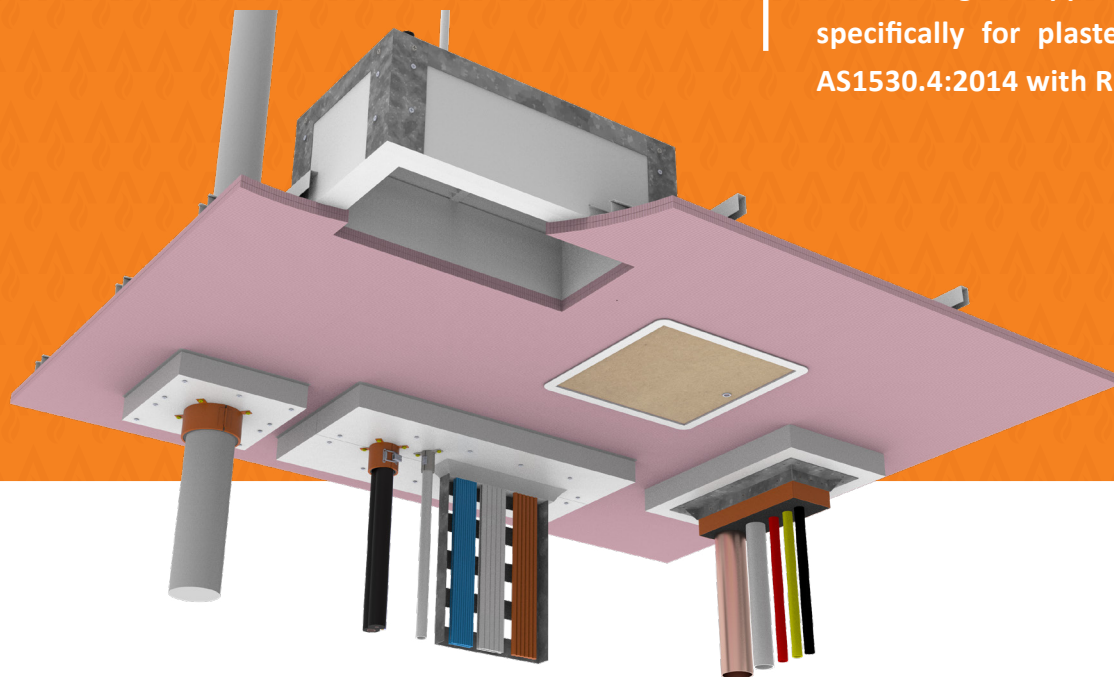


60 MINUTE PLASTERBOARD CEILINGS

Service Penetrations



Approvals for service penetrations in fire-rated plasterboard ceilings are limited across the market, however Trafalgar Fire have a range of approvals that are tested specifically for plasterboard ceilings to AS1530.4:2014 with RISF ratings.



SYSTEMS



-  **FyreBOX**MAXI
-  **FyreBOX**MINI
-  **FyreFLEX**
-  **FyreDAMPER**
-  **FyreBOARD**MAXILITE
-  **FyreCOLLAR**PREMIUM RETROFIT
-  **FyreCOLLAR**CONDUIT
-  **FyreCOLLAR**MIXED SERVICES
-  **FyreSHIELD**PLUS

APPLICATIONS



Plumbers

- PVC pipes
- Copper & Steel pipes
- PEX & PEX-Al-PEX pipes

Electricians

- Data cables
- Power cables
- Conduits
- Aluminium and Copper Cables

HVAC&R

- Pair coil bundles
- Insulated re Fridgeration pipes

Plasterers

- Fire rated ceiling hatch

Active Fire

- Fire Cables
- Sprinkler Pipes

TRADES

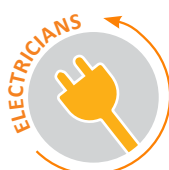


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COMPLIANCE



COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE (NCC)

Formerly known as BCA

Trafalgar Fire's plasterboard ceiling approvals have been fire tested to AS1530.4:2014 and approved in accordance with AS4072.1:2005 for a range of service types and applications.

The FRL's given show that the approved systems stop the physical spread of fire where the services penetrate a fire rated ceiling, and show that the temperature on the un-exposed side of the fire does not rise by more than 180 degrees.

Fire rated floor/ceiling systems also have an additional requirement to measure temperatures inside the ceiling cavity, called Resistance to the Incipient Spread of Fire (or RISF). Where service penetrations are required in these ceilings, the penetration system must also achieve the required level of RISF rating as well as the standard FRL as above. See over page for more details.



As with all passive fire installations, the fire stopping system used must be installed as per the manufacturer's instructions and test/assessment reports otherwise the end result will not be compliant. Please refer to each individual product manual for specific installation instructions which reflect how the systems have been tested and approved.

This manual specifically reviews the tested systems approved for 1 hour (2 x layer) ceilings, for 2 hour (3 x layer) ceilings refer the [Service Penetrations in 2Hr Plasterboard Ceilings Manual](#).

TEST AND ASSESMENT REPORTS

The systems in this manual are covered by test reports which are written by a NATA accredited facility and can be used as evidence of compliance under the NCC C3.15. Please email the technical team with your details at technical@tgroup.com.au if you require a copy of the reports. The test report numbers are referenced below in the FRL tables.

COMPLIANCE



RESISTANCE TO THE INCIPIENT SPREAD OF FIRE (RISF)

Aside from an FRL, ceiling systems are subject to another requirement under AS1530.4 called the resistance to the incipient spread of fire (RISF). The insulation value of a service penetration FRL is measured on the top side of the floor/ceiling system, and the RISF is based on the highest individual temperature reading inside the cavity. This requirement does not apply to wall and floor systems.

To maintain a RISF rating, the maximum temperature measured during a test must remain below 250°C inside the cavity. An important factor to achieving this rating is the size of the cavity present in a floor ceiling system.

A larger cavity will keep testing temperatures lower for longer. This is because the additional air gap present assists in cooling the building elements. As such it is considered that testing of this nature should only be applied to floor/ceiling systems of equal or larger cavity sizes that what was tested. Because of this, our access panel and penetration systems have been tested with one of the smallest cavity sizes that would practically be present on site (600mm).

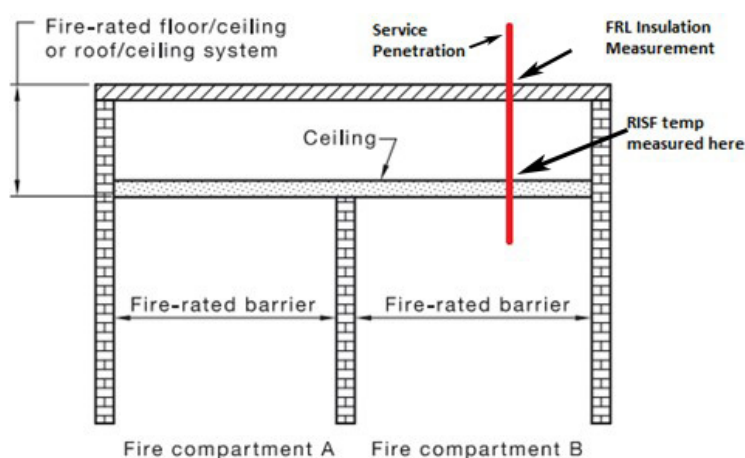


Figure 1- Resistance to the Incipient Spread of Fire rating required for this floor/ceiling system

The NCC defines RISF as:

Resistance to the incipient spread of fire, in relation to a ceiling membrane, means the ability of the membrane to insulate the space between the ceiling and roof, or ceiling and floor above, so as to limit the temperature rise of materials in this space to a level which will not permit the rapid and general spread of fire throughout the space.

Explanatory information:

Resistance to the incipient spread of fire refers to the ability of a ceiling to prevent the spread of fire and thermally insulate the space between the ceiling and the roof or floor above. "*Resistance to the incipient spread of fire*" is superior to "fire-resistance" because it requires a higher standard of heat insulation.

The definition is used in Volume Two for separating floors/ceilings for a Class 1a dwelling located above a non-appurtenant *private garage*.

The only way a system approval can be obtained for a penetration in a fire rated ceiling is to fire test a floor ceiling/system complete with a cavity and measure the temperature inside the cavity to ensure it meets the strict NCC requirements for RISF.

IMPORTANT NOTE – An FRL alone does not comply with the NCC for plasterboard ceilings (Refer to section C3.15 of the NCC).

APPROVED CEILING CONSTRUCTION

The fire rated ceilings that are referenced in this manual must be tested or assessed to achieve an FRL of at least-/60/60, and have the following minimum construction requirements:

Construction Aspect	Minimum Specification
Sheeting	1 x 16mm & 1 x 13mm fire rated plasterbaord
Ceiling Cavity	Min 500mm high
Approved floor/ceiling construction	Timber or steel framing



For any other types of ceiling construction contact technical@tgroup.com.au.

FRL TABLES

PLASTERERS AND PASSIVE FIRE PROFESSIONALS



Application	System	FRL	RISF* (mins)	Test Report
Access Panels	FyreSHIELD Plus	-/60/60	✓	FAS 200221

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



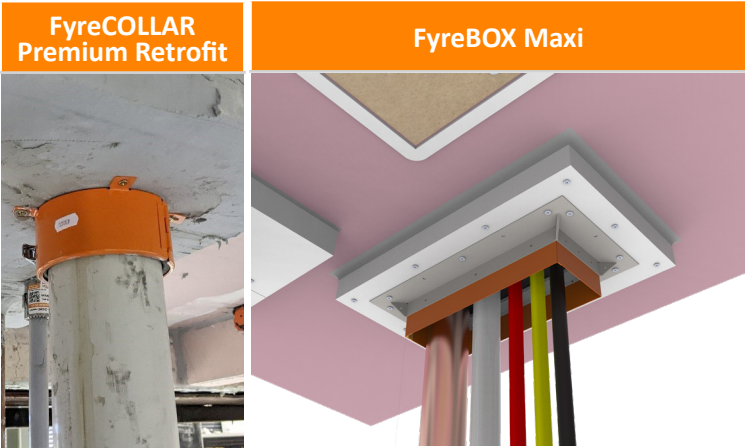
FRL TABLES

PLUMBING PENETRATIONS



Application	Specification	System	FRL	RISF*	Test Report
Metal Pipes	Copper or steel pipes up to 100mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini, & TWrap	-/60/60	✓	FC10266
Plastic Pipes	PVC pipes up to 100mm	FyreBOARD Maxilite & FyreCOLLAR	-/60/60	✓	RTL FT 1552
	PVC pipes up to 80mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini	-/60/60	✓	FC10266
	PEX pipes up to 32mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini	-/60/60	✓	FC10266
	PEX-Al-PEX pipes up to 32mm	FyreBOARD Maxilite, FyreBOX Maxi/Mini	-/60/60	✓	FC10266

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



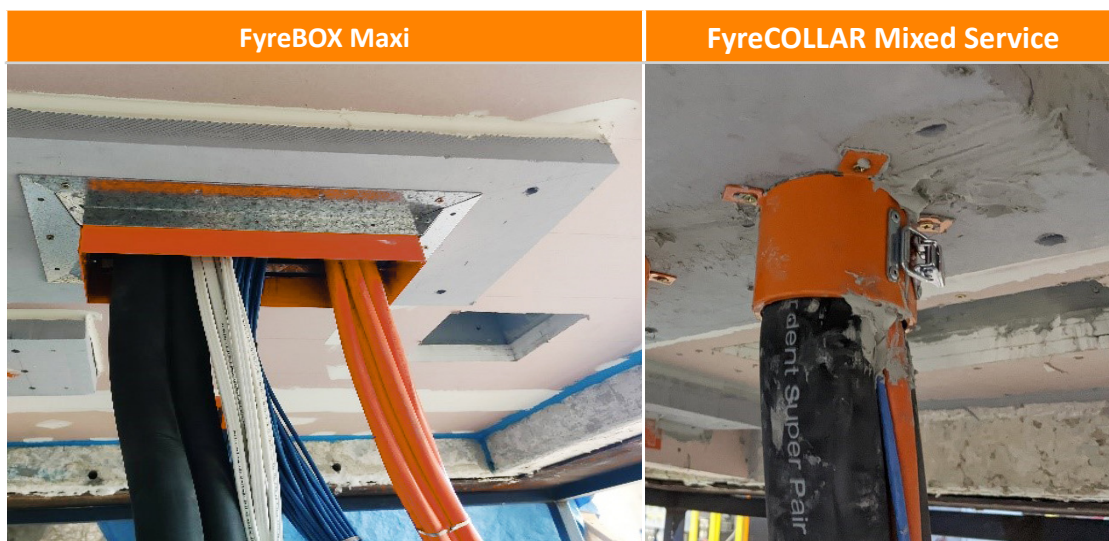
FRL TABLES

HVAC&R PENETRATIONS



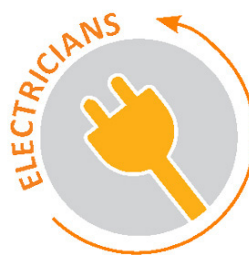
Application	Specification	System	FRL	RISF*	Test Report
Insulated Pipes	Copper or steel pipes up to 50mm with FR insulation (any thickness)	FyreBOARD Maxilite , FyreBOX Maxi/Mini & TWrap	-/60/60	✓	FC10266
	Stainless steel pipe up to 50mm with rockwool insulation	FyreBOARD Maxilite , FyreBOX Maxi/Mini & TWrap	-/60/60	✓	FC10266
Pair coil with associated cable	Pair coils up to 9 & 19mm with up to 13mm thick PE insulation	FyreBOARD Maxilite , FyreBOX Maxi/Mini & TWrap	-/60/60	✓	FC10266
	Pair coils up to 9 & 19mm with up to 20mm thick FR insulation	FyreBOARD Maxilite , FyreBOX Maxi/Mini & TWrap	-/60/60	✓	FC10266
	Pair coils up to 3/8" and 5/8" with FR insulation up to 19mm	FyreBOARD Maxilite , FyreCOLLAR & TWrap	-/60/60	✓	RTL FT 1552

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



FRL TABLES

ELECTRICIANS



Application	Specification	System	FRL	RISF*	Test Report
Power Cables – Copper	All copper core power cables	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
Communications & Data cables	NBN Fibre cables (with or without conduit)	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
	All copper core communications cables.	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
	300mm Cable Tray with up to 20 x CAT6, 10 x TPS, 7 x 3C+E (19mm OD)	FyreBOARD Maxilite, FyreFLEX Sealant and TWrap	-/60/60	✓	RTL FT 1552
Power Cables – Aluminium	Single core cables in bundles of up to 4 x 240mm ² + optional 120mm ² earth cable	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
	4C+E 16mm ² Cables in bundles up to 4x	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
Conduits	Rigid or flexible conduits up to 32mm OD	FyreBOARD Maxilite, FyreBOX & TWrap	-/60/60	✓	FC10266
	25mm rigid conduit	FyreBOARD Maxilite, FyreCOLLAR Conduit	-/60/60	✓	RTL FT 1552

*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.



FRL TABLES

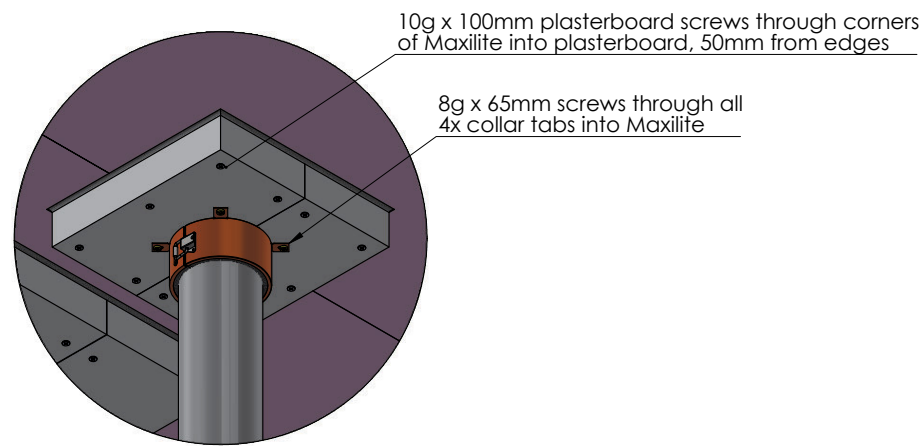
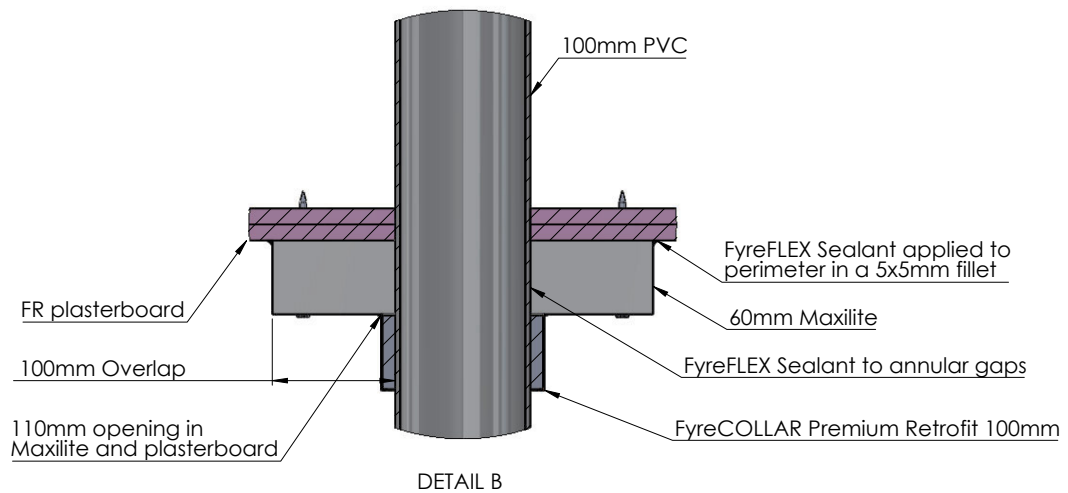
ACTIVE FIRE PENETRATIONS




Application	Specification	System	FRL	RISF*	Test Report
Metal Sprinkler Pipes	Copper or steel pipes up to 100mm	FyreBOARD Maxilite , FyreBOX & TWrap	-/60/60	✓	FC10266
Fire Alarm Cables	All copper core communications cables	FyreBOARD Maxilite , FyreBOX & TWrap	-/60/60	✓	FC10266
	Up to 10x fire TPS cables	FyreBOARD Maxilite , FyreFLEX & TWrap	-/60/60	✓	RTL FT 1552

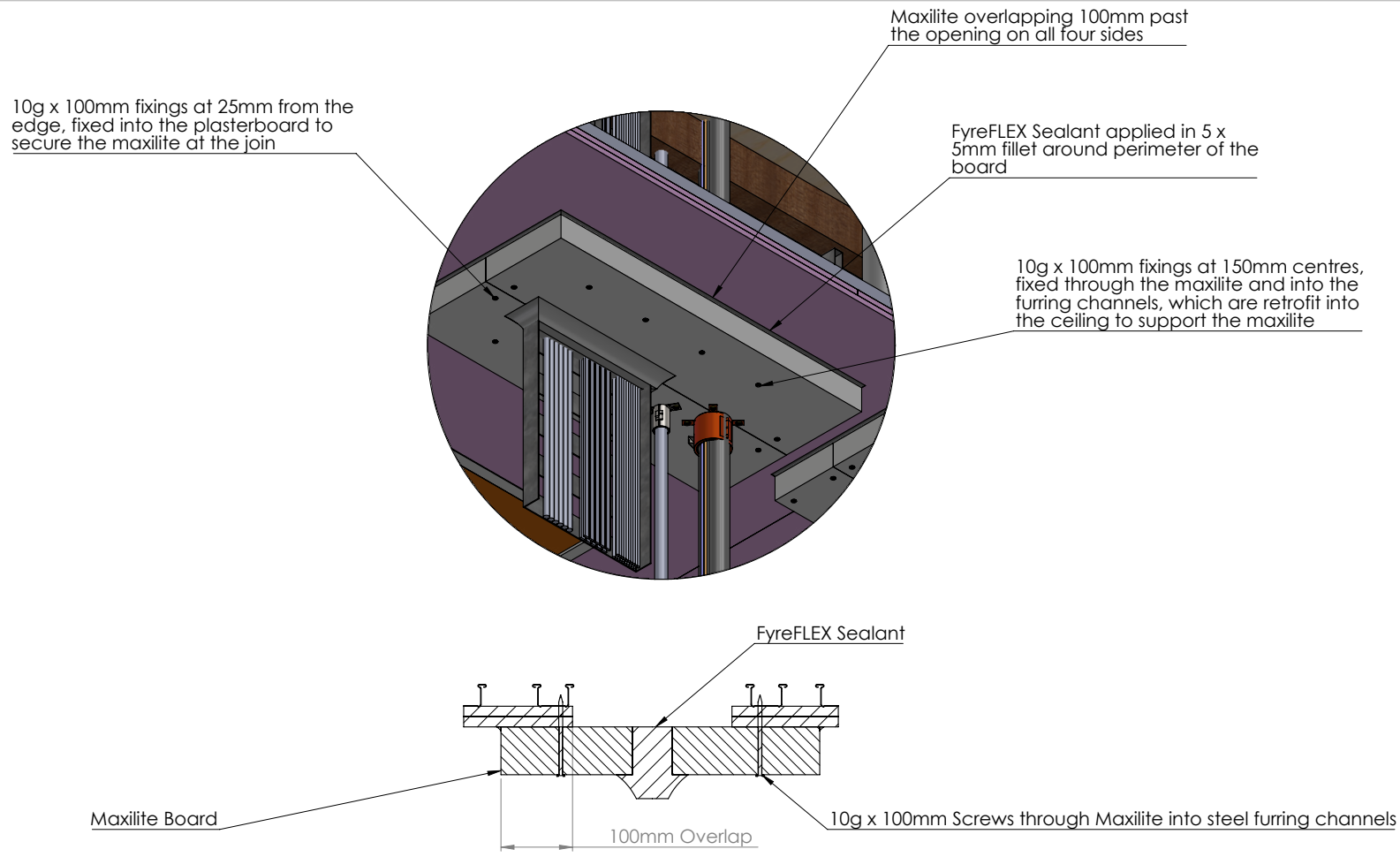
*tick indicates an RISF rating of at least 60min. NCC only requires 60min RISF rating for most applications. Contact technical@tgroup.com.au for more details.






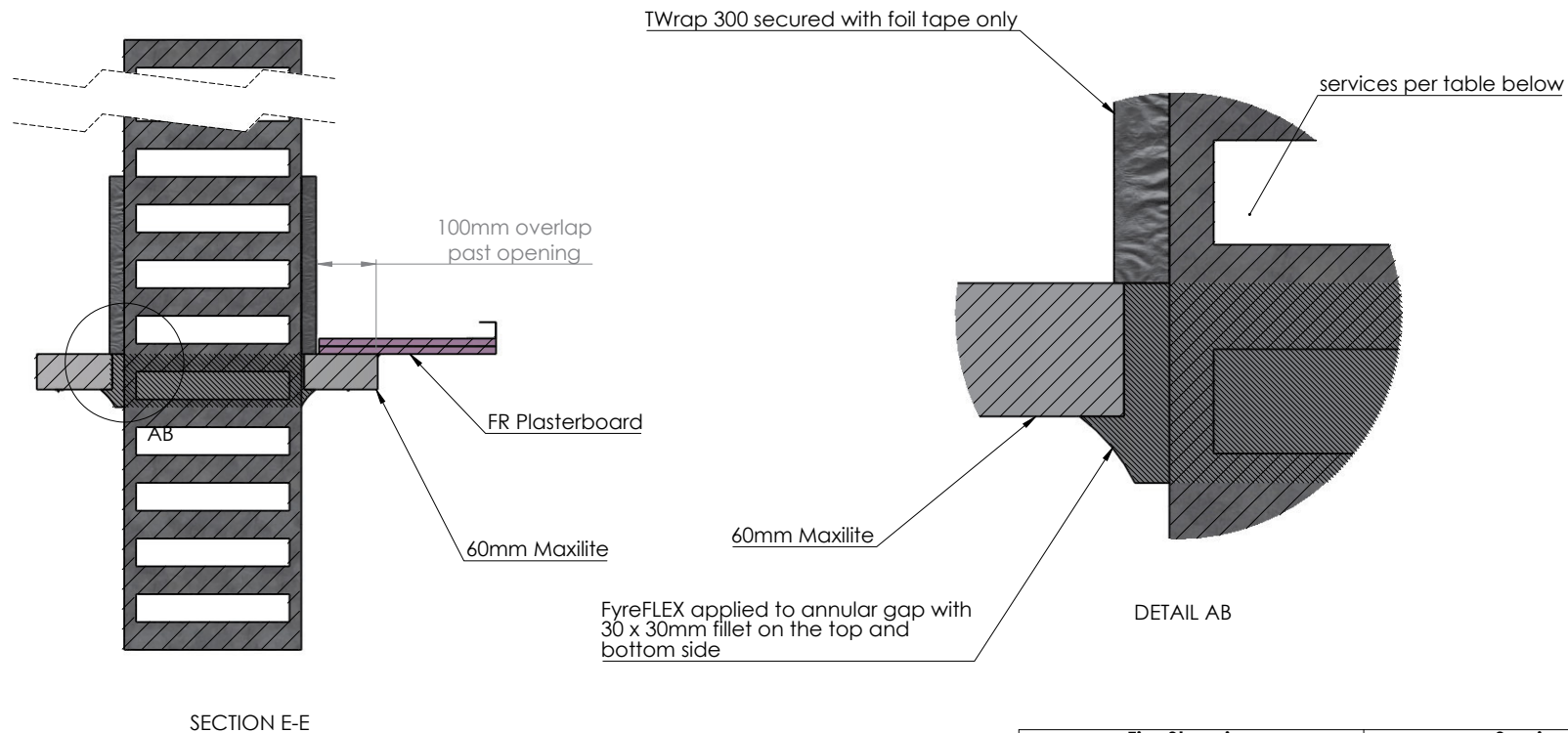
Note: For this particular service, the Maxilite does not need to be fixed into the ceiling supports

Drawing Name: PVC Pipe Penetration				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:
Project Title: 60min Ceiling Penetrations				Fire resistance level:	Drawn By: SM				
Drawing No. : 1	Sheet: 1 of 5	Date: 1/08/2022	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING	 <div>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</div>		



Note: For the services shown in the detail (Cable tray, conduit, pair coil bundle), the Maxilite must be fixed into the ceiling supports on two sides.

Drawing Name: Maxilite Installation Details				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:
Project Title: 60min Ceiling Penetrations				Fire resistance level:	Drawn By: SM	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm).</small>  TRAFALGAR FIRE <small>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</small>			
Drawing No. : 2	Sheet: 2 of 5	Date: 3/08/2022	Scale: NTS	Based on Report No.:	Checked By: JH				
					<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING				



Note: Maxilite fixed through plasterboard into steel ceiling members with 10g x 100mm screws

Fire Stopping	Services
60mm Maxilite, FyreFLEX Sealant, & TWrap	300mm Cable Tray - 20 x CAT6, 10 x TPS, 8 x 12mm OD 3C+E Power

Drawing Name: Cable Tray Penetration

Project Title: 60min Ceiling Penetrations

Drawing No. :
3

Sheet:
3 of 5

Date:
1/08/2022

Scale:
NTS

Test Standard:
AS1530.4

Fire resistance level:

Based on Report No.:

Codes:

Drawn By:
SM

Checked By:
JH

Revision:

Date:

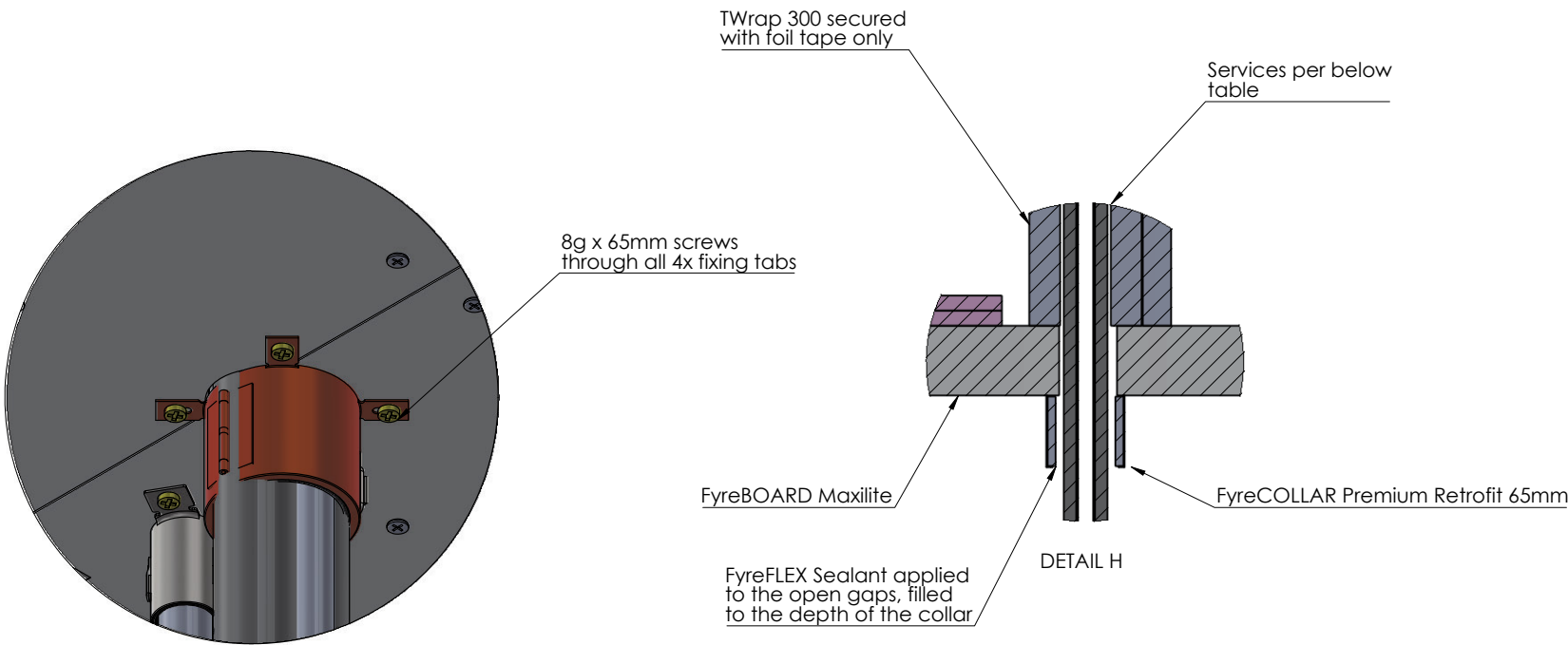
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NOTICE:


NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)

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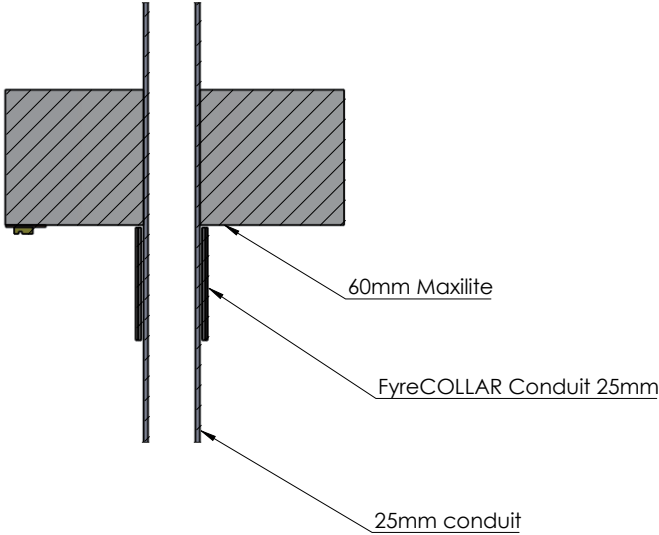
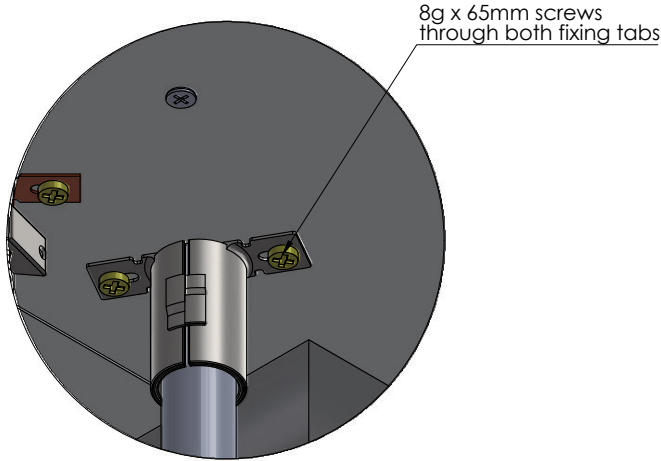
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F: 1800 201 500
E: technical@tgroup.com.au
W: www.tfire.com.au



Fire Stopping	Services
60mm Maxilite, FyreCOLLAR Premium Retrofit, & TWrap	9 & 19mm paircoil with 19mm FR insulation, 25mm PVC drain, 2 x cables


Drawing Name: Pair Coil Penetration				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE: <small>(NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm))</small>
Project Title: 60min Ceiling Penetrations				Fire resistance level:	Drawn By: SM				
Drawing No. : 4	Sheet: 4 of 5	Date: 1/08/2022	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING	<div><div>TRAFALGAR FIRE</div><div>Trafalgar Head Office: PO BOX 545 Chester Hill NSW 2162 T: 1800 888 714 F: 1800 201 500 E: technical@group.com.au W: www.tfire.com.au</div></div>		

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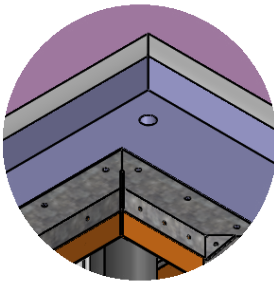
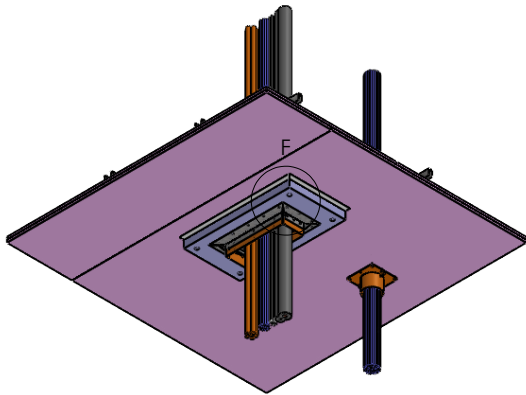
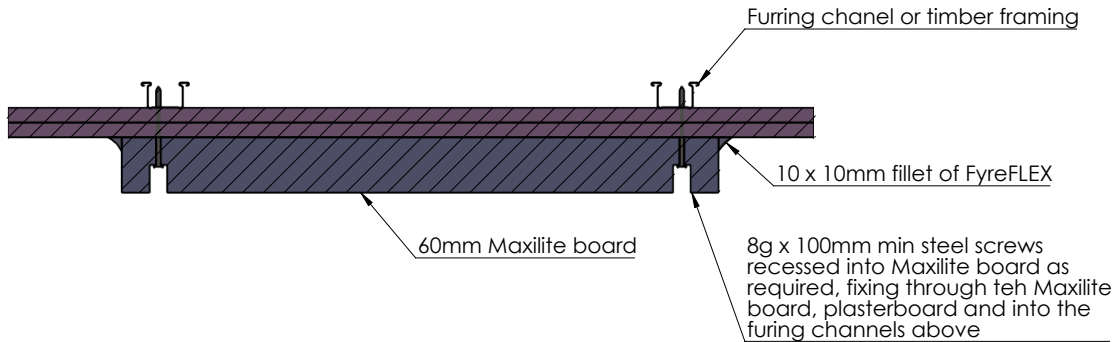
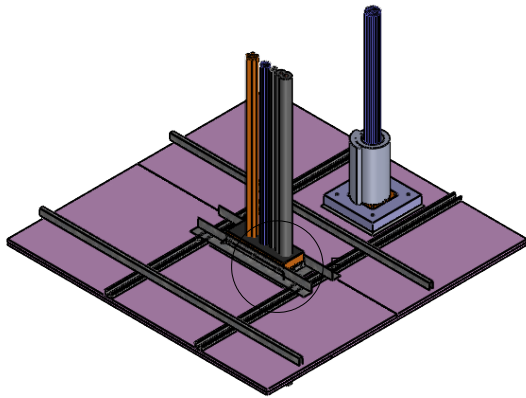


Note: Maxilite fixed through plasterboard into steel ceiling members with 10g x 100mm screws

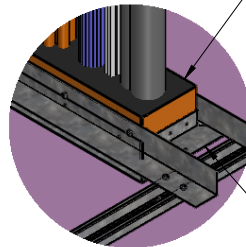
Fire Stopping	Services
60mm Maxilite, FyreCOLLAR Conduit	25mm Conduit

Drawing Name: Conduit Penetration				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE: <small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)</small> <div>TRAFALGAR FIRE 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</div>
Project Title: 60min Ceiling Penetrations				Fire resistance level:	Drawn By: SM				
Drawing No. : 5	Sheet: 5 of 5	Date: 1/08/2022	Scale: NTS	Based on Report No.:	Checked By: JH	<input type="checkbox"/> STANDARD DRAWING			
						<input type="checkbox"/> PROJECT DRAWING			

TWrap not shown



View from underside



View from top side

FyreBOX foam on the top side only

50 x 50 x 0.9mm steel angles used between furring channels to secure FyreBOX in place, steel tek screws used to fix angles to FyreBOX case

FyreBOX Flange installed to the top side of the plasterboard and underside of the Maxilite

Drawing Name: FyreBOX Maxi

Project Title: FyreBOX in Plasterboard ceilings

Drawing No. :
1

Sheet:
1 of 2

Date:
20/12/2022

Scale:
NTS

Test Standard:
AS1530.4

Fire resistance level:

Based on Report No.:

Codes:

Drawn By:
SM

Checked By:
JH

Revision:

Date:

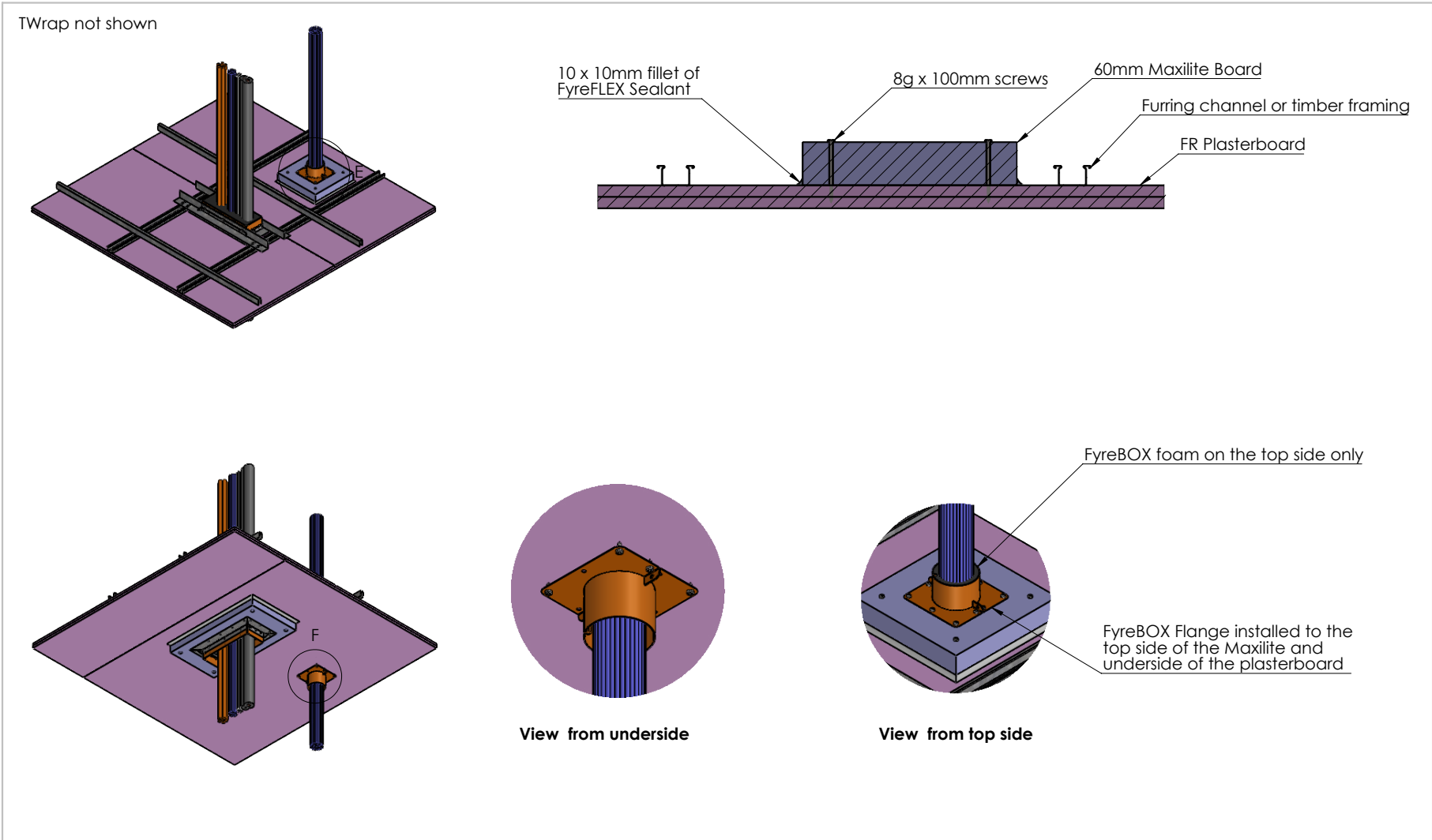
No.:


NOTICE:

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm)



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Drawing Name: FyreBOX Mini				Test Standard: AS1530.4	Codes:	Revision:	Date:	No.:	NOTICE:
Project Title: FyreBOX in Plasterboard ceilings				Fire resistance level:	Drawn By: SM	<small>NOTE: ALL DIMENSIONS ARE IN MILLIMETRES (mm).</small>  <small>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</small>			
Drawing No. : 2	Sheet: 2 of 2	Date: 20/12/2022	Scale: NTS	Based on Report No.:	Checked By: JH				
					<input type="checkbox"/> STANDARD DRAWING <input type="checkbox"/> PROJECT DRAWING				