

# FyreWrap®



FyreWrap® is the leading passive fire protection solution for commercial ductwork. The lightweight Insulfrax core ensures high temperature insulation and performance. Fibreglass reinforced scrim completely encapsulates the core for additional handling strength, tear resistance and antibacterial resistance.

**Fast. Clean. Easy.**

## Key Features



- Lightweight – up to 5 times lighter than traditional fire spray
- Clean and easy installation – no mesh required
- Greenguard listed for microbial resistance
- No masking required
- Quick and efficient construction
- Simple repair – tape up or replace section
- Seismic and vibration tolerant
- Tested and approved in accordance with AS 1530.4-2005 and AS/NZS 1530.4-2014

## Applications



- Supply air
- Zone pressurisation
- Smoke exhaust
- Carpark exhaust
- Kitchen exhaust

## Trades

Architect



Builder



HVAC&R



Passive Fire Professionals



FyreWrap® is a registered Trademark of Unifrax

## Table of Contents

Section		Page
What is FyreWrap®?		3
Benefits		4
Specifications		5
Green Star / Health & Safety		6
Fire Resistance Level		7
FRL Table		8
Installation Manual	Measuring Up	9
	Wrapping	10
	Wall Penetrations	11
	Overlap Details	12
	Fixings	13
	Typical Hanger/Trapeze Detail for External Fire Applications	14
System Range- FyreWrap® Access Panel		15
FyreWrap®		16-17
System Range- FyreWrap®		18
FAQ- FyreWrap®		19
Specifications Tables	Table 1: Annular Gap Size	20
	Table 2: Fixing Specs	20
	Table 3: Hanger Spacings	21
	Table 4: Walls Penetrations Additional Layers of FyreWrap®	21
	Table 5: Floor Penetrations Additional Layers of FyreWrap®	22
Technical Drawings		23-43

# What is FyreWrap®?

FyreWrap® is a foil-faced, fire protection wrap/blanket designed to provide fire rating to ducts, kitchen exhausts, smoke spill systems and penetration seals. FyreWrap® is fire tested and approved for up to three hours in accordance with AS 1530.4-2005 and AS1530.4-2014.

FyreWrap®'s core material incorporates the highly engineered, lightweight and high temperature thermal insulation material Insulfrax®. Insulfrax® is a high-temperature insulation made from calcia, magnesia and silica chemistry, designed to enhance bio solubility.

FyreWrap®'s aluminium foil, fiberglass-reinforced scrim completely encapsulates the core and provides additional handling strength, protection from tearing and provides a high resistance to mould growth. Importantly, it also allows ease of identification of FyreWrap® in the field by building certifiers and engineers.

FyreWrap® has undergone extensive testing to ensure it meets the highest quality in terms of environmental impact and health. The material is a completely bio-soluble solution and FyreWrap® has been Greenguard listed for microbial (mould growth) resistance.

## APPLICATIONS

FyreWrap® is diverse in its application ability. FyreWrap®'s extensive library of certifications and approvals, makes FyreWrap® perfect for applications in:

- Hospitals
- Commercial buildings
- Residential properties
- Commercial accommodation
- Aged care accommodation
- Sporting event and function centres
- Commercial and industrial kitchens
- Education facilities
- Detention complexes
- External applications\*

(\*Requires extra lining. Please contact the Trafalgar Fire Technical Team for further information)



# FyreWrap®

## Benefits

FyreWrap® is the safest and most environmentally friendly method of fire rating ductwork and other services in Australia. In addition to these qualities a range of other benefits come with the use of FyreWrap®. FyreWrap® is the premium choice, far ahead of its counterparts including conventional fire spray.

The choice is clear.

## FAST. CLEAN. EASY.

### Do the Comparison

Installation	FyreWrap	Conventional Fire Spray
Fast, clean and easy installation	✓	✗
No ventilation, temperature concerns, substrate cleaning and worker slip hazard care.	✓	✗
No water source needed on site	✓	✗
Nearby work can continue uninterrupted	✓	✗
No dust or waste in nearby drains	✓	✗
No masking for overspray	✓	✗
Off-site installation	✓	✗
Easy certification	✓	Difficult to determine thickness
System		
Clean simple repair	✓	✗
System weight	up to 5 times lighter	Heavy
Easy to use access panels	✓	✗
Vibration/seismic tolerance	✓	✗
Antimicrobial (mould) tested	✓	✗
Design Life of 30+ years	✓	✗
Ease of identification AS1851 Maintenance of Fire Systems	✓	✗

# FyreWrap®



## Specifications

	Thickness	38mm	
	Roll Widths	610mm	1220mm
	Surface area	4.65m <sup>2</sup>	9.30m <sup>2</sup>
	Roll weight	22kg	44kg
	Material density	96kg/m <sup>3</sup>	
	Microbial/mould resistance	GREENGUARD certified	
	Bio-soluble	Yes	
	Green Building Council /LEED Accreditation	Yes	
	Contains Volatile Organic Compounds (VOC)	No	
	R-Value (Thermal Resistance)	1.2m <sup>2</sup> .K/W	
	Acoustic Rating	31dB	
	Ozone depleting manufacture/ composition	No	

## Green Advantage

FyreWrap is an environmentally friendly solution



FyreWrap® is the ultimate green product. Approved by the Green Building Council and LEED (Leadership in Energy and Environment Design), FyreWrap® has received third-party verification by the world's best practice in energy conservation, green asset management and ensuring safe and healthy building for occupants and workers.

Local VOC testing has also been undertaken confirming FyreWrap® contains low VOCs (volatile organic compounds). No ODP Products are used in the composition or manufacturing of the product and no chemical blowing agents are used in the production of FyreWrap®.

## Health and Safety

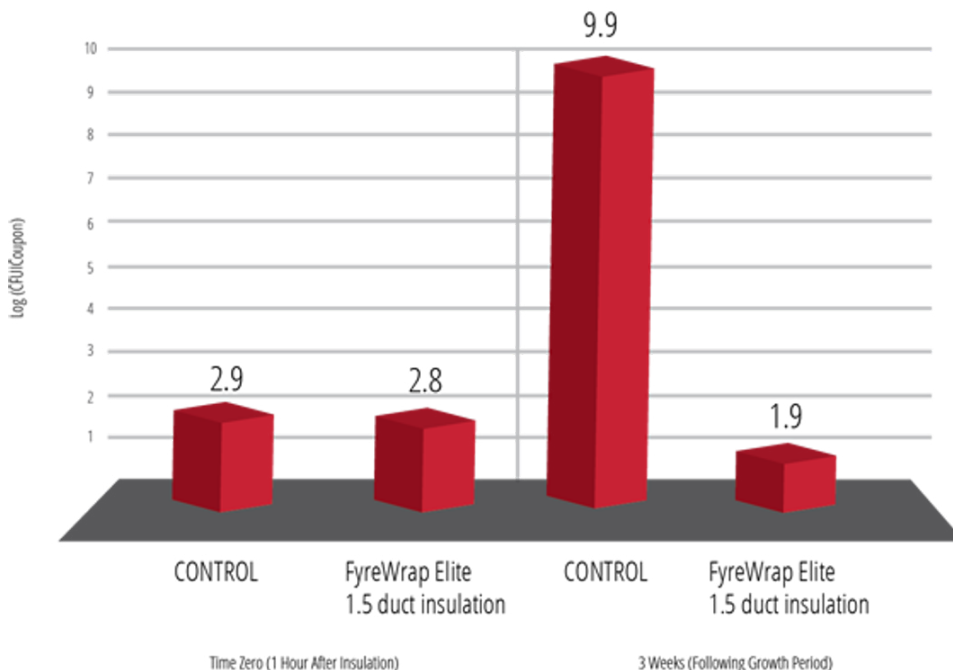
The bio-persistence of the fibres in the core FyreWrap® product was identified after short-term exposure by inhalation in a study (No. 02G97008) by the European Ceramic Fibres Industry Association. As a result FyreWrap® was deemed bio-soluble, and is completely safe for installers and anyone handling or coming into contact with the product.

FyreWrap® has also had microbial resistance testing completed by Green Guard and Air Quality Services.

FyreWrap® was supplied, without any pre-conditioning, and relevant material samples were inoculated with spores of Penicillium brevicompactum and transferred to a static control environment chamber maintained at 95% humidity and 25°C.

This makes FyreWrap® resistant to mould colonisation, and perfect for environments such as hospitals, nursing homes and restaurant kitchens in which any type of mould grouping or activity could have severe consequences.

The below chart demonstrates FyreWrap®'s resistance to mould growth.



# FyreWrap®

## 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. Ductwork uses a different FRL than other applications, shown below:

### FRL 120/120/120

(example)



#### Structural Adequacy

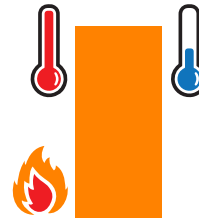
The duct will maintain its size and shape allowing operation.



#### Integrity

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

ie: no gases or flame passing in or out of the duct.



#### Insulation

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

ie: the temperature inside or outside the duct (dependency on test type) staying below the limit.

## Structural Adequacy

FyreWrap® will allow structural adequacy up to 3 hours (external fire) or 3 hours (internal fire). Unprotected supports are possible with FyreWrap® due to its lightweight nature.

## Integrity

The FyreWrap® system will achieve the integrity performance of 3 hours (external fire) or 3 hours (internal fire)

## Insulation (Temperature Rise)

FyreWrap® can achieve up to 3 hours insulation performance for internal and external fires with options for one or more layers depending on the FRL requirement.



## VERTICAL & HORIZONTAL DUCTS



Exposure	Maximum FRL	Report Reference	Maximum Size	Duct/Barrier Penetration
External Fire (Pressurisation systems)	1 Layer* 120/120/120 2 Layer 180/180/180 (vertical or horizontal)	FAR 4205 (AS1530.4:2005)	1200 x 1200mm	Concrete
				Masonry
				Plasterboard
				AAC Wall/ Hebel 75mm
Internal Fire (Exhaust Systems)	1 Layer* 180/180/180 (vertical ducts)  120/120/120 (horizontal ducts)	FCO 3226 (AS1530.4:2014)	3600 x 3600mm	Concrete
				Masonry
				Plasterboard
				AAC Wall/ Hebel 75mm
				Speedpanel 78mm

\* Additional wrap layers required at fire barrier penetrations.

### Approved Details

- Minimum duct specification pressure class 500 as per AS4254
- Single-sided wall penetrations (fire in one direction only, or outside compartment being served)
- Sprinkler pipe penetrations
- Cable penetrations
- Duct support penetrations (for prefabrication riser modules)
- Out of line dampers
- Circular/rectangular ducts
- Access Panels (FWAP)





## INSTALLATION

## MEASURING UP

*FyreWrap® may be installed with zero clearance to surrounding combustibles at any location of the wrap in crowded environments.*

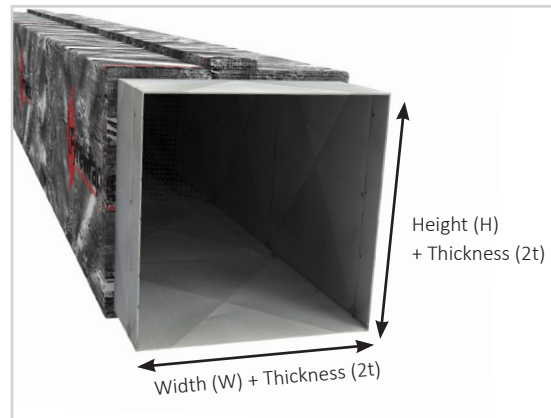
*To minimise waste FyreWrap® should be measured accurately and applied tautly.*

### Measure



Measure the outside dimensions of the duct

### Calculate



Take your measurement, add the thickness of the FyreWrap®, 38mm, to each of the four sides. Add an additional 100mm for the longitudinal overlap, then a small allowance for margin of error.

**Length to cut in mm:  $L = 2 \times (W+2t) + 2 \times (H+2t) + 100 + 100$**

**ONLINE CALCULATOR: [Click Here](#)**

### Cut



Once the total length of FyreWrap® is calculated unroll the FyreWrap®, measure the length with the FyreWrap® taut and cut the required length.

### Seal



Immediately after the FyreWrap® is cut, all exposed edges must be sealed with an approved aluminium reinforced foil tape.

## INSTALLATION

## WRAPPING

*FyreWrap® may be installed with three different fixing methods dependent on the size of the duct*

### Wrap



Wrap the FyreWrap® around the perimeter of the duct with a 100mm overlap where FyreWrap® meets itself (longitudinal overlap). A temporary hold using a filament tape is recommended for each length of FyreWrap® prior to the installation of the permanent fixing method. Place the next length of FyreWrap® with a 100mm overlap adjacent to the previous wrapped length of FyreWrap® (circumferential joint).

### Ducts less than 600mm x 600mm



For ducts less than 600mm x 600mm, a 12mm wide and 0.4 thick steel banding is used to permanently support the FyreWrap® around the duct. The steel banding is placed 40mm from the edge of the FyreWrap® blanket, over the overlaps and one additional band between the overlaps at 265mm centres. (see fixings table page 13)

### Ducts 600mm x 600mm to 1200mm x 1200mm



For ducts greater than 600mm x 600mm but less than 1200mm x 1200mm, the banding system is used in conjunction with either pre-welded pins or cup head style pins along the bottom of the duct. Self adhesive pins must not be used. Pins should be installed at 200mm centres. (see fixtures table page 13)

### Ducts over 1200mm x 1200mm

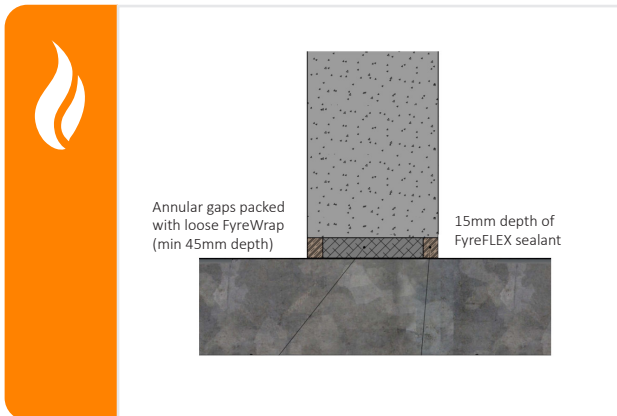


For ducts greater than 1200mm x 1200mm, either pre-welded pins or cup head style pins over all four sides of the duct must be used. Self adhesive pins must not be used. Pins should be installed at 200mm centres. (see fixtures table page 13)

## INSTALLATION

## WALL PENETRATIONS

### Annular Gaps



Ensure that the annular gaps are within the approved range based on your size of duct. Refer to table 1 on page 20 for specifics. Pack the annular gaps with loose FyreWrap® infill material, and seal with FyreFLEX sealant.

### Steel Angle



Install a steel angle to secure the duct to the wall/floor. Table 1 on page 20 lists the appropriate size steel angle based on the size of the duct.

### FyreBOARD Maxilite™ Strips



Install strips of FyreBOARD Maxilite® over the steel angle, lining the perimeter of the duct. Table 1 on page 20 shows the correct size FyreBOARD Maxilite® strips to use based on the size of duct.

### Wrap - Additional Layers



Wrap the duct with 2x layers of FyreWrap® for a distance detailed in table 4 on page 21. Floor penetrations may require a third layer of FyreWrap depending on the size of the duct. Floor distances detailed in Table 5 on page 22.

## Overlap Details

Configuration	Drawing	Description
1 layer of FyreWrap®	<p>Telescopic Overlap (most common)</p>	<p>Wrap the next segment of FyreWrap® over the edge of the previous segment with a 100mm overlap. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Checkerboard Overlap</p>	<p>Both edges of one segment overlap their respective adjacent segments. The overlap joints in alternate layers of duct wrap will resemble a checkerboard pattern once complete. This method is ideal when repairs are to be made to segments. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt-joint with Overstrip</p>	<p>Two adjacent segments are butt-jointed at their edges and a 200mm wide cover strip centred at the butt-joint. This allows for a 100mm overlap over each edge segment. Cover strips are to be made using FyreWrap® 1.5 material. All joints are to be taped with FyreWrap® premium tape.</p>
2 layer of FyreWrap®	<p>Double-Layer Telescopic Overlap</p>	<p>Both layers of FyreWrap® are wrapped using the telescopic method as on the previous page. Ensure there is a 100mm overlap in both layers. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt Joint with Telescopic Overlap</p>	<p>The first layer is butt-jointed at its edges and the second layer to be wrapped over the first layer using the telescopic overlap method with a 100mm overlap. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt-joint with cover strip</p>	<p>Both layers of FyreWrap® are butt-jointed at their edges. The layers are staggered to ensure a minimum 200mm overlap over each butt-joint of the first layer. The butt-joints on the second layer are covered with a 200mm wide strip. Cover strips are made using FyreWrap® Elite 1.5 material. All joints are to be taped with FyreWrap® premium tape.</p>

## INSTALLATION

## FIXINGS

### Fixing Method

Duct section (mm)	Steel Banding Only	Steel banding and Pins*	Pins Only (all sides)
Small less than 600 x 600mm	✓	✓	✓
Medium up to 1200 x 1200 mm		✓	✓
Large over 1200 x 1200mm			✓

\* Pins must be installed on the bottom side of horizontal ducts or one long side for vertical ducts.

### Fixings

Component	Type	Min Size		Centres Max
Band crimps	Steel	25mm long		-
Bands	Steel	12mm wide x 0.4mm thick		40mm from edges max 265mm centres
Bands	Stainless Steel	12mm wide x 0.4mm thick		40mm from edges max 265mm centres
Pre-welded pins	Steel	Pin Dia 2.7mm	Pin Length 1st Layer - 25mm 2nd Layer - 50mm 3rd Layer - 75mm	Grid of 200mm centres
Cup-head pins	Steel	Pin Dia 2.7mm	Pin Length 1st Layer - 25mm 2nd Layer - 50mm 3rd Layer - 75mm	Grid of 200mm centres
FyreWrap® Premium Reinforced Tape	Reinforced Aluminum	50mm wide		Taped over cut edges of FyreWrap®

## Typical Hanger/Trapeze Detail for External Fire Applications

- Due to FyreWrap® being an extremely light weight product, one of the huge benefits of using it, is that the rod-hangers and trapeze are not required to be wrapped in FyreWrap®.
- Please note that internal fire applications can use the standard hanger/support spacings under AS4254.2-2012, with one additional hanger located within 600mm of any fire-rated wall penetrations.
- Trafalgar Fire's BRANZ FAR2567 report, confirms and outlines that, providing the stress in the steel is less than 10MPa, no fire protection is required.
- The table below outlines typical duct sizes, thickness and trapeze spacings together with minimum support requirements to adhere to this rule.
- Please contact Trafalgar Fire Technical Team if you need a copy of this report or your duct arrangements differ from the table below.

Specifications for the fabrication of ducting and duct suspension systems for FyreWrap®

Rectangular/Square Ducts			Unprotected Suspension System Specification			
Duct Height (mm)	Duct Width (mm)	Min. Material Thickness (mm)	Max. Trapeze Spacing (mm)	Mild Steel Trapeze Angle (mm)	Min. Threaded Rod Diameter	Centres Max
1200	1200	1.0*	1520	40 x 40 x 3	10**	N/A
1600	1600	1.0*	1200	50 x 50 x 5	10**	N/A
			1520	50 x 50 x 6	12**	
600	2800	1.0*	1200	50 x 50 x 5	10**	N/A
			1520	50 x 50 x 6	12**	
2400	2400	1.0*	1200	50 x 50 x 5	12**	1***
3200	3200	1.0*	1200	50 x 50 x 5	12**	2***
3600	4800	1.0*	1200	50 x 50 x 5	16**	2***
Circular Duct		Unprotected Suspension System Specification				
Duct Diameter (mm)	Min. Material Thickness (mm)	Max. Trapeze Spacing (mm)	Mild Steel Trapeze Angle (mm)	Min. Threaded Rod Diameter	Centres Max	
1200	1.0*	1200	40 x 40 x 3	10**	N/A	

This specification is to be read in conjunction with the relevant detailed drawings.

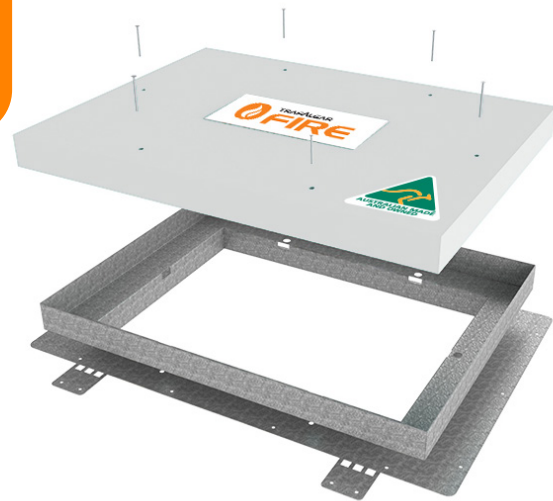
Fixings and angles specified are the minimum requirements.

\*Ducts shall be constructed in accordance with requirements of AS4254.

\*\*Threaded rod diameters must not exceed the allowable stress level of 10MPa or 10N/mm<sup>2</sup>, in accordance to Trafalgar Fire's BRANZ FAR 2567 Report.

\*\*\*Addition of internal tie rods required for each 1600mm width of duct to a maximum width of 4800mm.

# Access Panel



## FyreWrap® Access Panels (FWAP):

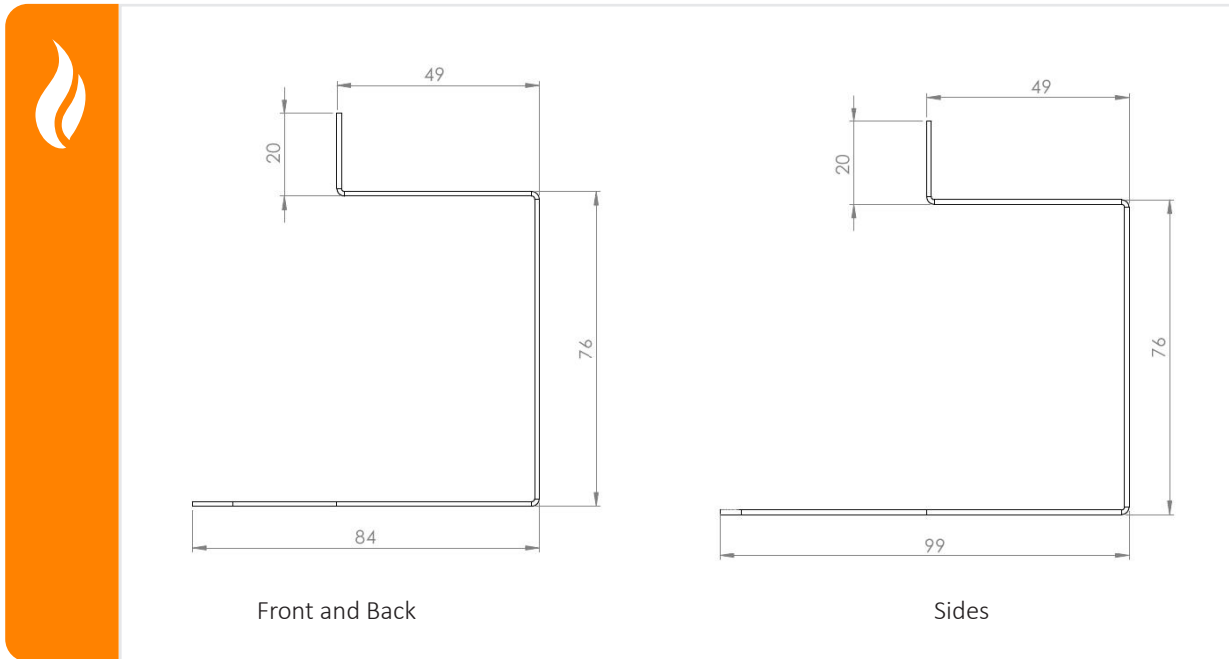
- are a patented system designed for use on ducts protected by the innovative FyreWrap® system.
- provide fire rating on ducts and allow access for the purpose of inspection, service, repair or replacement of internal equipment such as filters, volume control devices, dampers and fans.
- patented design includes a number of features and benefits to ensure complete flexibility and ease of installation.
- are simply installed by fitting directly over the existing 'non-rated duct access panel' and fixed to the duct using rivets through a series of pre-drilled holes.
- provide additional flexibility on site as they can be either pre-installed or easily retro-fitted.
- include patented, bendable fastening tabs for slimline ducts to allow access without the need for a full box encasement.

Item Number	Size	To Suit	FyreWrap® System
FW-AP-2L-AP0	708mm x 558mm	AP0	2 Layer
FW-AP-2L-AP1	558mm x 433mm	AP1	2 Layer
FW-AP-2L-AP2	433mm x 301mm	AP2	2 Layer
FW-AP-2L-AP3	304mm x 214mm	AP3	2 Layer
FW-AP-2L-CUSTOM	Custom Up to 708mm x 558mm	Custom	2 Layer

## INSTALLATION

## FyreWrap® ACCESS PANELS

### Profile Detail



### Prepare



Apply FyreFLEX Sealant around the perimeter of the duct access panel to form a 'gasket' where the FyreWrap® access panel will sit.

### Fix



Using the preformed holes in the FWAP frame, drill and fix (using steel rivets or self-tapping screws only) the frame to the ductwork.

- \* Fixings are required at maximum 150mm spacing.
- \* If required for low profile ductwork, the top and bottom fold-over tabs can be folded over and fixed through the top/bottom side of the ducting.



## INSTALLATION

## FyreWrap® ACCESS PANELS

### FyreWrap® First Layer



Install FyreWrap® Elite 1.5 according to FyreWrap® installation instructions, ensuring that the material fits snugly into the provided recess in the FWAP frame on all sides.

### FyreWrap® Second Layer



Install a second layer of FyreWrap® Elite 1.5, 100mm wide on all sides of the FyreWrap® Access Panel, fixing as per the standard FyreWrap® Elite 1.5 installation requirements (steel strapping or welded pins at 200mm centres).

### Tape Edges



Tape the edges of both layers of FyreWrap® Elite 1.5 together.

### Finish



Finish the installation with a fillet of FyreFLEX Sealant to the perimeter of the FyreWrap® Access Panel, ensuring that none of the metal frame remains exposed.

## FyreWrap® System



# FyreWrap®

- Lightweight fireproofing
- Fast, clean and easy to install
- Bio-soluble insulation material
- Up to 3 hour fire rating in accordance with AS1530.4 for internal and external fire.

Item Number	Size	Thick	Qty	Pallet Qty
FyreWrap® Elite 610	610mm wide x 7620mm long	38mm	1 roll	12 rolls
FyreWrap® Elite 1220	1220mm wide x 7620mm long	38mm	1 roll	6 rolls

## FyreWrap® Accessories Kit

- This kit contains one of each item below.

Kit	Item Number	QTY
FyreWrap® Kit	FyreWrap® Premium Reinforced Tape 96mm x 50m Roll	1
	FyreWrap® Crimper	1
	FyreWrap® Tensioner	1
	Steel Banding Roll 12.7mm x 250m	1
	Snap on Seals 13mm (box of 1000)	1
	Dispenser	1

# FAQ?

## Q Do I need to wrap the duct support hangers and trapeze?

**A** FyreWrap® is a lightweight system so in most cases there is no need. Refer to page 13 for more information.

## Q How many layers of FyreWrap® do I need to get an FRL of 120/120/120 (2-hours)?

**A** One layer will achieve the 2 hour FRL, however additional layers are required where the duct passes through fire rated walls and floor systems.

## Q Why would you use FyreWrap® instead of a spray system?

**A** FyreWrap® is faster to install, much cleaner on site so there is less cleaning and masking off, and easier for other trades to work side by side. Certification is also easier as there is no need to check thicknesses like a spray system plus there are FyreWrap® Access Panels (FWAP's) for easy and compliant access into the duct for future maintenance.

## Q Why do I need additional layers of FyreWrap® where the duct passes through a fire rated wall?

**A** You need to maintain the FRL of the wall, as well as the duct system to prevent spread of fire from one to the other and visa versa. The wall interface is subject to the most intense conditions during a fire, so additional layers of wrap and strips of FyreBOARD Maxilite™ are needed to keep the temperatures down and maintain the fire rating.

## Q Can I use FyreWrap® on PVC ducting?

**A** No, FyreWrap® is approved for use on steel ducting only which must comply with the duct construction AS4254.2 for pressure class 500.

## Q Can I use FyreWrap® on a steel exhaust flu from a fire pump?

**A** Yes, FyreWrap®'s core material is suitable for temperatures up to 1200°C peak (and at least 1000°C constant temperature) although it is recommended that the foil scrim is removed from the 'hot' side to prevent smoldering of the foil.

## FIRE BARRIER & DUCT PENTRATION SPECIFICATION TABLES

### TABLE 1: ANNULAR GAP SIZE

Duct size (mm)	Annular Gap Size	Steel L-angle specifications	FyreBOARD Maxilite® Specifications
Up to 600mm	10-30mm	75 x 75 x 1.6mm	100mm width, 60mm thickness
600-1600mm	20-40mm	75 x 75 x 1.6mm	100mm width, 60mm thickness
1600-2600mm	40-60mm	125 x 100 x 2mm	150mm width, 60mm thickness
2600-3600mm	60-80mm	125 x 100 x 2mm	150mm width, 60mm thickness

### TABLE 2: FIXING SPECS

Wall Type	Fixing Location	Fixing Type Required	Fixing Spec	Maximum Centres
All	Angle to duct	Steel rivets	5mm dia. x 10mm length	200mm
Plasterboard	Angle to wall	Plasterboard screws	8g x 50mm	200mm
	FyreBOARD Maxilite™ to wall		8g x 100mm	
Concrete/ Masonry	Angle to wall	Min. M6 masonry anchors. Length to suit min. 30mm embedment	M6 x 30mm	400mm
	FyreBOARD Maxilite™ to wall		M6 x 120mm	
AAC Wall/ Hebel	Angle to wall	Type 17 bugle/hex head screws	14g x 50mm	200mm
	FyreBOARD Maxilite™ to wall		14g x 100mm	
Speedpanel	Angle to wall	Self-drilling screws	10g x 30mm	200mm
	FyreBOARD Maxilite™ to wall		10g x 100mm	

**TABLE 3: HANGER SPACINGS**

Direction of Exposure	Hanger Spacings and Requirements
Internal Exposure Only	For ducts exposed to fire from inside only, duct construction shall be in accordance with AS4252.2-2012 Pressure Class 500. Variation to hanger rod size, hanger spacing, support, duct BMT, stiffeners or jointing shall be in accordance with AS4254.2-2012 as appropriate for Pressure Class 500.
External or exposure in both directions	For ducts exposed to external fire, or requiring protection in both directions, refer to the table on page 14

For external exposure, hangers are to be spaced to ensure a maximum of 10MPa stress in all supports (as per FAR 2567) unless otherwise stated. An acceptable safety factor should be included in any calculations. Additional layers of FyreWrap® required at penetrations through fire-rated walls may require additional supports at 600mm from fire barrier to allow for the extra weight of material. Additional supports may be required locally near access panels (as detailed on drawing 20 of the FyreWrap® Install Details drawing package)- These are not factored into the spacing calculations.

**TABLE 4: WALL PENETRATION  
ADDITIONAL LAYERS OF FYREWRAP®**

Duct Size		Length of second layer from fire barrier	
Duct Width	Duct Height	FRL 60/60/60	FRL 120/120/120
600mm or less	600mm or less	1350mm	1800mm
600-1200mm	600mm or less	1600mm	2150mm
600-1200mm	600-1200mm	1900mm	2600mm
1200-2400mm	1200-2400mm	2500mm	3450mm
2400-3600mm	2400-3600mm	2700mm	3750mm

Please note—The lengths listed above are summaries from Assessment Report FCO 3226. A more thorough breakdown of the required lengths for other duct sizes can be found in this FCO 3226.

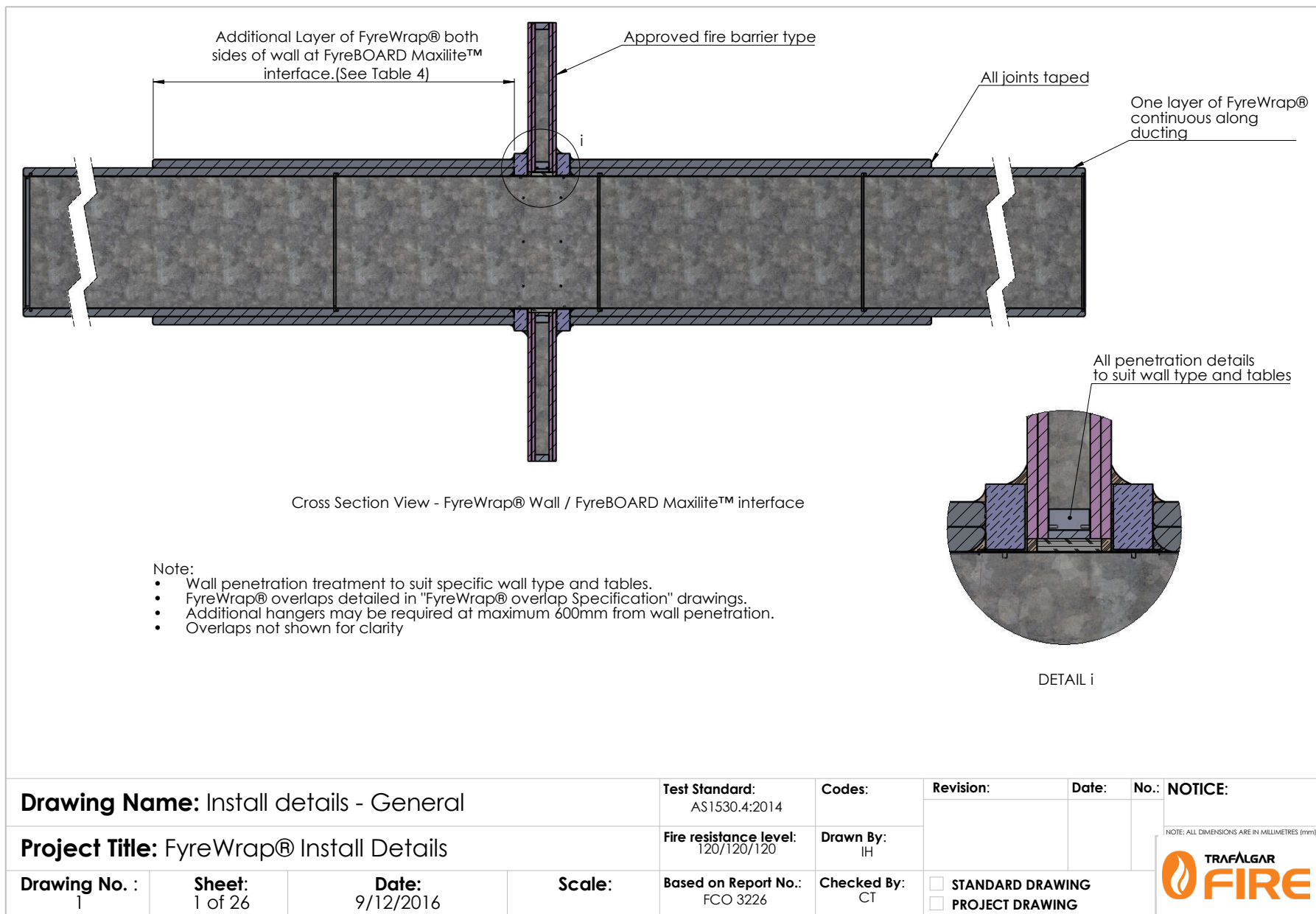
**TABLE 5: FLOOR PENETRATION  
ADDITIONAL LAYERS OF FYREWAP®**

Duct Size		FRL 120/120/120		FRL 180/180/180	
Duct Width	Duct Height	Length of Second Layer	Length of Third Layer	Length of Second Layer	Length of Third Layer
Up to 600mm	Up to 600mm	2000mm	Not needed	2150mm	1100mm
600-1200mm	Up to 600mm	2550mm	1250mm	2700mm	1400mm
600-1200mm	600-1200mm	3100mm	1500mm	3200mm	1600mm
1200-2400mm	1200-2400mm	4200mm	1950mm	4600mm	2300mm
Up to 3600mm	Up to 3600mm	5200mm	2200mm	5400mm	2500mm

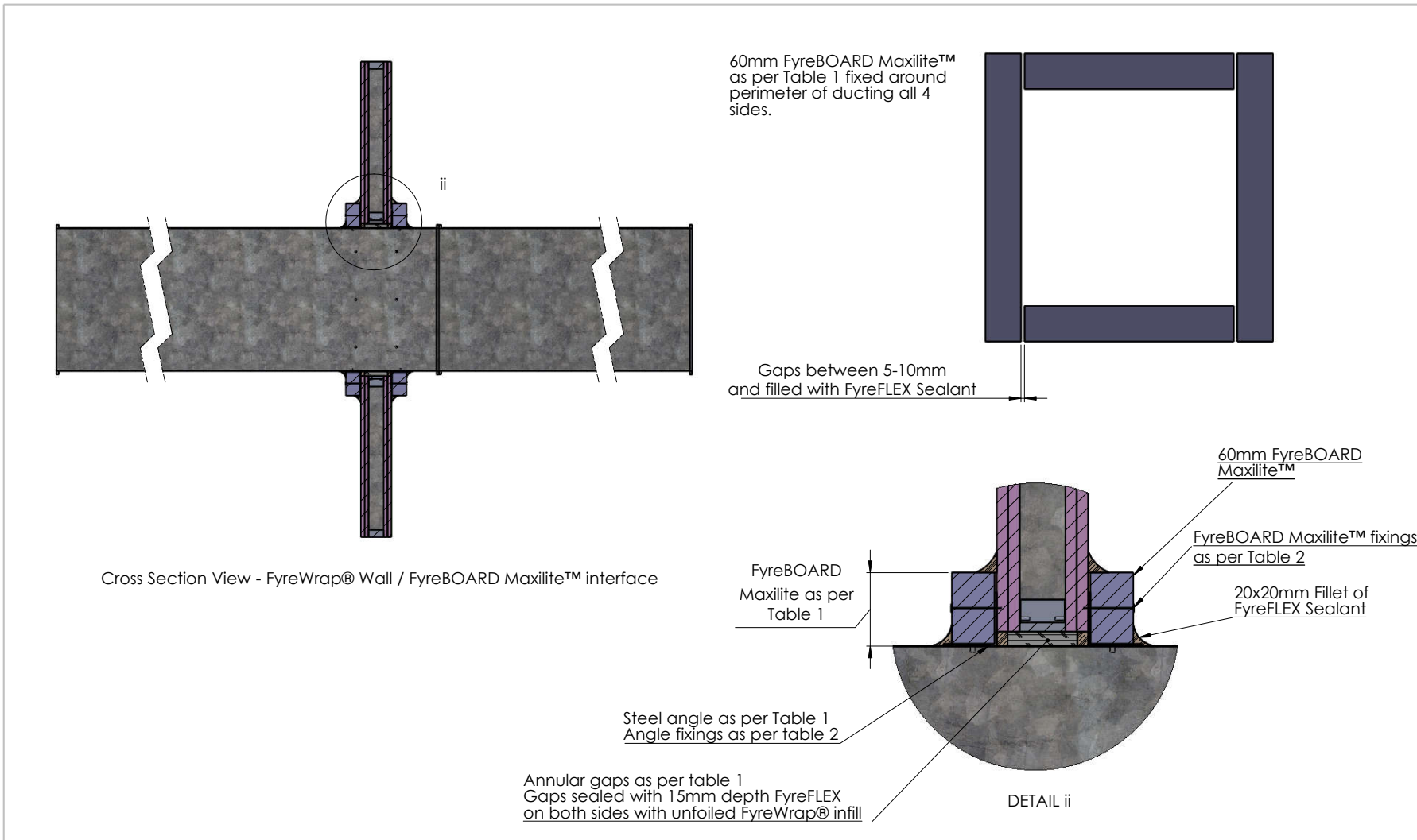
Please note—The lengths listed above are summaries from Assessment Report FCO 3226. A more thorough breakdown of the required lengths for other duct sizes can be found in FCO 3226.



## General Installation



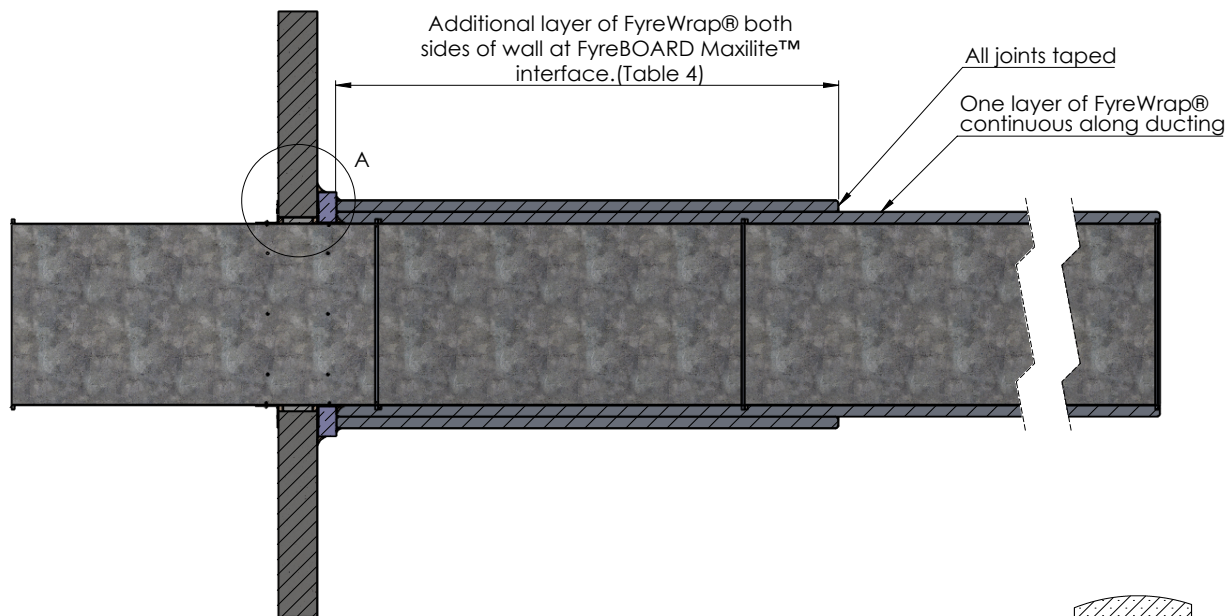
## General Penetration Details



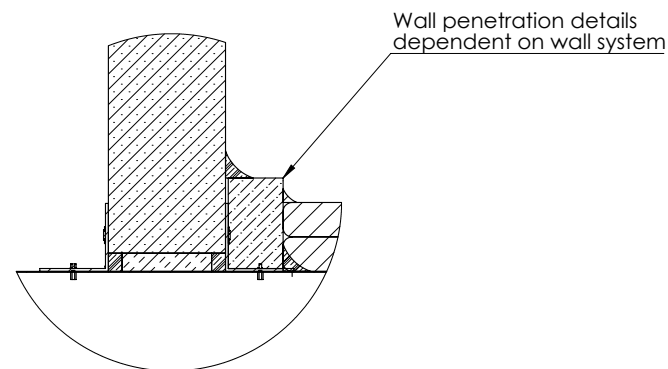
<b>Drawing Name:</b> Penetration details - General				<b>Test Standard:</b> AS1530.4:2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Install Details				<b>Fire resistance level:</b> 120/120/120	<b>Drawn By:</b> IH				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 26	<b>Date:</b> 9/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b> FCO 3226	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			



## One Sided Wall Penetration



Cross Section View - FyreWrap® Wall / FyreBOARD Maxilite™ Interface



DETAIL A

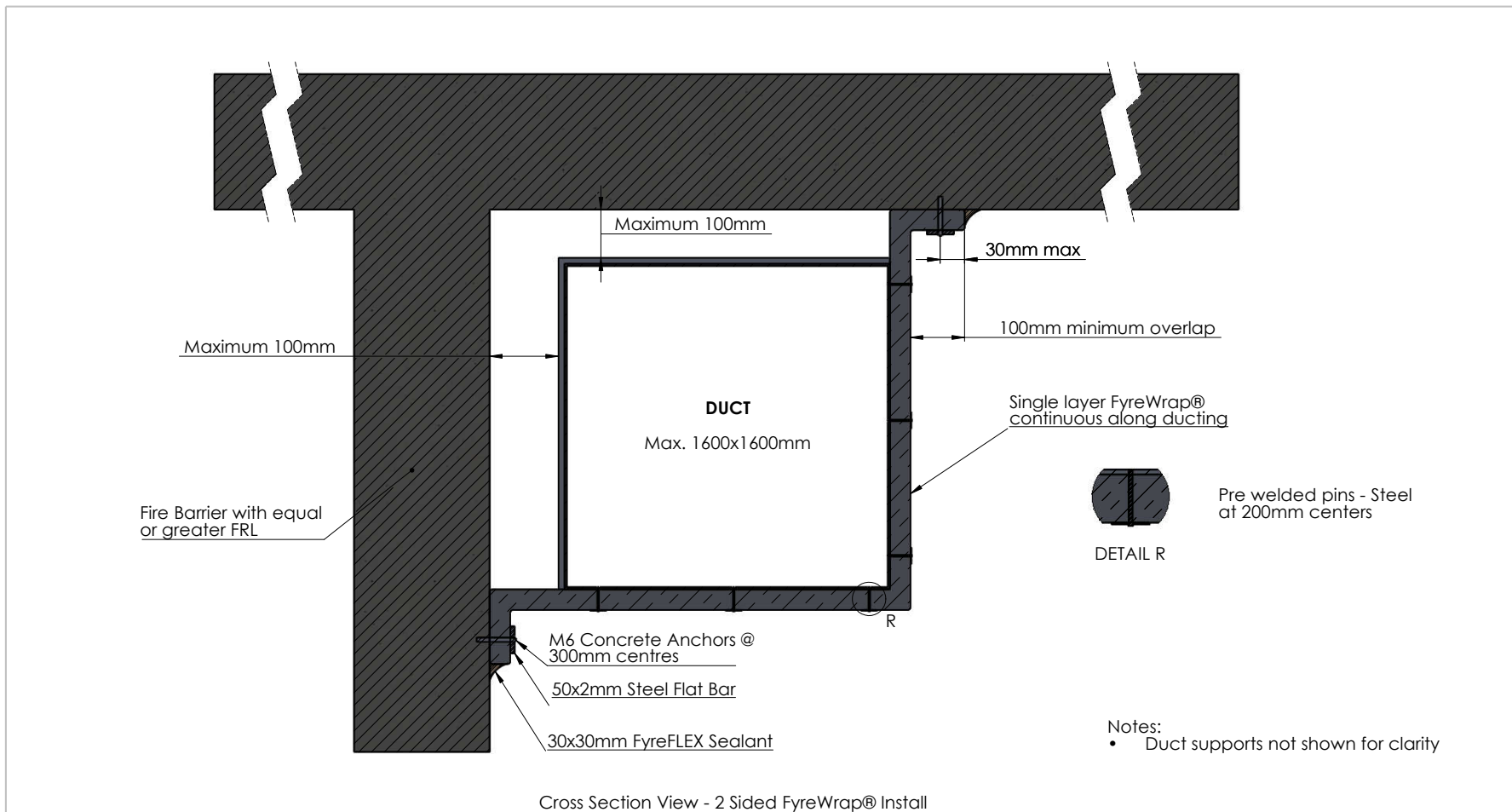
Notes:


- FyreWrap® overlaps detailed on page 34

<b>Drawing Name:</b> One sided wall penetration				<b>Test Standard:</b> AS1530.4:2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® - One sided duct penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> JH	NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)			
<b>Drawing No. :</b> 1	<b>Sheet:</b> 1 of 1	<b>Date:</b> 12/10/2020	<b>Scale:</b>	<b>Based on Report No.:</b>	<b>Checked By:</b> CT				

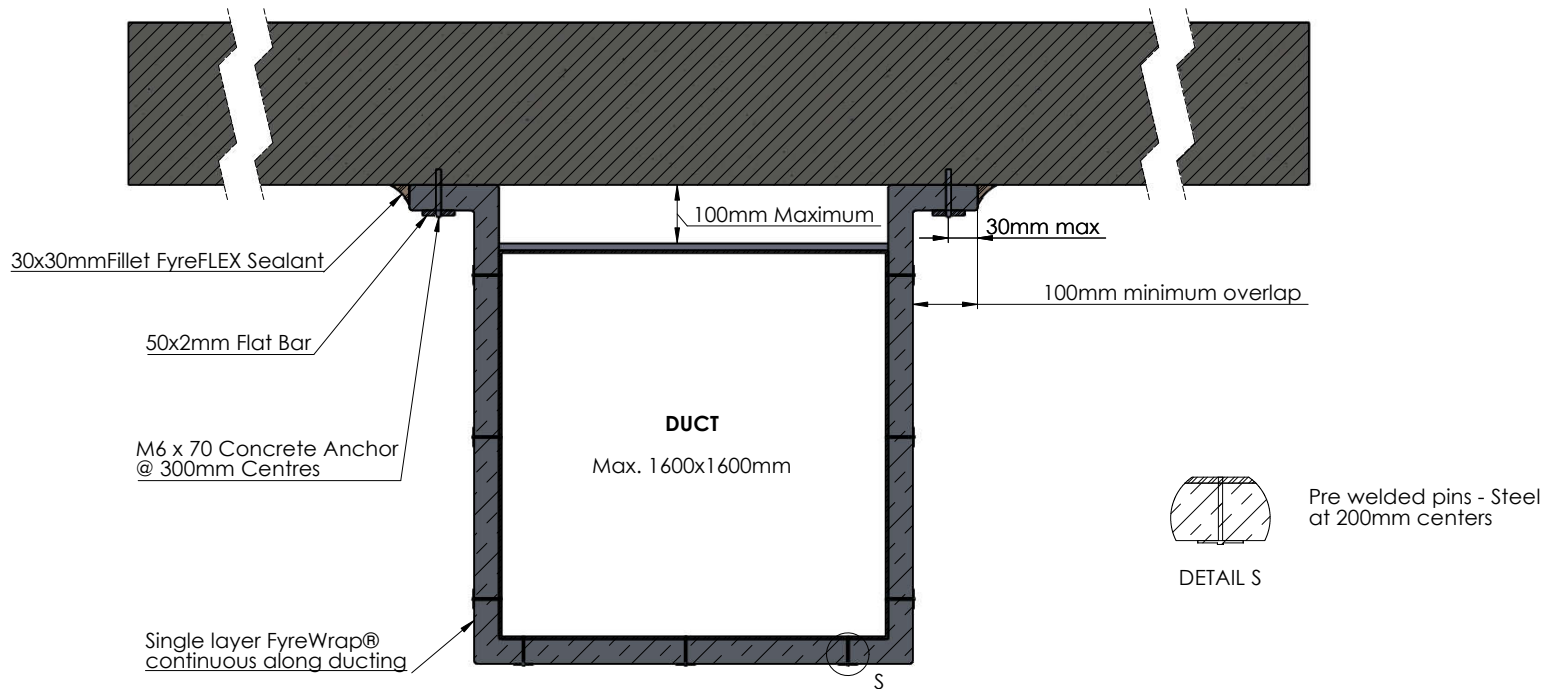


## Two Sided Detail




<b>Drawing Name:</b> FyreWrap® 2 Sided Detail				<b>Test Standard:</b> AS1530.4:2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Install Details				<b>Fire resistance level:</b> 120/120/120	<b>Drawn By:</b> IH				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 23	<b>Sheet:</b> 23 of 26	<b>Date:</b> 9/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b> FCO 3226	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING			
						<input type="checkbox"/> PROJECT DRAWING			

## Three Sided Detail

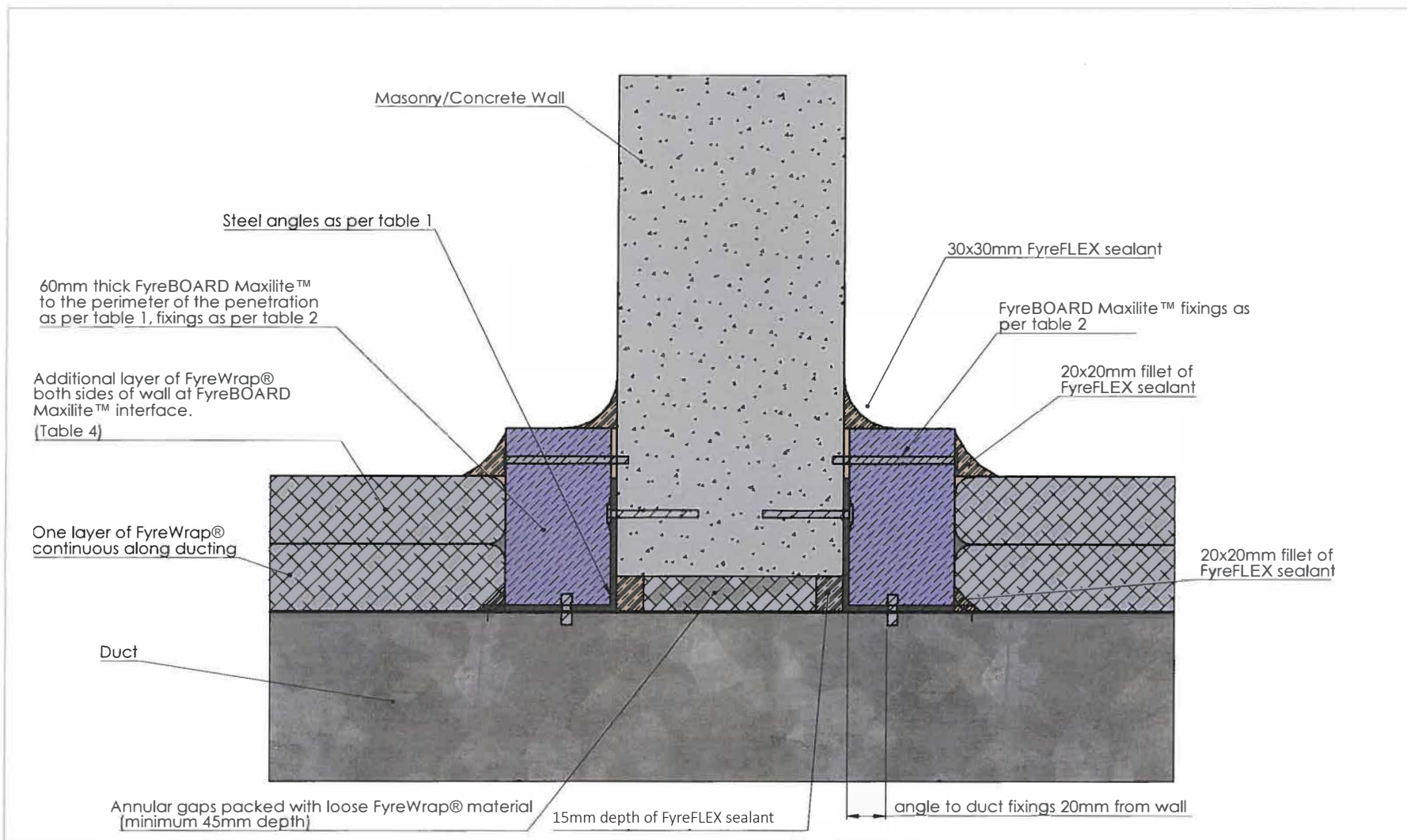


Cross Section View - 3 Sided FyreWrap® Install

- Notes:
- Duct supports not shown for clarity

<b>Drawing Name:</b> FyreWrap® 3 Sided Detail				<b>Test Standard:</b> AS1530.4:2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Install Details				<b>Fire resistance level:</b> 120/120/120	<b>Drawn By:</b> IH	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> 			
<b>Drawing No. :</b> 24	<b>Sheet:</b> 24 of 26	<b>Date:</b> 9/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b> FCO 3226	<b>Checked By:</b> CT				

## Masonry Walls



**Drawing Name:** 1. Masonry wall penetration

**Project Title:** Wall penetration dwgs

**Drawing No. :**  
1

**Sheet:**  
1 of 4

**Date:**  
9/12/2016

**Scale:**

**Test Standard:**  
AS1530.4:2014

**Fire resistance level:**  
120/120/120

**Based on Report No.:**  
FCO 3226

**Codes:**

**Drawn By:**  
JH

**Checked By:**  
CT

**Revision:**

**STANDARD DRAWING  
PROJECT DRAWING**

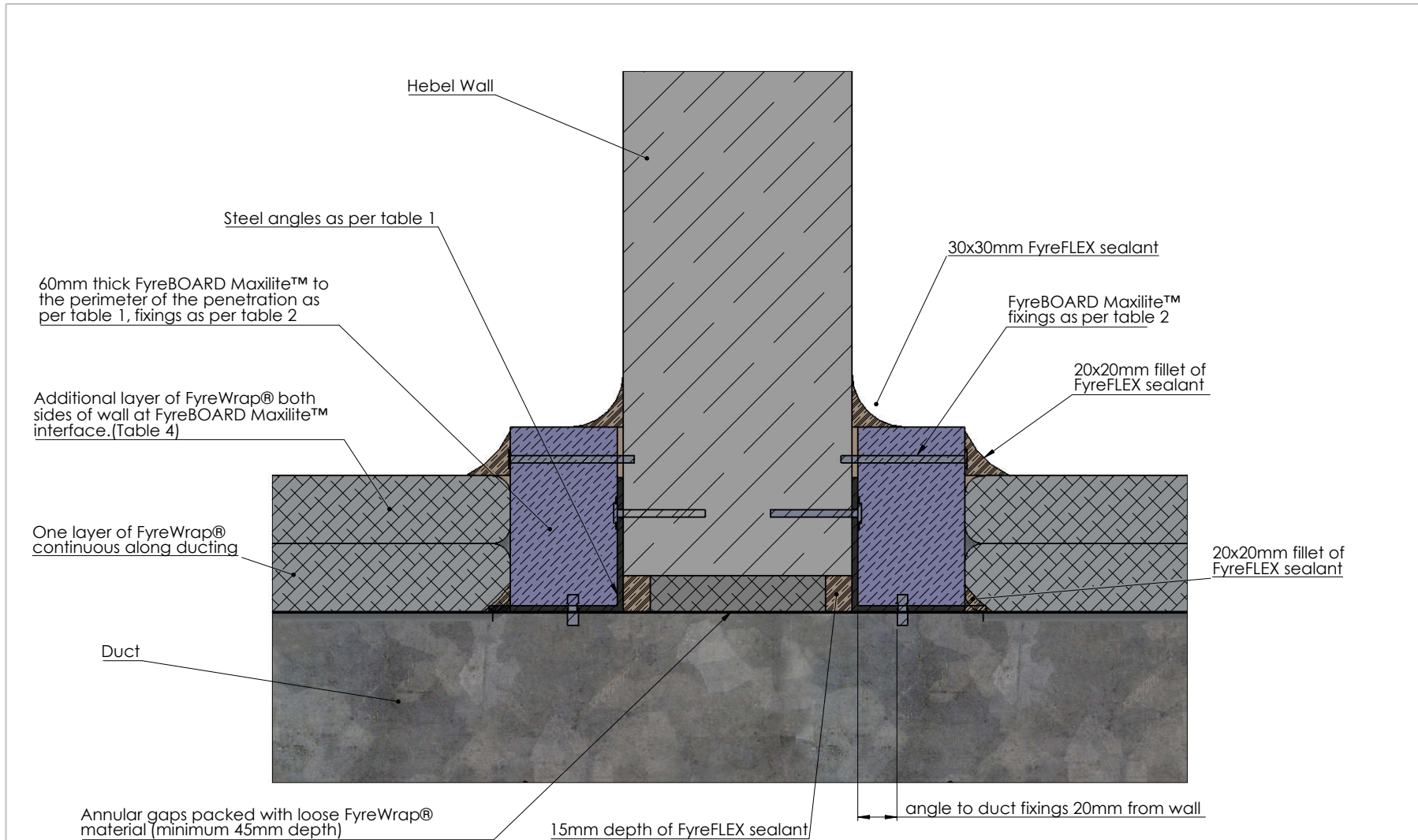
**Date:**

**No.:** **NOTICE:**

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)



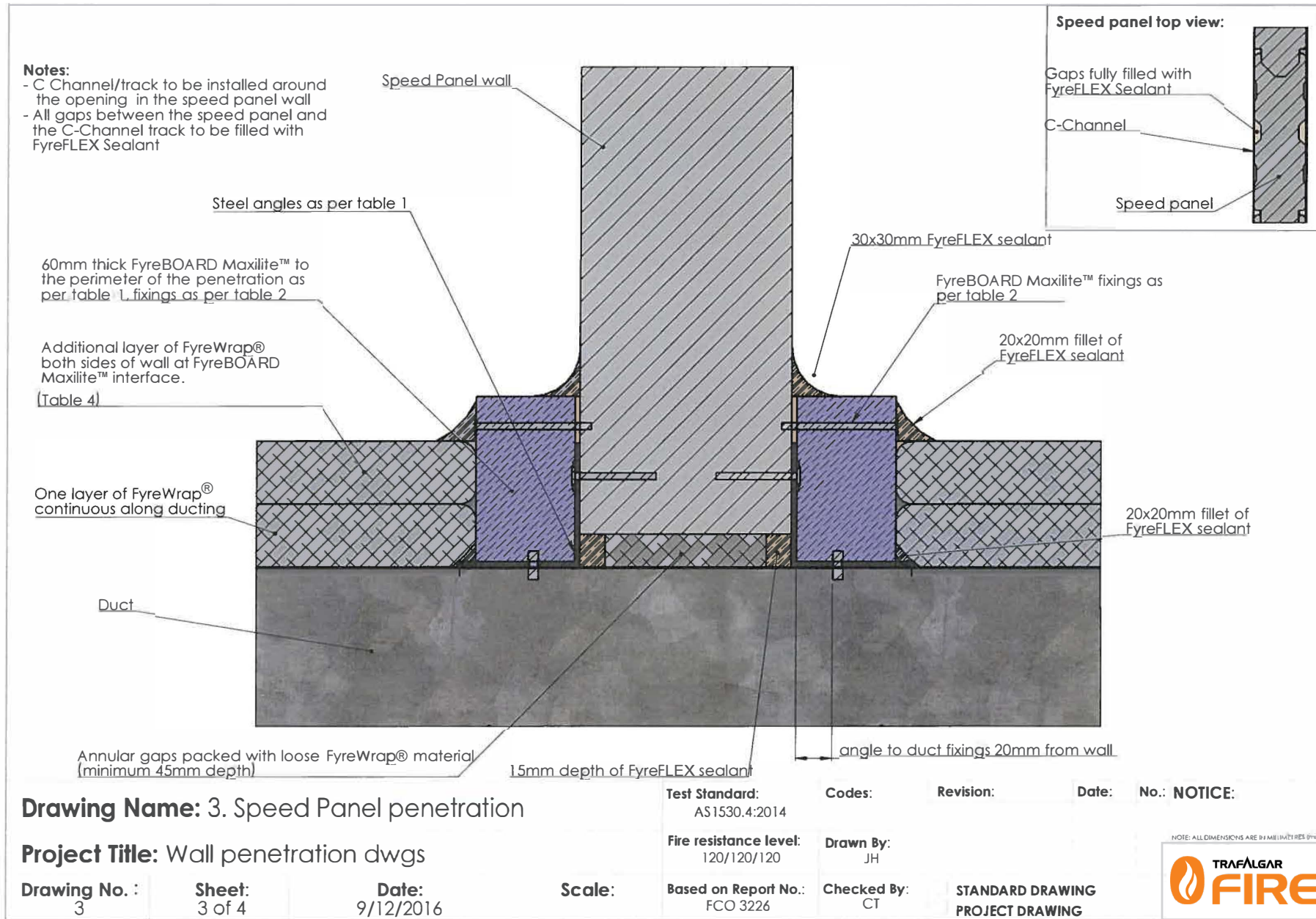
## Hebel and Walsc AAC Panel Walls



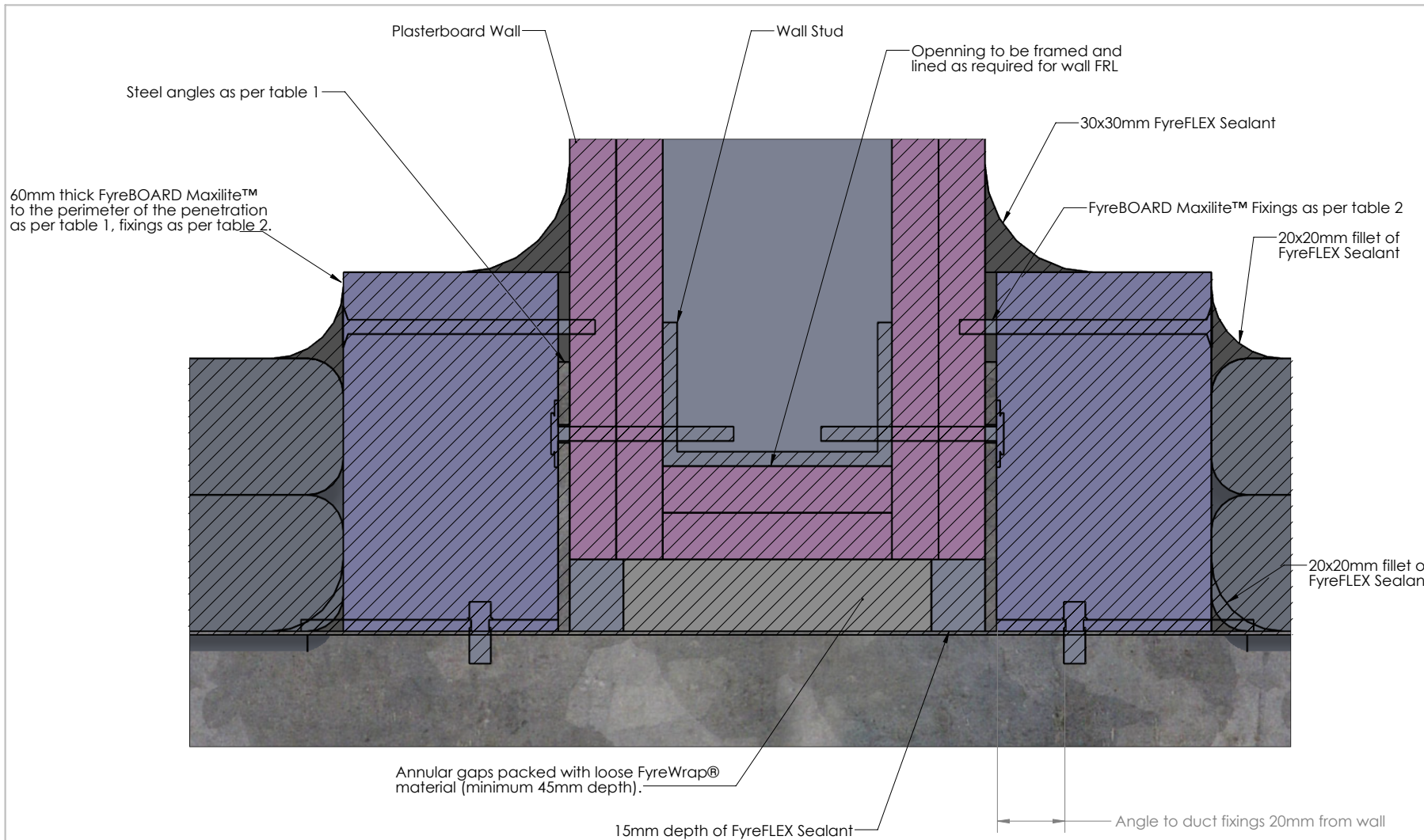
<b>Drawing Name:</b> 2. Hebel wall penetration				<b>Test Standard:</b> AS1530.4:2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Wall penetration details				<b>Fire resistance level:</b> 120/120/120	<b>Drawn By:</b> JH	NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)			
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 4	<b>Date:</b> 9/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b> FCO 3226	<b>Checked By:</b> CT				



## Speedpanel Walls



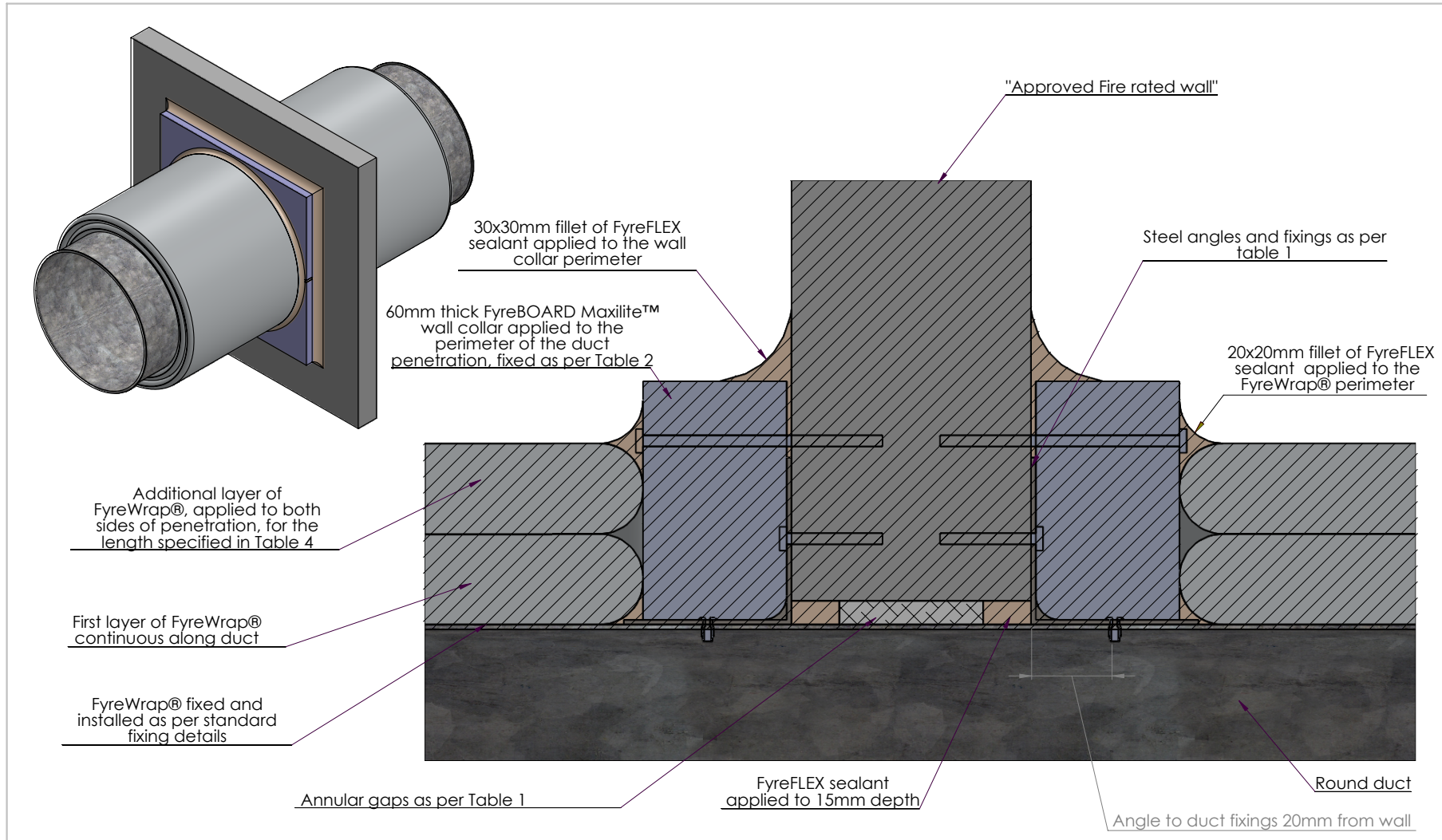
## Plasterboard Walls




<b>Drawing Name:</b> 4. Plasterboard penetration				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Duct Penetration through wall				<b>Fire resistance level:</b>	<b>Drawn By:</b> SM	NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)			
<b>Drawing No. :</b> 1	<b>Sheet:</b> 1 of 1	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> JH				



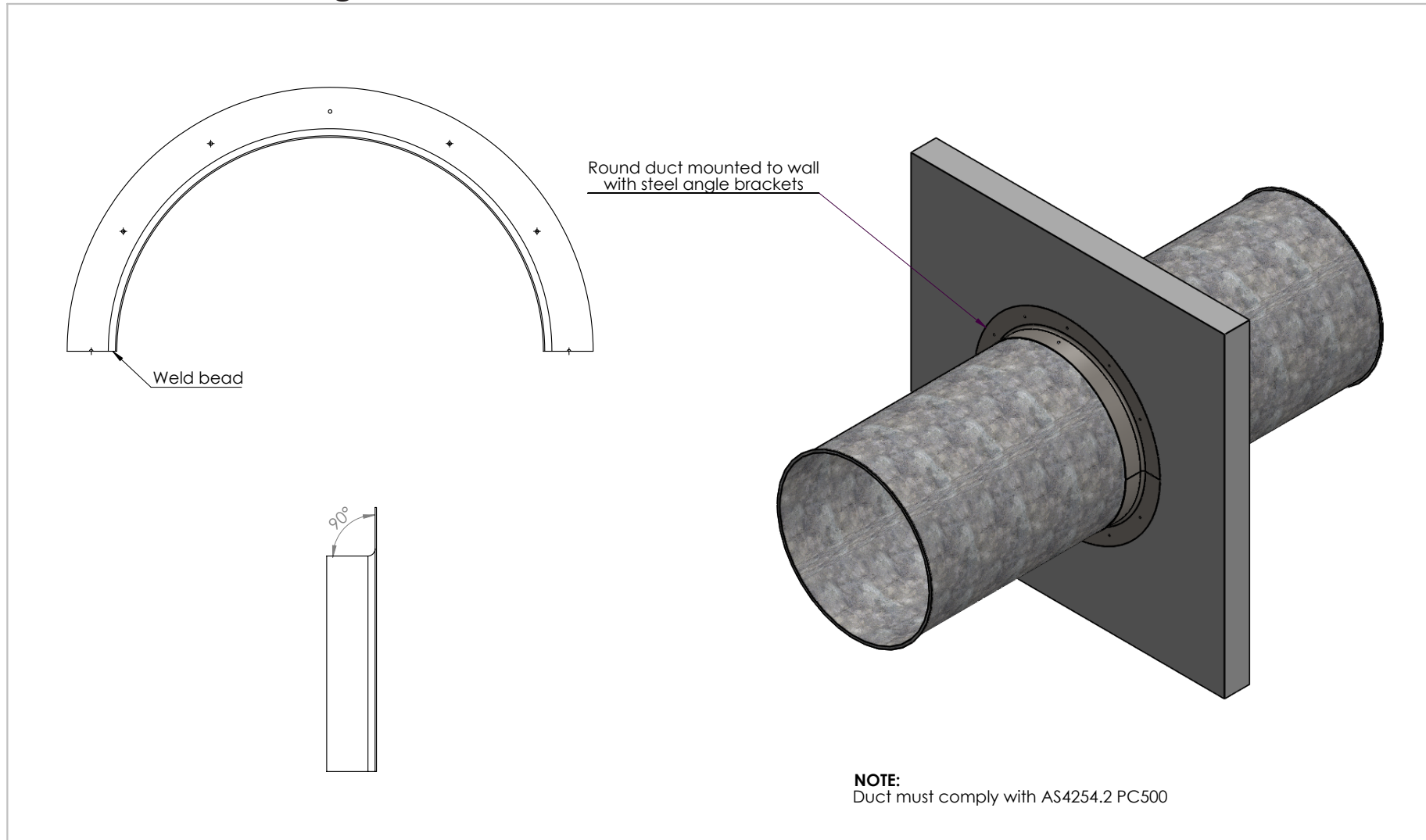
## Round Duct Penetration




<b>Drawing Name:</b> Installation Instructions				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Round Duct Penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> RB	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> 			
<b>Drawing No. :</b> 1	<b>Sheet:</b> 1 of 2	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> JH				



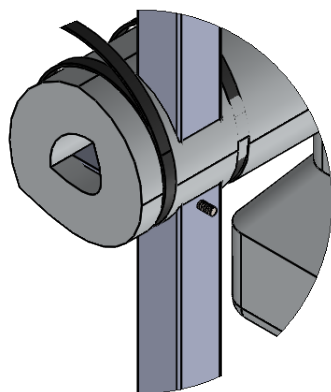
## Round Duct Steel Angles



**NOTE:**  
Duct must comply with AS4254.2 PC500

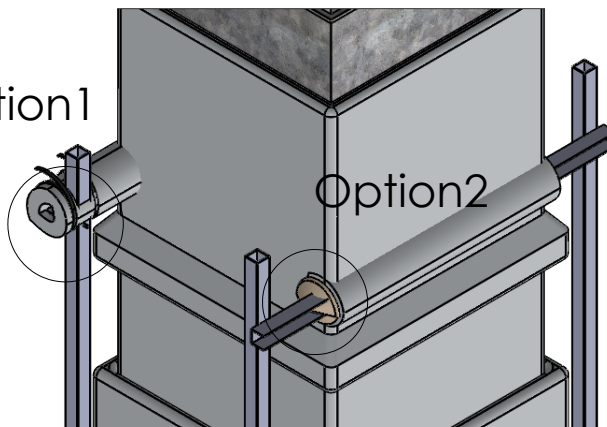
<b>Drawing Name:</b> Steel Angles				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Round Duct Penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> RB	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> 			
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 2	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> JH				

## Support Interface Details

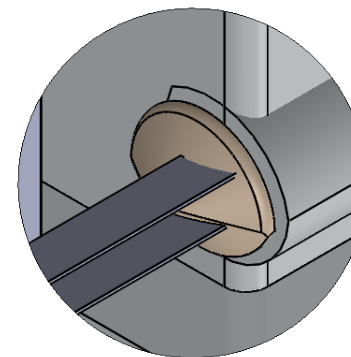


Option 1:  
Finished with one layer of FyreWrap® for 200mm length from the duct

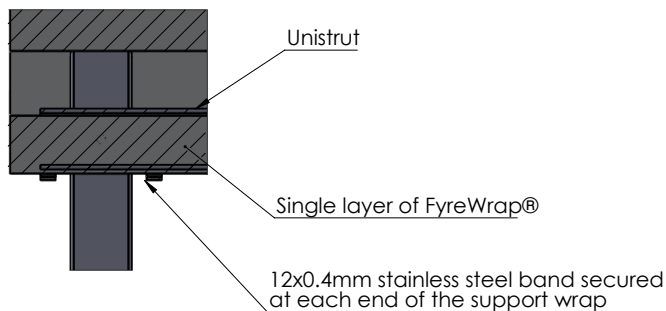
Option 1



Option 2



Option 2:  
Unistrut filled with unfoiled FyreWrap® (as shown in section below) then covered with a nominal 30x30mm fillet of FyreFLEX sealant

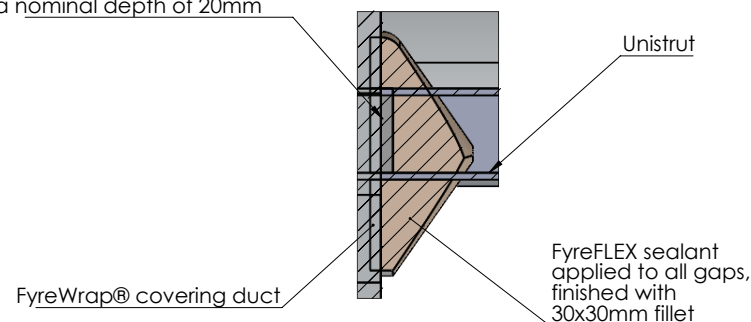


Unistrut

Single layer of FyreWrap®

12x0.4mm stainless steel band secured at each end of the support wrap


Unfoiled FyreWrap® filled to a nominal depth of 20mm



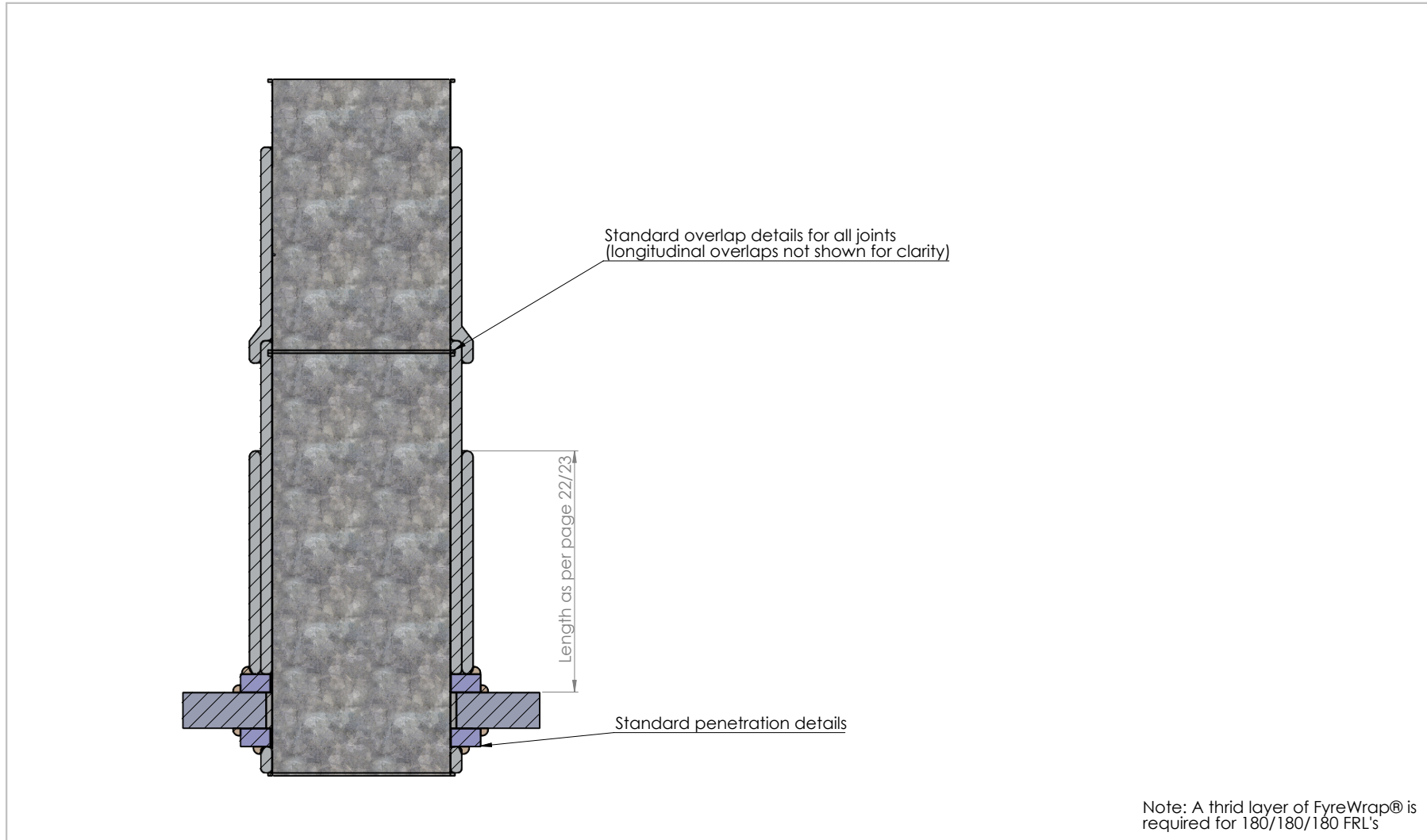
Unistrut

FyreWrap® covering duct


FyreFLEX sealant applied to all gaps, finished with 30x30mm fillet

<b>Drawing Name:</b> FyreWrap®/Support Interface				<b>Test Standard:</b> AS1530.4-2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® installation details				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 1	<b>Sheet:</b> 1 of 3	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING			
						<input type="checkbox"/> PROJECT DRAWING			

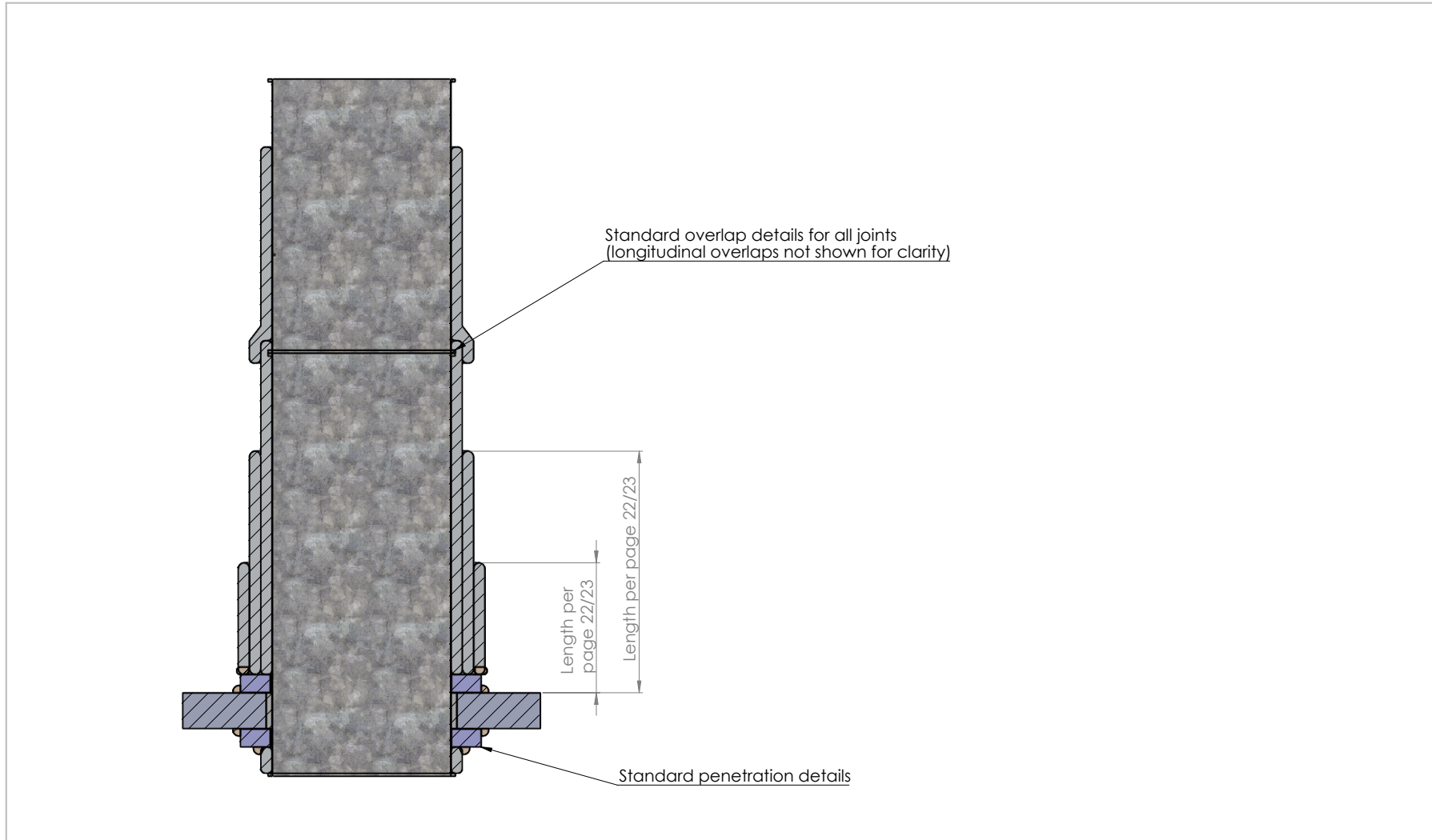
## Floor Penetrations - Ducts up to 600 x 600mm




Note: A third layer of FyreWrap® is required for 180/180/180 FRL's

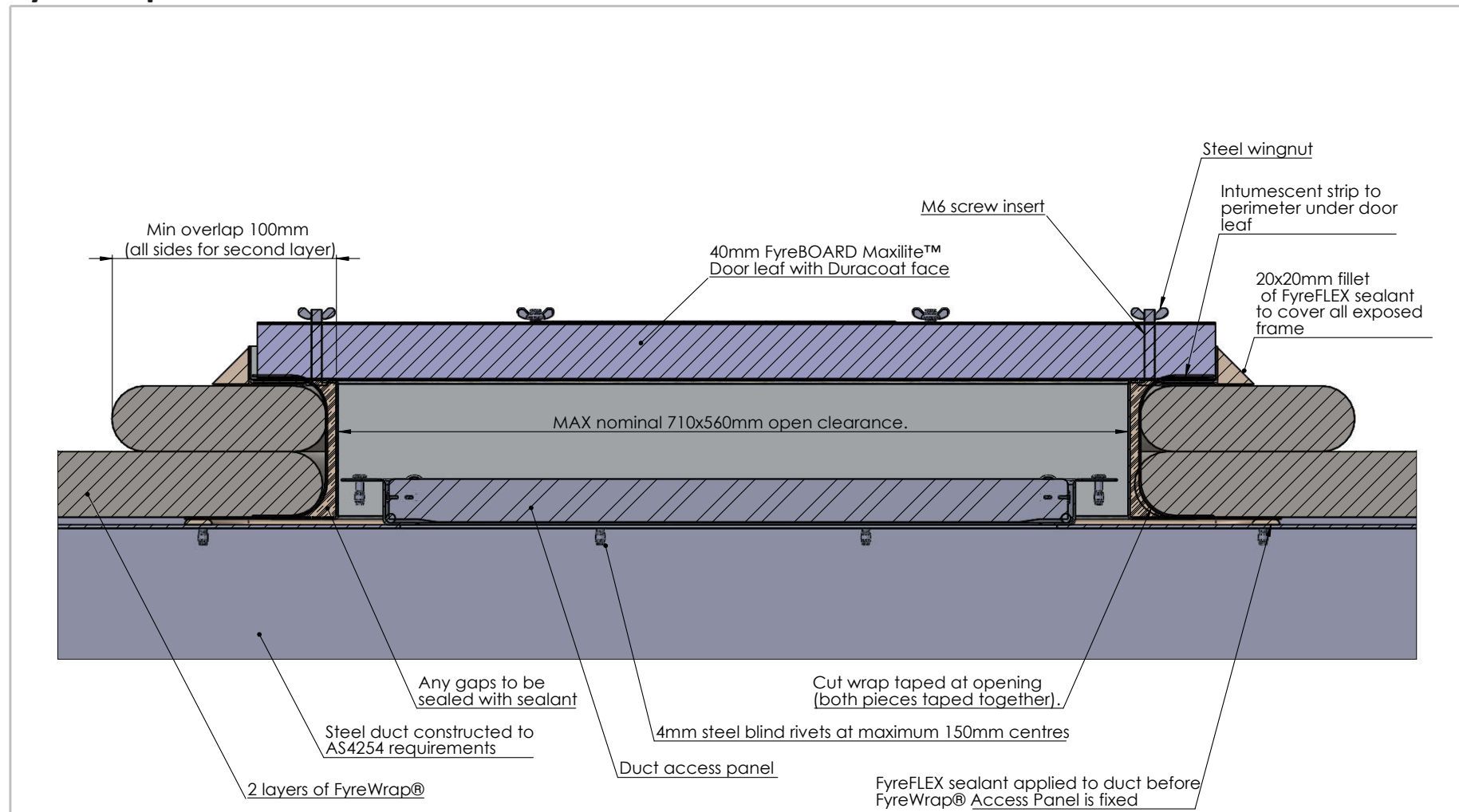
<b>Drawing Name:</b> Ducts up to 600x600				<b>Test Standard:</b> AS1530.4-2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Floor Penetration Details				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 3	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING	<input type="checkbox"/> PROJECT DRAWING		

### Floor Penetrations - Ducts over 600 x 600mm



<b>Drawing Name:</b> Ducts above 600x600				<b>Test Standard:</b> AS1530.4-2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> Floor Penetration Details				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> 			
<b>Drawing No. :</b> 3	<b>Sheet:</b> 3 of 3	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT				

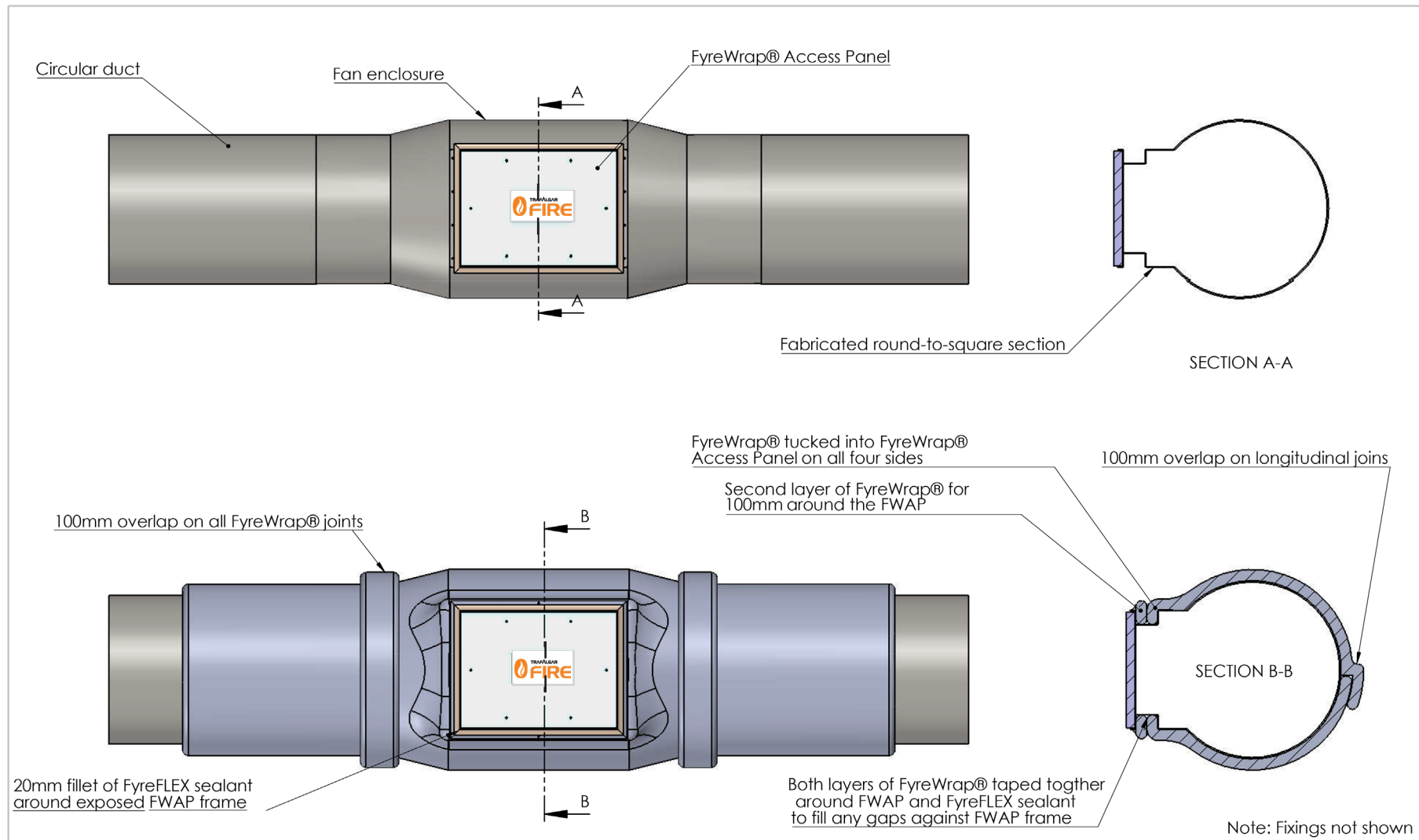
## FyreWrap® Access Panel Details



NOTE: Maximum FyreWrap® Access Panel size: Nominal 710x560mm open clearance

<b>Drawing Name:</b> 2. FWAP MKII				<b>Test Standard:</b> AS1530.4 - 2014	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Install Details				<b>Fire resistance level:</b> 120/120/120	<b>Drawn By:</b> JH				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 21	<b>Sheet:</b> 21 of 26	<b>Date:</b> 16/11/2016	<b>Scale:</b>	<b>Based on Report No.:</b> FCO 3226	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			

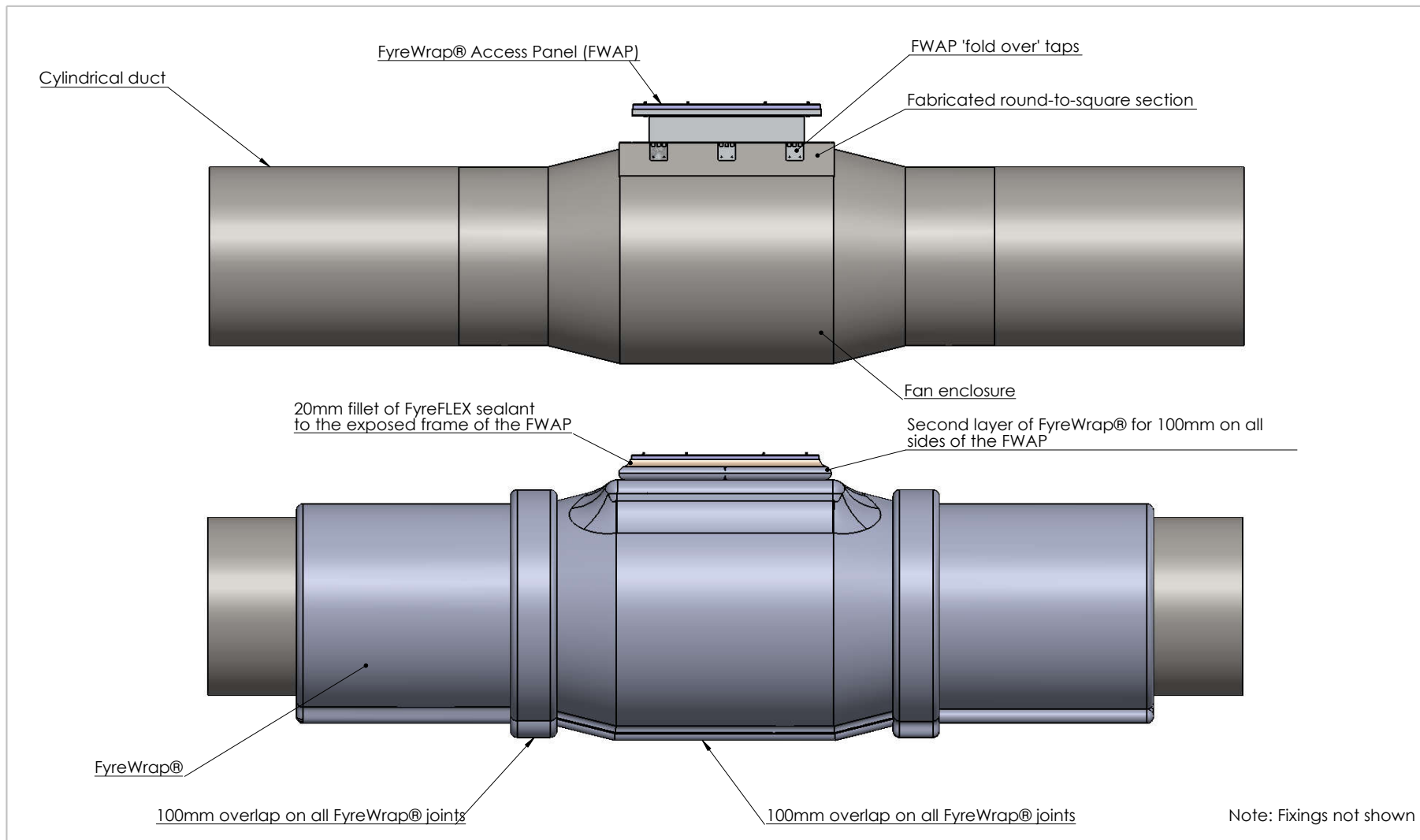
## FWAP Fan Enclosure - Front View



Note: Fixings not shown

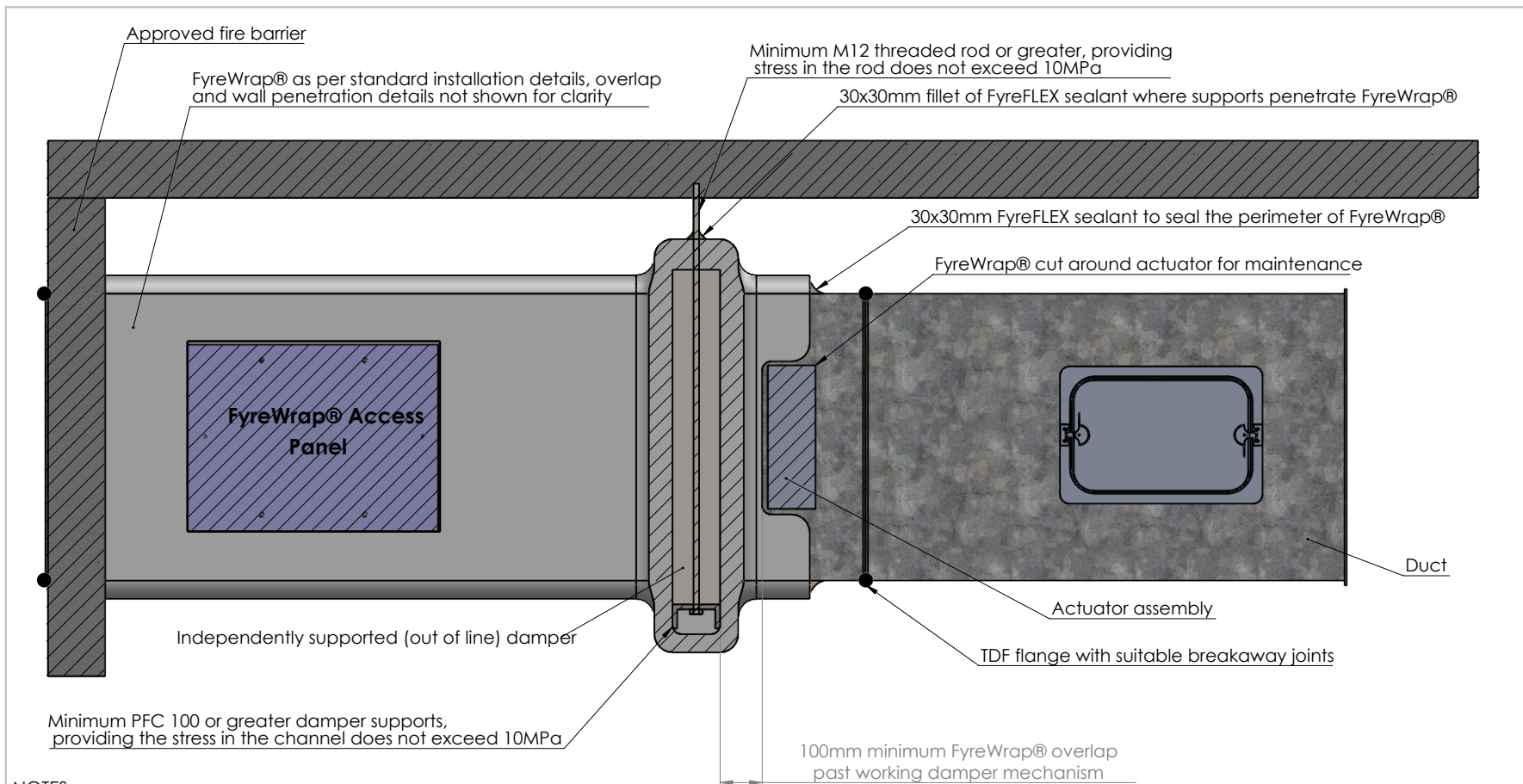
<b>Drawing Name:</b> FWAP - fan enclosure front view				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b> Issued for Install	<b>Date:</b> 13/12/2016	<b>No.:</b> 1	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® for fan enclosures				<b>Fire resistance level:</b>	<b>Drawn By:</b> JH				<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 2	<b>Date:</b> 13/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input checked="" type="checkbox"/> STANDARD DRAWING	<input type="checkbox"/> PROJECT DRAWING		

## FWAP Fan Enclosure - Side View




<b>Drawing Name:</b> FWAP - fan enclosure side view				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b> 13/12/2016	<b>No.:</b> 1	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® for fan enclosures				<b>Fire resistance level:</b>	<b>Drawn By:</b> JH	NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)			
<b>Drawing No. :</b> 1	<b>Sheet:</b> 1 of 2	<b>Date:</b> 13/12/2016	<b>Scale:</b>	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input checked="" type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			

## Out of Line Damper



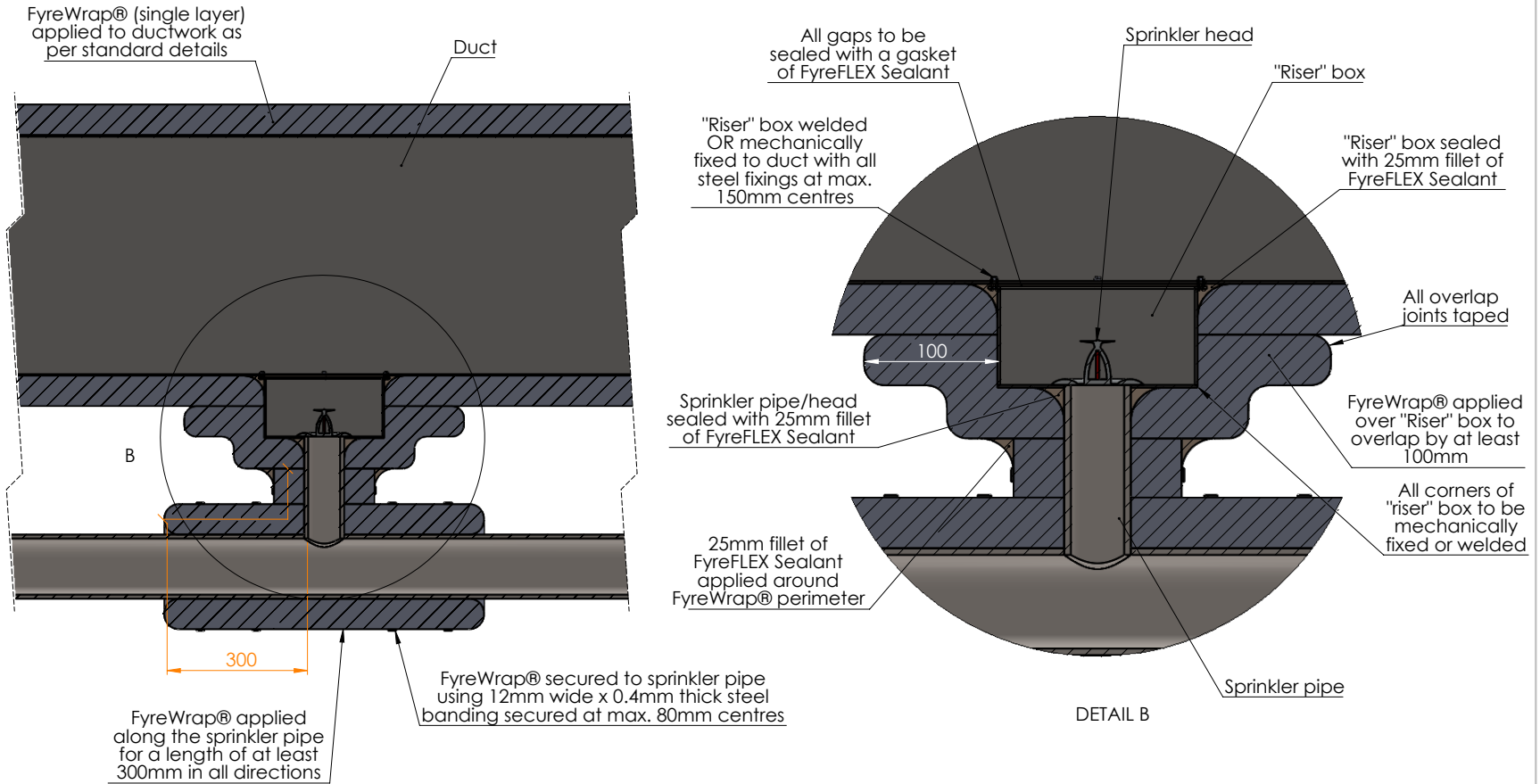
**NOTES:**

- FyreWrap® overlaps have not been shown for clarity
- Dampers to be installed to manufacturers instructions
- Damper fixings not shown for clarity
- Adequate fixings of FyreWrap® to be in conjunction with Trafalgar Fire's recommendation of maximum nominal duct size
- Threaded rod diameters and steel sections **MUST NOT** exceed the allowable stress limit of 10MPa in accordance with Trafalgar Fire's **BRANZ FAR 2567 report**
- indicates required location of break-away joints

<b>Drawing Name:</b> Out of line damper install				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b> <small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>
<b>Project Title:</b> Out of line damper drawings				<b>Fire resistance level:</b>	<b>Drawn By:</b> JH				
<b>Drawing No. :</b>	<b>Sheet:</b>	<b>Date:</b> 12/10/2020	<b>Scale:</b>	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			



# Sprinkler Head Installed in "Riser" Box - Single Layer



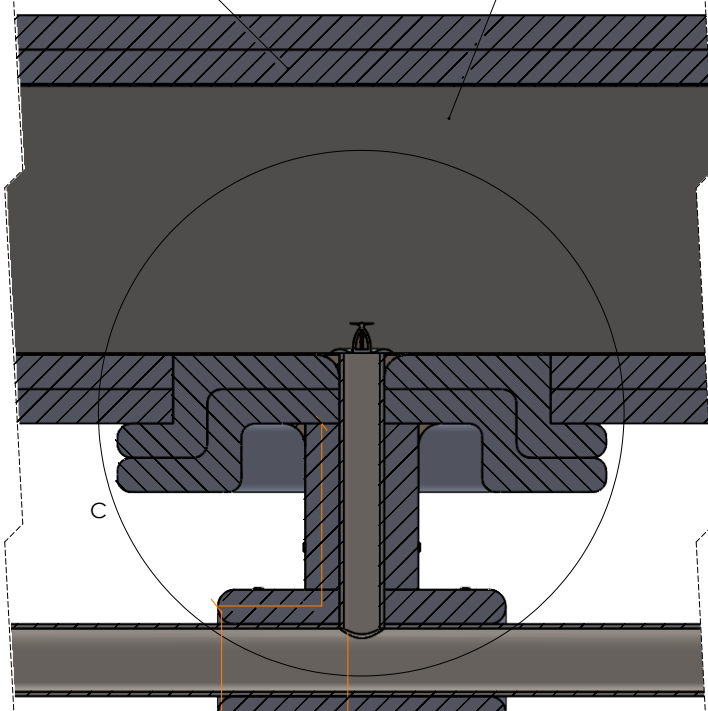
<b>Drawing Name:</b> "Riser" Box - Single				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Sprinkler Penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC	NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (MM)			
<b>Drawing No. :</b> 2	<b>Sheet:</b> 2 of 4	<b>Date:</b> 13/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT				



# Sprinkler Head Against Duct Wall - Double Layer

FyreWrap® (double layer) applied to ductwork as per standard details

Duct

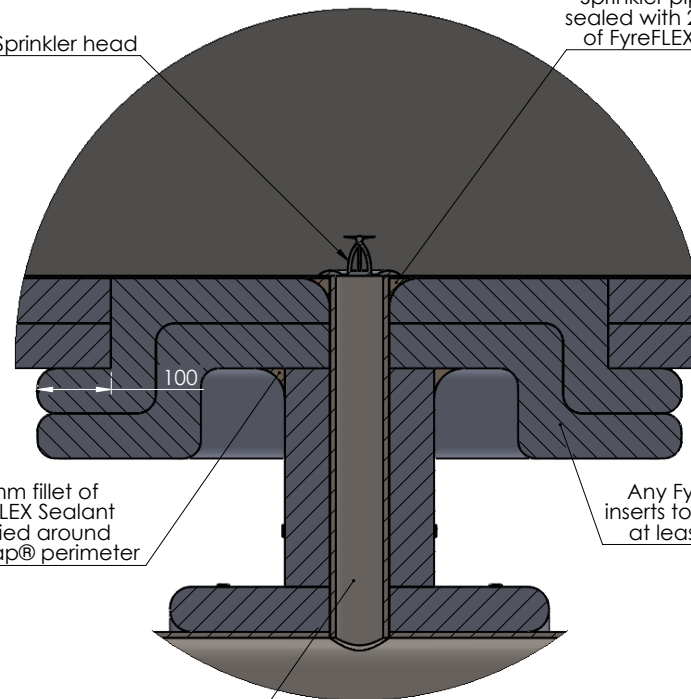


FyreWrap® applied along the sprinkler pipe for a length of at least 300mm in all directions

FyreWrap® secured to sprinkler pipe using 12mm wide x 0.4mm thick steel banding secured at max. 80mm centres

Sprinkler head

Sprinkler pipe/head sealed with 25mm fillet of FyreFLEX Sealant




25mm fillet of FyreFLEX Sealant applied around FyreWrap® perimeter

Any FyreWrap® inserts to overlap by at least 100mm

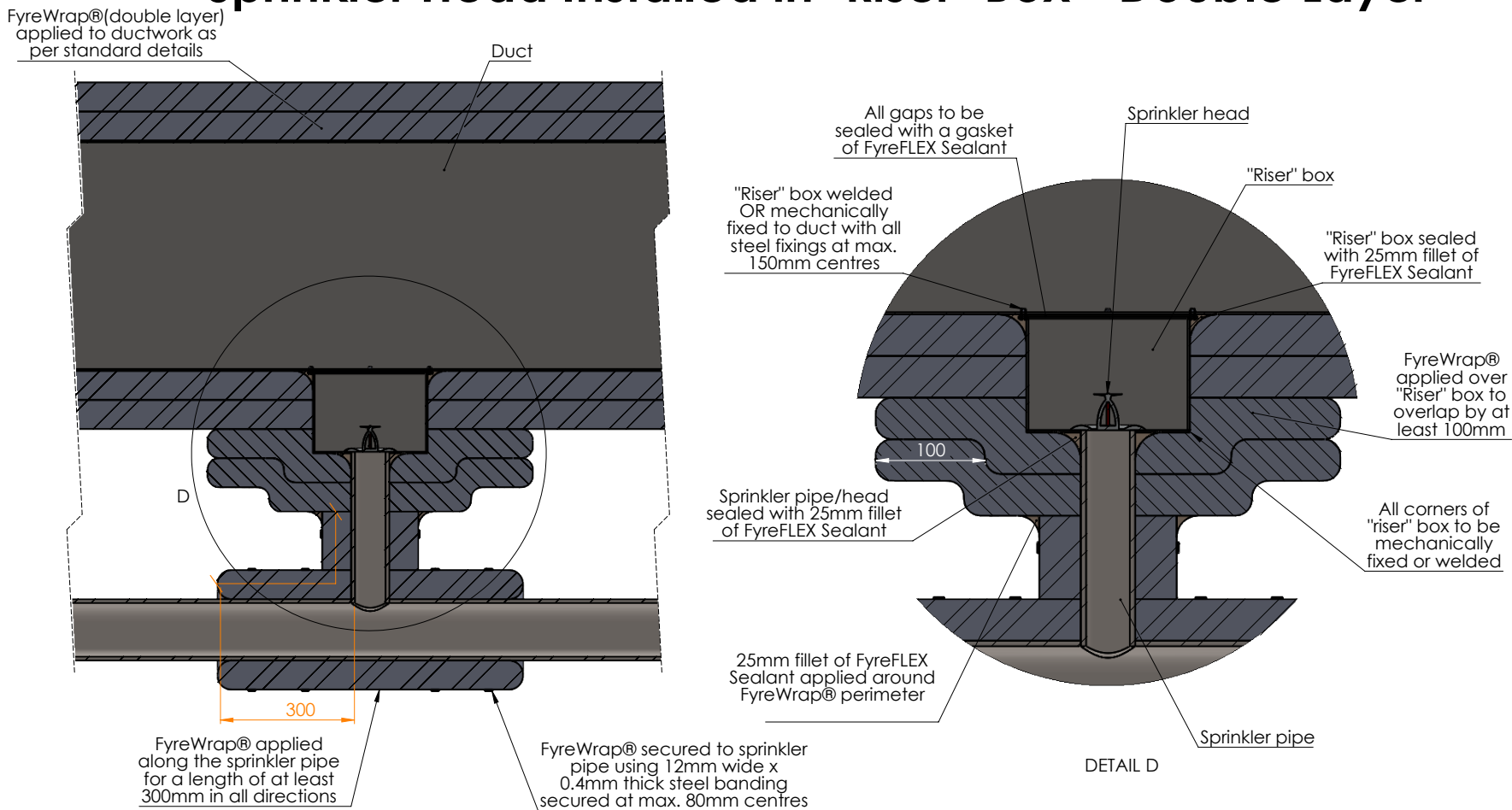
Sprinkler pipe

DETAIL C

NOTE: Sprinkler head located minimum 50mm from FyreBOARD Maxilite™ strips at the wall penetration

<b>Drawing Name:</b> Head Against Wall - Double				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Sprinkler Penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> 			
<b>Drawing No. :</b> 3	<b>Sheet:</b> 3 of 4	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT				

# Sprinkler Head Installed in "Riser" Box - Double Layer



NOTE: Sprinkler head located minimum 50mm from FyreBOARD Maxilite™ strips at the wall penetration

<b>Drawing Name:</b> "Riser" Box - Double				<b>Test Standard:</b> AS1530.4	<b>Codes:</b>	<b>Revision:</b>	<b>Date:</b>	<b>No.:</b>	<b>NOTICE:</b>
<b>Project Title:</b> FyreWrap® Sprinkler Penetration				<b>Fire resistance level:</b>	<b>Drawn By:</b> JC	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small>			
<b>Drawing No. :</b> 4	<b>Sheet:</b> 4 of 4	<b>Date:</b> 12/10/2020	<b>Scale:</b> NTS	<b>Based on Report No.:</b>	<b>Checked By:</b> CT	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING			