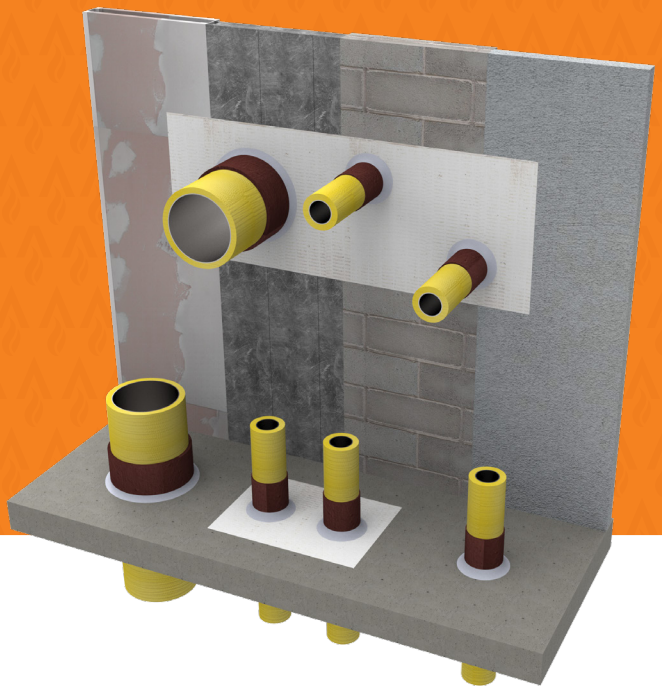
TRAFALGAR FIRE

TRAFALGAR ArmaFlexProtect

TRAFALGAR ARMAFLEX® PROTECT



Trafalgar Armaflex Protect is an all-in-one flexible pipe lagging with intumescent technology for fire barrier penetrations of hot and chilled-water services. Trafalgar Armaflex Protect allows pipes to pass through fire barriers without loss of thermal efficiencies, or risks of condensation caused by typical fire stopping systems which may require lagging to be stripped through fire barrier penetrations. Solutions for all R-Values on a range of services up to 300mm diameter pipes.

NCC 2022 READY

KEY FEATURES

- Service penetrations in fire rated walls & floors
- Maintain thermal insulation (R-values)
- Complies with NCC Section C and J
- Service temperatures from-50 to +85 degrees
- Self-extinguishing
- Resistant to seismic and building movement
- Fire ratings (FRL's) up to 4 hours
- Fast, clean and easy installation
- Intumescent effect for increased performance

APPLICATIONS

- Hot and cold pipes
- Small & large copper & steel pipes
- Used with Trafalgar FyreBATT for oversized penetrations
- Individual core hole systems
- NCC 2022 J6D9 compliance

TRADES

HVAC&R

PLUMBING

PASSIVE FIRE PROFESSIONALS

LAGGERS

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WHAT IS TRAFALGAR ARMAFLEX® PROTECT?

By combining the proven thermal properties of Armaflex pipe lagging with a high grade intumescent formula that provides expansion properties when heated, fire spread is ruled out!

Whether in floors, solid walls or lightweight walls, Trafalgar Armaflex Protect gives reliable fire protection in fire walls/ floors without any complicated additional measures. At the same time the product ensures effective thermal insulation and reliable condensation control.

Product Specifications

SPECIFICATIONS

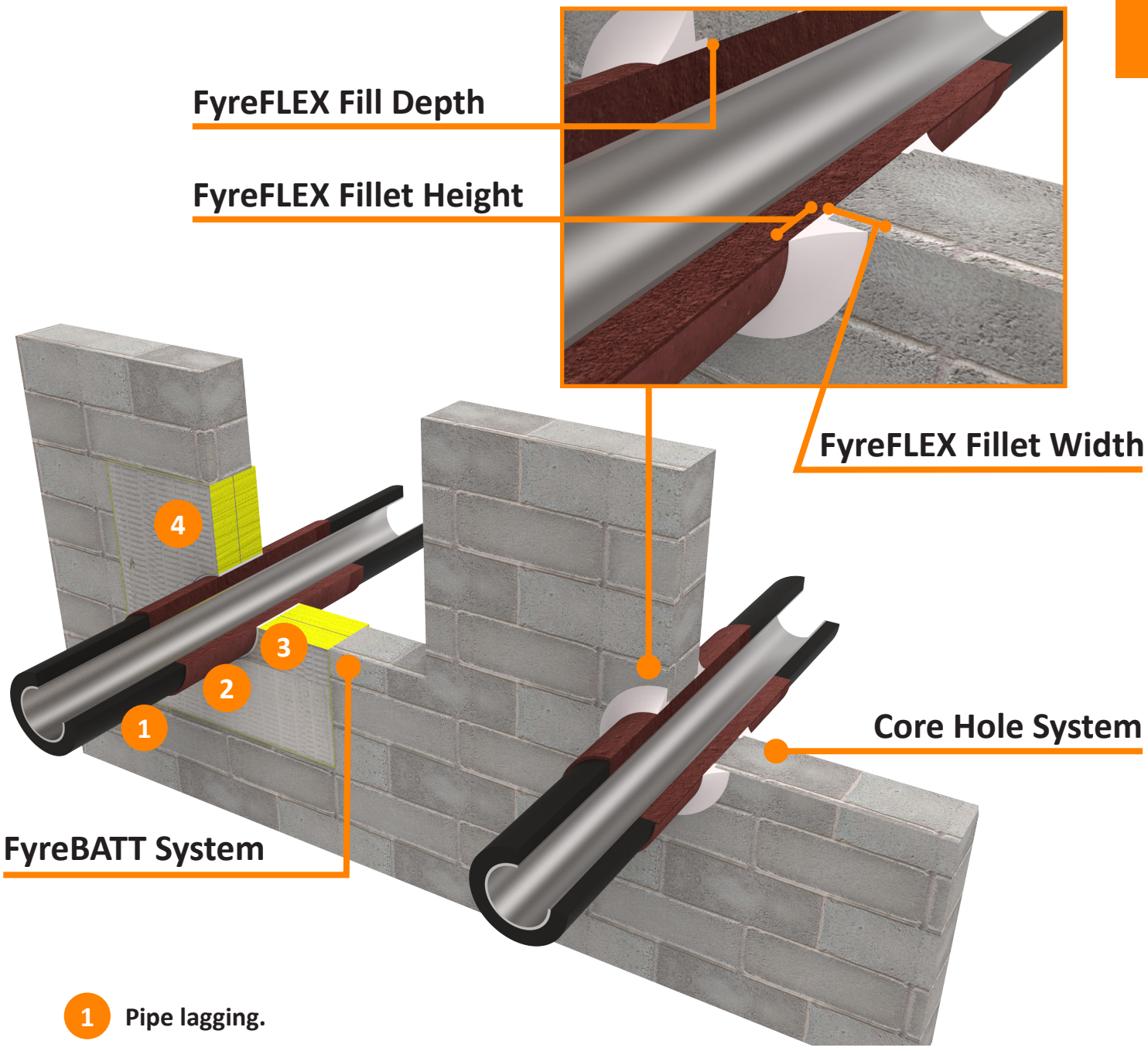
Details	Value
Maximum Service Temperature	85 degrees
Minimum Service Temperature	-50 degrees
Thermal Conductivity	λ 0.056 W/m.K
Water Vapour Diffusion Resistance	μ > 7000
Reaction to fire	Self-Extinguishing
UV Resistance	Suitable for indoor use only
Colour	Dark Red
R-Value	1x layer = 0.25 | 2x layer = 0.5 | 3x layer = 0.75 | 4x layer = 1

COMPARISON TO TRADITIONAL FIRE STOPPING SYSTEMS

Traditional fire stopping systems aren't fire tested with continuous lagging, and require the pipe lagging to be stripped for the application of 'fire rated' insulation wraps. These wraps may not reach the R-Value required, and can leave gaps at the interface to the lagging that can affect vapour seals, potentially causing condensation which can lead to mold and rot over time.

Trafalgar Armaflex Protect has been fire tested at thicknesses specifically designed to comply with Section J of the NCC for thermal efficiency, and can be sealed to the existing lagging with traditional lagging adhesives, and foil tape to maintain a vapour seal where required.

TRAFALGAR ARMAFLEX PROTECT SYSTEM



1. Pipe lagging.
2. Trafalgar ArmaFLEX protect, lagging the pipe for a specific length through the penetration.
3. FyreFLEX Sealant.
4. FyreBATT, to backfill larger penetrations.

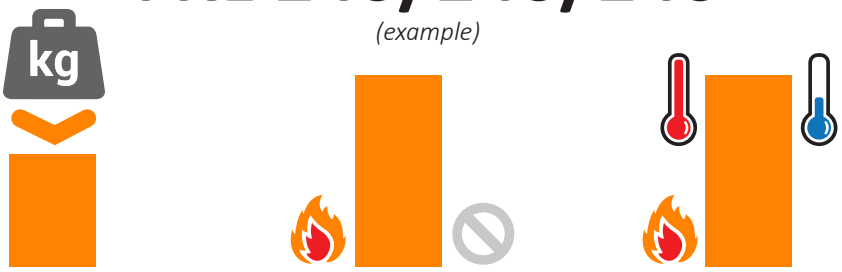
FIRE RESISTANCE LEVEL

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.

Note: Penetrations are not required to have a Structural Adequacy rating and is usually expressed as a dash. For example, a penetration through a 2 hour load bearing wall would be written as -/120/120.

INTEGRITY

The Trafalgar Armaflex Protect system will achieve the integrity performance up to 4 hours. The intumescent impregnated foam will expand, sealing off gaps to stop the passage of fire.

INSULATION (TEMPERATURE RISE)

The Trafalgar Armaflex Protect system will achieve the insulation performance up to 4 hours, keeping the temperature down on the non-fire side. This is sometimes achieved with additional insulation protection such as TWrap. Higher FRL's can be achieved with the help of TWrap, which increases the thermal insulation properties of the system, during fire exposure.

Note: The insulation criteria of the FRL is different to the R-Value thermal insulation.

FIRE STOPPING ACCESSORIES

WHAT IS FYREBATT?

Trafalgar FyreBATT is a coated stonewool batt, designed for use as a fire seal for service penetrations. Consisting of a high-density lamella core, sealed on both sides with a flexible fire rated ablative coating. FyreBATT's offer a high fire protection, along with an effective smoke and acoustic seal.

FyreBATT's are used to seal various service penetrations in fire rated walls, shafts or floors located in dry environments, providing a fire rating for up to 4 hours where required by the National Construction Code (NCC).

FyreBATT's have been fire tested and approved in numerous configurations and with a multitude of service penetration types to AS1530.4.-2014 and AS4072.1-2005. FyreBATT is simple to cut and install, making them the ideal solution for sealing around lagged pipes in oversized penetrations.

WHAT IS FYREFLEX®?

Trafalgar 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 40 years. FyreFLEX® has been approved for use in a large range of control joint or fire stopping applications required under the National Construction Code (NCC) including for use with Trafalgar Armaflex Protect.

WHAT IS TWRAP™?

Trafalgar 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.

In some instances Twrap is used in conjunction with Trafalgar Armaflex Protect to increase the FRL performance.

WHAT IS MONOWRAP?

MonoWRAP is a 40mm thick fire protection wrap that is tested for wrapping around service penetrations, to protect against heat transfer (AKA insulation performance) that may occur during fire conditions. MonoWRAP is foiled on the outside layer around the stonewool core to provide additional handling strength.

Before wrapping the services with MonoWrap, the penetration in the fire barrier must first be sealed for fire integrity using Trafalgar's range of FyreBATTs, FyrePLUG Pillows, FyreSET mortar (or in some cases just FyreFLEX sealant) which physically stop the fire. Where the services conduct heat through fire barrier (such as metal pipes and cables) MonoWRAP can be wrapped around the services to maintain the insulation rating of the wall or floor.

Combined, the system will provide FRL's in excess of -/120/120 as required by the National Construction Code (NCC) and has been tested/approved in accordance with AS1530.4-2014. Please refer to the relevant product technical manual for specific FRLs and installation requirements.

FYREBATT – 2X LAYERS INSTALLED INTO WALLS WRAP FREE

Approved in all barriers covered in FyreBATT Assessment, including plasterboard, shaftliner, concrete/masonry, Speedpanel, Hebel/AAC.

Annular Gap Fill: full depth of the batt with FyreFLEX sealant.

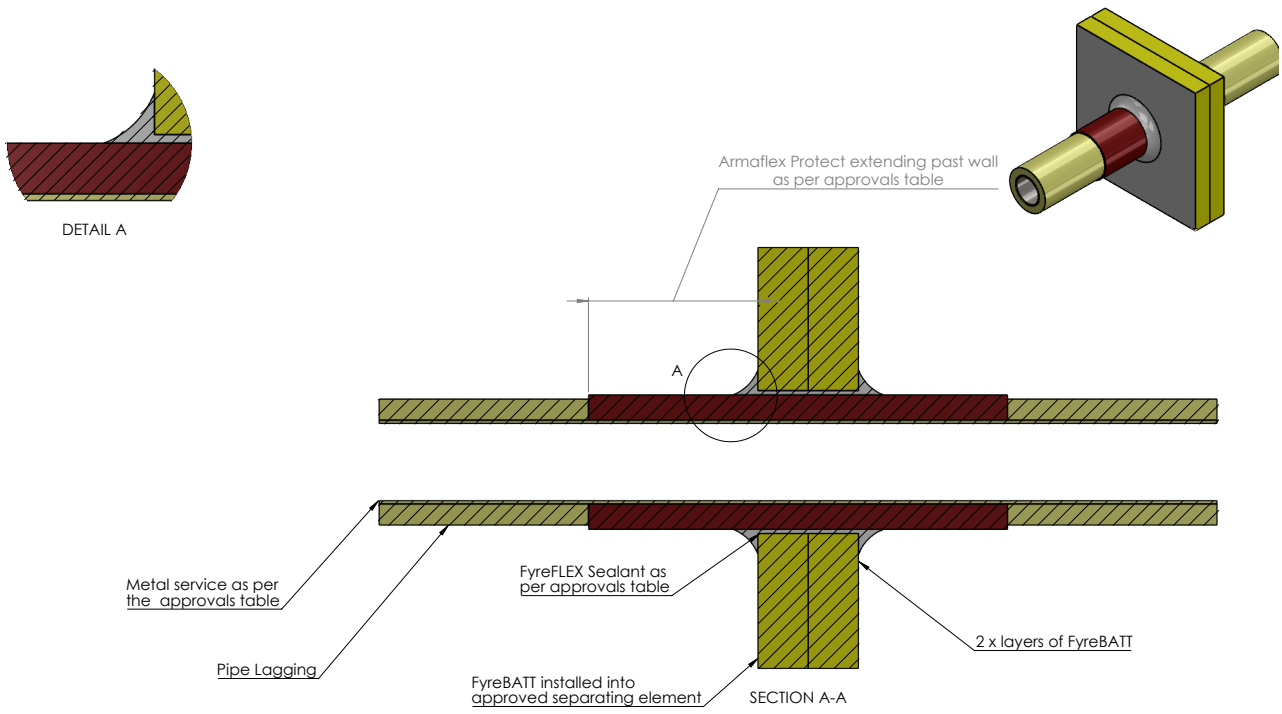
Fillet Size (as required): 30mm each side of the wall with FyreFLEX sealant.

Trafalgar Armaflex Protect: one 500mm width roll wrapped around the pipe, centred to the wall.

Service Type	Nominal Size Up to	ArmaFLEX Protect Thickness (Layers)	R - Value Through Penetration	Hole Size	Max FRL	Report	Table Reference
Steel	50mm	3	0.7	130mm	-/180/180	FAS230168 & FAS 210023	T3 #3
	100mm	4	0.9	205mm	-/180/120	FAS230168 & FAS 210023	T3 #2
	300mm	4	0.9	370mm	-/180/120	FAS230168 & FAS 210023	T3 #2
Copper	100mm	4	0.9	205mm	-/180/120	FAS230168 & FAS 210023	T3 #2
	50mm	3	0.7	130mm	-/180/180	FAS230168 & FAS 210023	T3 #3

Note: FRL limited to the performance of the FyreBATT & the separating element.

FyreBATT installation & max sizes, covered in the FyreBATT manual and report.



Metal pipes protected with Trafalgar Armaflex Protect insulation penetrating 2 layers of vertical FyreBATT - WRAP FREE

FYREBATT – 2X LAYERS INSTALLED INTO WALLS WITH ADDITIONAL WRAP

Approved in all barriers covered in FyreBATT Assessment, including plasterboard, shaftliner, concrete/masonry, Speedpanel, Hebel/AAC.

Annular Gap Fill: full depth of the batt with FyreFLEX sealant.

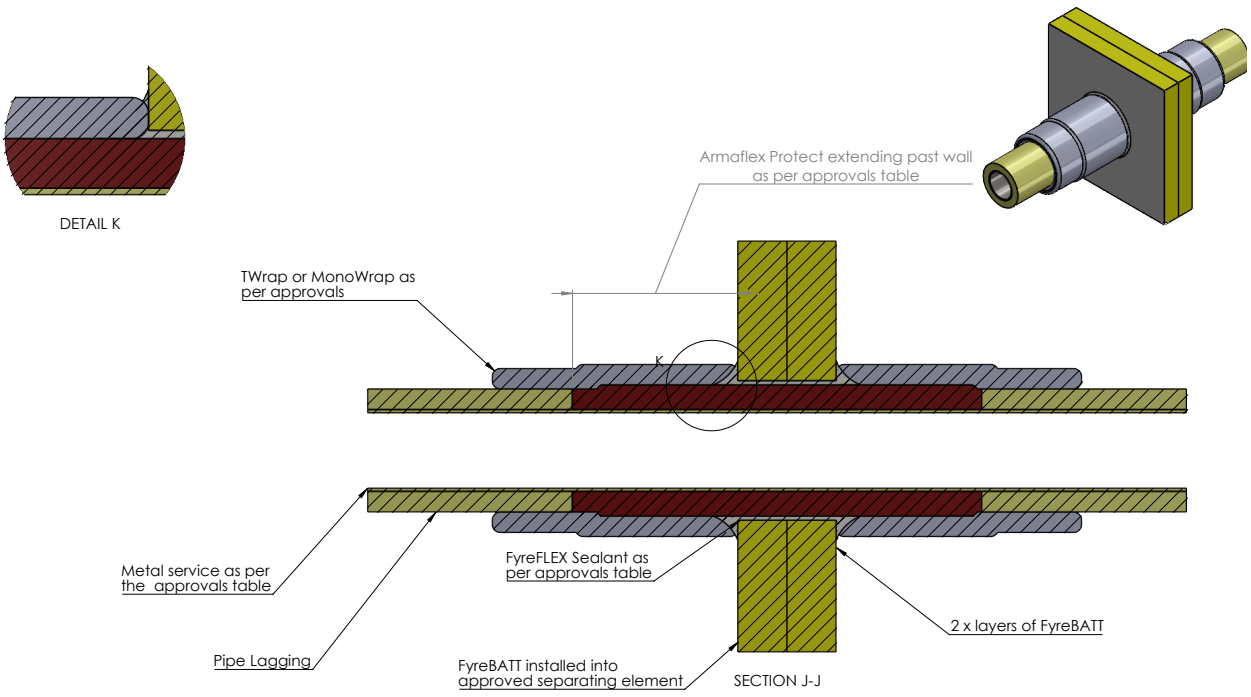
Fillet Size (as required): 30mm each side of the wall with FyreFLEX sealant.

Trafalgar Armaflex Protect: one 500mm width roll wrapped around the pipe, centred to the wall.

Service Type	Nominal Size Up to	ArmaFLEX Protect Thickness (Layers)	R - Value Through Penetration	Hole Size	Max FRL	TWrap or MonoWRAP Length	Report	Table Reference
Steel	50mm	3	0.7	130mm	-/240/240	1100mm	FAS230168 & FAS 210023	T3 #3
	100mm	4	0.9	205mm	-/180/180	1100mm	FAS230168 & FAS 210023	T3 #3
Copper	100mm	4	0.9	205mm	-/180/180	1100mm	FAS230168 & FAS 210023	T3 #2
	50mm	3	0.7	130mm	-/240/240	1100mm	FAS230168 & FAS 210023	T3 #3

Note: FRL limited to the performance of the FyreBATT & the separating element.

FyreBATT installation & max sizes, covered in the FyreBATT manual and report.



Metal pipes protected with Trafalgar Armaflex Protect insulation penetrating 2 layers of vertical FyreBATT - with additional TWrap/MonoWrap as required

FYREBATT – 2X LAYERS INSTALLED INTO CONCRETE FLOOR SLAB WRAP FREE

FRL limited to performance of the concrete floor slab, as per AS 3600.

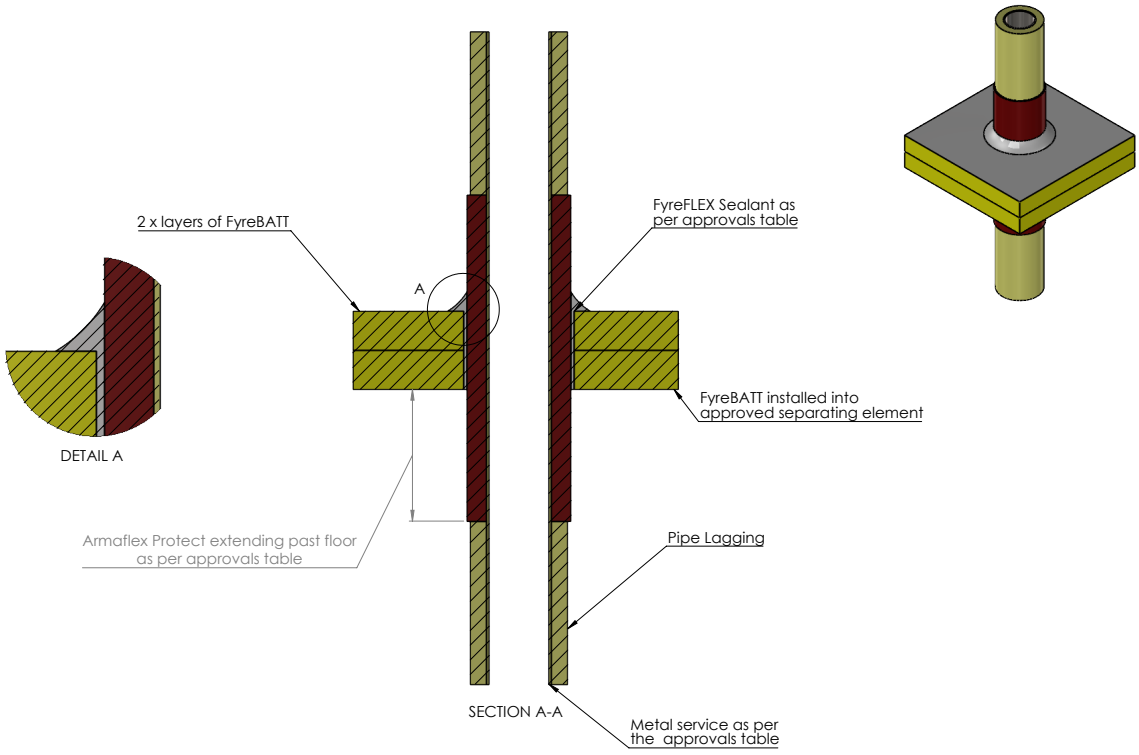
Fillet: 30mm top side of batts.

Annular Gap Fill: full depth of the batt.

Trafalgar Armaflex Protect: one 500mm width roll wrapped around the pipe, centred to the wall.

Service Type	Nominal Size Up to	ArmaFLEX Protect Thickness (Layers)	R - Value Through Penetration	Hole Size	Max FRL	Report	Table Reference
Steel	32mm	2	0.5	90mm	-/120/120	FAS230168 & FAS 210023	T4 #3
	50mm	3	0.7	135mm	-/120/120	FAS230168 & FAS 210023	T4 #2
	300mm	4	0.9	370mm	-/240/120	FAS230168 & FAS 210023	T4 #1

Note: FRL limited to the performance of the FyreBATT & the separating element.



Metal pipes protected with Trafalgar Armaflex Protect insulation penetrating 2 layers of horizontal FyreBATT-WRAP FREE

INSTALLATION:

TRAFALGAR ARMAFLEX PROTECT ROLL

CUT

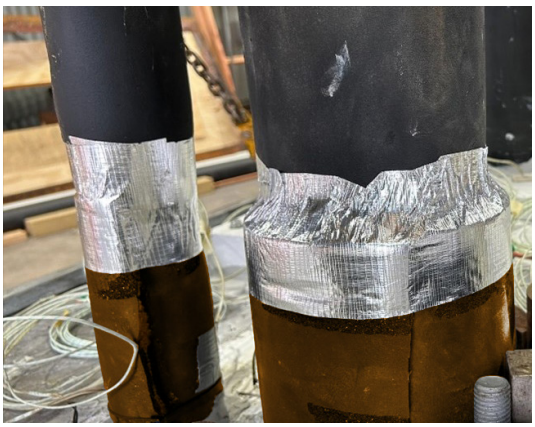
Cut the required length of Trafalgar Armaflex Protect to run through the penetration.

GLUE

Join the insulation using the Armaflex adhesive. Centre Armaflex protect within fire barrier.

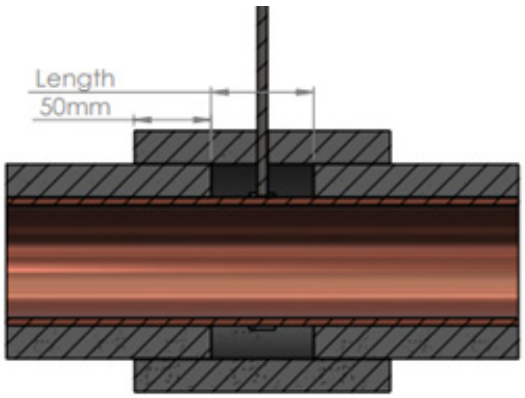
Check the FRL table for relevant thickness and length

TAPE JOINTS - OPTIONAL



Tape joints from the Trafalgar Armaflex Protect to the pipe lagging with steel reinforced tape to maintain a vapour seal.

PIPE SUPPORTS



Leave the Trafalgar Armaflex Protect short of any pipe brackets on initial installation, and cover brackets with a cover-strip of the material.

INSTALLATION:

OVERSIZED OPENINGS

CUT

Cut FyreBATT's 3-5mm oversize to friction fit into the opening, with a hole for the service matching the OD of the insulation.

SEAL

Seal all edges with FyreFLEX Sealant. Note: FyreFLEX can be mixed to a brush grade adding 200ml of water to a 600ml sausage, and paint on.

FIT

Fit the FyreBATT's around the service, ensuring all cut edges are sealed with FyreFLEX.

FINISH

Install a fillet of FyreFLEX Sealant around the services. Refer to approvals tables for exact specifications.

INSTALLATION:

WRAP INSTALLATION

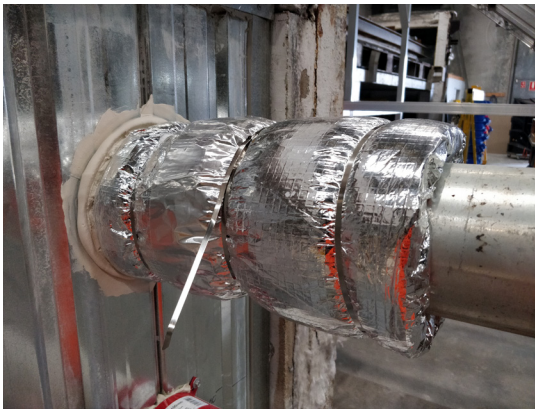
CHECK REQUIREMENTS

TWrap or MonoWRAP is not required for all applications, check the FRL tables to confirm the if it is needed, and if so, to what length.

CUT TO LENGTH

Cut the roll of wrap to the right length for the pipe, ensuring enough length for the wrap to overlap by 50mm where it meets itself around the pipe.

SECURE



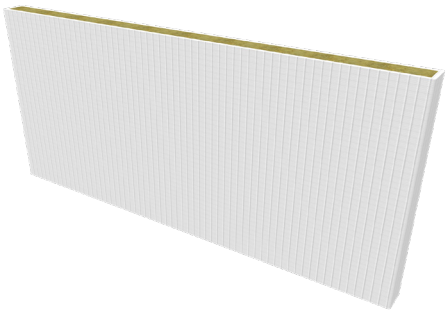
TWrap can be held in place with foil reinforced tape, and should be finished with steel ties, 50mm from each end and at 150mm centers between.

WRAP TO FULL LENGTH

As required, add additional pieces of wrap to reach the required length from the separating element, again overlapping by 50mm where the wrap meets itself.

SYSTEM COMPONENTS

Item Number	Description	Dimentions	Carton Contents	Min Order
I00662	Trafalgar Armaflex Protect Red 13mm	6000mm x 500mm x 13mm	6m^2	1



FyreBATT

Item Number	Description	Min Order Qty	Pallet QTY
FyreBATT 60mm	Coated mineral fibre Batt 60mm x 600mm x 1200mm	1	48

MONOWRAP

Item Number	Description	Min Order Qty	Pallet QTY
MonoWRAP	Penetration wrap foiled one side- 40mm thick- 600mm x 4000mm roll.	1	36

SYSTEM COMPONENTS

FyreFLEX

Item Number	Description	Min Order Qty	Box Qty	Pallet QTY
FyreFLEX 300W FyreFLEX 300G	FyreFLEX® Sealant Cartridge 300ml White or Grey	1	20	1920
FyreFLEX 600W FyreFLEX 600G	FyreFLEX® Sealant Sausage 600ml White or Grey	1	20	1040
FyreFLEX 10G	FyreFLEX® Sealant Pail 10L Grey	1	N/A	64

TWRAP

Item Number	Description	Min Order Qty	Pallet QTY
TWRAP 300	300mm wide, 25mm thick blanket	7620mm long roll	32
TWRAP 450	450mm wide, 25mm thick blanket	7620mm long roll	16
TWRAP 600	600mm wide, 25mm thick blanket	7620mm long roll	16
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

FAQ

Q Will Trafalgar Armaflex Protect maintain my R-Value?

A The thickness of Trafalgar Trafalgar Armaflex Protect through the penetration can be designed within the approved range to meet the R-value required. Note that the required R-Value can be halved through penetrations through structural barriers. Refer to the approval tables or R-Value page of this manual for more information.

Q What Barriers is Armaflex approved for?

A Concrete Floors, Plasterboard Walls, Concrete & Masonry Walls, Hebel, AAC, Speedpanel, and others! Contact technical@tgroup.com.au if you can't find anything for your barrier.

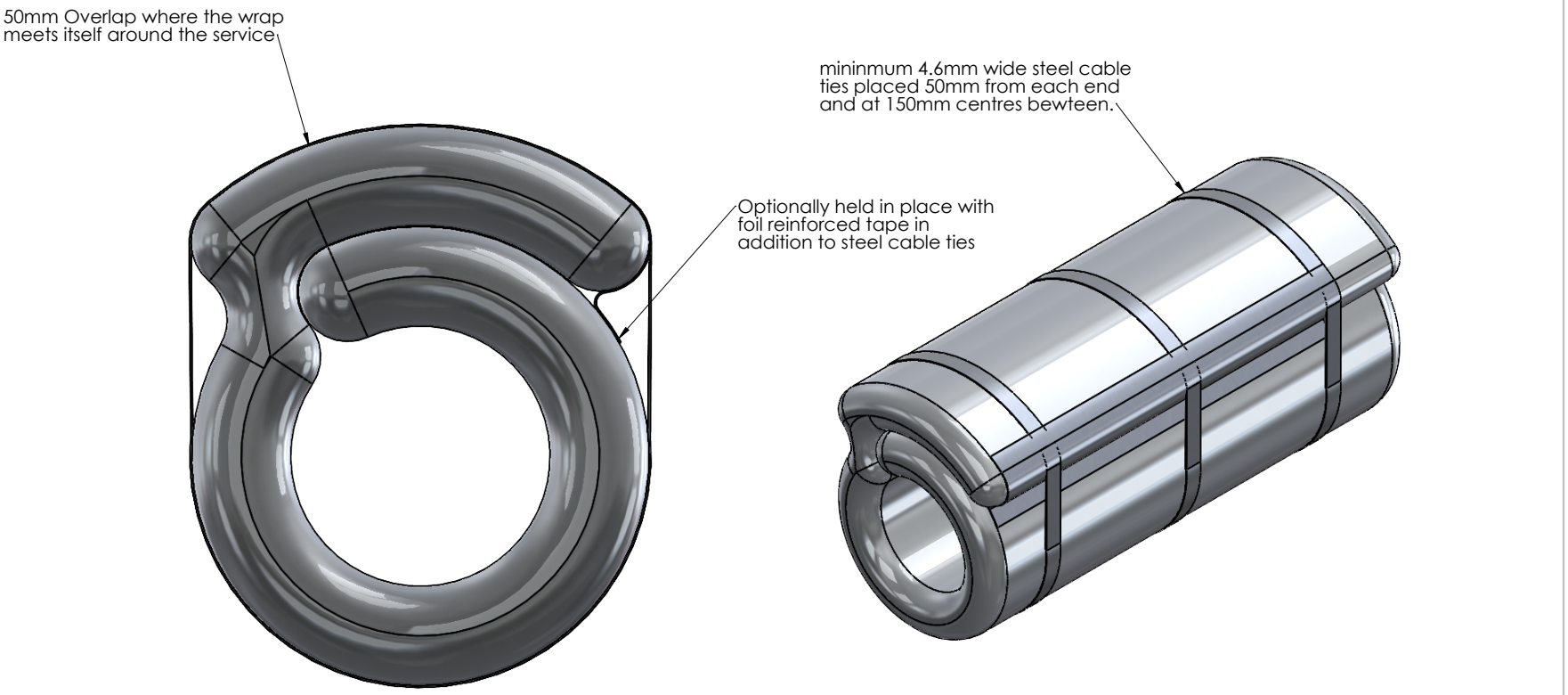
Q What type of services is Trafalgar Armaflex Protect suitable for?

A Hot and chilled services, with R-values in accordance with NCC 2019 Section J5.8/ NCC 2022 J6D9.

Q Can I penetrate larger openings or does the hole need to be tight to the pipe?

A Yes, larger openings are approved with FyreBATT.

TWrap & MonoWrap



Drawing Name: Installation Overview				**Test Standard:** AS1530.4	**Codes:**	**Revision:**	**Date:**	**No.:**	**NOTICE:** NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)
Project Title: TWrap & MonoWrap				**Fire resistance level:**	**Drawn By:** SM				
Drawing No. : 1	**Sheet:** 1 of 1	**Date:** 22/01/2024	**Scale:** NTS	**Based on Report No.:**	**Checked By:** JH	☐ STANDARD DRAWING ☐ PROJECT DRAWING			

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FRL - FyreBATT BLANK SEALS

CONCRETE & MASONRY WALLS

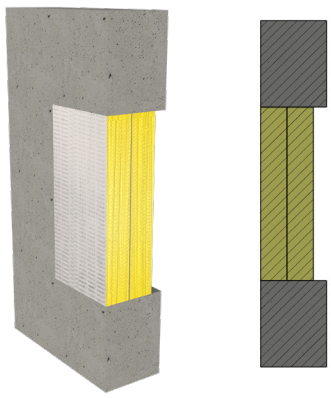
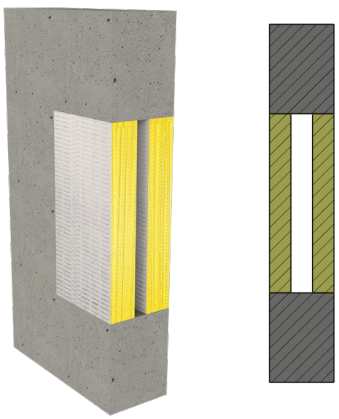
Approved Interface Configurations

There are a number of approved 'blank seal' FyreBATT installation configurations that can be used based off the specific fire rated wall or floor, any of which can be selected to provide to maintain the FRL of the fire barrier. Where services are present, please select an a system that has the correct number of FyreBATT layers needed as per the Service Penetration FRL's from page 10.

Walls - 2 Way Fire Protection

Concrete/Masonry

The maximum FRL of these walls should be determined in accordance with AS3600 & AS3700, but limited by the FyreBATT system approvals. For example, if a wall is rated to -/240/240 and the FyreBATT with a service penetration is rated to an FRL of-/240/180, then the lower FRL will apply.

Double Layer FyreBATT	
	
Double layer FyreBatt, flush to one side of the wall. Max. FRL-/240/240	Double layer FyreBATT, installed flush with each side of the wall (with cavity in centre). Max. FRL-/240/240
Max Size (HxW): 1200mm x 1200mm	Max size (HxW): 1200mm x 1200mm
System Ref. TBD1	System Ref. TBD1

FRL - FyreBATT BLANK SEAL

PLASTERBOARD WALLS

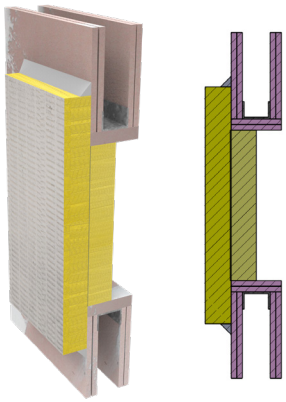
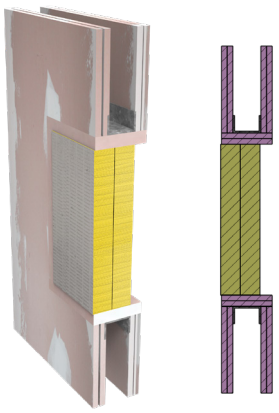
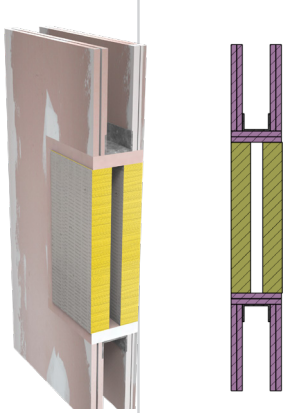
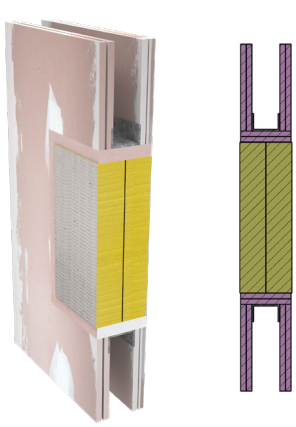
Plasterboard Wall Systems

FyreBATT is approved for use in fire rated **single-layer plasterboard** walls that have either 13 or 16mm plasterboard on each side of a 64mm stud (minimum 90mm overall thickness).

FyreBATT is also approved for use in fire rated **double-layer plasterboard** walls that have of 2x13mm plasterboard on each side of a 64mm stud (minimum 116mm).

For plasterboard shaft wall construction, please see the next page.

Double Layer FyreBATT configurations

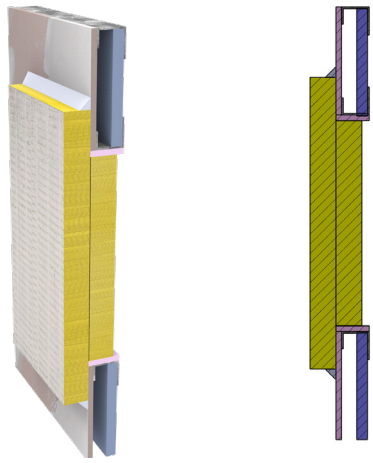
			
Double Layer Batt, pattress fit with one layer friction fit into the wall (flush with the face of the wall), and the second surface mounted with a 100mm overlap onto the barrier. Max FRL-/120/120.	Double layer FyreBATT, flush with one side of the wall. Max FRL-/120/120.	Double layer FyreBATT, flush with each side of the wall (with cavity in the middle). Max FRL-/120/120.	Double layer FyreBATT, centred to the wall. Max FRL-/120/120.

Max size in single layer plasterboard wall: 1000x1200mm. System Ref. TBD3
Max size in double layer plasterboard walls (HxW): 1200x2400mm. System Ref. TBD2

FRL - FyreBATT BLANK SEAL

SHAFTLINER, HEBEL, WALSC & SPEEDPANEL WALLS

Double Layer FyreBATT configuration



Double Layer Batt, Pattress fit, with one layer friction fit into the wall (flush with the face of the wall), and the second surface mounted with a 100mm overlap onto the barrier. Max. FRL -/120/120.

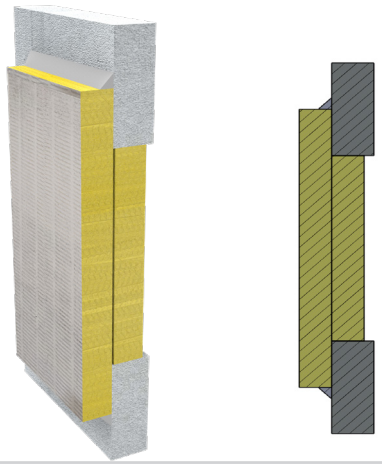
Max size (HxW): 1200mm x 2400mm

System Ref. TBD2

Shaftliner Plasterboard Wall Systems

FyreBATT is approved for use in shaftliner C-H Stud style shaftliner wall systems that use 25mm shaftliner panel with a minimum of 16mm fire grade plasterboard on the other side of the C-H stud (Minimum 80mm overall thickness). Max FRL in accordance with wall manufacturers specifications, & limited by the FyreBATT system approvals.

Double Layer FyreBATT configuration



Double Layer Batt, Pattress fit, with one layer friction fit into the wall (flush with the face of the wall), and the second surface mounted with a 100mm overlap onto the barrier. Max. FRL-/120/120.

Max size (HxW): 1000mm x 1200mm

System Ref. TBD4

Speedpanel, Hebel & Walsc panel wall systems

FyreBATT is approved for use with:

- Speedpanel walls (51, 64 & 78mm systems)
- AAC Hebel & Walsc (75mm) panel walls

The max. FRL will be accordance with wall manufacturers specifications, limited by the system approvals.

Fixings table (for all pattress fit configurations in walls)

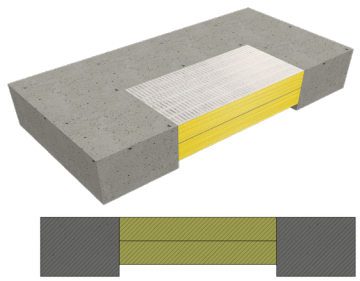
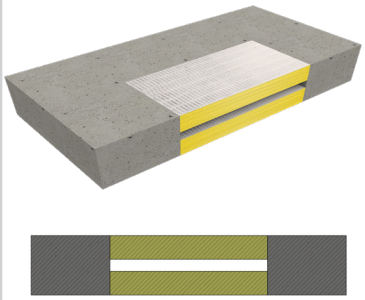
Note: For Patress fit, suitable washers must be used.

Barrier type	Fixings	Centers	FyreFLEX Sealant fillet size
Plasterboard wall constructions	10g x 100mm plasterboard screws	200mm	25 x 25mm at the perimeter
Concrete/masonry constructions	M6 x 100mm masonry screws/ anchors	200mm	25 x 25mm at the perimeter
Hebel/Walsc walls	10g x 100mm plasterboard screws	200mm	25 x 25mm at the perimeter
Speedpanel walls	10g x 100mm self tapping hex head screws	200mm	25 x 25mm at the perimeter

FRL - FyreBATT BLANK SEAL

CONCRETE FLOORS

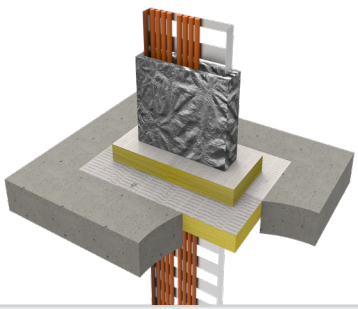
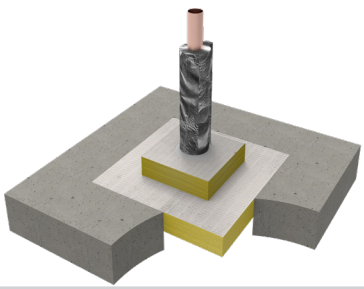
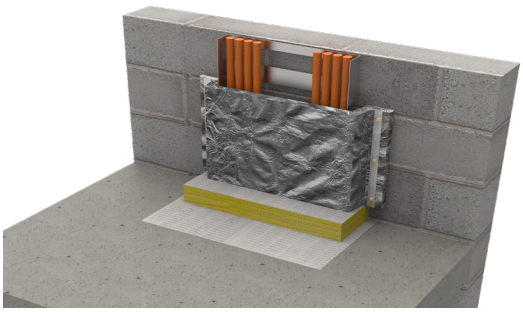
The maximum FRL of these floors should be determined in accordance with AS3600, but also limited by the FyreBATT system approvals. For example, if a floor is rated to -/240/240 and the FyreBATT with a service penetration is rated to an FRL of -/240/180, then the lower FRL will apply.

Double Layer FyreBATT	
	
Double layer FyreBATT, flush with the top side of the floor. Max FRL -/180/180.	Double layer FyreBATT, flush with both sides of the floor (with cavity in middle). Max FRL -/180/180.
Max size (HxW): 1200mm x 600mm	Max size (HxW): 1200mm x 600bb
System Ref. TBD5	System Ref. TBD5

Penetrations in Single Layer Batts (Floors)

A single layer of FyreBATT installed as per the above tables will achieve the FRL where services pass through the penetration, the system may require 2 x layers of FyreBATT. As an alternative to two full layers of FyreBATT, you can use a single layer system with a local patch of FyreBATT installed around the services.

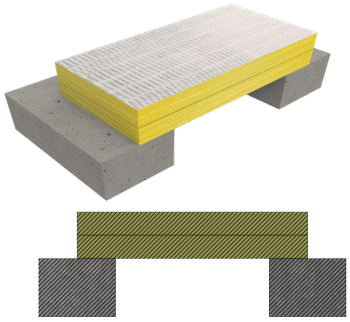
As shown below, a small patch may be installed at the penetration extending 100mm past the penetration on all sides. The patch piece must be fixed to the first layer of FyreBATT using 90mm pigtail Screws in each corner.

Local Patch		Cable Trays Installed next to a wall
		
Single layer FyreBATT with local thickening around penetrations. Services, fire stopping and FRL per system approvals. Max FRL -/180/120		Single layer FyreBATT with local thickening around penetrations. Services (or 2x layers of FyreBATT). Max FRL-/180/120
Max size (HxW):1200mm x 600mm		Max size (HxW): 1200mm x 600mm
System Ref. (Refer to service specific system numbers)		System Ref. TPD36 & TPD38

FRL - FyreBATT BLANK SEAL

CONCRETE FLOORS - Cont.

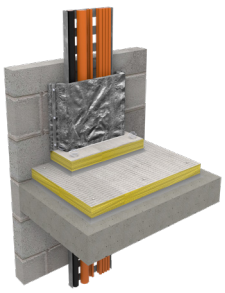
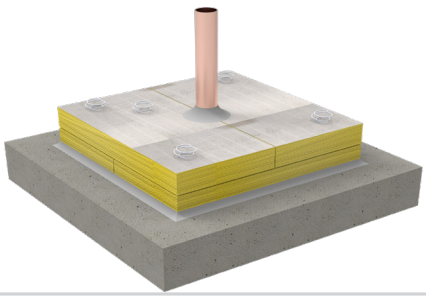
The maximum FRL of these floors should be determined in accordance with AS3600, but also limited by the FyreBATT system approvals. For example, if a floor is rated to -/240/240 and the FyreBATT with a service penetration is rated to an FRL of-/240/180, then the lower FRL will apply.

Double layer FyreBATT

Double layer FyreBATT, surface mounted, overlapping 150mm. Max. FRL-/180/180.
Max size (HxW): 1200mm x 600mm
System Ref. TBD5

Penetrations in surface mounted batts (Floors)

A single layer of FyreBATT installed as per the above tables will achieve the FRL where services pass through the penetration, the system may require 2 x layers of FyreBATT. As an alternative to two full layers of FyreBATT, you can use a single layer system with a local patch of FyreBATT installed around the services.

As shown below, a small patch may be installed at the penetration extending 100mm past the penetration on all sides. The patch piece must be fixed to the first layer of FyreBATT using 90mm pigtail Screws in each corner.

Local Patch	Full Double Layer
	
Single layer surface mounted across entire penetration, with a second layer applied as a local patch around the service. Applicable for up to-/180/120 FRL's.	Double layer surface mounted across the full penetration, with service penetration. Applicable for up to -/180/180 FRL's.
Max size (HxW):1200mm x 600mm	Max size (HxW): 1200mm x 600mm
System Ref. (Refer to service specific system numbers)	System Ref. TPD36 & TPD38