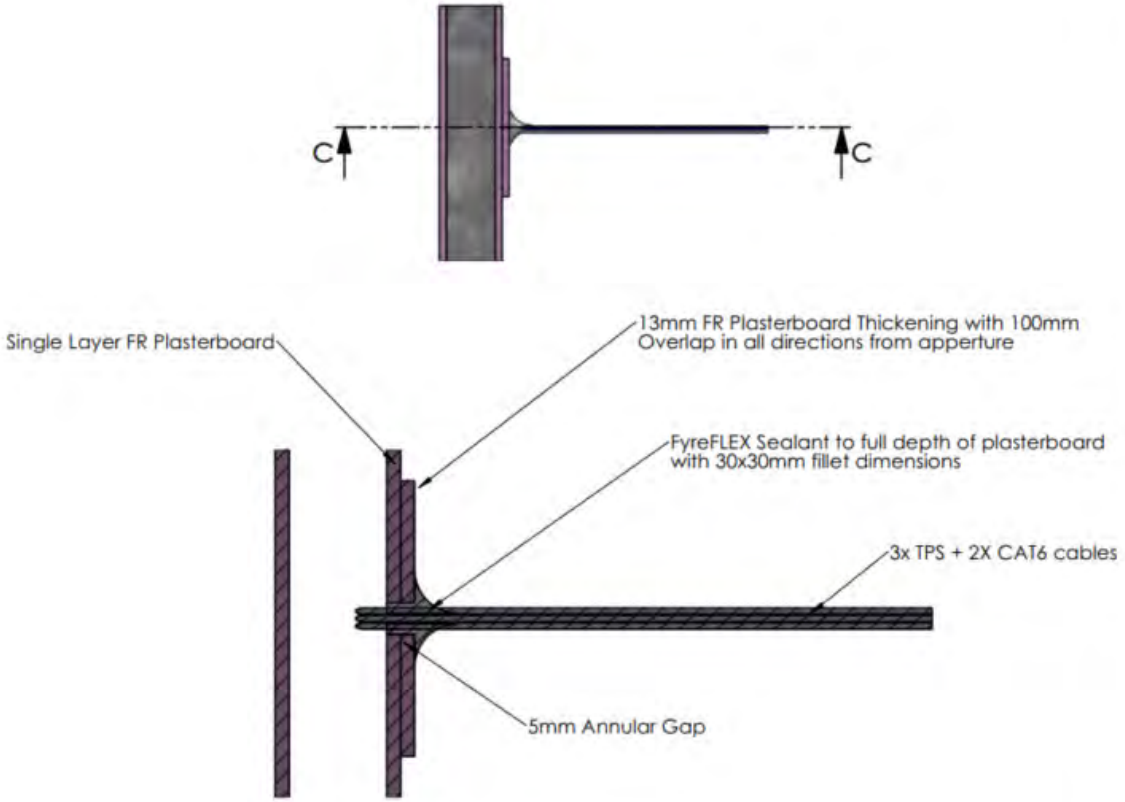

SECTION c-c

Drawing Name: Cable Penetration + Thickening				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:**
Project Title: FRT180358.1					**Drawn By:** DP			
Drawing No. : 3	**Sheet:** 3 of 3	**Date:** 12/04/2022	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING		

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

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SEALANT AND WRAP GUIDE FOR PLUMBERS

FyreFLEX®

Sealant and TWRAP™

Trafalgar Fire's FyreFLEX® Sealant is a water based, low VOC and environmentally friendly fire-resistant acrylic sealant which makes it perfect for fire stopping cable and metal pipe penetrations through fire rated barriers. FyreFLEX is proudly Australian Made and Owned Certified, and is one of the most fire tested sealants in the market with more than 40 fire tests. This manual provides information on tested systems for fire sealing of cable services through a wide range of fire rated barriers.

AUSTRALIAN MADE AND OWNED

NCC 2022 READY

KEY FEATURES

- Australian made non-toxic, low VOC sealant
- Fully encapsulated 25mm TWRAP™ material
- Simple installation details
- Fire tested to AS1530.4:2014
- Tested in Hebel®, Speedpanel®, Plasterboard and more
- Top side only install for floors
- Maintains acoustic performance

APPLICATIONS

Plumbing / Active Fire:

- Copper Pipes up to DN150
- Steel pipes up to NB150
- Stainless steel pipes up to NB170

This manual specifically covers metal pipe penetrations, for details on electrical penetrations or control/expasion joints with FyreFLEX® sealant, contact Trafalgar Fire at technical@tgroup.com.au

TABLE OF CONTENTS

BENEFITS - FyreFLEX® SEALANT

WHAT IS FyreFLEX®?

FyreFLEX® sealant is a water based, low VOC and environmentally friendly fire-resistant acrylic sealant with slight intumescent properties which makes it perfect for fire stopping cable and metal pipe penetrations through fire rated barriers. FyreFLEX® is the one of the most fire tested sealants in the market with more than 40 fire and acoustic tests, and assessments spanning over 40 years. FyreFLEX® has been approved for use in a large range of control joint or firestopping applications required under the National Construction Code (NCC). This technical manual in particular relates to common plumbing services, including copper and steel pipes, however FyreFLEX® Sealant is used in many other applications including; control/expansion joints, electrical penetrations, as well as acting as a seal for many of our other systems (FyreBOX™, FyreBOARD Maxilite® etc.).

APPLICATIONS

FyreFLEX® and TWRAP™ is suitable for:

Metal plumbing / active fire pipes

- Copper Pipes
- Steel Pipes
- Stainless Steel Pipes

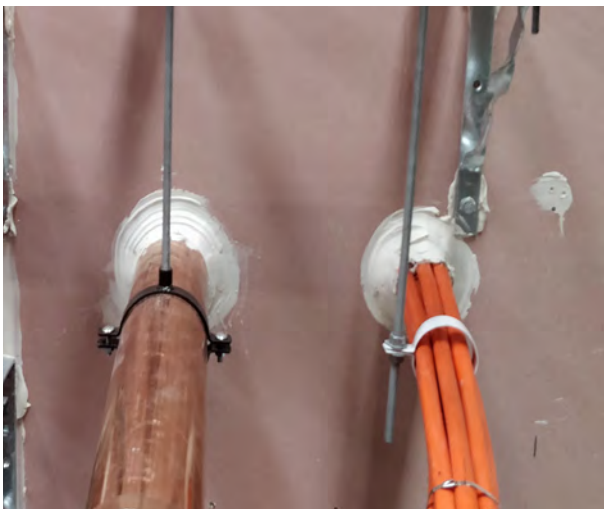
Power Cables

- Comms and data cables
- Cables power
- Cable bundles and trays

This manual specifically covers plumbing penetrations, for details on electrical penetrations or control/expansion joints with FyreFLEX® Sealant, contact Trafalgar Fire on technical@tgroup.com.au

ACOUSTIC PERFORMANCE

Many fire-rated barriers also have a requirement for low sound transmission. As such service penetrations in fire rated walls can reduce the acoustic performance of the wall itself if not properly assessed. FyreFLEX® Sealant has been tested for its acoustic properties to ensure it is suitable for these applications. Tested in a typical arrangement (electrical penetration with a 10mm annular gap), it has been found that FyreFLEX® Sealant has no degradation of the acoustic performance of the following wall types:



- Single layer plasterboard wall acoustic rating of up to RW 50
- Double layer plasterboard wall acoustic rating of up to RW 54
- 140mm Concrete/Masonry wall acoustic rating of up to RW 45

Refer to tfire.com.au for a copy of the acoustic report, and contact technical@tgroup.com.au is you have any questions.

Note: For plastic pipe penetrations (PVC, PEX, etc.) refer to our technical manual for systems such as FyrePEX HP intumescent Sealant, and FyreCHOKE Collars.

BENEFITS - TWRAP™ INSULATION SYSTEMS

WHAT IS TWRAP™

TWRAP™ is a 25mm thick fully foil encapsulated, fire protection wrap engineered to provide insulation performance on service penetrations as required by the National Construction Code (NCC) and tested in accordance with AS1530.4-2014.

TWRAP™ must be used in conjunction with Trafalgar Fire's parent penetration sealing systems to provide the integrity and insulation rating, for services that conduct heat through fire barriers such as metal pipes and cables.

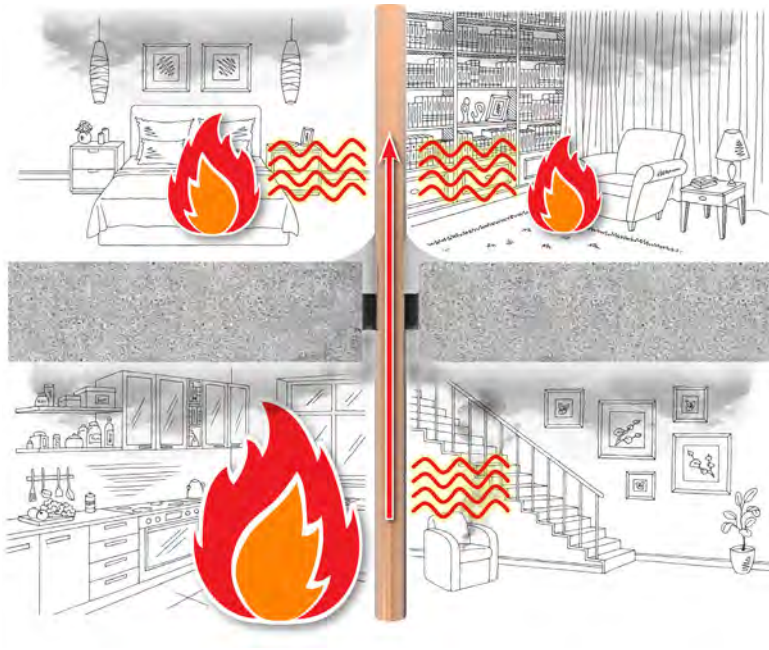
The aluminium foil, fiberglass-reinforced outside layer completely encapsulates the core and provides additional handling strength, protection from tearing and provides a high resistance to mould growth.

WHY IS TWRAP™ NEEDED?

If a fire were to break out within a fire compartment, the temperatures within that compartment can quickly reach 1000^{O}C. This heat can be conducted through any metal service penetrations, typically metal pipes, cables and cable tray, into the adjoining fire compartment.

The increased temperatures can ignite any combustible materials in close proximity to the service penetrations, allowing the fire to spread without flames directly breaching the fire barrier.

Service penetrations are essential in all modern buildings, and the building code (NCC) requires these penetrations to be fire stopped for integrity as well as insulation performance which is where TWRAP™ is required.



SPECIFICATIONS

FyreFLEX®

SPECIFICATIONS

Movement Capabilities	+/- 10% movement
Colour	White- for service penetrations and easy painting Grey- colour matched to concrete or blockwork
Testing	Tested and approved to AS1530.4-2014 and AS4072.1 in accordance with the National Construction Code (NCC) along with TWRAP™, as part of the tested system. Report FCO 1579.
Safety	Non-toxic, low VOC Please refer to the system MSDS for full safety information
Shelf Life	24 months from date of manufacture
Acoustics	Maintains acoustic performance of up to RW 54
Environmental	Made using recycled materials, and has Green Star VOC rating

TWRAP™

SPECIFICATIONS

Description	TWRAP™ is a 25mm thick fully foil encapsulated, fire protection wrap engineered to provide insulation performance on service penetrations (i.e. heat transfer).
Dimensions	25mm thickness, roll widths 300mm, 450mm and 600mm and 7.6m long
Fixing requirements	4.6mm wide stainless steel cable ties and Aluminium reinforced tape
Safety	Mould growth resistance, asbestos free
Testing	Tested and approved to AS1530.4-2014 and AS4072.1 in accordance with the National Construction Code (NCC) as part of the tested system with FyreFLEX® sealant. Report FCO 1579.
Thermal Resistance	R value of 0.7 at 25mm

COMPLIANCE

NCC 2022 READY

COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE (NCC)

Where any service penetrates a fire barrier that has a Fire Resistance Level (FRL) with respect to integrity and insulation, the installation must comply with clause C4D15 2A(i)(B) (formerly C3.15) which allows for one of the following:

A - A Fire Tested System – An identical prototype, installed in the same wall or floor system that has been tested/approved to the fire testing standard AS1530.4 and AS4072.1 which has achieved an FRL of equal to or greater than that required by the fire barrier.

B - An Assessed System – A system from an assessment report written by a NATA accredited lab, based on actual Fire Test data that allows variations within the limits of AS4072.1.

For example, if the site has a-/90/90 plasterboard wall system with an electrical cable penetration, the system used to seal the cables must have been fire tested at an approved laboratory *with* electrical cables *in* the same wall type *and* fire tested for at least 90 minutes without failing the integrity or insulation criteria.

Compliance will only be achieved when the installation on site mirrors the tested system.

Refer to FCO 1579 available on our website.

FyreFLEX® APPROVALS

Fire testing is a timely and expensive process, and it is impossible to test every single possible service configuration 'identically' in a practical sense.

Under the building code C4D15 2A(i)(B) (formerly C3.15) an acredited testing laboratory is permitted to write a formal assessment confirming the likely fire performance (FRL) of the penetration. The guidelines for what can and can't be included in a formal assessment are outlined in AS4072.1.

Our FyreFLEX® sealant fire assessment report FCO 1579 is written by expert Fire Engineers from a NATA approved laboratory which provides evidence of compliance under the NCC. The report summaries the decades of fire test data for FyreFLEX® sealant and allows for a large range of practical applications in various walls and floor penetrations. FCO 1579 is available for download at www.tfire.com.au

PRE-INSTALL NOTES

ANNULAR GAP

The annular gap is the space between a service and the hole. Annular gaps are important as they allow for movement between the building and service. If metal pipes are cast into concrete, it can cause damage with building movement over time.

FyreFLEX® Sealant is used to fill the annular gap to form a seal to stop the spread of fire while allowing movement preventing damage to the building and the service.

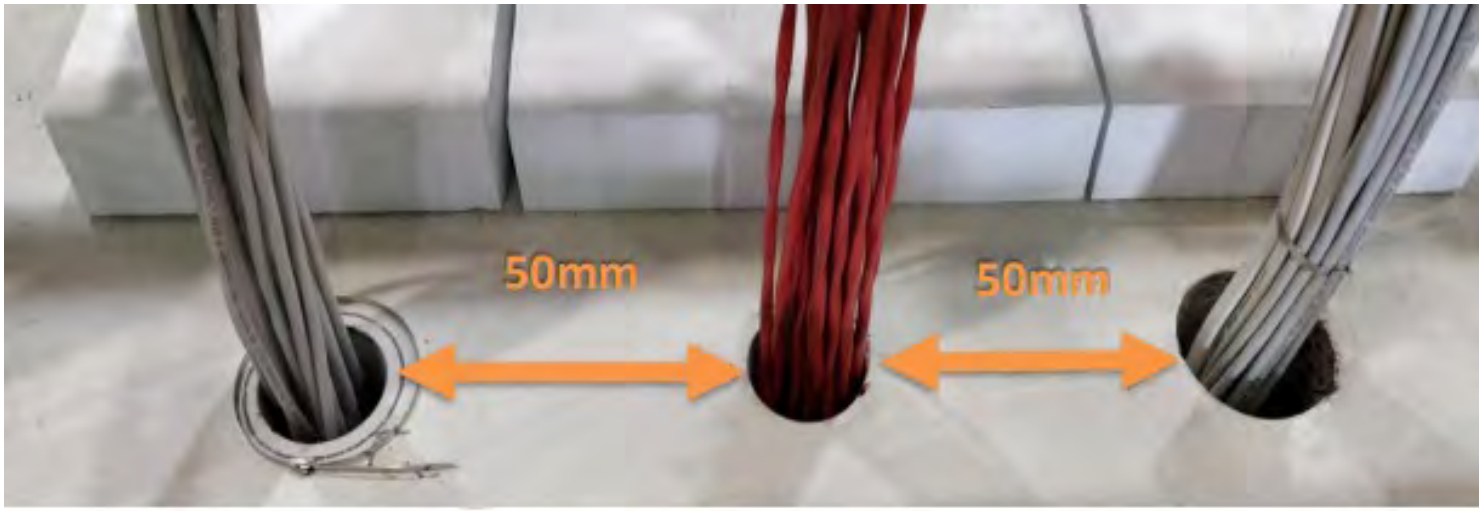
If an opening has already been formed and it is larger than what is prescribed here in this manual, Trafalgar Fire has several systems that can be used to close down the opening to the correct size:

- FyreBATT
- FyreBOARD Maxilite®
- FyreSET® Mortar
- FyrePLUG® Pillow

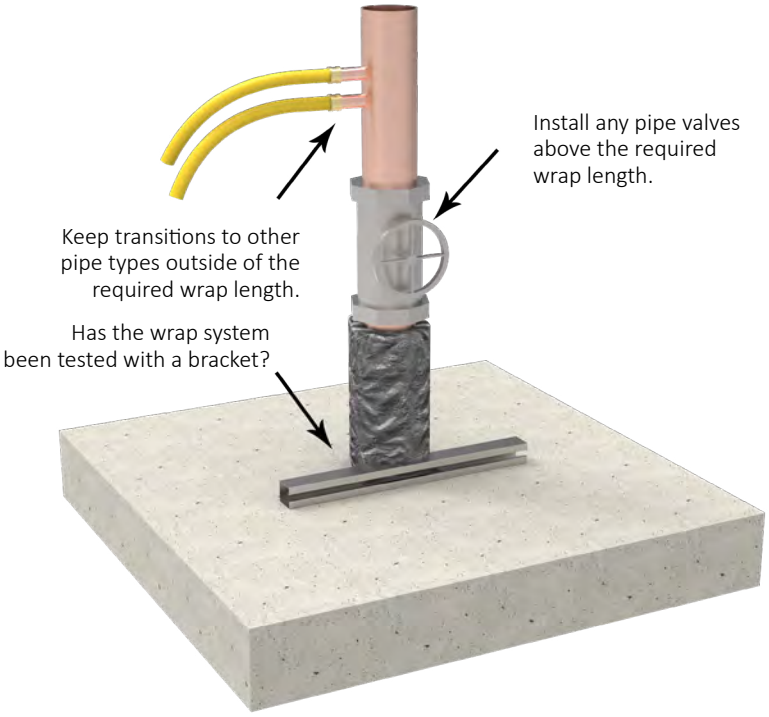
Refer to your preferred system's technical manual for details on installation and approved barriers and services or, contact Trafalgar Fire at technical@tgroup.com.au for technical assistance.

SERVICE SEPARATION

The distance between any two services can be a tricky topic of conversation. There are trade specific requirements (i.e. proximity of electrical services to gas services), but often asked is what are the requirements for compliance with fire stopping systems? FyreFLEX® Sealant and TWRAP™ for metal pipe penetrations is approved to have penetrations as close as 50mm away from one another (i.e. 50mm between openings, edge-to-edge).



PLANNING AHEAD



VALVES, SOCKETS, AND BRACKETS

As shown on the left, there are a few things to keep in mind when "roughing in" plumbing services to avoid issues with the compliance of the passive fire systems:

- Pipe penetrations should not be located underneath or on top of a fire rated wall, or inside the cavity of a **fire-rated wall** (by doing this there is no practical way to apply fire stopping to the penetration)
- Keep pipes valves located outside of the passive fire materials, including above TWrap
- Metal pipes that transition to plastic pipes should be jointed well away from the penetration (including the TWrap)
- Metal brackets and pipe supports ARE tested and approved to be sealed and wrapped around as show below

HYDRANT PIPE BRACKETS

A common support method for hydrant pipes is a support bracket on the top side of the slab. To reflect this and incorporate it into our range of approvals, Trafalgar Fire have specifically tested for this installation method (written into the assessment report FCO 1579). Simply apply the fillet of FyreFLEX® Sealant around the bracket and apply TWRAP™ over the top.

Where the TWRAP™ interfaces the bracket, it can be slit so that a fold of TWRAP™ can overlay the bracket itself. The slit is then sealed generously with FyreFLEX® sealant (including within the channel of the bracket where applicable).

DO I NEED TO WRAP WATER FILLED PIPES?

While it does make good practical sense that a pipe filled with water might not get as hot in the event of a fire, and therefore require less wrap or none at all, unfortunately this is not the case with any wrap systems across the market. In fire testing to AS1530.4, pipes are required to be tested empty, this is to represent the worst-case scenario where perhaps the pipe has been damaged and the pipe is no longer charged. This is why you'll find that all metal pipes, even those with water inside, require wrap.

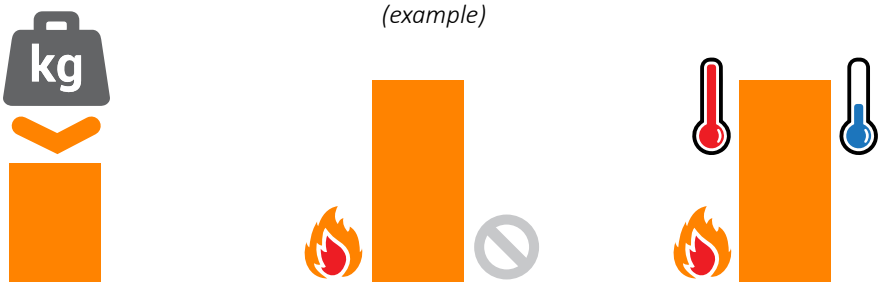
FIRE RESISTANCE LEVEL

FIRE RATING – HOW IS FIRE PERFORMANCE MEASURED?

An FRL (fire resistance level) is a handy way of summarising the performance of a building element. It consists of 3 numbers, all given in minutes:

FRL 240/240/240

(example)



Structural Adequacy

The ability of the building element to support the weight of adjacent building elements.

ie: a brick wall supporting a concrete floor slab above.

Integrity

The ability of an element to prevent the passage of flames and hot gasses.

ie: a plasterboard wall remaining intact and not allowing holes to form.

Insulation

The ability of an element to resist heat transfer from the exposed face to the unexposed face.

ie: a copper pipe remaining below a set temperature limit on the unexposed side of the wall penetration system.

Note: Penetrations are not required to have a Structural Adequacy rating and is usually expressed as a dash. For example, a penetration through a 4 hour load bearing wall would be written as -/240/240.

INTEGRITY

The FyreFLEX® system will achieve the integrity performance for up to 4 hours physically stopping the direct spread of fire, however the insulation performance of the penetration will be limited to the type of wall being used and conductivity of the services in the penetration.

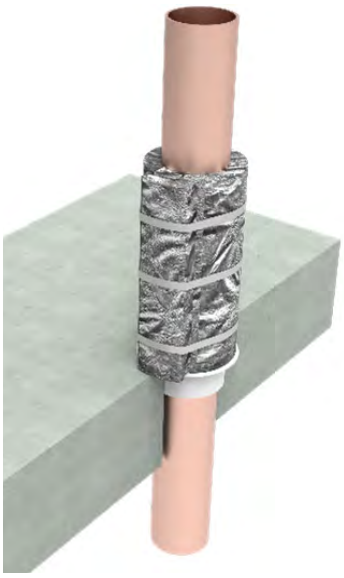
INSULATION (TEMPERATURE RISE)

Heat transfer via conduction (or heat rise) will occur through the conductive parts of any penetration system. To limit the heat rise through the FyreFLEX® Sealant penetration systems, our 25mm thick TWRAP™ foil encased blanket can be wrapped around the services to achieve up to 4 hours of insulation performance.

FLOOR PENETRATIONS

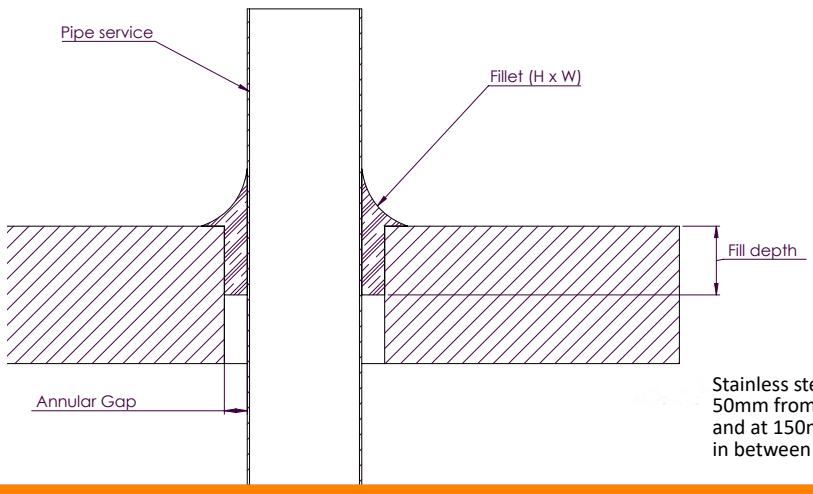
CONCRETE FLOOR SLABS

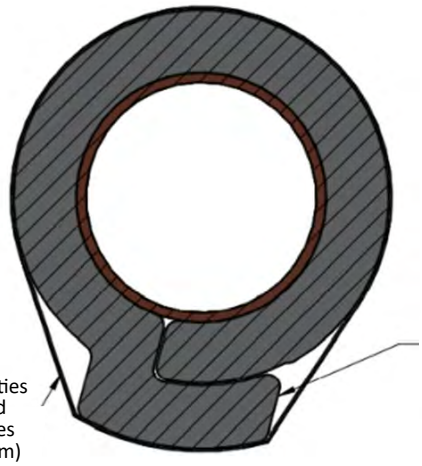
FyreFLEX® sealant specifications	
Fillet size	40 x 40mm
Max Annular gap	10-20mm
Fill depth	60mm from the top side



TWRAP™ length						
Pipe Type	**Pipe Size**	**FRL:**	**-/90/90**	**-/120/120**	**-/180/180**	**-/240/240**
Copper pipe (type B)	Up to DN50		300mm	300mm	800mm & 300mm*	-
	Up to DN100		600mm	600mm	800mm & 300mm*	-
	Up to DN 150		850mm	850mm	-	-
			UniGUARD™ - CLICK HERE			
Steel pipe (medium grade)	Up to NB50		300mm	300mm	450mm	-
	Up to NB100		450mm	450mm	450mm	-
	Up to NB 150		600mm	600mm	600mm & 300mm* (-/240/180)	
			UniGUARD™ - CLICK HERE		-	-
Stainless Steel Pipes (min. 1.5mm wall thickness)	Up to 54mm		300mm	300mm	300mm	300mm
	Up to 170mm		600mm	800mm & 300mm*	2x 800mm	2x 800mm

*Indicates a second layer of TWRAP™ located at the base of the penetration.





Stainless steel cable ties 50mm from each end and at 150mm centres in between (+/- 10mm)

50mm overlap where wrap meets itself

For large metal pipes the UniGUARD™ can be used instead of TWRAP™.
Refer to the technical drawing on page 30 or the UniGUARD™ technical manual for additional details.

WALL PENETRATIONS

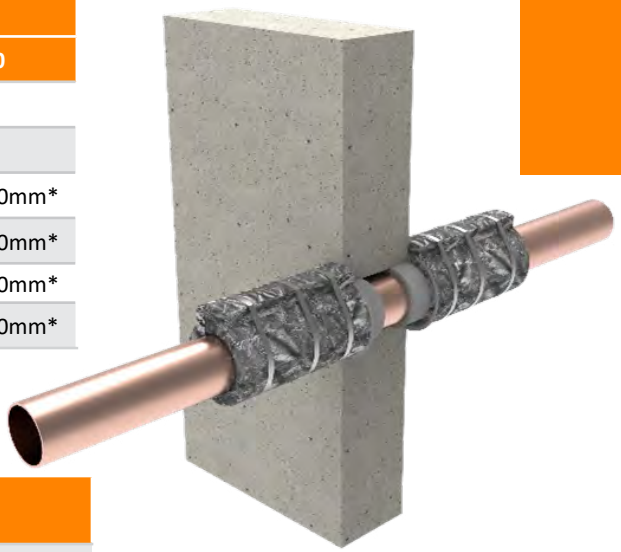
CONCRETE AND MASONRY WALLS

FyreFLEX® sealant specifications	
Fillet size	15 x 15mm
Max Annular gap	10mm
Fill depth	26mm from the both sides

TWRAP™ length

Pipe Type	Pipe Size	FRL:	Up to -/120/120	-/240/240
Copper pipe (type B)	Up to DN50		300mm	-
	Up to DN100		600mm	-
	Up to DN 150		1100 & 300mm*	1500mm & 300mm*
Steel pipe (medium grade)	Up to NB50		300mm	1500mm & 300mm*
	Up to NB100		450mm	1500mm & 300mm*
	Up to NB 150		600mm	1500mm & 300mm*

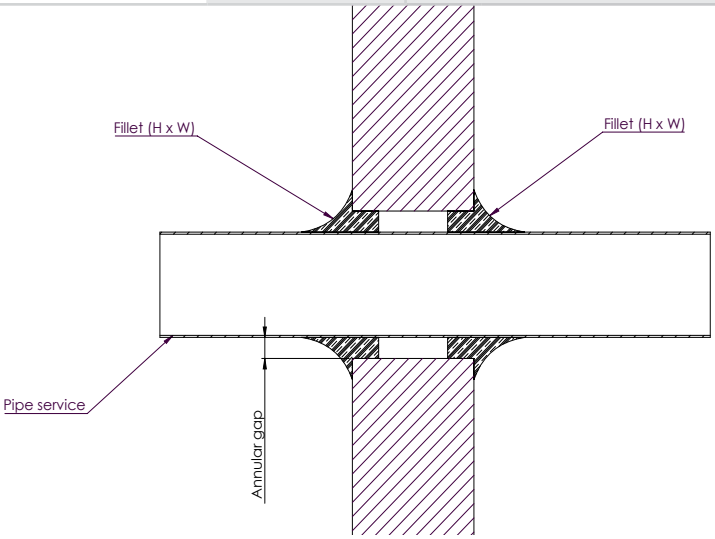
*Indicates a second layer of TWRAP™ located at the base of the penetration.

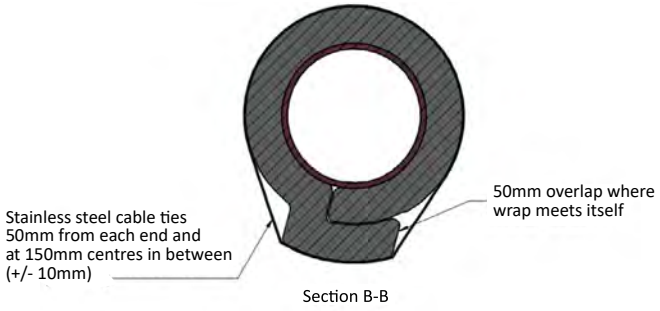


Stainless Steel pipes - FyreFLEX® sealant specifications	
Fillet size	30 x 30mm
Max Annular gap	10mm
Fill depth	30mm from the both sides

TWRAP™ length

Pipe Type	Pipe Size	FRL:	Up to -/120/120	-/240/240
Stainless Steel Pipes (min. 1.5mm wall thickness)	Up to 54mm		450mm	300mm
	Up to 170mm		2x 800mm	2x 800mm





Section B-B

WALL PENETRATIONS

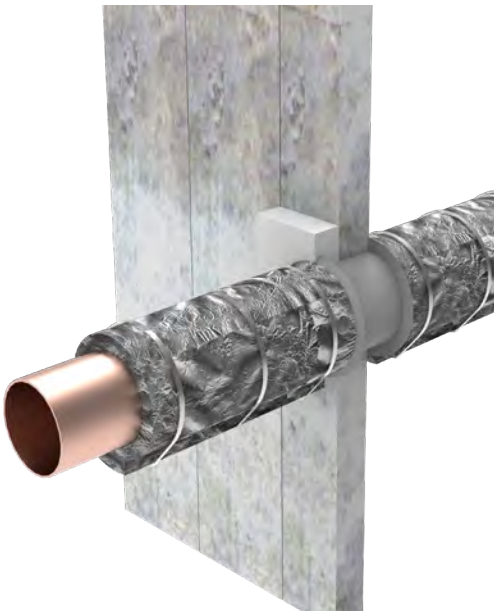
78mm SPEEDPANEL

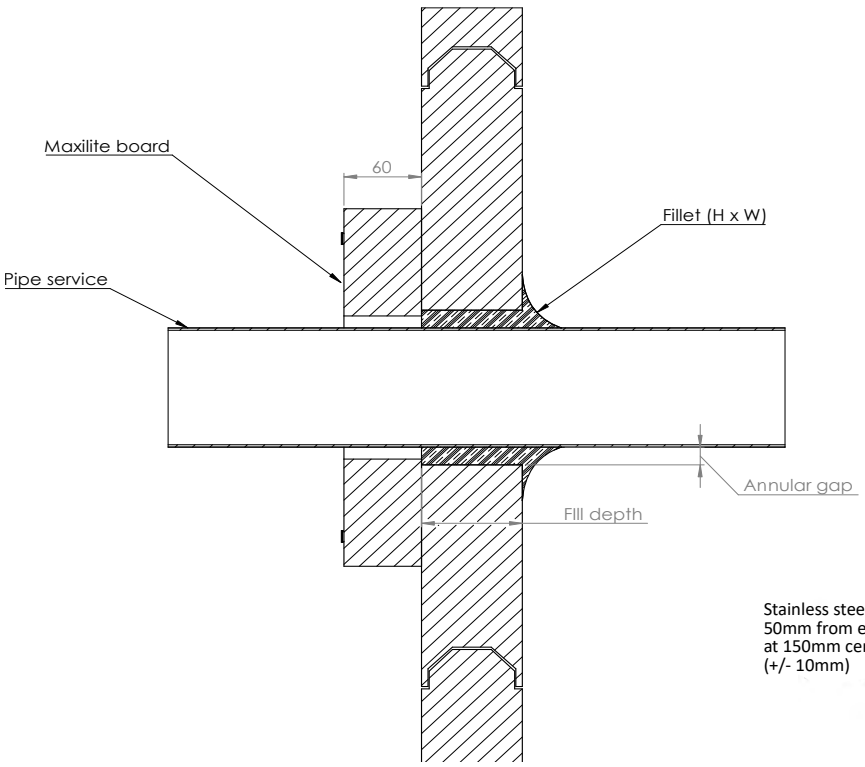
Please note that all Speedpanel penetrations with metal pipes must be thickened locally on one side of the wall with 60mm thick FyreBOARD Maxilite® 100mm around the penetration. Check the drawings on page X for below for requirements.

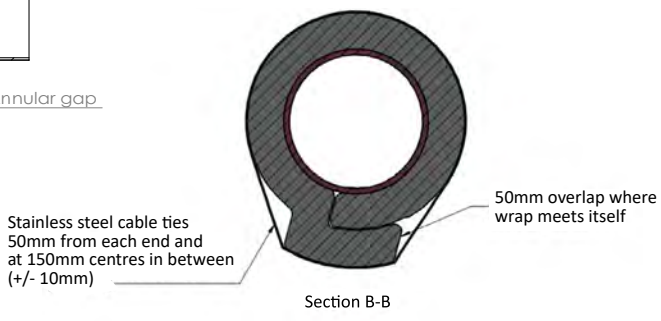
FyreFLEX® sealant specifications	
Fillet size	30x30mm
Max Annular gap	10mm
Fill depth	Full 78mm depth of Speedpanel

TWRAP™ length			
Pipe Type	**Pipe Size**	**FRL**	**-/120/120**
Copper pipe (type B)	Up to DN50		300mm
	Up to DN100		600mm
	Up to DN 150		1100 & 300mm*
Steel pipe (medium grade)	Up to NB50		300mm
	Up to NB100		450mm
	Up to NB 150		900 & 300mm*
Stainless Steel Pipes (min. 1.5mm wall thickness)	Up to 54mm		300mm
	Up to 170mm		1100 & 300mm*

*Indicates a second layer of TWRAP™ located at the base of the penetration.



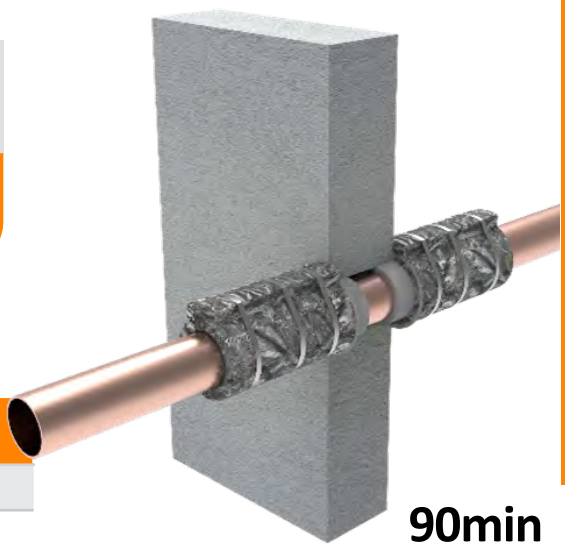




WALL PENETRATIONS

75mm HEBEL/WALSC AAC

Please note that for 2 hour applications, the AAC wall must be thickened locally on one side of the wall with 60mm thick FyreBOARD Maxilite® 100mm around the penetration. Refer to page 28 for installation drawing.

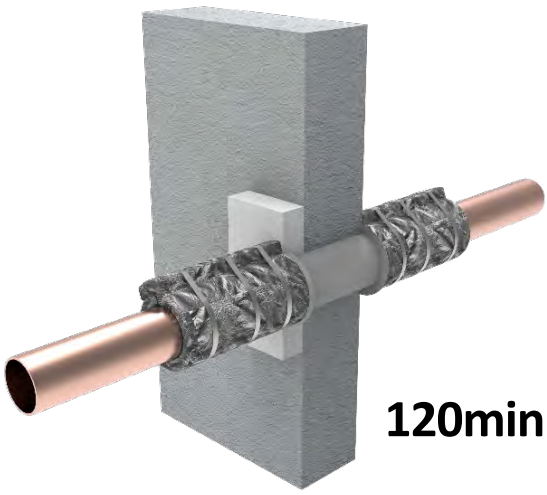


90min

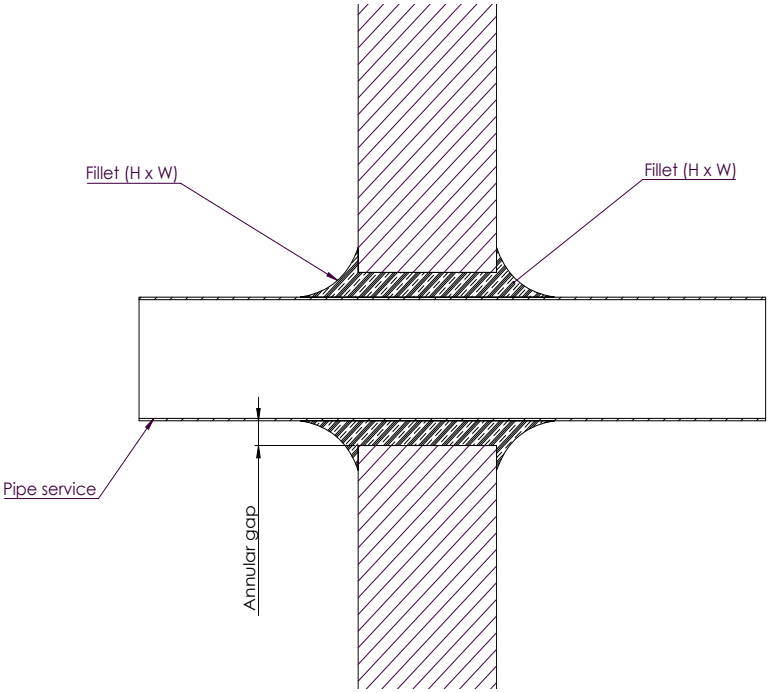
FyreFLEX® sealant specifications	
Fillet size	15 x 15mm
Max Annular gap	10mm
Fill depth	Full depth of AAC panel

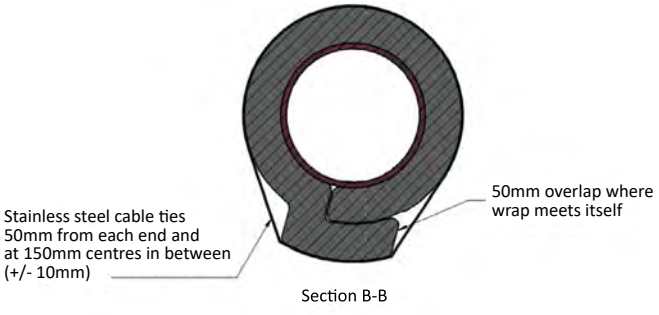
TWRAP™ length				
Pipe Type	**Pipe Size**	FRL	-/90/90	-/120/120
Copper pipe (type B)	Up to DN50		300mm	300mm
	Up to DN100		600mm	600mm
	Up to DN 150		1050mm	1100 & 300mm*
Steel pipe (medium grade)	Up to NB50		300mm	300mm (no FyreBOARD Maxilite™ required)
	Up to NB100		450mm	450mm
	Up to NB 150		1050mm	900 & 300mm*
Stainless Steel Pipes (min. 1.5mm wall thickness)	Up to 54mm		300mm	-
	Up to 170mm		1050mm	-

*Indicates a second layer of TWRAP™ located at the base of the penetrations.



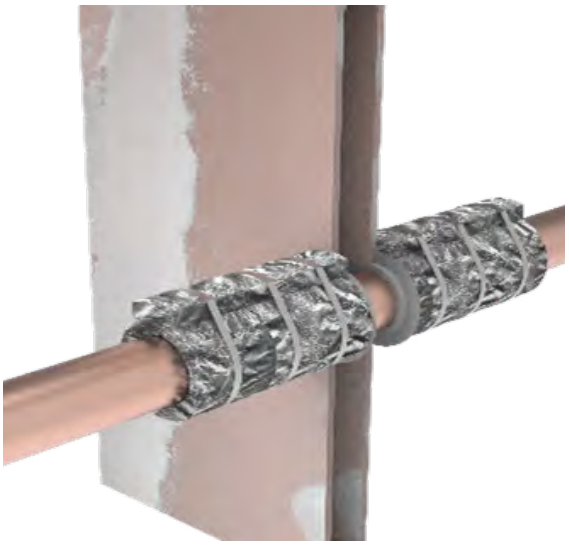
120min





WALL PENETRATIONS

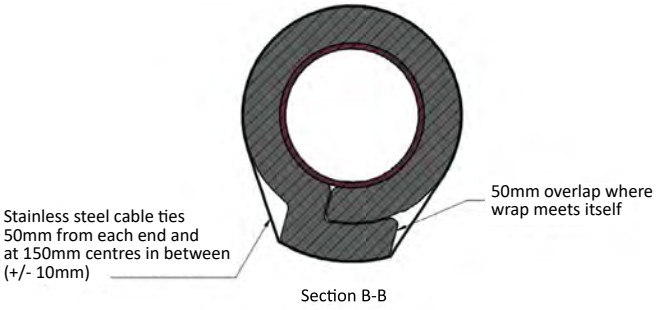
PLASTERBOARD - SINGLE LAYER WALLS



FyreFLEX® sealant specifications	
Fillet size	50x50mm
Max Annular gap	10mm
Fill depth	Full depth of plasterboard

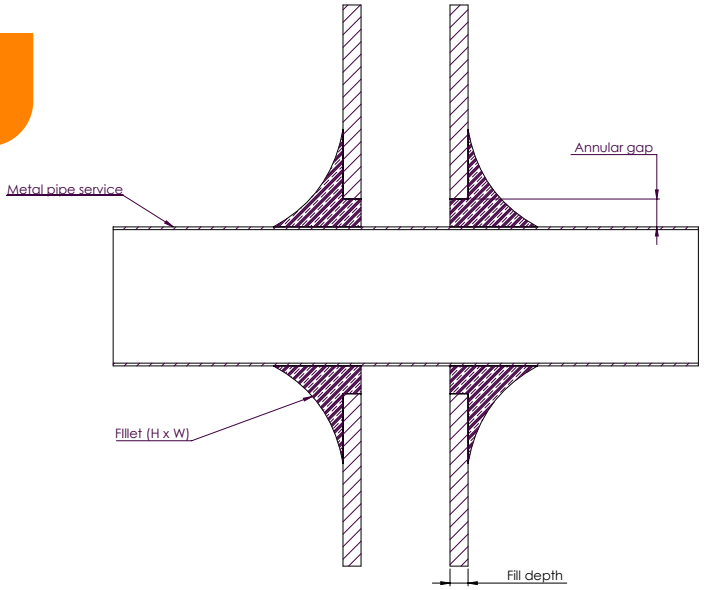
TWRAP™ length				
Pipe Type	**Pipe Size**	FRL	-/60/60	-/90/90
Copper pipe (type B)	Up to DN50		300mm	300mm
	Up to DN100		450mm	600mm
	Up to DN 150		-	-
Steel pipe (medium grade)	Up to NB50		300mm	300mm
	Up to NB100		450mm	450mm
	Up to NB 150		-	-
Stainless Steel Pipes (min. 1.5mm wall thick-ness)	Up to 54mm		300mm	300mm
	Up to 170mm		1100 & 300mm*	

*Indicates a second layer of TWRAP™ located at the base of the penetration.



APPROVED WALL SPECIFICATIONS

Plaster sheeting		Studs	FRL
Single Layer	1 x 13mm plasterboard each side of stud	Min 64mm thick	-/60/60
	1 x 16mm plasterboard each side of stud		-/90/90

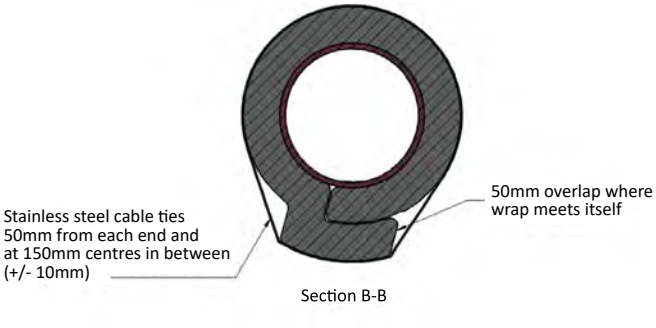


WALL PENETRATIONS

PLASTERBOARD - DOUBLE LAYER WALLS

FyreFLEX® sealant specifications	
Fillet size	15 x 15mm
Max Annular gap	10mm
Fill depth	Full depth of plasterboard

		TWRAP™ length			
Pipe Type	**Pipe Size**	FRL	-/60/60	-/90/90	-/120/120
Copper pipe (type B)	Up to DN50	300mm		300mm	300mm
	Up to DN100	450mm		600mm	600mm
	Up to DN 150	-		-	1100 & 300mm*
Steel pipe (medium grade)	Up to NB50	300mm		300mm	300mm
	Up to NB100	450mm		450mm	450mm
	Up to NB 150	-		-	600mm
Stainless Steel Pipes (min. 1.5mm wall thick-ness)	Up to 54mm	300mm		300mm	300mm**
	Up to 170mm	1100 & 300mm*			

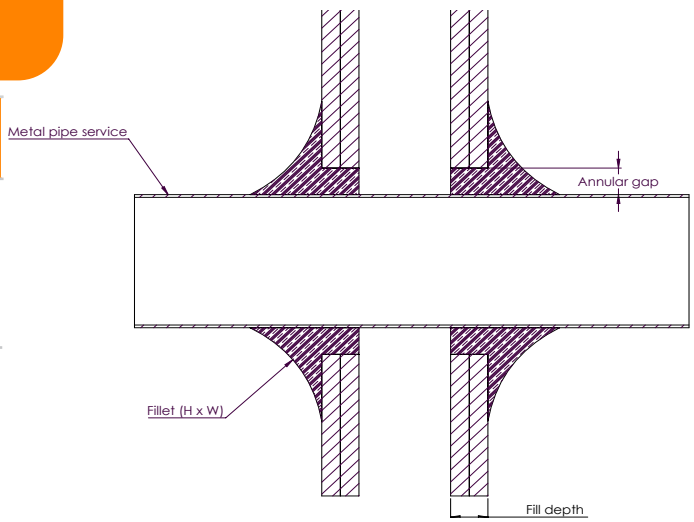


*Indicates a second layer of TWRAP™ located at the base of the penetration.

** Requires larger fillet of sealant 50x50mm on both sides of the wall

APPROVED WALL SPECIFICATIONS

Plaster sheeting		Studs	FRL
Double Layer	2 x 13mm plasterboard each side of stud	Minimum 64mm	-/120/120



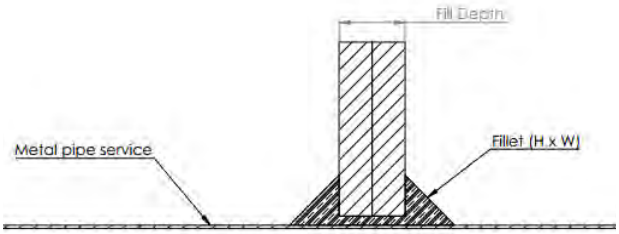
WALL PENETRATIONS

COREX SHAFT WALLS

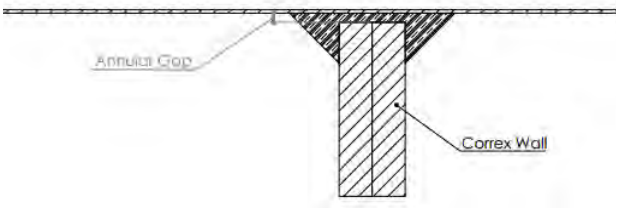
Corex boards can be used to construct a 2-way FRL solid partition wall with various FRL's. For instructions on constructing a Corex solid partition as a shaft wall or vertical bulkhead, please refer to the Corex technical manuals available at www.tfire.com.au.

FyreFLEX® sealant specifications	
Fillet size	30x30mm
Max Annular gap	<10mm
Fill depth	Full depth of Corex boards

TWRAP™ length				
Pipe Type	**Pipe Size**	FRL	-/90/90	-/120/120
Copper pipe (type B)	Up to DN50		300mm	600mm
	Up to DN100		600mm	600mm & 300mm*
Steel pipe (medium grade)	Up to NB50		300mm	600mm
	Up to NB100		600mm	600mm
Stainless Steel Pipes (min. 1.5mm wall thickness)**	Up to 100mm		600mm	600mm

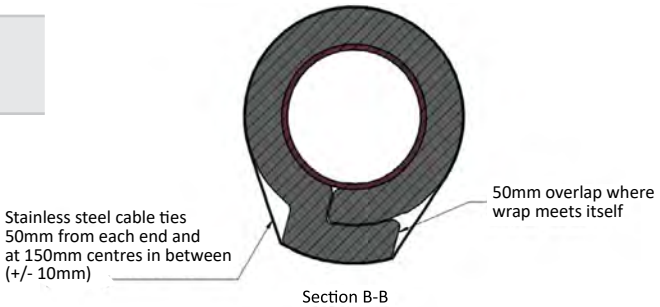


*Indicates a second layer of TWRAP™ located at the base of the penetrations.
** Stainless steel pipe penetrations must be thickened locally with a patch of 60mm Maxilite, with 100mm overlaps around the pipe penetration.



COREX WALL SPECIFICATIONS

Corex wall facing	Studs	FRL
2 x 20mm Corex boards on the outside of a steel stud	64mm steel studs	-/90/90
2 x 25mm Corex boards on the outside of a steel stud		-/120/120



INSTALLATION

PLASTERBOARD WALLS

STEP 1

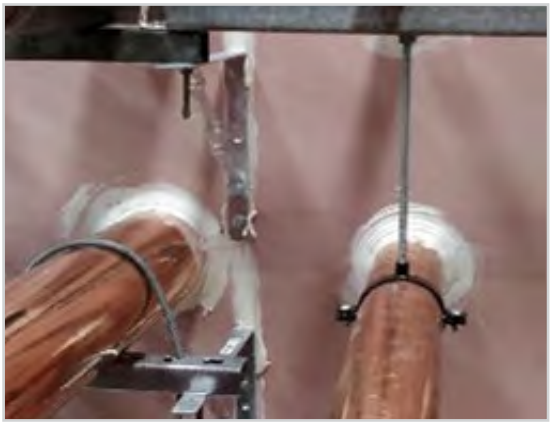
Form an opening appropriate for your service as per the approvals table on page 14-15. Maintain 50mm between openings if multiple pipes are present.

STEP 2

Run services through the holes formed, ensure the pipes are nominally centered in the opening. Clean the penetration of dust.

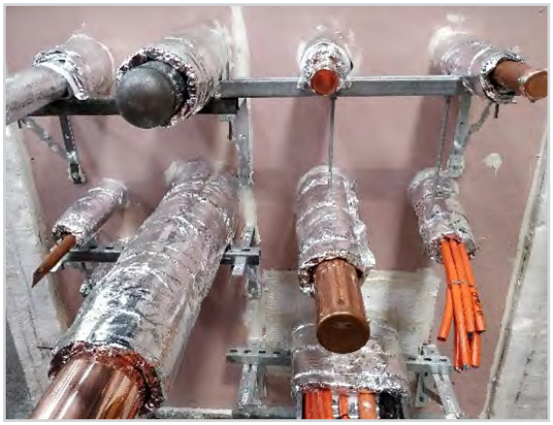
Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3



Apply FyreFLEX® Sealant to the full thickness of the plasterboard, ensuring the correct size of fillet (or cone). **Sealant needs to be applied to both sides of a wall penetration.**

STEP 4



Wrap to the approved length (as per the tables on page 14-15) ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See page 24-26 for technical drawings.

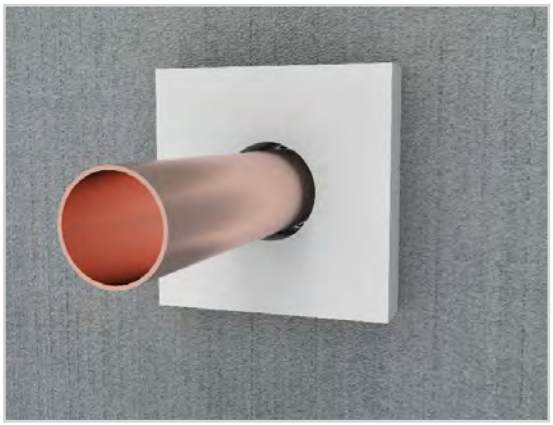
INSTALLATION

AAC, CONCRETE & MASONRY WALLS

STEP 1

Form an opening appropriate for your service per the approvals table on page 11, 12 or 13. Maintain 50mm between openings if multiple pipes are present.

STEP 2



For 2 hour AAC walls (i.e. Hebel, Walsc), one side of the wall is required to be locally thickened for 100mm around the penetration with our 60mm thick FyreBOARD Maxilite®. Fix FyreBOARD Maxilite™ with min 10g x 100mm steel screws in each corner. Refer to page 31 for drawings. **NOTE This is not required for -/90/90.**

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® Sealant to the depth specified in the approvals page 11, 12 or 13, ensuring the correct size of fillet (or cone).

Sealant needs to be applied to both sides of a wall penetration.

STEP 4

Wrap to the approved length (as per the tables above) ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See pages 24-26 for technical drawings.

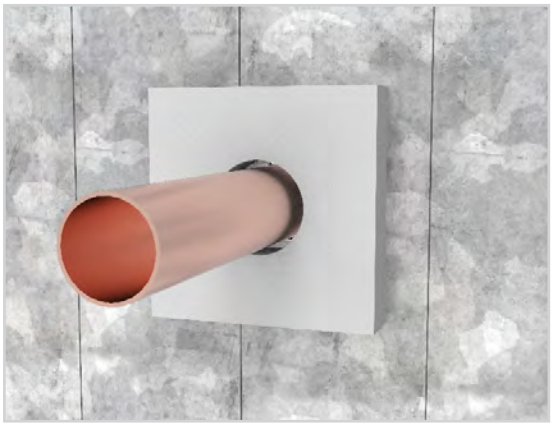
INSTALLATION

SPEEDPANEL WALLS

STEP 1

Form an opening appropriate for your service per the approvals table on page 12. Maintain 50mm between openings if multiple pipes are present. Clean penetration of dust.

STEP 2



For Speedpanel®, one side of the wall is required to be locally thickened for 100mm around the penetration with our 60mm thick FyreBOARD Maxilite®. Fix FyreBOARD Maxilite™ with min 10g x 100mm steel screws in each corner. Refer to page 31 for drawings.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® Sealant to the depth specified in the approvals page 12, ensuring the correct size of fillet (or cone). **Sealant needs to be applied to both sides of a wall penetration.**

STEP 4

Wrap to the approved length (as per the tables on page 12) ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See pages 24-26 for technical drawings.

INSTALLATION

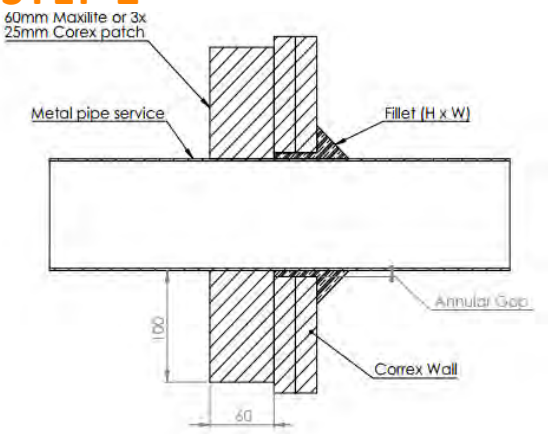
COREX WALLS

For instructions on constructing a Corex solid partition as a shaft wall or vertical bulkhead, please refer to the Corex technical manuals available at www.tfire.com.au.

STEP 1

Form an opening appropriate for your service per the approvals table on page 16. Maintain 50mm between openings if multiple pipes are present. Clean penetration of dust.

STEP 2



For stainless steel pipes, one side of the wall is required to be locally thickened for 100mm around the penetration with our 60mm thick FyreBOARD Maxilite® (or 3x layers of 25mm Corex board). Fix FyreBOARD Maxilite™ with min 10g x 100mm steel screws in each corner.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® Sealant to the depth specified in the approvals page 16, ensuring the correct size of fillet (or cone). **Sealant needs to be applied to both sides of a wall penetration.**

STEP 4

Wrap to the approved length (as per the tables on page 16) ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminum foil tape and secure wrap to service with steel cable ties. See pages 24-26 for technical drawings.

INSTALLATION

FLOORS

STEP 1

Form an opening appropriate for your service per the approvals table on page 9. Maintain 50mm between openings if multiple pipes are present. **Remove any PVC formers, dust and debris.**

STEP 2

Run the services through the holes formed, ensuring the pipes are nominally centered in the opening.

Clean the penetration of dust.

Foam backing rods (combustible or otherwise) can be used to ensure sealant is filled to the correct depth.

STEP 3

Apply FyreFLEX® sealant to the depth specified in the approvals on page 10, ensuring the correct size of fillet (or cone). Sealant needs to be applied to the top side of a floor penetration only.

STEP 4

Wrap to the approved length (as per the tables on page 10) ensuring that where the wrap meets itself, there is a 50mm overlap. Close and cut edges of the wrap with aluminium foil tape and secure wrap to the service with steel cable ties. See pages 23-26 for technical drawings.

SYSTEM RANGE

AUSTRALIAN MADE AND OWNED

FyreFLEX

CLICKABLE CODES

Item Number	Description	Min Order Qty	Pallet QTY
FyreFLEX 300W FyreFLEX 300G	FyreFLEX® sealant Cartridge 300ml White or Grey	20	1440
FyreFLEX 600W FyreFLEX 600G	FyreFLEX® sealant Sausage 600ml White or Grey	18	810
FyreFLEX 10W FyreFLEX 10G	FyreFLEX® sealant Pail 10L White or Grey	1	110

TWRAP

CLICKABLE CODES

Item Number	Description	Min Order Qty	Pallet QTY
TWRAP 300	300mm wide, 25mm thick blanket	7620mm long roll	24
TWRAP 450	450mm wide, 25mm thick blanket	7620mm long roll	12
TWRAP 600	600mm wide, 25mm thick blanket	7620mm long roll	12
Tape	Foil tape, 95mm wide, 50m roll	1	N/A
Cable Tie SS 12 x 521	4.6mm wide x 521mm long	25	N/A
Cable Tie SS 12 x 910	4.6mm wide x 910mm long	25	N/A

** FyreWrap® can be substituted for TWRAP™*

FAQ

Q What if there is a pipe bracket at the base of the slab?

A Hydrant pipe brackets have been tested, installed before sealant/wrap is applied.

Q Do I need to wrap my services?

A For metal pipes TWRAP™ is required to achieve a full FRL (-/120/120 for instance). Refer to the approval's tables or the TWRAP™ quick lookup table in this manual.

Q Do I need to wrap my hydrant pipes?

A Water filled pipes do still need to be wrapped with TWRAP™. This is to protect against the worst case scenario where a pipe may be damaged and no longer be filled with water.

Q Can I use FyreFLEX® for my plastic pipes?

A No, Trafalgar Fire has different solutions for plastic pipes such as FyreCHOKE Collars and FyrePEX HP Sealant. Contact Trafalgar Fire at technical@tgroup.com.au for details.

Q Can I paint over the sealant?

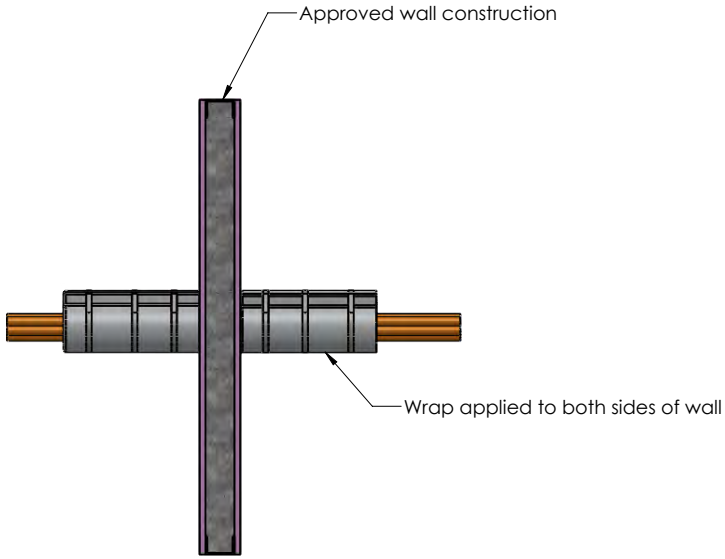
A Yes, the sealant can be painted over.

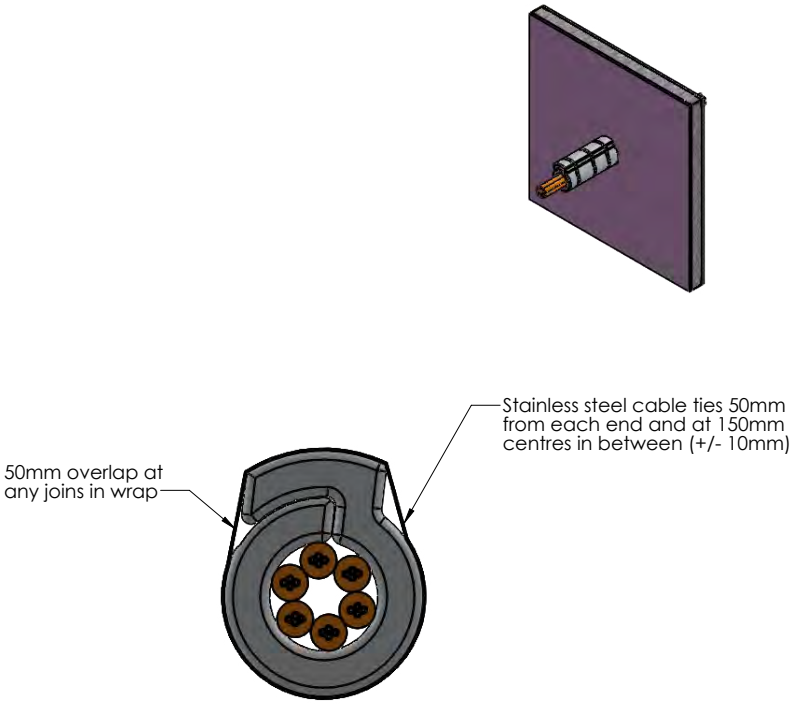
Q Is the FyreFLEX® Sealant suitable for external use?

A FyreFLEX® sealant is not recommended for standing water applications, however it can be used in external applications, we simply recommend covering FyreFLEX® with another sealant that is externally.

SOCIAL MEDIA

LinkedIn YouTube





SECTION A-A

Drawing Name: Walls - Single TWrap Length

Project Title: TWrap FCO1579

Drawing No. :	Sheet:	Date:	Scale:
1	1 of 4	15/06/2021	NTS

Test Standard: AS1530.4

Fire resistance level:

Based on Report No.:

Codes:

Drawn By: SM

Checked By: JH

Revision:

Date:

No.:

NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

☐ **STANDARD DRAWING**

☐ **PROJECT DRAWING**

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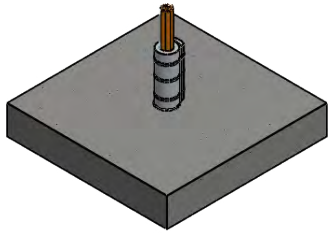

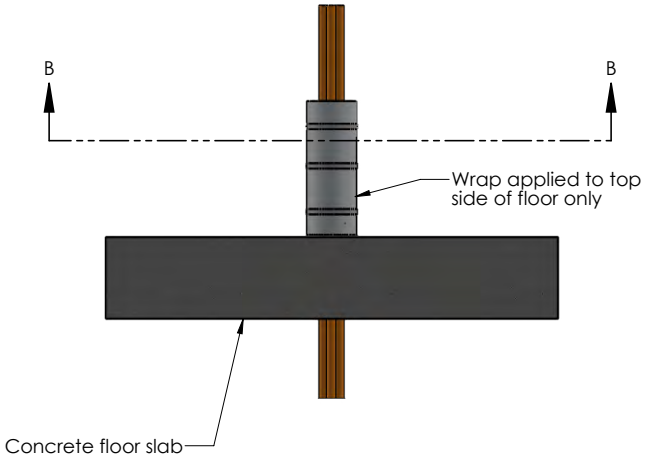

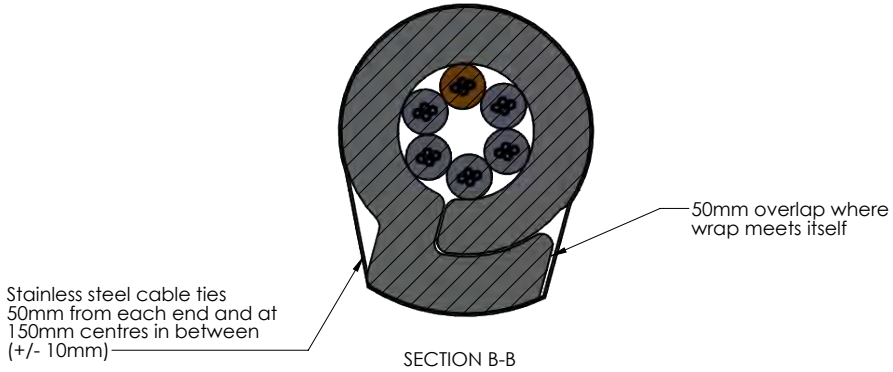

SECTION B-B

Drawing Name: Floors - Single TWrap Length			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:** NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Project Title: TWrap FCO1579			**Fire resistance level:**	**Drawn By:** SM			
Drawing No. : 2	**Sheet:** 2 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	TRAFALGAR FIRE

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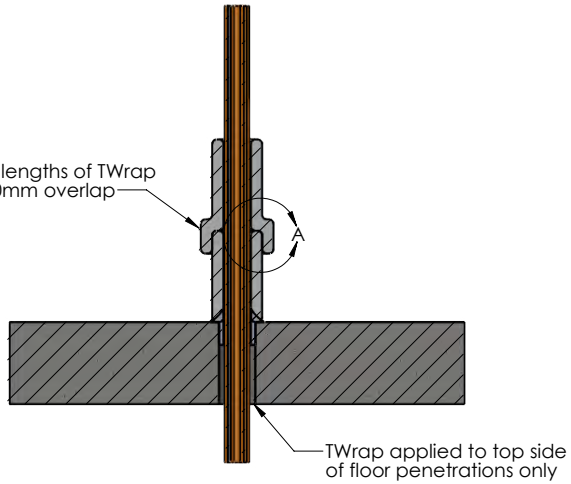
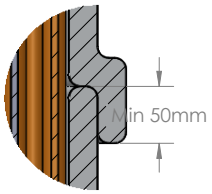
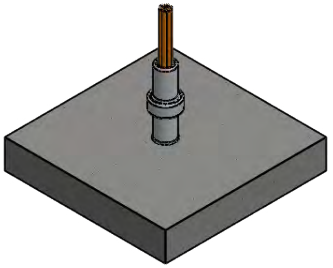
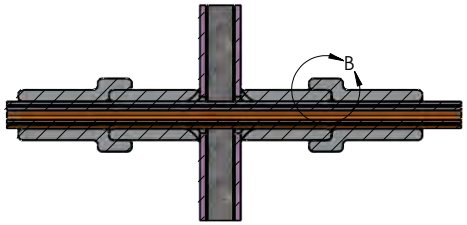


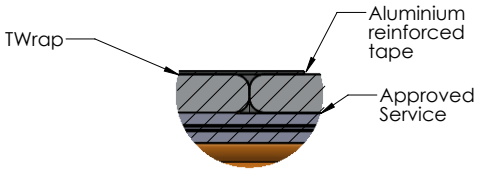


DETAIL A





DETAIL B



Note: Wrap can also be cut down both joining edges and taped together (top and bottom) to 'stitch' together two pieces. For this use 95mm aluminium reinforced tape.

Drawing Name: TWrap - Extended Length			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:**
Project Title: TWrap FCO1579			**Fire resistance level:**	**Drawn By:** SM			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 3	**Sheet:** 3 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	TRAFALGAR FIRE

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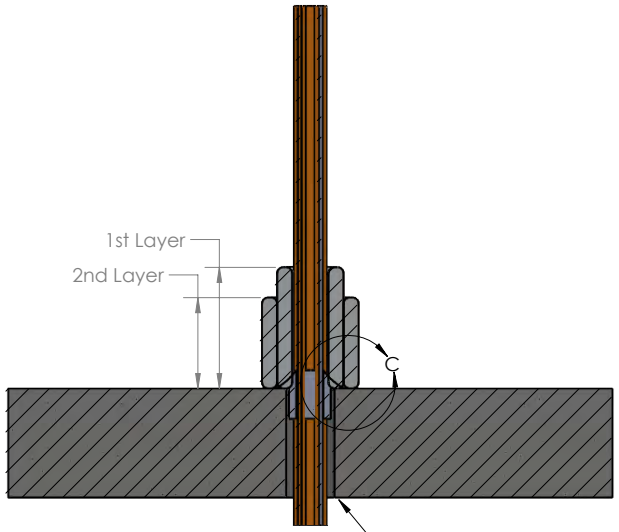
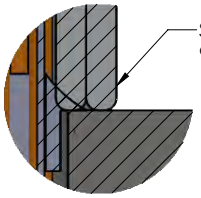
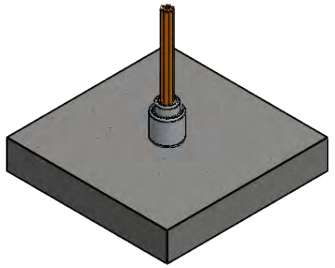
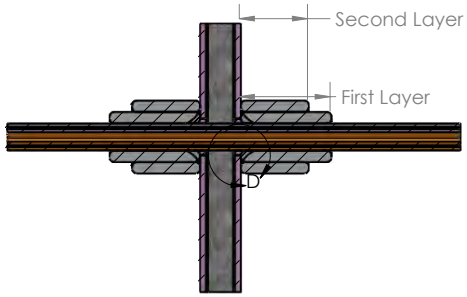
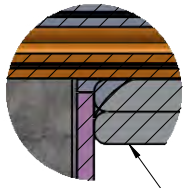




DETAIL C

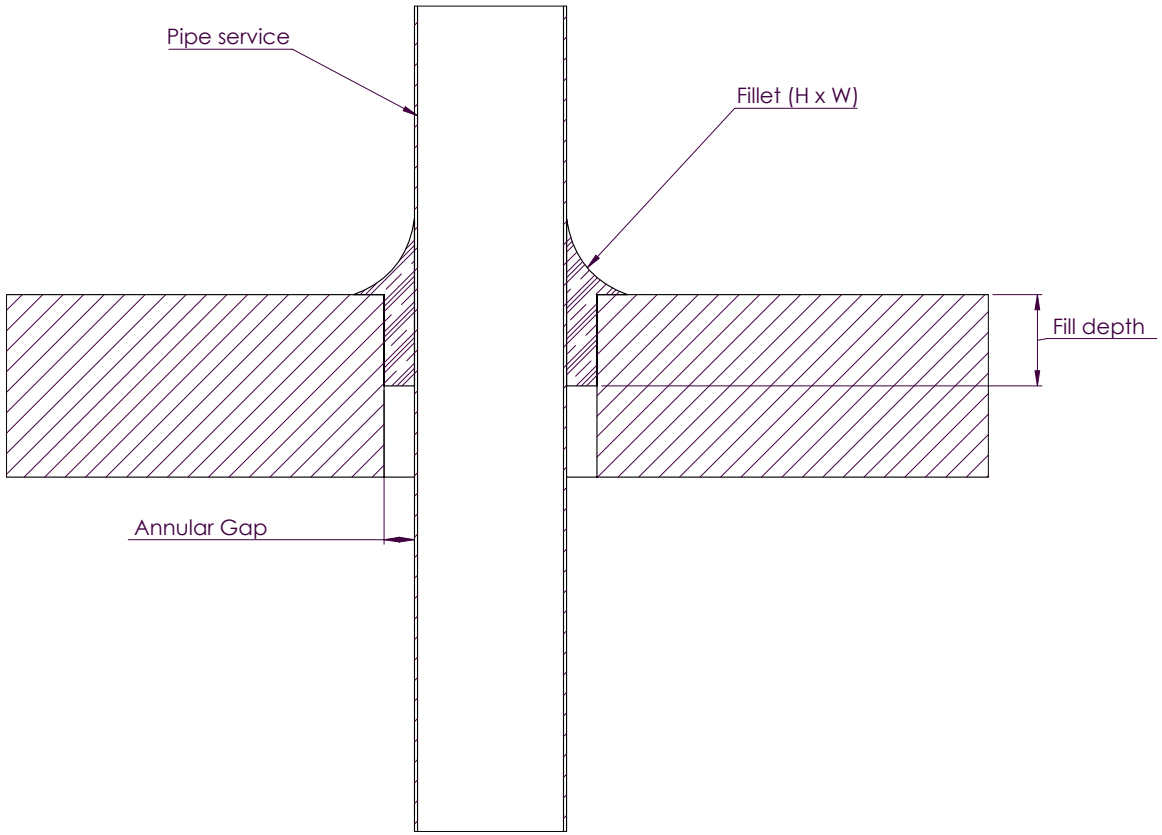






DETAIL D

Drawing Name: Double Layers				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:** / **NOTICE:** NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Project Title: TWrap FCO1579				**Fire resistance level:**	**Drawn By:** SM		TRAFALGAR FIRE
Drawing No.: 4	**Sheet:** 4 of 4	**Date:** 15/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tgroup.com.au W: www.tfire.com.au



NOTE: Sealant drawing only (before wrap installation)

Drawing Name: Concrete floor - Metal pipe			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**
Project Title: FyreFLEX FCO1579			**Fire resistance level:**	**Drawn By:** RB		
Drawing No.: 1	**Sheet:**	**Date:** 10/06/2020 / **Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	

NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

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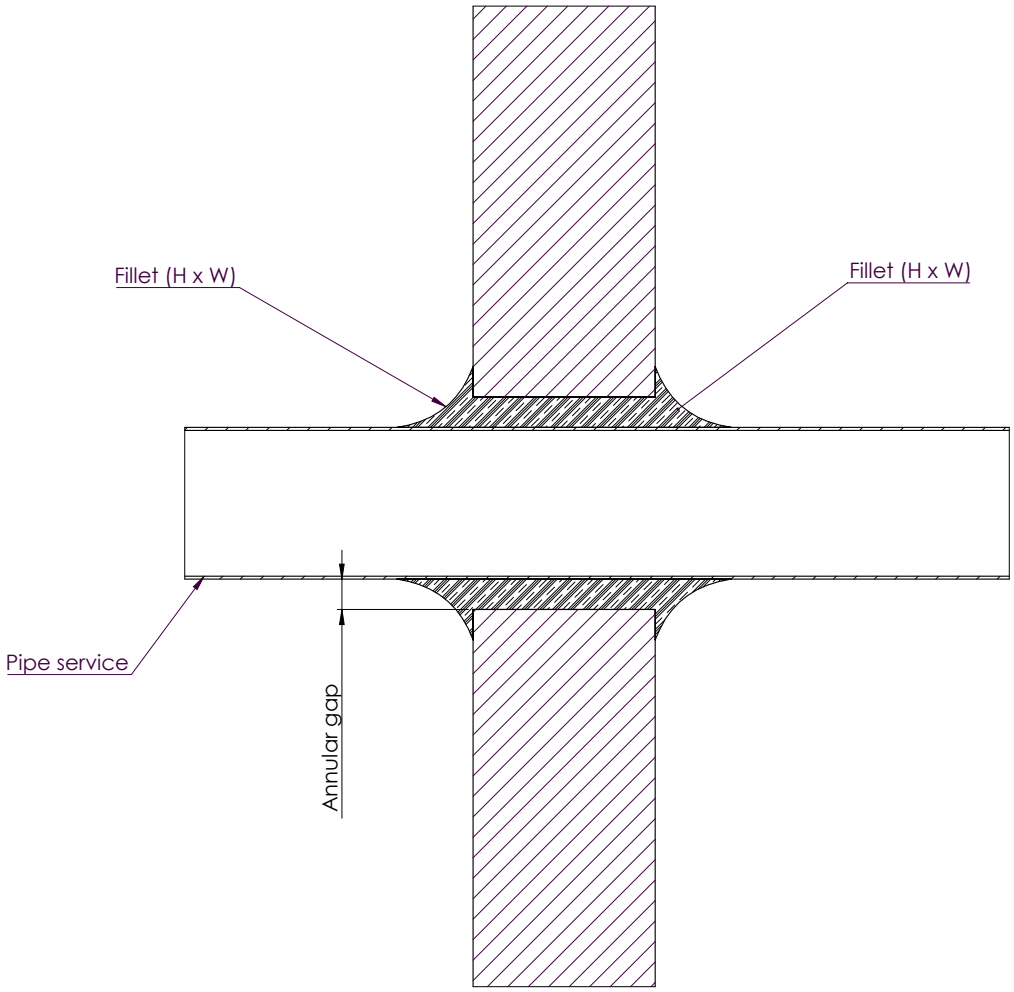
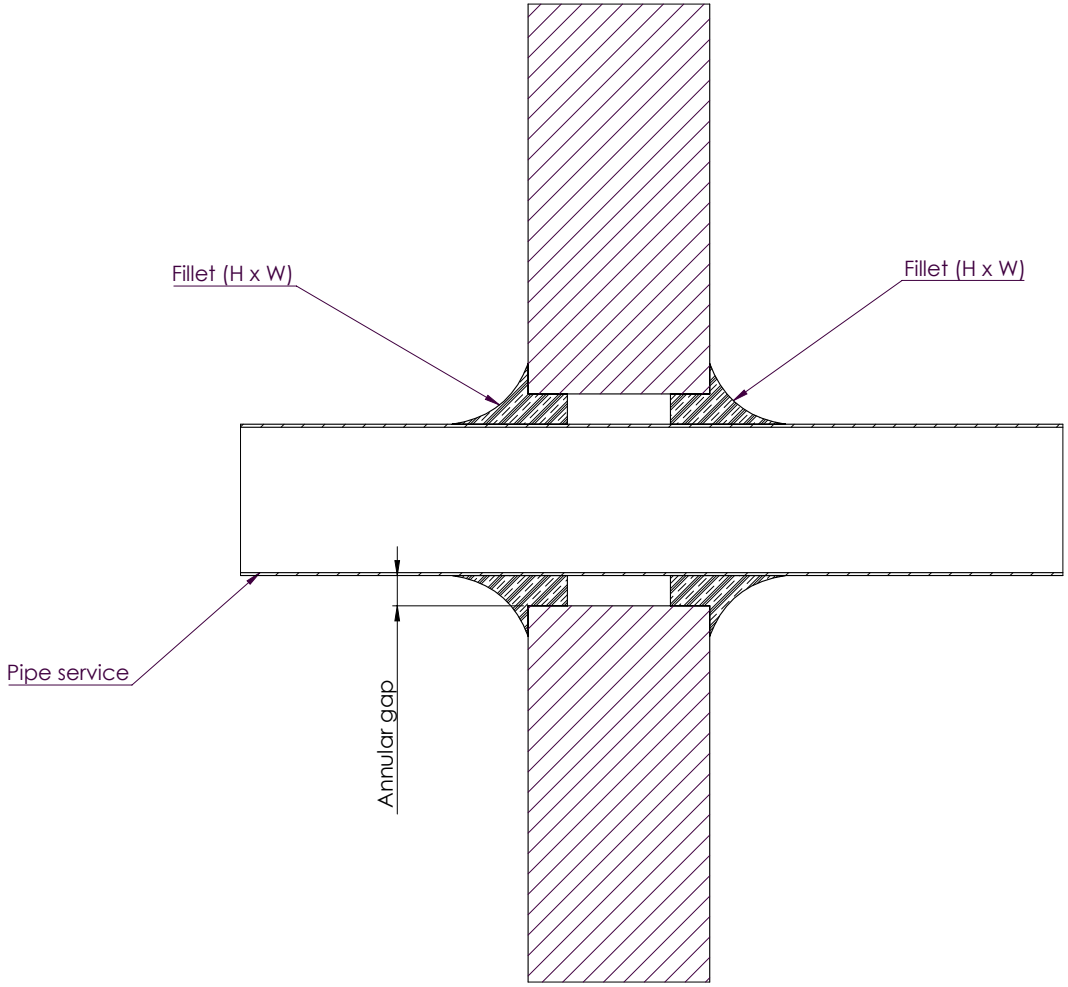


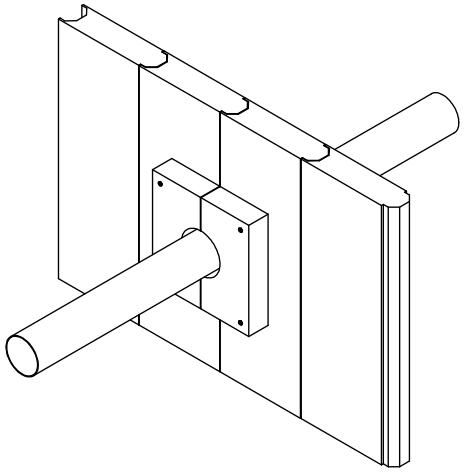
NOTE: Sealant drawing only (before wrap installation)

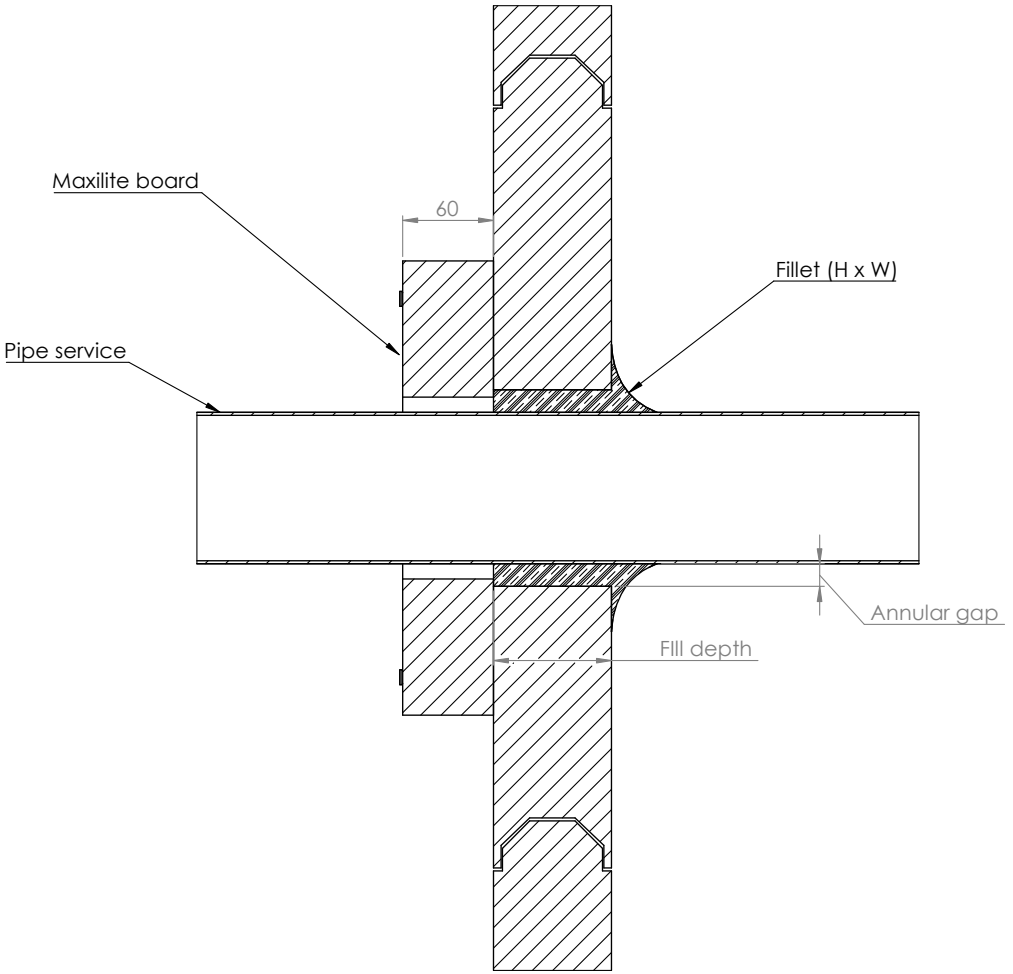
Drawing Name: Solid Wall - Metal pipe			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:** **NOTICE:**
Project Title: FyreFLEX FCO1579			**Fire resistance level:**	**Drawn By:** RB			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 4	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: info@tfire.com.au W: www.tfire.com.au



NOTE: Sealant drawing only (before wrap installation)

Drawing Name: Concrete/Masonry Wall - Metal pipe	**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**	**NOTICE:**
Project Title: FyreFLEX FCO1579	**Fire resistance level:**	**Drawn By:** RB				NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 5 / **Sheet:** / **Date:** 10/06/2020 / **Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING			Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: info@tfire.com.au W: www.tfire.com.au





NOTE:
- Maxilite fixed with minimum 10gx100mm plasterboard screws
- Screw fixings 25mm from each corner, 4x total
- Maxilite may be cut into halves and retrofit around pipe

Drawing Name: Locally Thickened Wall			**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**
Project Title: FyreFLEX FCO1579			**Fire resistance level:**	**Drawn By:** RB		
Drawing No. : 9	**Sheet:**	**Date:** 11/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING

NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

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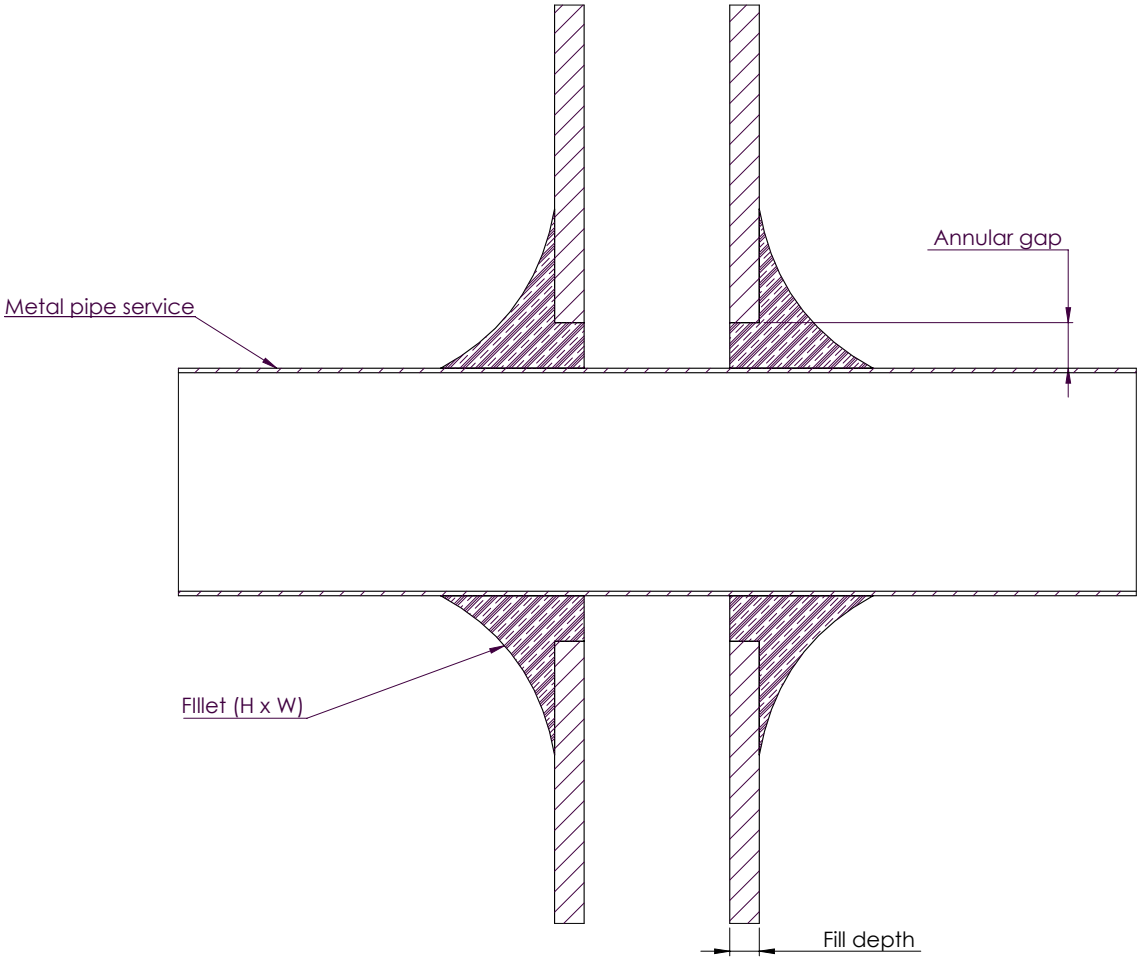
NOTE: Sealant drawing only (before wrap installation)



NOTE: Sealant drawing only (before wrap installation)

Drawing Name: Single Layer walls - Pipe		**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**
Project Title: FyreFLEX FCO1579		**Fire resistance level:**	**Drawn By:** RB			
Drawing No. : 11	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING

NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

Trafalgar Head Office:
PO BOX 545
Chester Hill NSW 2162
T: 1800 888 714
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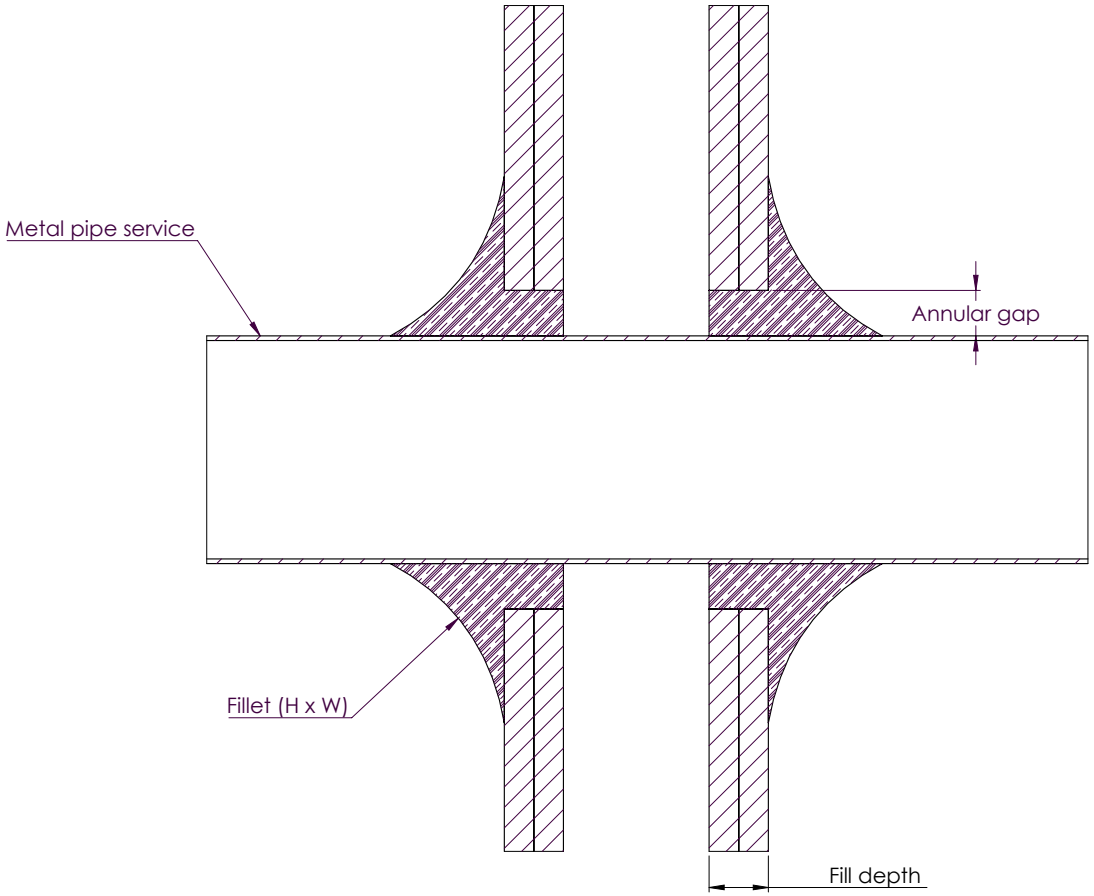

NOTE: Sealant drawing only (before wrap installation)

Drawing Name: Double layer plaster - pipes		**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**
Project Title: FyreFLEX FCO1579		**Fire resistance level:**	**Drawn By:** RB			
Drawing No.: 13	**Sheet:**	**Date:** 10/06/2020	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING

NOTICE:

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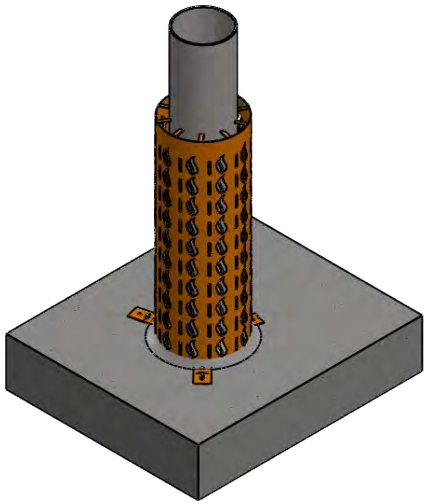

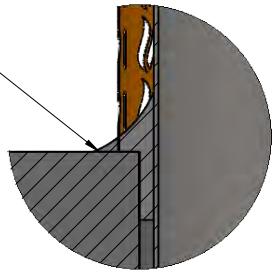

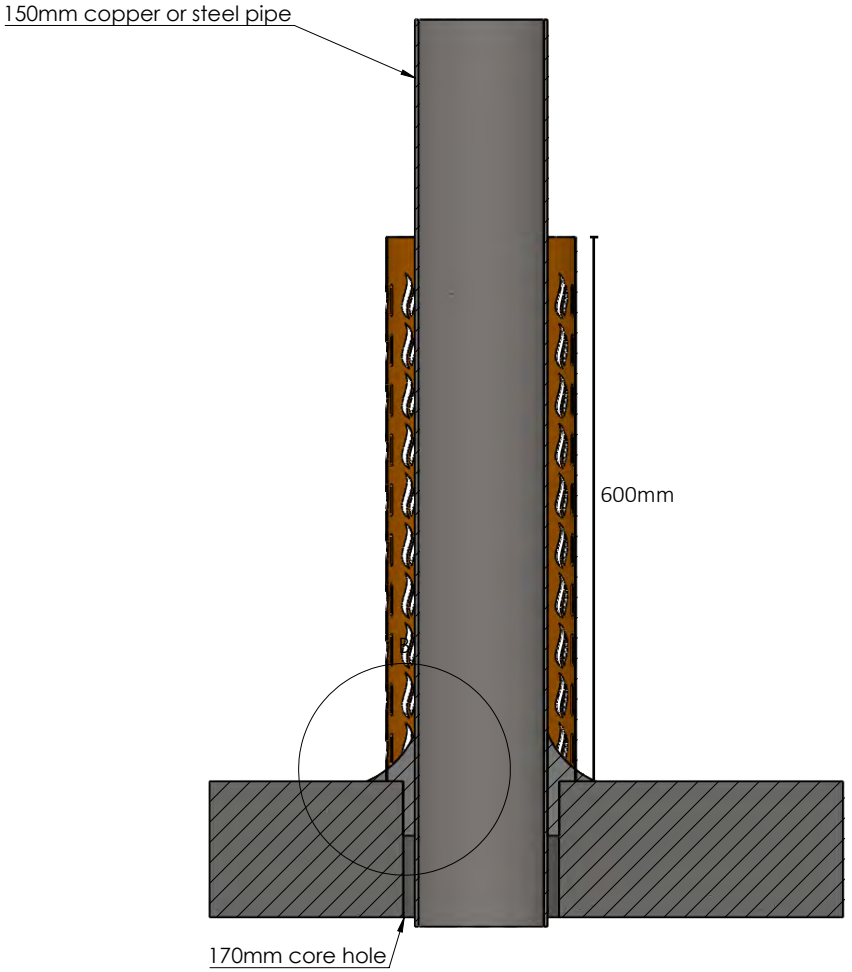

Note: Refer to the UniGUARD Technical Manual for more approvals, availavle on www.tfire.com.au

Drawing Name: UniGUARD Installation				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:** / **No.:**	**NOTICE:**
Project Title: UniGUARD for Metal Pipes				**Fire resistance level:**	**Drawn By:** SM			NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Drawing No.: 1	**Sheet:** 1 of 1	**Date:** 30/06/2021	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING	TRAFALGAR FIRE	Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@tfgroup.com.au W: www.tfire.com.au

TWRAP™ QUICK REFERENCE

CONCRETE AND MASONRY WALLS & FLOOR SLABS

Pipe Type	Pipe Size (up to)	TWRAP™ Length		
		Concrete/ Masonry 2 hour walls	90min concrete floor	2 hour concrete floor
Copper	DN50	300mm	300mm	300mm (2hr)
	DN100	600mm	600mm	800 & 300mm* (3hr) or 600mm (2hr)
	DN150	1100 & 300mm*	850mm	850mm (2hr)
Steel	NB50	300mm	300mm	300mm (2hr)
	NB100	450mm	450mm	450mm (2hr or 3hr)
	NB150	900 & 300mm*	600mm	600mm (2hr) or 600 & 300mm* (-/240/180)

*Indicates as second layer of TWRAP™ located at the base of the penetration, on both sides of the wall.

OTHER WALL TYPES

Pipe Type	Pipe Size (up to)	TWRAP™ Length				
		1hr Plasterboard	2hr Plasterboard	90 min AAC Panel	2hr AAC Panel + 60mm FyreBOARD Maxilite® (120mm)	2hr Speedpanel® + 60mm FyreBOARD Maxilite® (120mm)
Copper	DN50	300mm				
	DN100	450mm	600mm			
	DN150	-	1100 & 300mm*	1050mm	1100 & 300mm*	
Steel	NB50	300mm				
	NB100	450mm				
	NB150	-	900 & 300mm*	1050mm	900 & 300mm*	

*Indicates a second layer of TWRAP™ located at the base of the penetration, on both sides of the wall.