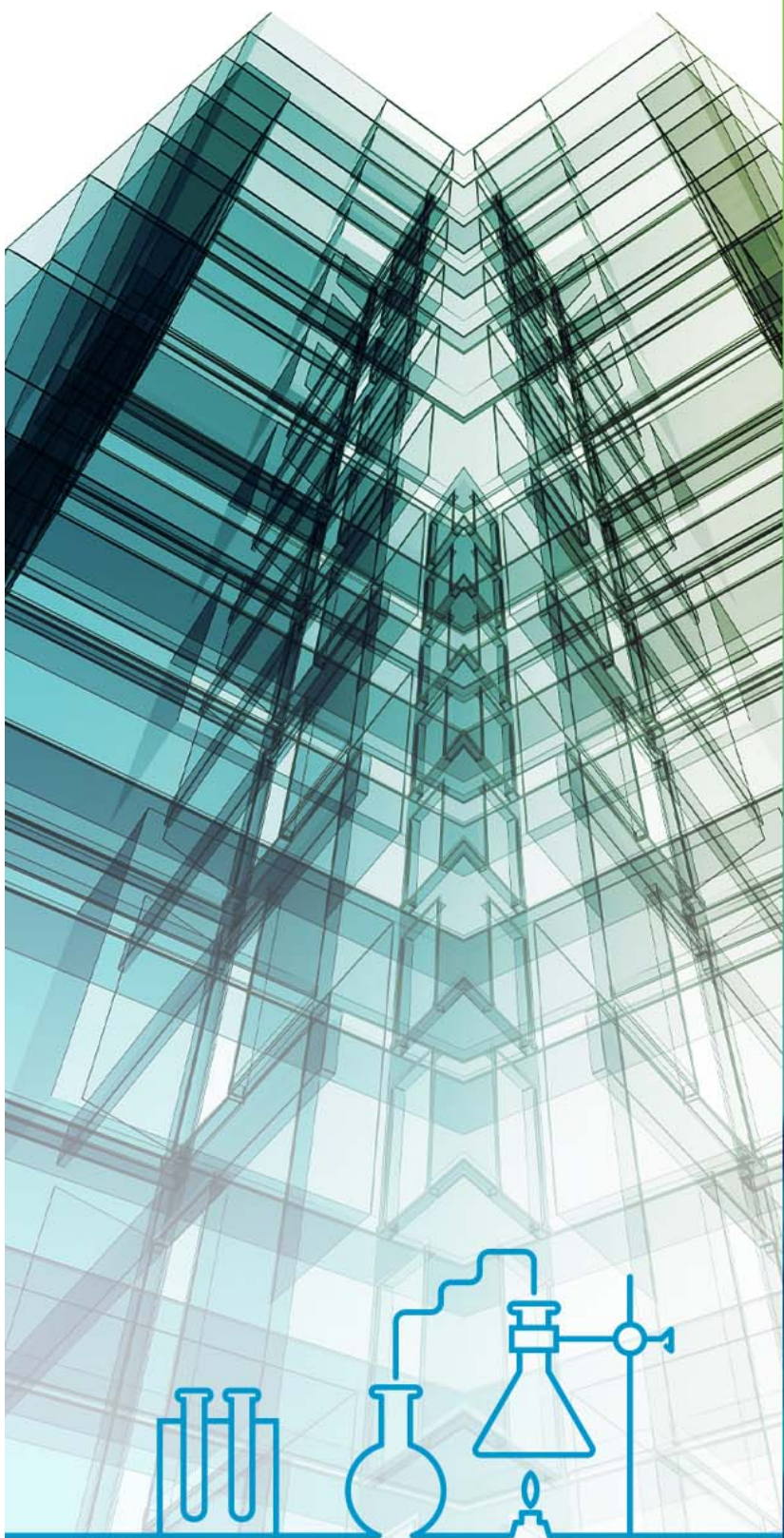




Assurance

Construction Laboratories
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SUPAPANEL
HORIZONTAL INSTALATION
FIRE ASSESSMENT REPORT

AS 1530.4-2014
AS 4072.1-2005

ACTC-8307-01R I01R00D02

Issued: 23.08.2024

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- NCC Vol 1 BCA 2022



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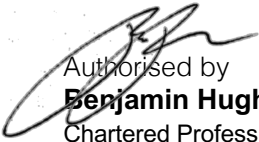
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TL-1162



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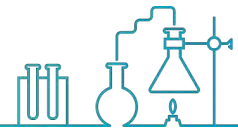


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1 INTRODUCTION

1.1 Assessment Objectives

The purpose of this report is to document the test undertaken on the Supapanel and to evaluate the application of the Supapanel in line with the National Construction Code – Volume One – Building Code of Australia 2022 (NCC) for installation of the Supapanel in a horizontal orientation to a Span of 6.5 meters with additional cross walls in a horizontal application totalling a combined span of 6.5 meters.

Door systems that are required to be installed in a Supapanel wall and the evaluation of the treatment of the door frame connected to the Supapanel wall with the fire integrity of the particular door system, and the fire capacity of the door system that is to be maintained.

Pipes, services and penetrations through the Supapanel wall, the relative use of passive fire products around these items to maintain fire integrity of the wall system.

Supapanel is to be installed as an infill wall in a horizontal position for a length and height of up to 6.5m and height unlimited. The fire testing of the Supapanel has demonstrated its ability to maintain a Fire Resistance Level of -/180/60 for the 62 mm panel and -/120/120 for the 72mm panel. The structural analysis undertaken by Robert Bird Group based on the Ian Bennie NATA approved wind load testing as well as separate weight load testing has documented the installation requirements to install the Supapanel in a horizontal orientation of spans up to 4 meters for the 62mm panel and 6.5 meters for the 72 mm panel.

Supapanel has been tested in accordance with AS 1530.4-2014 by Pfits / Fire TS Lab for the 72mm panel Warringtonfire for the 62 mm panel. The Supapanel is proposed to be increased in height from the tested system of 3 m to 6.5 m within the subject installation method and detailed connection details nominated in this report.

In accordance with the National Construction Code Clause A5G3 (1)(d) evidence to support that the use of a material, product, form of construction or design meets a Deemed-to-Satisfy Provision may be in the form of a report issued by an Accredited Testing Laboratory. The report demonstrates that a material, product or form of construction fulfils specific requirements of the BCA, and sets out the tests the material, product or form of construction has been subjected to and the results of those tests and any other relevant information that has been relied upon to demonstrate it fulfils specific requirements of the BCA.

In accordance with the National Construction Code Specification 1 Clause S1C2 the tested building element meets the requirement of Specification 1 for fire resistance of building elements where it differs in only a minor degree from a prototype tested under the standard fire test. The FRL attributed to the building element is confirmed in a report from an Accredited Testing Laboratory.

AS 1530.4-2014 outlines the minimum information required for regulatory compliance within Clause 2.16.3. It is required that details of the testing body, details of the test and the applicability of the results for the specimens to be evaluated.

This report is issued by Benjamin Hughes-Brown, Accredited Laboratory Signatory and Chartered Professional Engineer of Assurance Construction Testing and Certification for use under the Deemed-to-Satisfy requirements of the BCA Volume 1 and BCA Volume 2. This report is by an Accredited Testing Laboratory, IAS accreditation TL-1162 and serves as a certificate from a signatory of an Accredited Testing Laboratory and professional engineer in accordance with Clause A5G3(1)(d) and A5G3(1)(e) of the BCA. Assurance holds accreditation to AS 1530.4-2014 and AS 4072.1-2005 with IAS (International Accreditation service) a signatory to the Mutual Recognition Agreement (MRA) under the International Laboratory Accreditation Cooperation.

1.2 Background

The Fire Resistance Level (FRL) of the 72mm Supapanel up to a span of 6.5m and up to 4.0m for the 62mm Supapanel in a vertical orientation is as follows:

| | | |
|---|---|-----------|
| A | Supapanel 62 mm | -/180/60 |
| B | Supapanel 62 mm + Fire Grade Mastic outside joint | -/180/90 |
| C | Supapanel 62 mm + 13 mm Fire Grade plasterboard | -/180/90 |
| D | Supapanel 62 mm + 16 mm Fire Grade plasterboard | -/180/120 |
| E | Supapanel 72 mm | -/120/120 |

1.3 Supapanel

The Supapanel is a 425mm wide x 62mm and 72mm thick panel (nominal 350mm between panel-to-panel joints) comprising of an aerated cement core encased in a 0.3 to 0.4mm thick mild galvanised steel 250 MPa skin with a 425 Kg concrete core. The 0.35 mm thick steel casing was subjected to testing. The following figures detail the 62mm and 72mm wide panels characteristics.

FIGURE 1:
62 MM SUPAPANEL PROFILE

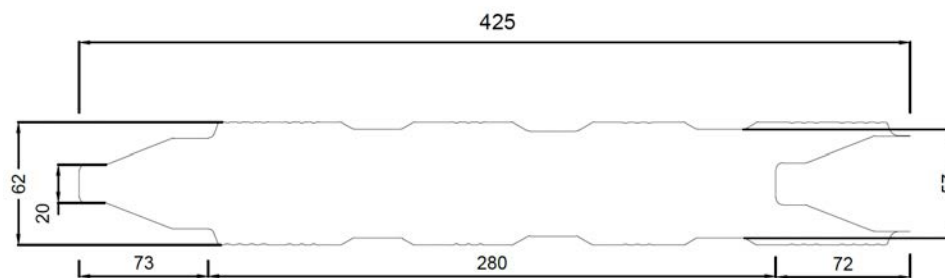
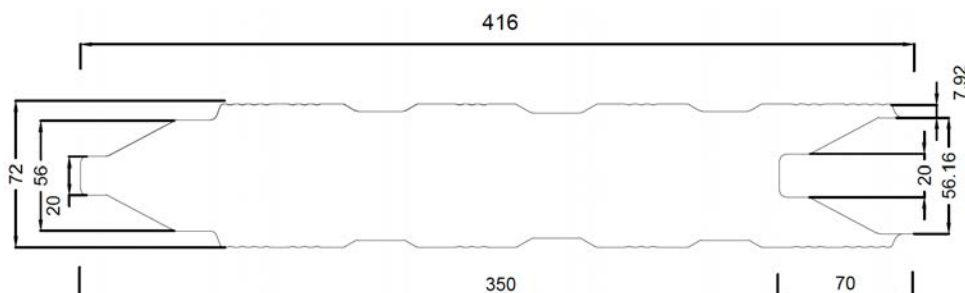


FIGURE 2:
72 MM SUPAPANEL PROFILE





The Supapanel wall system has been tested by PFITS, Fire TSLabs and Warringtonfire in accordance with AS 1530.4:2014. The Supapanel, being a 62mm and 72mm thick panel achieves the following Fire Resistance Levels:

TABLE 1:

SYSTEM A – 62 MM THICK SUPAPANEL

| | | |
|----------|---|-------------------------|
| A | Wall System - Supapanel 62 mm | |
| | The wall system consists of a 62 mm Supapanel | |
| | BCA Clause | |
| | Clause A5G5 | |
| | AS 1530.4-2014 | |
| | Supporting Evidence | Test Report |
| | PFITS Test Report | PF19066 R4.0 26.11.2020 |
| | Application | |
| | The Supapanel is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/60/60 is required. | |
| | Installation Conditions | |
| | The Supapanel is to be installed in accordance with K8 Installation Guide 2020 | |
| | Fire Resistance Level | |
| | Structural Adequacy | - |
| | Integrity | 180 |
| | Insulation | 60 |

TABLE 2:

SYSTEM B – 62 MM THICK SUPAPANEL + JOINT MASTIC

| | | |
|----------|--|-------------------------|
| B | Wall System - Supapanel 62 mm + joint mastic | |
| | The wall system consists of a 62 mm Supapanel and mastic installed over the joints on one side. | |
| | BCA Clause | |
| | Clause A5G5 | |
| | AS 1530.4-2014 | |
| | Supporting Evidence | Test Report |
| | PFITS Test Report | PF19066 R4.0 26.11.2020 |
| | Application | |
| | The Supapanel with joint mastic is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/180/90 is required. | |
| | Installation Conditions | |
| | The Supapanel is to be installed in accordance with K8 Installation Guide 2020 | |
| | Fire Resistance Level | |
| | Structural Adequacy | - |
| | Integrity | 180 |
| | Insulation | 90* |

* The insulation of the wall to 90 minutes is based on an enhancement of the wall with fire grade mastic.


TABLE 3:

SYSTEM C – 62 MM THICK SUPAPANEL + 13 MM FIRE GRADE PLASTERBOARD

C Wall System - Supapanel 62 mm + 13 mm fire grade plasterboard on one side

The wall system consists of a 62 mm Supapanel and 13 mm fire grade plasterboard panel.

BCA Clause

Clause A5G5

AS 1530.4-2014

Supporting Evidence

PFITS Test Report

[Test Report](#)

PF19066 R4.0 26.11.2020

Application

The Supapanel with 13 mm fire grade plasterboard is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/180/90.

Installation Conditions

The Supapanel is to be installed in accordance with K8 Installation Guide 2020

Fire Resistance Level

| | |
|---------------------|-----|
| Structural Adequacy | - |
| Integrity | 180 |
| Insulation | 90* |

* The insulation of the wall to 90 minutes is based on an enhancement of the wall by a 13 mm layer of fire grade plasterboard.

TABLE 4:

SYSTEM D – 62 MM THICK SUPAPANEL + 13 MM FIRE GRADE PLASTERBOARD

D Wall System - Supapanel 62 mm + 16 mm fire grade plasterboard on one side

The wall system consists of a 62 mm Supapanel and 16 mm fire grade plasterboard panel.

BCA Clause

Clause A5G5

AS 1530.4-2014

Supporting Evidence

Warringtonfire

[Test Report](#)

FRT200129 R1.0 10.06.2020

Application

The Supapanel with 16 mm fire grade plasterboard is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/180/120.

Installation Conditions

The Supapanel is to be installed in accordance with K8 Installation Guide 2020

Fire Resistance Level

| | |
|---------------------|------|
| Structural Adequacy | - |
| Integrity | 180 |
| Insulation | 120* |

* The insulation of the wall to 120 minutes is based on an enhancement of the wall by a 16 mm layer of fire grade plasterboard.

TABLE 5:
SYSTEM E – 72 MM THICK SUPAPANEL

| | | |
|--------------------------------|---|--|
| E | Wall System - Supapanel 72 mm | |
| | The wall system consists of a 72 mm Supapanel with fire grade mastic | |
| BCA Clause | Clause A5G5 AS 1530.4-2014 | |
| Supporting Evidence | FireTSLabs | Test Report PF23046 13.09.2023 |
| Application | The Supapanel is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/120/120 is required. | |
| Installation Conditions | The Supapanel is to be installed in accordance with K8 Installation Guide 2020 | |
| Fire Resistance Level | Structural Adequacy | - |
| | Integrity | 120 |
| | Insulation | 120 |


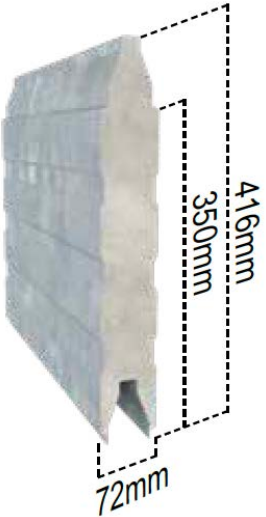
1.4 Conclusion

The Supapanel being a 425mm wide x 62mm and 72mm thick panel (nominal 350mm between panel-to-panel joints) comprising of an aerated cement core encased in a 0.3 to 0.4mm thick mild galvanised steel 250 MPa skin with a 425 Kg concrete core. The 0.35 mm thick steel casing was subjected to testing to AS1530.4: 2014. The below table nominates the maximum vertical span for the 62mm and 72mm thick Supapanel panels.

TABLE 6:
SUPAPANEL APPLICATION SUMMARY

| Supapanel wall thickness | 62 mm Supapanel | 62 mm Supapanel with one side caulked joint or 13 mm fire rated plasterboard | 62 mm Supapanel with One 16 mm fire rated plasterboard on one face | 72 mm Supapanel | Maximum vertical span between structural elements or vertical Supapanel wall |
|--|-----------------|--|--|-----------------|--|
| Maximum wall span | 4000 mm | 4000 mm | 4000 mm | 6500 mm | Unlimited |
| Maximum lineal meters of cross wall connected to primary spanning wall | 4000 mm | 4000 mm | 4000 mm | 6500 mm | Unlimited |
| Fire Resistance Level | -/60/60 | -/90/90 | -/180/120 | -/120/120 | -/120/120 |
| Fire core door system | -/60/30 | -/90/30 | -/120/30 | -/120/30 | -/120/30 |
| Penetration passive fire product | -/60/60 | -/90/90 | -/120/120 | -/120/120 | -/120/120 |
| Access hatches | -/60/30 | -/90/30 | -/120/30 | -/120/30 | -/120/120 |
| Ducting fire dampers | -/60/- | -/90/- | -/120/- | -/120/- | -/120/- |



2 SCHEDULE OF COMPONENTS

| Item | Description | |
|--------|---------------|---|
| PANELS | | |
| 1 | Item Name | 62 MM SUPAPANEL |
| | Product Name | Supapanel |
| | Specification | 425 mm wide x 62 mm thick panels (nominal 350 mm between panels joints) comprised an aerated cement core encased in 0.35 mm thick galvanised steel skin |
| | |  |
| 2 | Item Name | 72 MM SUPAPANEL |
| | Product Name | Supapanel |
| | Specification | 416 mm wide x 72 mm thick panels (nominal 350 mm between panels joints) comprised an aerated cement core encased in 0.35 mm thick galvanised steel skin |
| | |  |



| Item | Description | |
|------|-------------|--|
|------|-------------|--|


TRACKS




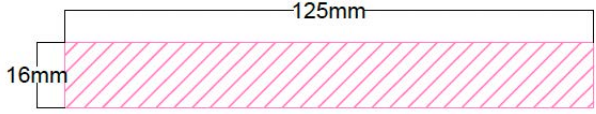

| | | |
|----------|-----------|---|
| 3 | Item Name | Top Track / Capping Track |
| | Material | 1.15 BMT Galvanised Steel |
| | Size | <ul style="list-style-type: none"> • 72 mm or 62 mm – 50/75/50 or 50/65/50 • 72 mm or 62 mm – 50/75/63 or 60/65/63  |
| 4 | Item Name | Bottom Track |
| | Material | 1.15 BMT Galvanised Steel |
| | Size | <ul style="list-style-type: none"> • 72 mm or 62 mm – 50/75/50 or 50/65/50 • 72 mm or 62 mm – 50/75/50 or 19/65/50  |

SEALANT

| | | |
|----------|-----------|--|
| 5 | Item Name | Fire Rated Sealant |
| | Material | BOSS FireMastic 300™, Fullers firesound, Promaseal |

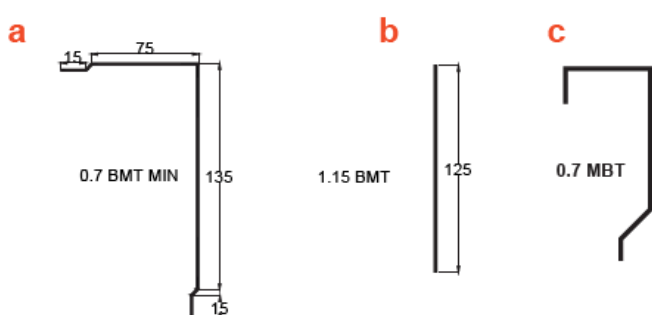
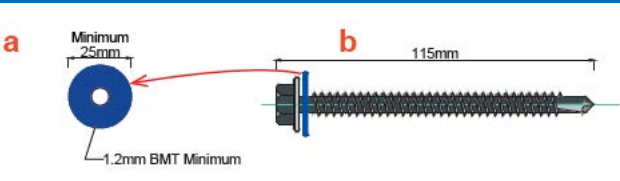
INTUMESCENT STRIP

| | | |
|----------|-----------|--|
| 6 | Item Name | Intumescent Strip |
| | Material | BOSS UniWrap® or Rely Intumescent Wrap |
| | Size | 12 mm x 2 mm  |

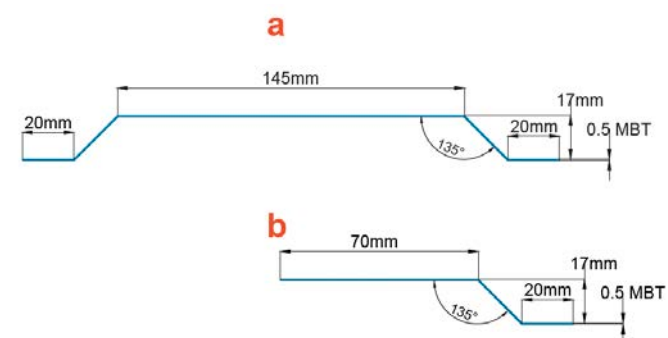
| Item | Description | |
|---------------------|---------------------|---|
| FIXINGS | | |
| 7 | Item Name | Joint Screw / Bottom Track Screw |
| | Product description | 6g x 16 mm flat head, self-drill screws 8g x 25 mm wafer head, self-drill screws  |
| 8 | Item Name | Plasterboard Screw |
| | Product description | 6g x 45 mm bugle head, self-drill plasterboard needle point screws  |
| 9 | Item Name | Seismic Anchor Screw |
| | Product description | AnkaScrew™ 14g x 45 mm long  |
| PLASTERBOARD | | |
| 10 | Item Name | Head Track Protection |
| | Material | Fire rated plasterboard |
| | Density | 653 kg/m ³ |
| | Size | 12 mm x 2 mm  |
| EQUAL ANGLE | | |
| 11 | Item Name | Top and Bottom Support |
| | Size | 50/50 – 1.15 mm BMT internal angle  |

| Item | Description |
|------|-------------|
|------|-------------|

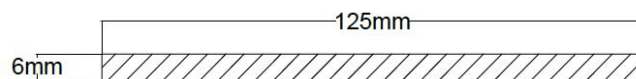
EXTERNAL METAL FLASHING

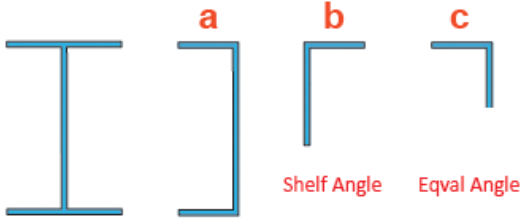
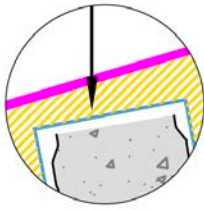




| | | |
|-----------|-----------|--|
| 12 | Item Name | External Metal Flashing 0.7 BMT Min |
| | Size |  |
| 13 | Item Name | 12 gauge SDS with Washer |
| | |  |

HORIZONTAL – VERTICAL COVER

| | | |
|-----------|-----------|--|
| 14 | Item Name | Horizontal / Vertical Flashing |
| | |  |

BOARD PROTECTION

| | | |
|-----------|-----------|---|
| 15 | Item Name | MGO board |
| | | 6 mm 125 wide MGO board  |

| Item | Description | |
|-----------------------------|---|---|
| STEEL BEAM | | |
| 16 | Item Name | Steel Beam |
| | Steel beam to engineer specification |  |
| ROCKWOOL | | |
| 17 | Item Name | Steel Beam |
| | Fire rated Rockwool to fill void and achieve the required FRL |  |
| SHAFT LINER | | |
| 18 | Item Name | Shaft Liner |
| | | 25 mm Shaft Liner sheet  |
| 6 mm FIBRE CEMENT | | |
| 19 | Item Name | 6 MM Fibre Cement |
| | | 25 mm Shaft Liner sheet  |
| STEEL STUD | | |
| 20 | Item Name | Steel Stud |
| | |  |
| 50 MM BOSS FIRE BATT | | |
| 21 | Item Name | 50 mm Boss Fire Batt |
| | |  |



3 NATIONAL CONSTRUCTION CODE COMPLIANCE

3.1 General

The following fire safety measures relate to elements that are associated with the performance analysis. All other elements of the buildings fire safety measures not specifically documented in the following section is to comply with the requirements of the BCA and documented by others.

The following clauses of the BCA (including all related State and Territory variations) have been evaluated and is of the opinion of Assurance to satisfy the following parts of the Building Code of Australia. The joints have been tested and reported as per AS 1530.4: 2014, AS 4072.1: 2005 by Fire TS Lab and as per Specification 1 and Clause C4D15 for a tested system. The installation of fire doors within the Supanel has been evaluated against the requirements of AS 1530.4:2014 and AS4072.1:2005.

Volume One – Building Code of Australia 2022

- 3.1.1 [Clause A5G2](#) evidence to support the use of a material meets the nominated Performance Requirements through the Governing Requirements of the NCC.
- 3.1.2 [Clause A5.2 \(1\)\(e\)](#) as evidence to support that the Supanel meets the nominated Performance Requirements and Deemed-to-Satisfy Provisions under a certificate issued by an Accredited Testing Laboratory and being tested by an Accredited Testing Laboratory being Fire TS Lab and Warringtonfire.
- 3.1.3 [Clause A5G5](#) Fire-resistance of building elements
 - a. The FRL of a building element has been determined in accordance with Specification 1 for vertical or horizontal orientation.

3.2 Fire Safety Measures

3.2.1 Wall Compliance (including shaft lining in vertical orientation)

- a. It is proposed that the following clause of the BCA has been evaluated and identified as being complied with:
 - i. [Clause A5G5](#) Fire-resistance of building elements
- b. [Specification 1 Clause S1C2\(c\)](#) being a building element tested to the standard fire curve achieving an FRL for each wall thickness being improved from the tested wall system and listed above.

3.2.2 Installation

- a. The installation of Supanel to maintain the required fire resistance level is documented in the attached drawings by Supanel nominated in this report. This includes screw spacing, fixings, head and base track and equal angle connection details, obtuse connections, fixing to steel structure, intersecting with other light weight fire rated walls in the vertical orientation.



4 EXTENDED SPAN

4.1 General

The purpose of this assessment is to report the applicable use and compliance of Supapanel to maintain its tested Fire Resistance Level when oriented in a horizontal position extending the span from the tested specimen of 3.0m to 6.5m. The strength and ability of the Supapanel is considered to maintain the Fire Resistance Level of the wall system provided.

From the fire testing detailed above, the weakness in the panel occurs in the deflection of the panel joints under pressure. The deflection varied by 10 mm when the wind pressure was increased over the greater 6.5 m length. The greatest deflection occurred during the fire resistance test. It is considered that as the panels increase in size and with the uniform fixing of the joints, the wall is capable to withstand the deflection without failure. Accordingly, the panels, being non-loadbearing, are considered able to maintain their joint and as such maintain the tested fire resistance level for integrity and insulation.

Robert Bird Group undertook structural load testing of the Supapanel on 18 November 2020. It is the nature of the Supapanel core material, being concrete, to have a natural compressive strength. The testing demonstrated an ability for the Supapanel to have the loaded weight up to 6.5m in height without detriment to the established Fire Resistance Level.

4.2 Robert Bird Engineers Report

The following is an extract of reporting form Robert Bird Group based on the testing conducted by Ian Bennie & Associates.

Robert Bird Group – Consulting Structural Engineers, were commissioned from Wall Technologies Pty Ltd to prepare an Interim Structural Design Certificate for the 72 mm Supapanel System maximum height vs wind pressure vs deflection charts based on the available test data and installations tabulated below and derived via methods of theoretical interpolation of testing data.

Robert Bird Group undertook this theoretical desktop assessment and detailed design work for the proprietary installations as specifically tested and reported by Ian Bennie Associates to formulate theoretical interpolations of various spans:

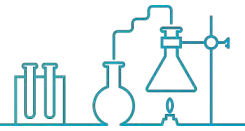
- a. Supapanel Test Report: Supapanel - 0.35BMT/380 kg/m³@3600 Span, Report No. 2021-085-S1- S4 (Amended) dated 3rd February 2022.
- b. Supapanel Test Report: Supapanel - 0.35BMT/380 kg/m³@6000 Span under maximum 300 and 600 Pa testing loads received in January 2022.

The Supapanel wall system used in the 3.6m and 6m high Supapanel testing typically comprised of 2 # 350mm wide core samples combined and interconnected with a half width core each side to form the 3.6m and 6.5m high x 1.0m wide tested system except one testing wall system comprised of 4 # 350mm wide core samples combined with a half width core each side to form the 6.5m high x 1.75m wide tested system. Each core contained 380 kg/m³ density concrete with the screw fixings only installed between panels on the positive pressure face.

The testing report from Ian Bennie & Associates provides an outline for this engineering review undertaken of the wind testing data and how this data was collated to validate the certification of the Supapanel products with 0.35 BMT. The testing application is limited to 3.6 m and 6.5 m maximum height as per the tested panels for the specified 'Safe Working and Ultimate Wind Loads' in the testing reports.

These wind loads have been determined for Region A zones to AS 1170.2-2011 and are not applicable to cyclonic regions.

The testing by Ian Bennie & Associates as well as the evaluation by Robert Bird Group has concluded that the Supapanel has the capacity to maintain its integrity and fixing over a span of 6m when subject to Safe Working and Ultimate Wind Loads.



Further to the wind loading testing of the Supapanel, several jointing options have been considered where the span can be increased to 4m for 62mm panels and 6.5m for 72mm panels. The joints provide the equivalent connection and jointing to the panels and are deemed to present an equivalent level of strength to the wall system, should it be tested.



5 VARIATION TO TESTED PROTOTYPES

5.1 General

The Supapanel 72 mm wall panels have been subjected to testing by Warringtonfire, Pfits and Fire TS Lab. The Supapanel is proposed to be increased in height from the tested system of 3.0m to 6.5 m within the subject installation as well as installed within various connection details.

The purpose of this assessment is to report the applicable use and compliance of the 62 mm and 72 mm thick Supapanel against the requirements of the National Construction Code – Volume One – Building Code of Australia 2022 (BCA) and AS 1530.4-2014 to be used as a non-combustible infill panel wall system where it is to span up to 6.5 m high in a vertical orientation for 72mm panels and 4.0m high for 62mm panels as per Robert Bird Group assessment whilst maintaining its Fire Resistance Level.

This assessment considers the additional span above the tested 3.0m height to a 6.5 m height. A 6.0 m length of Supapanel was tested by Ian Bennie and Associates to AS/NZS 4284:2008 and evaluated by Robert Bird Group in assessment 21626M dated 16 March 2022. Robert Birds assessment indicated the wall system when subjected to substantial wind pressure (at least 250 Pa) that the wall joints did not fail.

During the testing at 1.75 Kpa for the 3.6m length specimen a deflection of 17.3 mm was measured and at 600 pascals for the 6 m length specimen a deflection of 27.4 mm was measured.

AS 1530.4:2014 permits variations to the tested specimen provided no individual component is removed or reduced the increase in the length of a wall of identical construction if the specimen was tested with one vertical edge unrestrained. The following evaluation considers the fire and wind testing of the panels to demonstrate that increasing the panels length to 6.5 m does not present a reduction in performance.

Testing of the wall system in accordance with AS 1530.4-2014 has been undertaken by pfits / Fire TS Lab and documented in their report PF19066 achieved an FRL of at least -/180/60 during testing of the bare 62 mm panel and PF23046 achieved an FRL of at least -/120/120 during testing of the bare 72 mm panel. During the pfits / Fire TS Lab laboratory test a deflection in the order of 160 mm was measured at the peak point of the 240 minute test. It is considered important to note that the Supapanel maintained general integrity over the 240 minutes in this test.

From the above testing, the weakness in the panel occurs in the deflection of the panel joints under pressure. The deflection varied by 10 mm when the wind pressure was increased over the greater 6.5 m length. The greatest deflection occurred during the fire resistance test. It is considered that as the panels increase in size and with the uniform fixing of the joints, the wall can withstand the deflection without failure. Accordingly, the panels, being non-loadbearing, are considered able to maintain the joint strength during exposure to heat and gas as well as wind loading and as such maintain the tested fire resistance level for integrity and insulation.

6 HORIZONTAL INSTALLATION

6.1 General

The purpose of this assessment is to report the applicable use and compliance of Supapanel to maintain its tested Fire Resistance Level when orientated in a horizontal position in lieu of vertical. The strength and ability of the Supapanel is considered to maintain the Fire Resistance Level of the wall system provided the weight of the wall system, in a horizontal orientation, does not increase the deflection of the panel outside of that within the tested system under fire conditions.

From the fire testing detailed above, the weakness in the panel occurs in the deflection of the panel joints under pressure. The deflection varied by 10 mm when the wind pressure was increased over the greater 6.5m length. The greatest deflection occurred during the fire resistance test. It is considered that as the panels increase in size and with the uniform fixing of the joints, the wall is able to withstand the deflection without failure. Additionally, the panels, being non-loadbearing, are considered able to maintain the integrity in the joint of wall system and as such maintain the tested fire resistance level for integrity and insulation.

Robert Bird Group undertook structural load testing of the Supapanel on 18 November 2020. It is the nature of the Supapanel core material, being concrete, to have a compressive strength. The testing demonstrated an ability for the Supapanel to have the loaded weight up to 6.5m in span without detriment to the established Fire Resistance Level.

6.2 Supapanel Testing

The following is an extract of reporting form Robert Bird Group based on the testing conducted by Ian Bennie & Associates.

Robert Bird Group – Consulting Structural Engineers, were commissioned by Wall Technologies Pty Ltd to prepare an Interim Structural Design Certificate for the 72mm Supapanel System maximum height vs wind pressure vs deflection charts based on the available test data and installations tabulated below and derived via methods of theoretical interpolation of testing data.

Robert Bird Group undertook this theoretical desktop assessment and detailed design work for the proprietary installations as specifically tested and reported by Ian Bennie Associates to formulate theoretical interpolations of various spans:

- a. Supapanel Test Report: Supapanel - 0.35BMT/380 kg/m³@3600 Span, Report No. 2021-085-S1-S4 (Amended) dated 3rd February 2022.
- b. Supapanel Test Report: Supapanel - 0.35BMT/380 kg/m³@6000 Span under maximum 300 and 600 Pa testing loads received in January 2022.

The Supapanel wall system used in the 3.6m and 6m high Supapanel testing typically comprised of 2 # 350mm wide core samples combined and interconnected with a half width core each side to form the 3.6m and 6.5m high x 1.0m wide tested system except one testing wall system comprised of 4 # 350mm wide core samples combined with a half width core each side to form the 6.5m high x 1.75m wide tested system. Each core contained 380kg/m³ density concrete with the screw fixings only installed between panels on the positive pressure face.

The testing report from Ian Bennie & Associates provides an outline for this engineering review undertaken of the wind testing data and how this data was collated to validate the certification of the Supapanel products with 0.35mm BMT steel shell. The testing application is limited to 3.6m and 6.5m maximum height as per the tested panels for the specified 'Safe Working and Ultimate Wind Loads' in the testing reports. These wind loads have been determined for Region A zones to AS 1170.2-2011 and are not applicable to cyclonic regions.

The testing by Ian Bennie & Associates as well as the evaluation by Robert Bird Group has concluded that the Supapanel has the capacity to maintain its integrity and fixing over a span of 6m when subject to Safe Working and Ultimate Wind Loads.

Further to the wind loading testing of the Supapanel, several jointing options have been considered where the span can be increased to 4m and 6.5m. The joints provide the equivalent



connection and jointing to the panels and are deemed to present an equivalent level of strength to the wall system, should it be tested.

7 DIRECT FIELD OF APPLICATION

The results of the fire test contained in this test report are directly applicable to similar constructions of the subject wall. Variations in building elements that are not minor will require re-testing.

This report is by an Accredited Testing Laboratory, IAS accreditation TL-1162 and serves as a certificate from a signatory of an Accredited Testing Laboratory and professional engineer in accordance with Clause A5G3 (1)(d) and A5G3 (1)(e) of the BCA Volume 1. Assurance holds accreditation to AS 1530.4- 2014, AS 4072.1-2005 with IAS, being the International Accreditation service, a signatory to the Mutual Recognition Agreement (MRA) under the International Laboratory Accreditation Cooperation.

Fire TS Lab is accredited with IANZ and recognised by NATA through a mutual recognition agreement under the International Laboratory Accreditation Cooperation.



8 PROPOSED VARIATIONS

8.1 INTRODUCTION

The BCA sets the requirements for fire doors to comply with AS 1905.1: 2015. Clause 1.4.13 which details that the nominal grading period, in minutes, that is determined by subjecting a specimen to the standard time temperature curve regime as set out in AS 1530.4: 2014. Clause 1.4.17 details full-scale testing whilst Clause 1.4.25 details pilot-fire tests where the furnace opening is not less than 1000mm x 1000mm and the minimum clear opening size of 800 mm x 800mm. The normative section of AS 1905.1: 2015 being section 3 sets the determination of fire resistance by testing a specimen door set in accordance with the fire resistance test specified in AS 1530.4: 2014.

The TVC-Core doorset has been tested numerous times to AS 1530.4: 2014 and established a consistent FRL of -/120/30. The 72mm Supapanel has been tested and considered to achieve a Fire Resistance Level of -/120/120.

Section 4 of AS 1905.1: 2015 sets variations from the tested specimen. Clause 4.4(a) details the following criteria to trigger a retest of the system. This includes:

- More severe deflection characteristics than the previously tested wall;
- Different frame and wall mounting details on the proposed wall that may be detrimental to the FRL of the door set; and
- Achieved a lower required FRL

The proposed wall system includes the same framing system with the only difference being the physical materials being the installation of the 72mm Supapanel in lieu of a lightweight wall system or Hebel wall system. The requirements of AS 1905.1: 2015 and the testing relate to the door and wall framing,

accessories and the door itself. The material of the wall system is not a direct criterion established under AS 1905.1: 2015.

As such the criteria to confirm variations in the wall design is as follows:

- The wall framing and connection to the door frame is to be equivalent
- The wall system is to achieve an equivalent Fire Resistance Level.

The proposed Supapanel system has an equivalent wall framing and connection to the door frame. The proposed Supapanel wall system achieves an FRL of at least -/120/120 being equivalent to that of the tested system with the TVC-Core door set.

8.2 Testing, Evaluation and Compliance

8.2.1 Tested 72 mm System

| | |
|-----------------------------------|-----|
| 72 mm Supapanel | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 120 |
| TVC-Core Door and Frame | |
| CSIRO FCO-2872 August 2019 | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 30 |



8.3 Conclusion

The following clauses of the BCA (including all related State and Territory variations) have been evaluated and identified as being complied with should the full wall and door system be tested:

- Specification C3.4 Fire Doors, Smoke Doors, Fire Windows and Shutters
- Performance Requirement CP2
- Clause 2 Fire Doors

A required fire door must

- a. Comply with AS 1905.1: 2015; and
- b. Not fail by radiation through any glazed part during the period specified for integrity in the required FRL.

The evaluation wall and door system comply with the following:

| | |
|----------------------------|-----|
| 72 mm Supapanel | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 120 |
| TVC-Core Door and Frame | |
| CSIRO FCO-2872 August 2019 | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 30 |

9 DOOR EVALAUTION – 60 MIN IN 62 MM WALL SYSTEM

9.1 Door Assessment Objective

The purpose of this assessment is to report the applicable use and compliance of the Fire core TVC30 refractory core panel door to be installed within the Supapanel intertenancy walls have apertures if fire rated boundary wall system against the requirements of the National Construction Code - Volume One - Building Code of Australia 2022 (BCA) as well as AS 1905.1-2015.

The FireCore TVC30 doorset has been tested in accordance with the requirements of AS 1530.4:2014 within a 64mm steel stud dual wall and shaft liner wall system using fire grade plasterboard wall elements and Steel structural elements. This is documented in CSIRO test report FSV 1870 to AS 1530.4:2014 being a full scale test and FSP 1143 to AS 1530.4:2014 being a pilot test where the TVC 30 door achieved an FRL of at least -/60/30.

The FireCore TVC30 doorset has been tested in accordance with the requirements of AS 1530.4 as well as AS 1905.1-2015. This is documented in CSIRO test report FSV 1001. The FireCore TVC 30 door achieved an FRL of at least -/60/60.

When subjected to the test conditions of AS1530.4:2005 the test specimen achieved an FRL -/60/30. Only minor differences exist between AS1530.4:2005 and AS1530.4:2014 test procedures which have no detrimental impact on the test specimen for compliance against AS1530:2014.

In accordance with the National Construction Code Volume One Building Code of Australia 2022 Clause S1C2(b) that the prototype that has been submitted to the Standard fire test being AS 1530.4:2005 which is an equivalent test to AS 1530.4:2014.

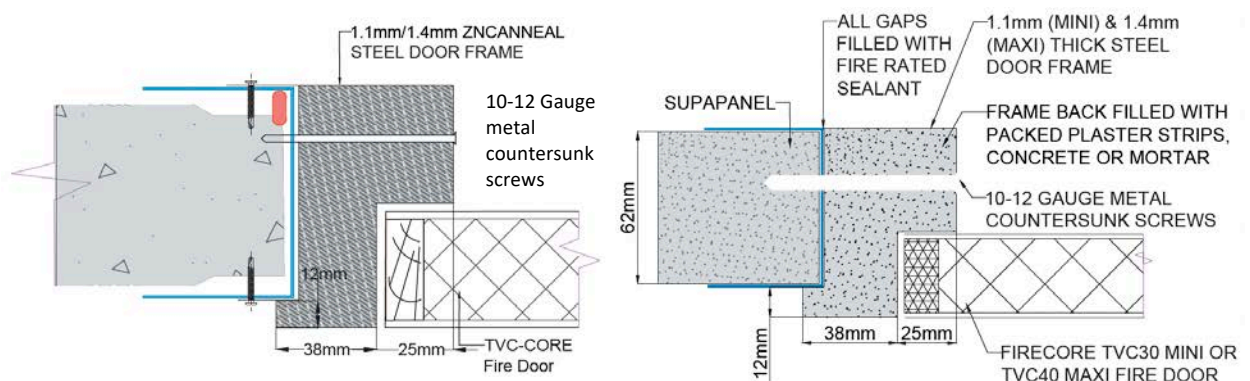
Supapanel has been tested in accordance with the requirements of AS 1530.4:2014 in test report FRT190206 R1.0 dated 6 August 2019 as well as test report FRT 190207 R1.0 dated 25 September 2019.

This evaluation reviews the inclusion of the FireCore TVC30 doorset within the Supapanel system. The TVC 30 fire door as well as its frame and fixings will be equivalent to the tested system and its inclusion within the Supapanel system.

9.2 Product Installation

The proposed wall and door system includes the 62mm Supapanel system and the TVC-30 door. The tested wall and door system is detailed below.

FIGURE 3:
MAXIMUM SPAN BETWEEN SUPPORTS WALLS 4.0 M



9.3 National Construction Code Compliance

The following clauses of the BCA (including all related State and Territory variations) have been evaluated and identified as being complied with:

- Specification 12 Fire Doors, Smoke Doors, Fire Windows and Shutters
- Performance Requirement CP2

- Clause 2 Fire Doors

A required fire door must

(a) Comply with AS 1905.1: 2015; and

(b) Not fail by radiation through any glazed part during the period specified for integrity in the required FRL.

The evaluated wall and door system complies with the following:

| | |
|--------------------------------------|----|
| 72 mm Supapanel | |
| Structural Adequacy | - |
| Integrity | 60 |
| Insulation | 60 |
| <hr/> | |
| TVC-Core Door and Frame | |
| CSIRO FCO-3292 dated 4 February 2018 | |
| Structural Adequacy | - |
| Integrity | 60 |
| Insulation | 30 |

9.4 Application

From the above testing and evaluation of the TVC-30 door and associated frame can be used in a nonloadbearing wall being the 62mm Supapanel system where an FRL of at least -/60/60 is required as well as a fire door achieving an FRL of at least -/60/30. The door, wall and framing system is to be installed as per the following figure.

The c-track forming the opening for the door is screwed through the frame on each side into the panels at 350mm centres starting a 100 mm from the floor. The floor track is to be screwed into the door jamb track where they cross.

FIGURE 4:

MAXIMUM SPAN BETWEEN SUPPORTS WALLS 3.6 METERS

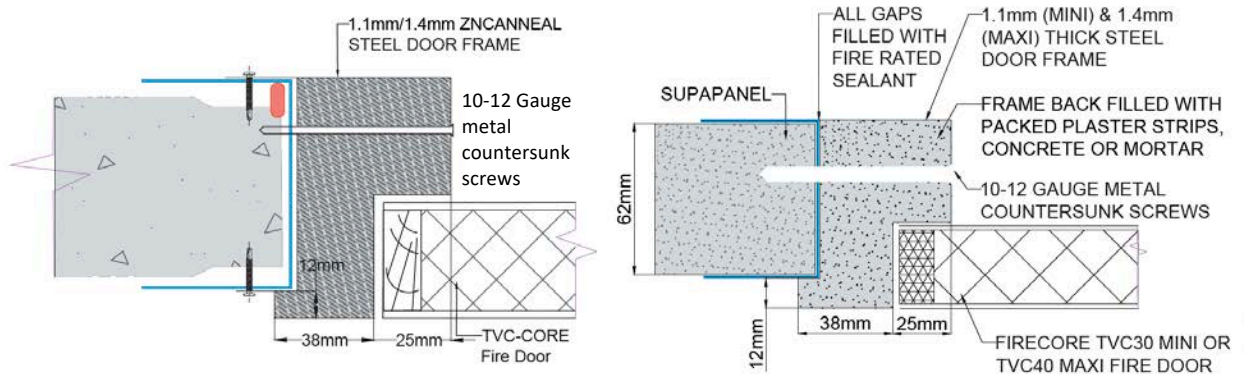
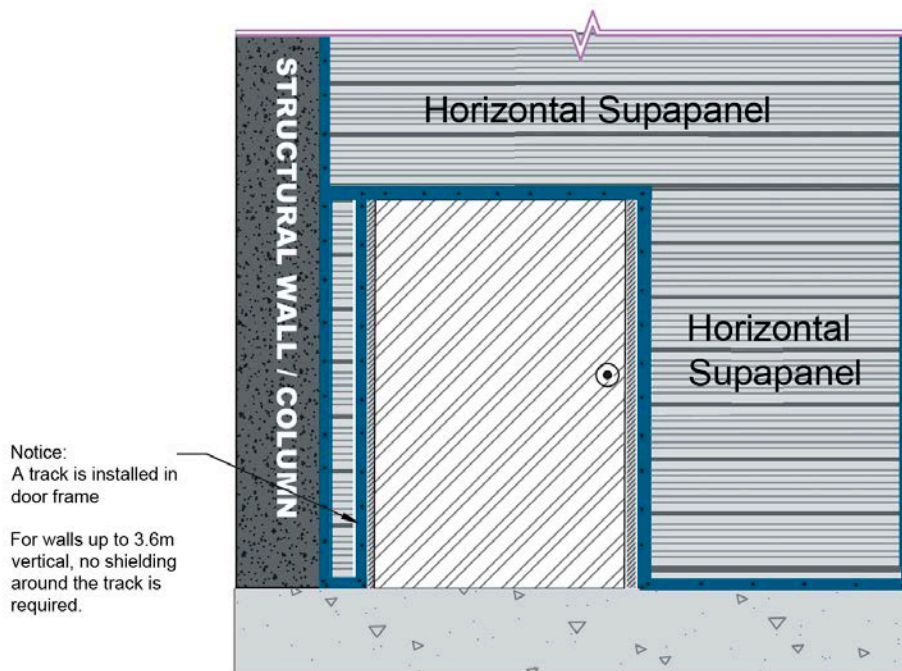
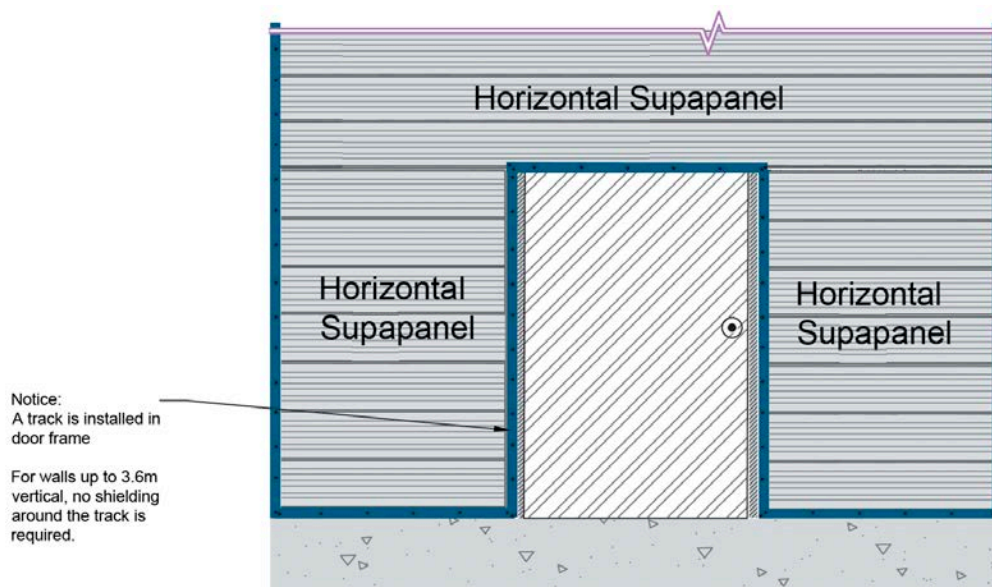


FIGURE 5:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 6:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 7:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

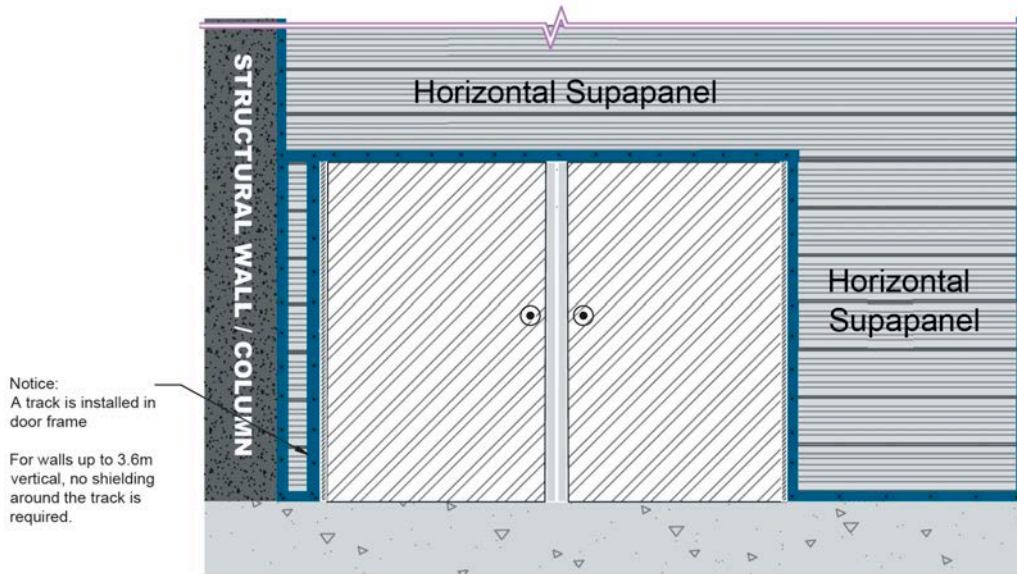


FIGURE 8:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

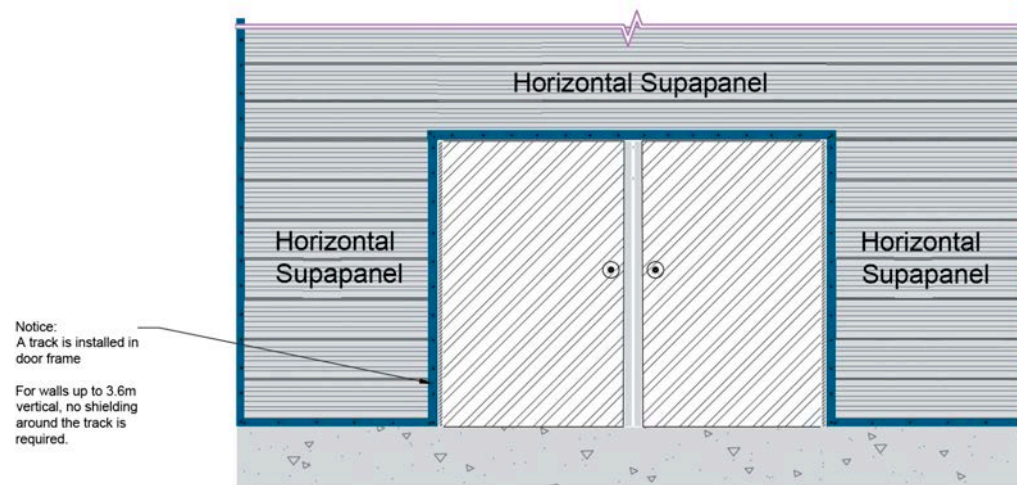


FIGURE 9:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

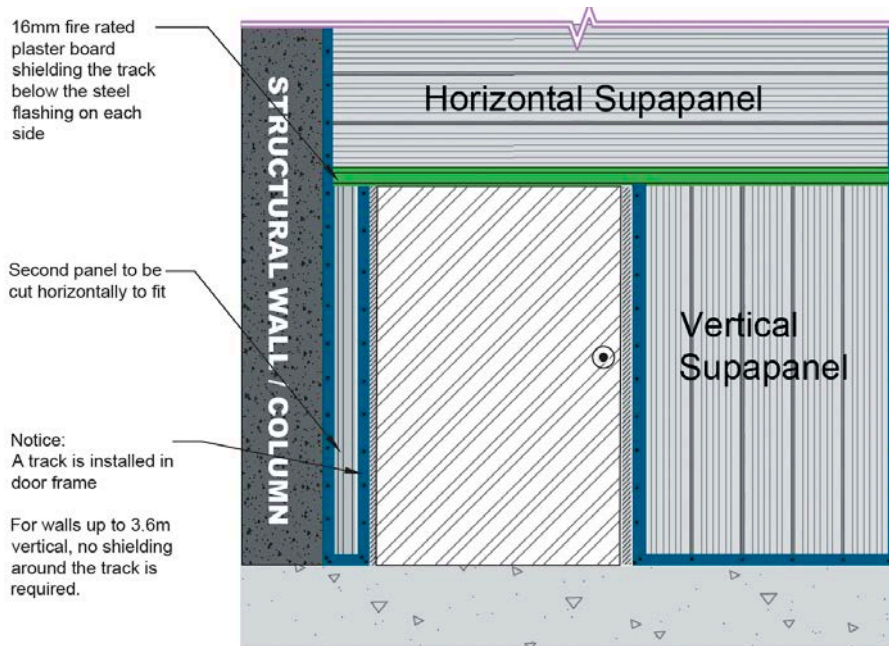
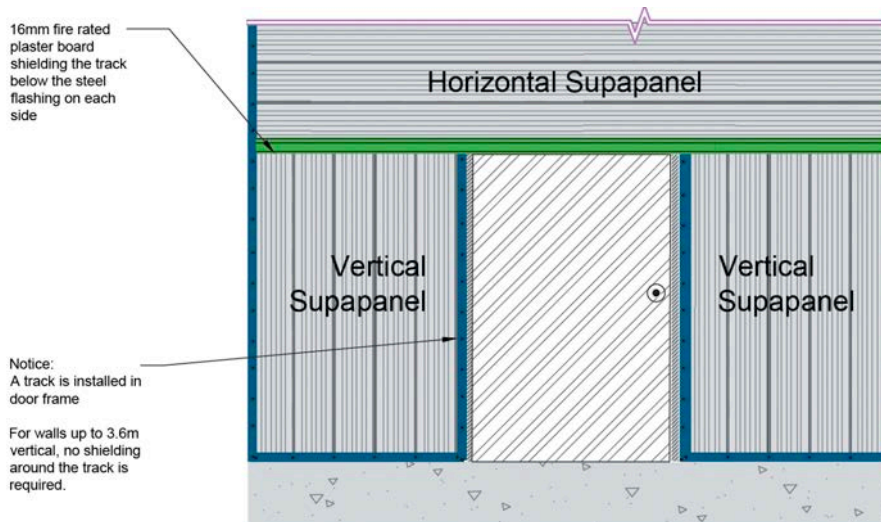


FIGURE 10:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 11:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

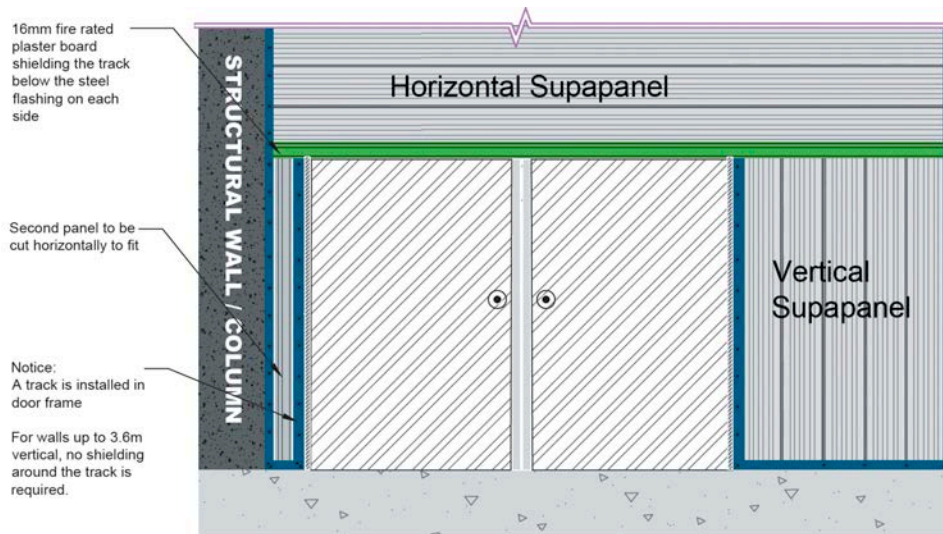
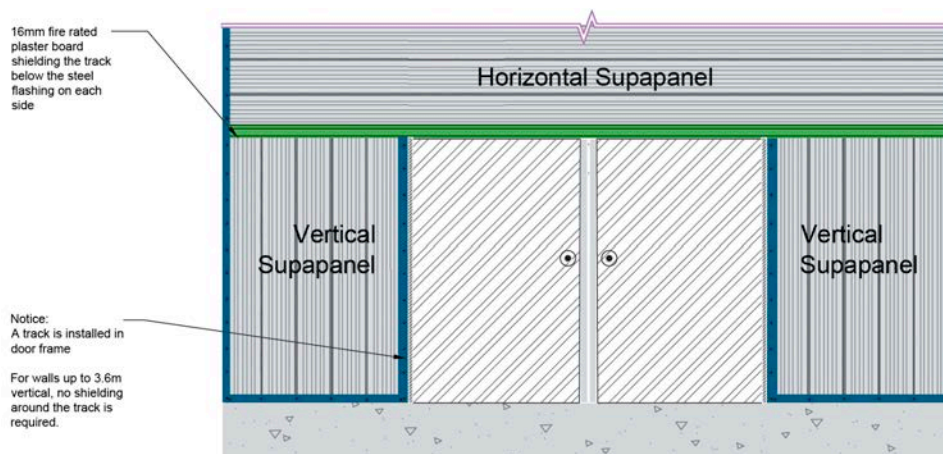


FIGURE 12:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 13:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

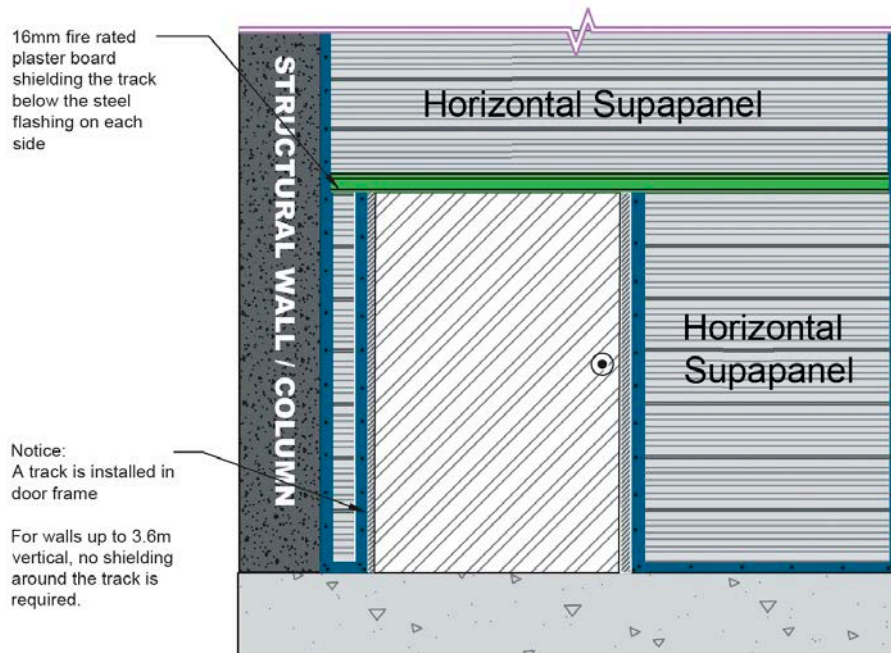
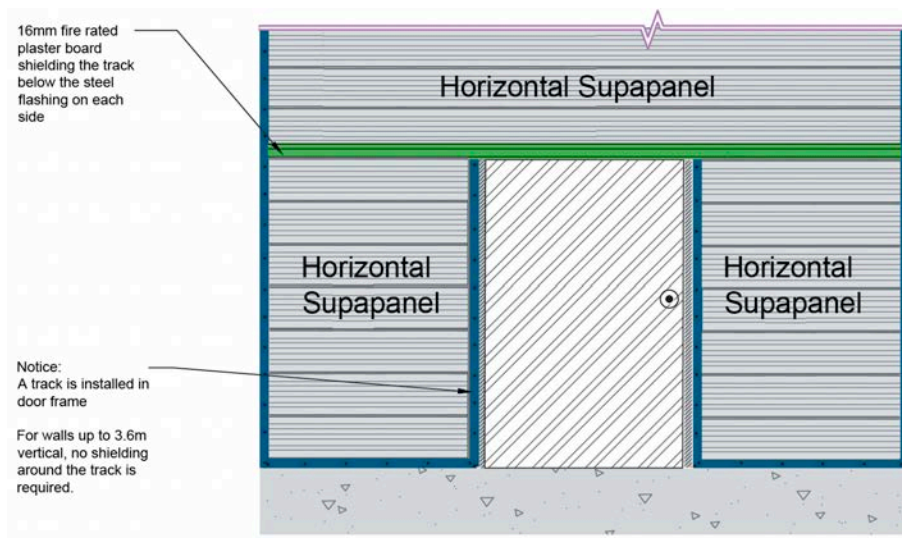


FIGURE 14:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 15:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

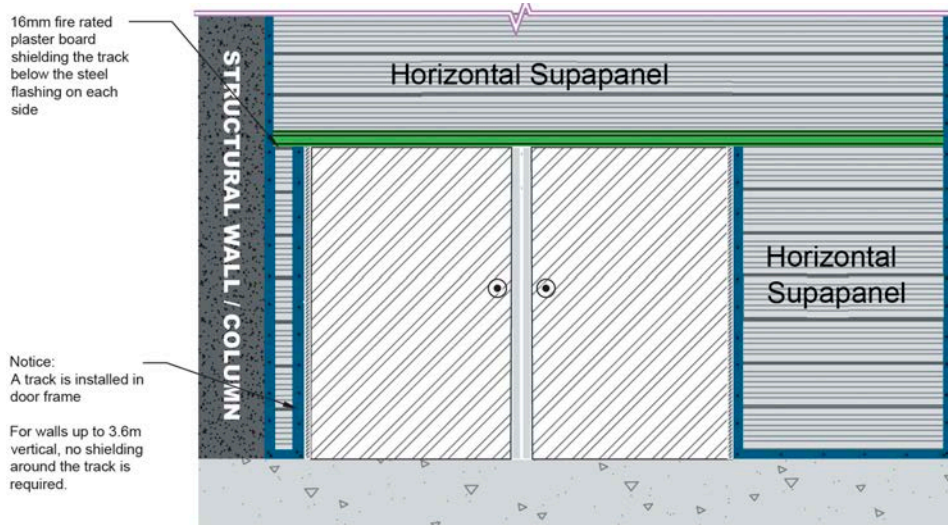


FIGURE 16:
SUBJECT WALL, DOOR AND FRAMING SYSTEM MAXIMUM SPAN 4.0 M UNLIMITED HEIGHT

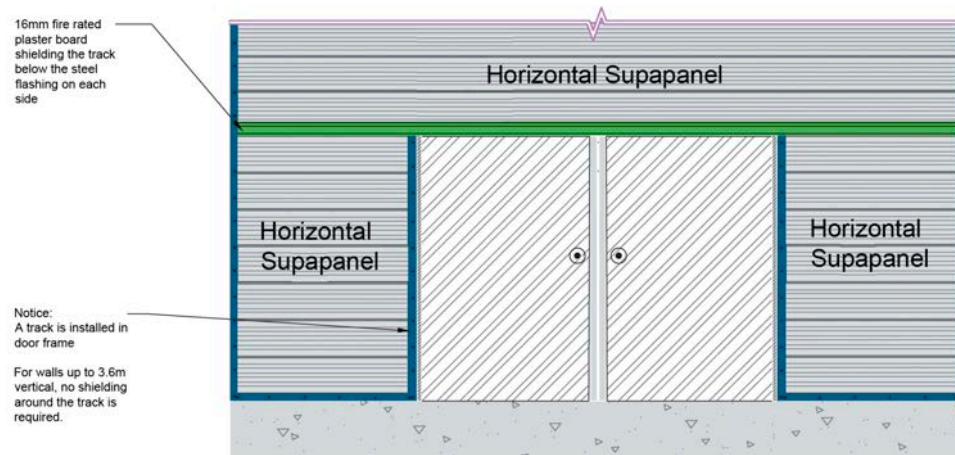
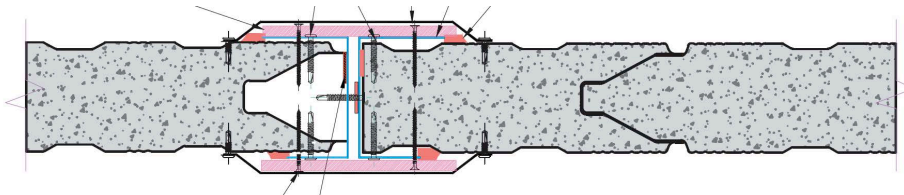


FIGURE 17:
SUBJECT WALL, DOOR AND FRAMING SYSTEM – JOINT COVER DETAIL



10 DOOR EVALAUTION – 120 MIN IN 72 MM WALL SYSTEM

10.1 Door Assessment Objective

The purpose of this assessment is to report the applicable use and compliance of the Firecore TVC refractory core panel door to be installed within the Supapanel intertenancy walls have apertures if fire rated boundary wall system against the requirements of the National Construction Code - Volume One - Building Code of Australia 2022 (BCA) as well as AS 1905.1-2015.

The FireCore TVC-Core doorset has been tested in accordance with the requirements of AS 1530.4: 2014 within multiple walls. This is documented in CSIRO test reports FCO-2872 Rev F August 2019 which evaluates a number of wall variations for the Firecore TVC-Core fire doors within a -/120/30 Fire Resistance Level wall system.

The FireCore TVC-Core doorset has been tested in accordance with the requirements of AS 1530.4: 2014 within a number of wall system that achieves an FRL of at least -/120/120. This is documented in CSIRO test report FCO-2872. The FireCore TVC-Core door achieved an FRL of at least -/120/30.

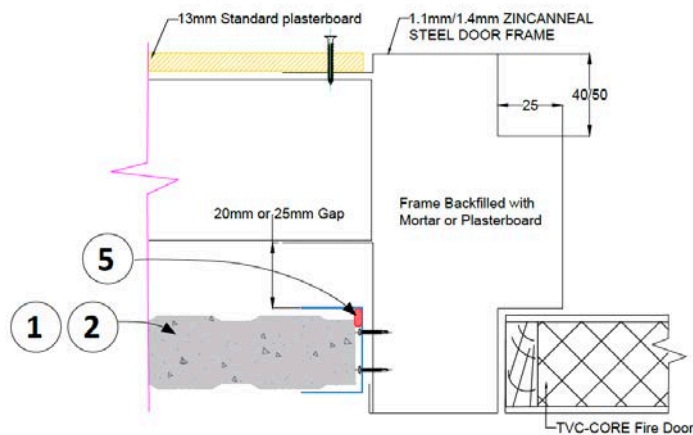
This evaluation reviews the substitution of the tested wall systems being the CSR partywall, the Boral wall system and AAC wall systems for the Supapanel wall system. The TVC-Core fire door as well as its frame and fittings will be equivalent to the tested system for installation into the wall system.

10.2 Product Installation

The proposed wall and door system includes the 72mm Supapanel intertenancy wall and the TVC-Core door. The tested wall and door system is detailed below.

FIGURE 18:

SUPERPANEL WALLS UP TO 4M IN HEIGHT
WALLS WITH MAXIMUM SPAN BETWEEN SUPPORTS 3.6 M



10.3 National Construction Code Compliance

The following clauses of the BCA (including all related State and Territory variations) have been evaluated and identified as being complied with:

- Specification C3.4 Fire Doors, Smoke Doors, Fire Windows and Shutters
- Performance Requirement CP2
- Clause 2 Fire Doors

A required fire door must

(a) Comply with AS 1905.1: 2015; and

(b) Not fail by radiation through any glazed part during the period specified for integrity in the required FRL.

The evaluated wall and door system complies with the following:

| | |
|----------------------------|-----|
| 72 mm Supapanel | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 120 |
| <hr/> | |
| TVC-Core Door and Frame | |
| CSIRO FCO-2872 August 2019 | |
| Structural Adequacy | - |
| Integrity | 120 |
| Insulation | 30 |

10.4 Application

From the above testing and evaluation of the TVC-Core door and associated frame can be used in a nonloadbearing wall being the 72mm Supapanel system where an FRL of at least -/120/120 is required as well as a fire door achieving an FRL of at least -/120/30. The door, wall and framing system is to be installed as per the following figure.

The c-track forming the opening for the door is screwed through the frame on each side into the panels at 350mm centres starting a 100 mm from the floor. The floor track is to be screwed into the door jamb track where they cross.

FIGURE 19:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
WALLS WITH SPAN GREATER THAN 3.6M UP TO MAXIMUM SPAN 6.5 M

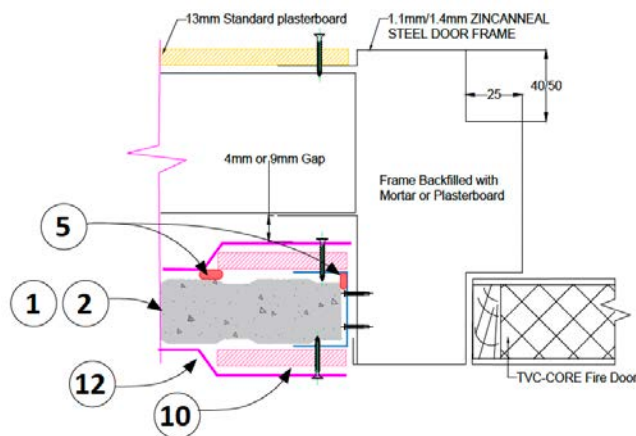


FIGURE 20:
 SUBJECT WALL, DOOR AND FRAMING SYSTEM - ALTERNATIVE 1
 WALLS WITH SPAN GREATER THAN 3.6M UP TO MAXIMUM SPAN 6.5 M

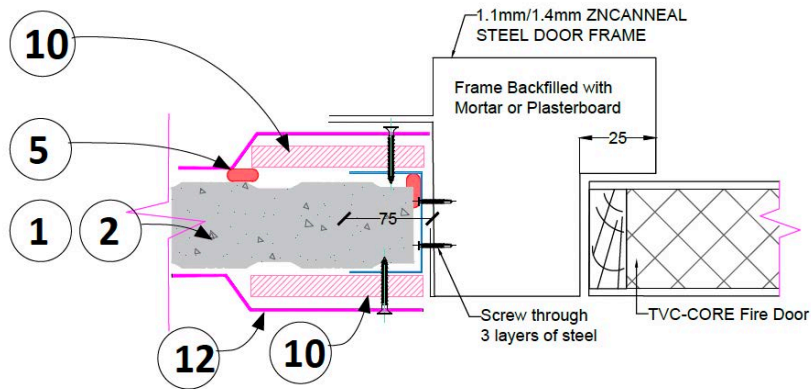


FIGURE 21:
 SUBJECT WALL, DOOR AND FRAMING SYSTEM.- ALTERNATIVE 2
 WALLS WITH SPAN GREATER THAN 3.6M UP TO MAXIMUM SPAN 6.5 M

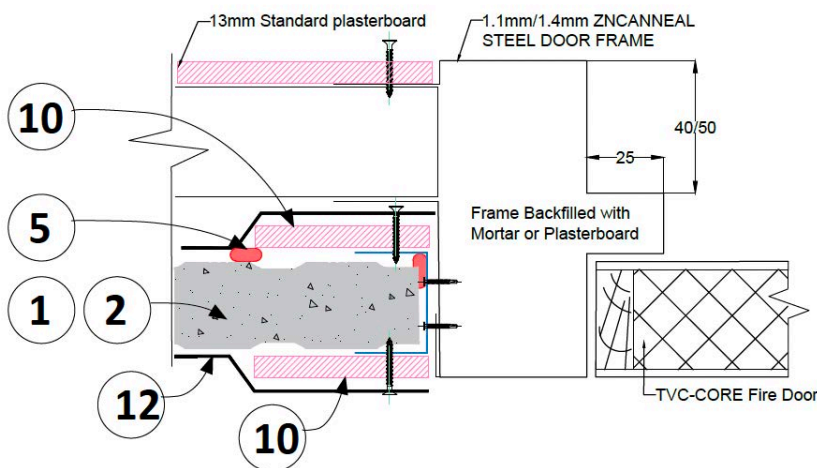
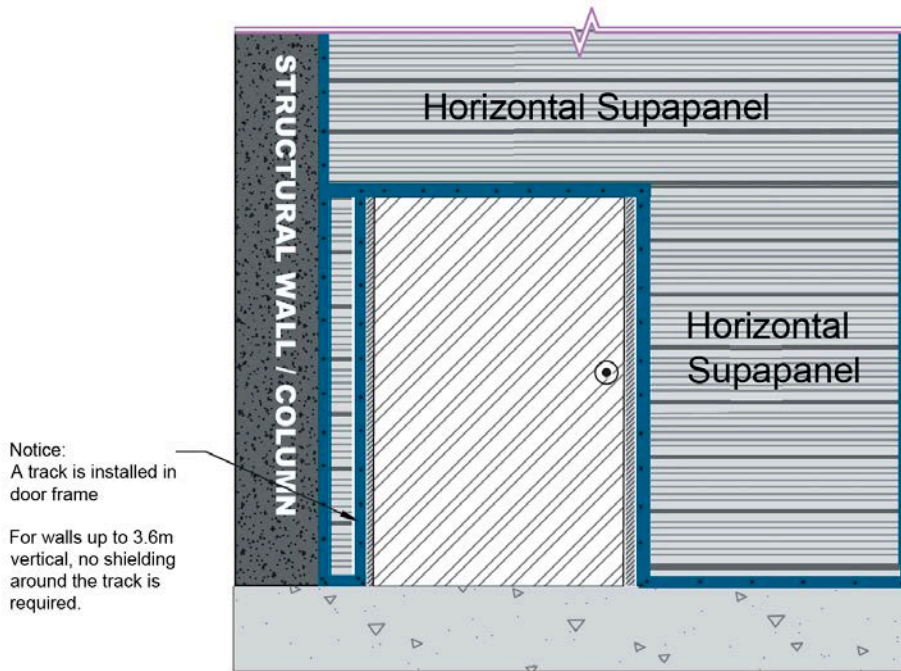
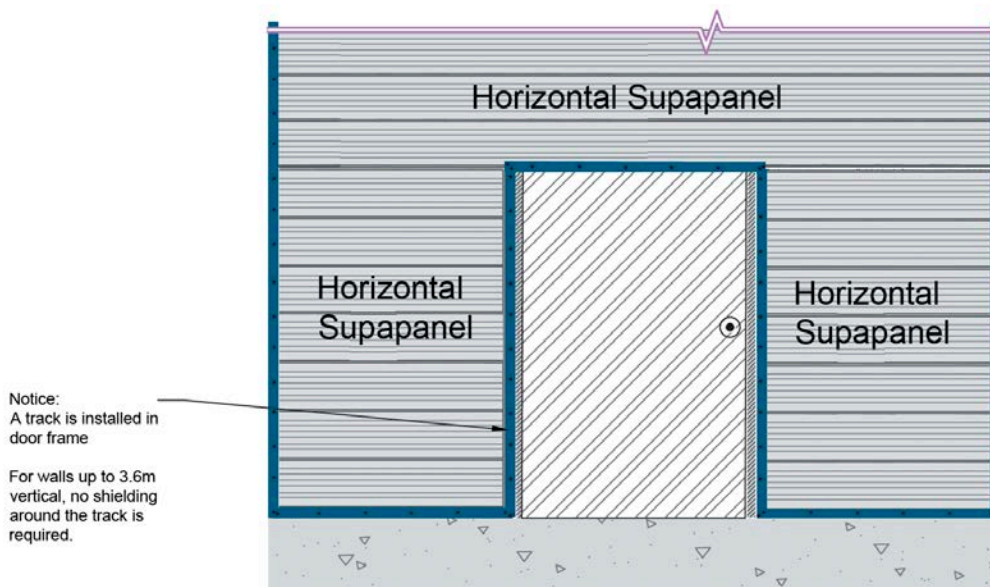


FIGURE 22:
 SUBJECT WALL, DOOR AND FRAMING SYSTEM
 72 MM SUPAPANEL UP TO 3.6 M SPAN UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 23:
 SUBJECT WALL, DOOR AND FRAMING SYSTEM
 72 MM SUPAPANEL UP TO 3.6 M SPAN UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 24:
SUBJECT WALL, DOOR AND FRAMING SYSTEM UNLIMITED HEIGHT

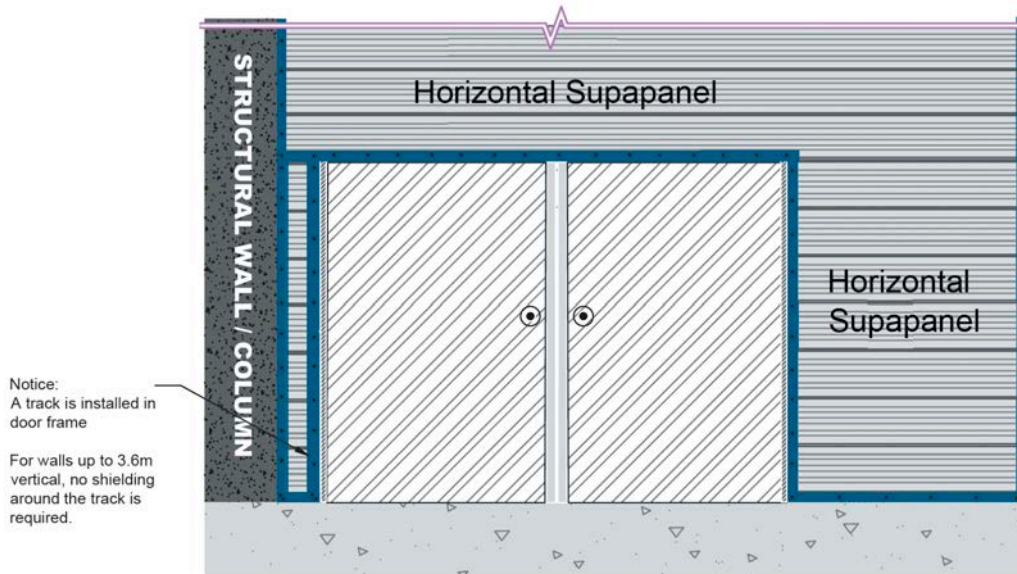


FIGURE 25:
SUBJECT WALL, DOOR AND FRAMING SYSTEM UNLIMITED HEIGHT

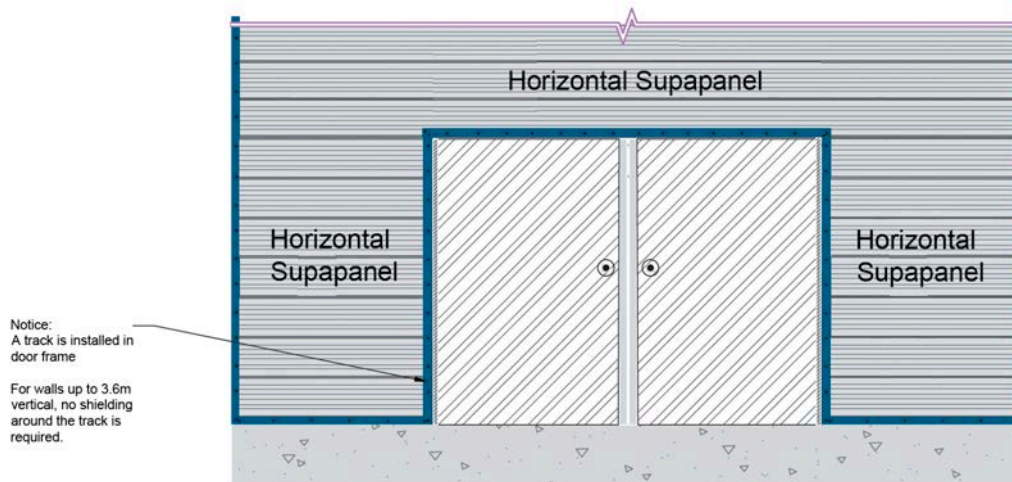
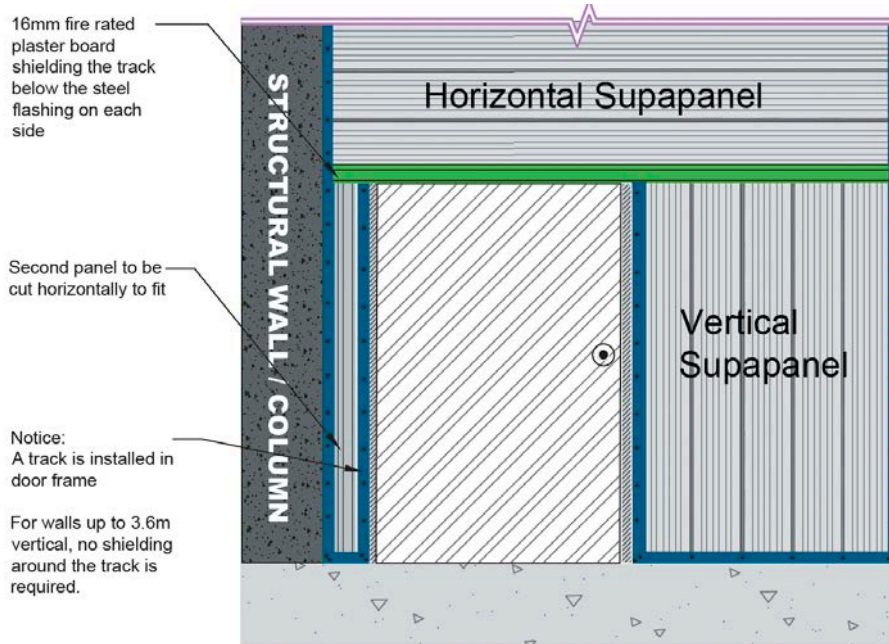
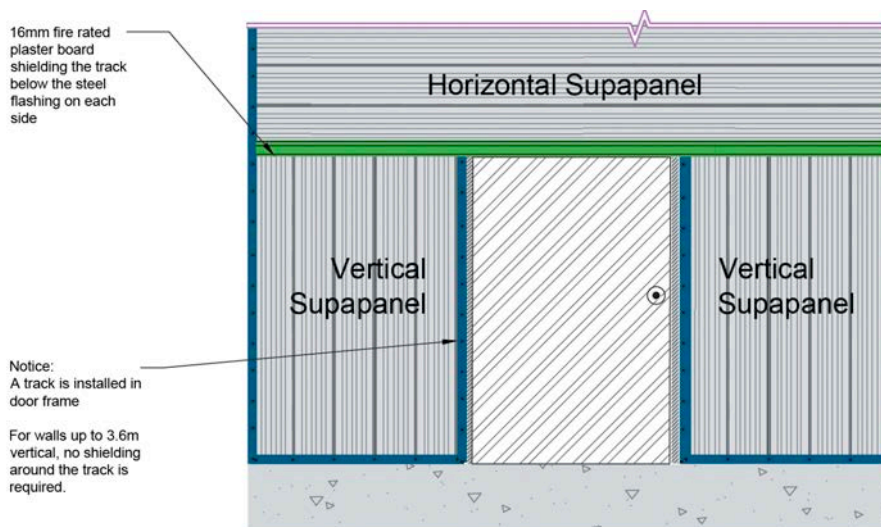


FIGURE 26:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT


FIGURE 27:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 28:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT

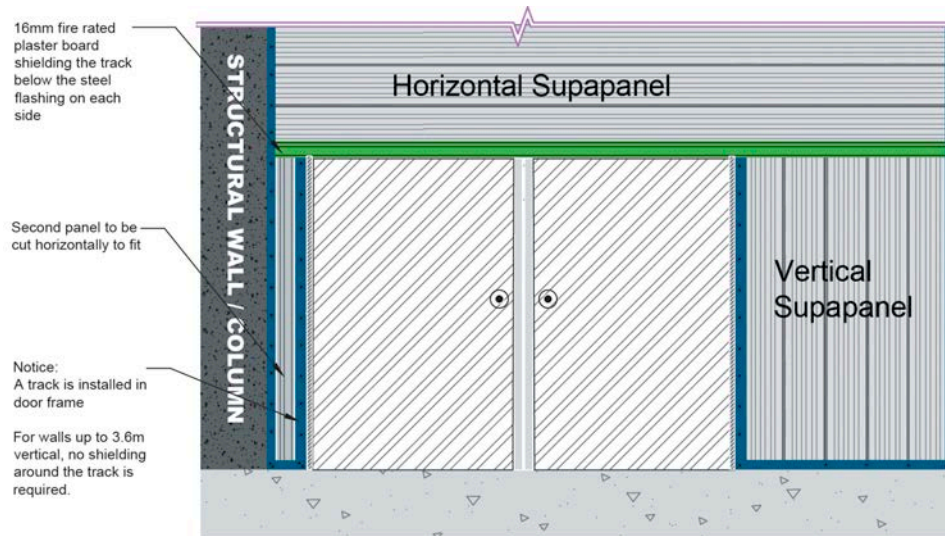
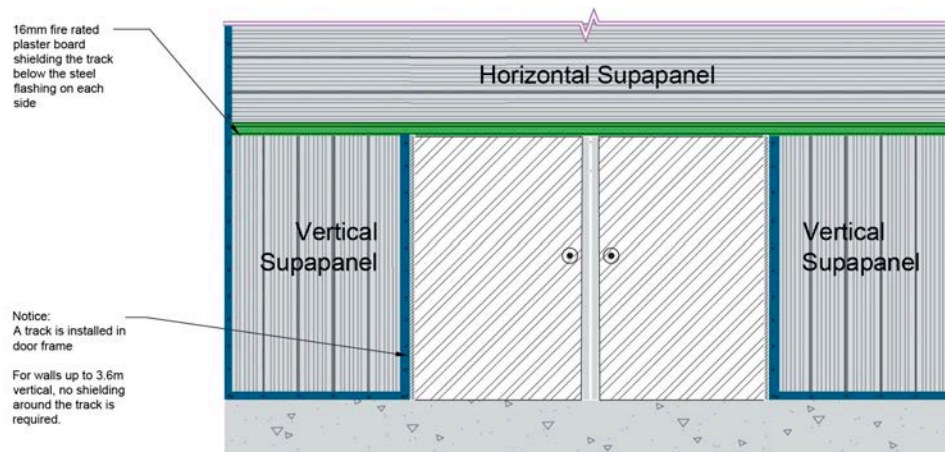


FIGURE 29:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 30:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT

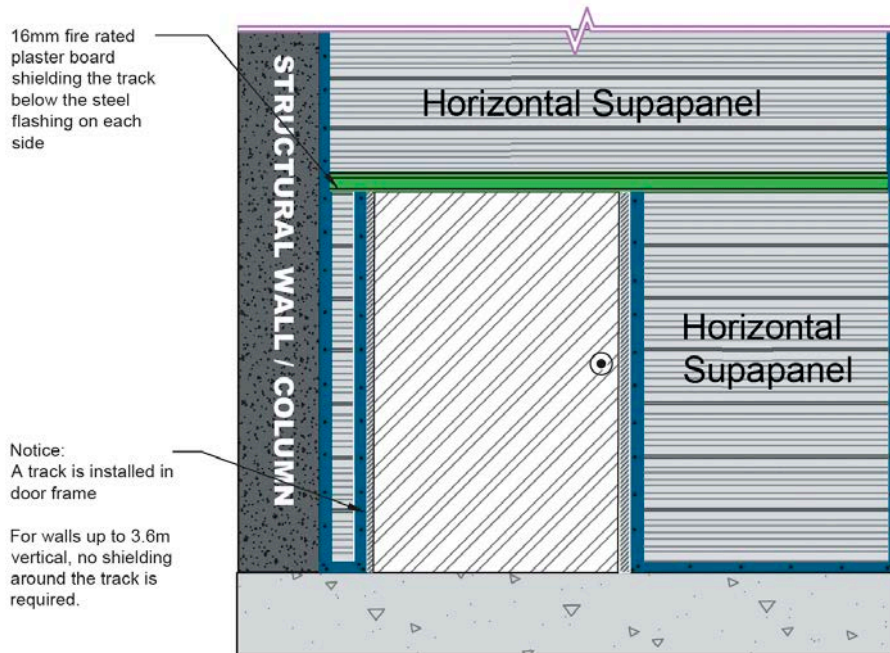
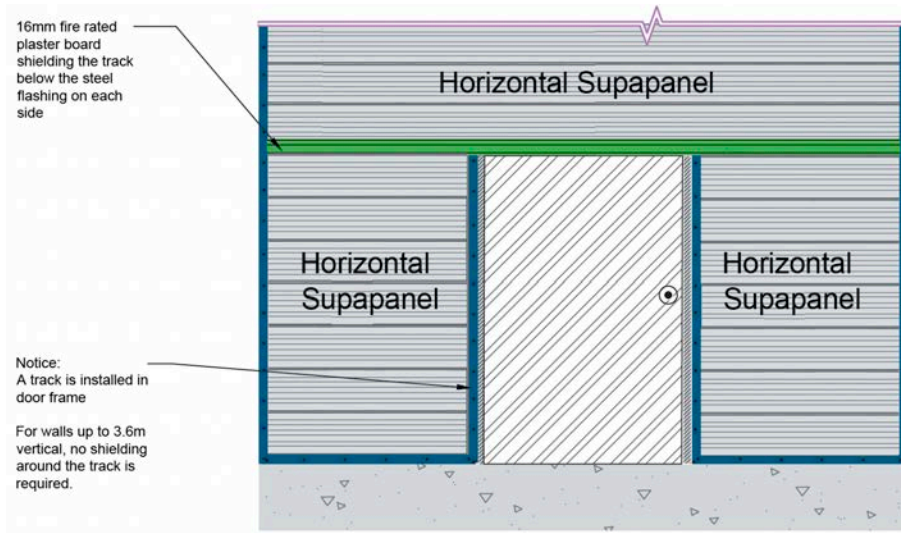


FIGURE 31:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT



- Screws at 250mm centres both sides of door frames
- Horizontal panel to sit in top track
- Fix into panel joints through track on door frames

FIGURE 32:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT

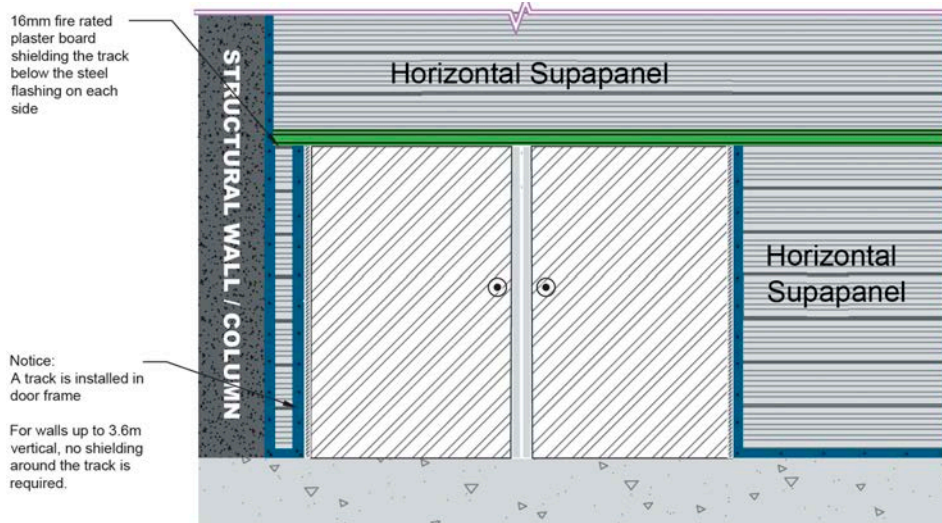


FIGURE 33:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M UNLIMITED HEIGHT

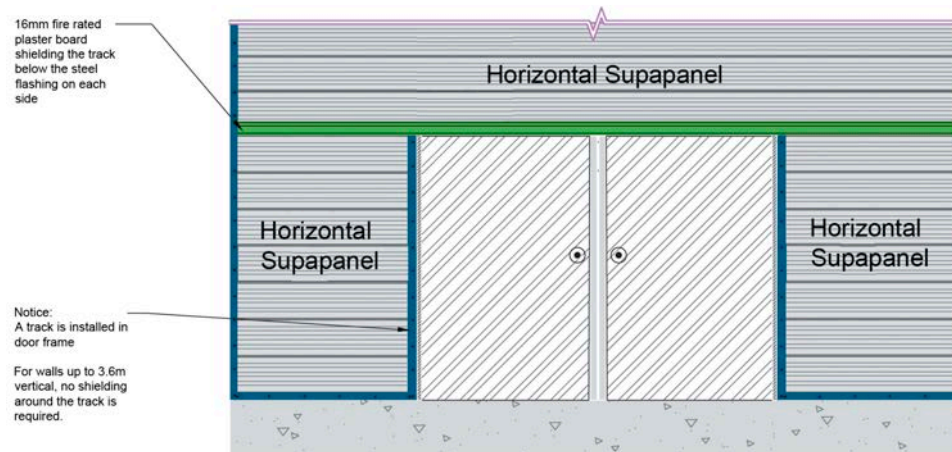
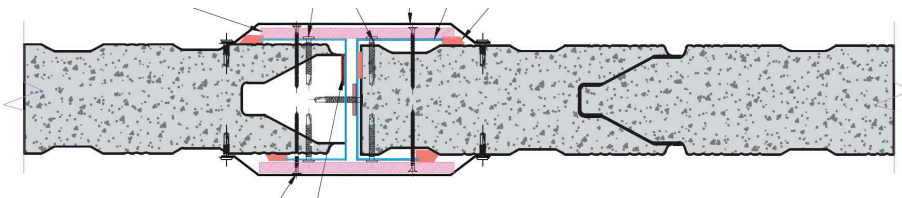


FIGURE 34:

SUBJECT WALL, DOOR AND FRAMING SYSTEM
72 MM SUPAPANEL SPAN GREATER THAN 3.6 M UP TO 6.5 M



11 PASSIVE PRODUCT EVALUATION

11.1 General

The purpose of this assessment is to report the applicable use and compliance of the 72mm and 62mm wide Supapanel against the requirements of the National Construction Code – Volume One – Building Code Testing of the wall system in accordance with AS 1530.4-2014 has been undertaken by FireTSLab laboratory and documented in their report PF23046 achieved an FRL of at least -/120/120 during testing of the raw 72mm panel.

Testing of the wall system in accordance with AS 1530.4-2014 has been undertaken by FireTSLab laboratory and documented in their report PF19066 achieved an FRL of at least -/180/60 during testing of the raw 62mm panel. Warringtonfire undertook a series of development and prototype tests on the 62mm panel in a raw application as well as within a pilot wall with a layer of 16mm fire grade plasterboard.

A number of passive fire penetration treatments are required to have a layer of fire grade plasterboard to maintain the required Fire Resistance Level. The initial development test demonstrated the ability for the Supapanel to achieve an ongoing ability to maintain general integrity for greater than 4 hours as well as the method and process of thermal transmission through the joints in which the insulation criteria fails.

A additional pilot testing was undertaken by Warringtonfire in their report FRT200129 the 62mm Supapanel wall system with a 16mm plasterboard liner. The specimen achieved no failure of integrity and resulted in insulation failure at 165 minutes. The resultant FRL is determined by Warringtonfire to be -/180/120.

Various penetrations are proposed for a building to be installed within the 72 mm Supapanel as well as within the Promaseal Batt. The penetrations include the following to satisfy a Fire Resistance Level of at least -/120/120. The cables are considered for copper only in accordance with AS 1530.4:2014.

- 3 x 2.5 mm Cable (PVC Sheathed)
- 150 x 50 mm Cable Tray with D1 and/or D2 Config. Cables
- Up to Power Cable up to 3 x 3C+ E 20mm
- Up to 20 mm PEX Pipe
- Up to 25 mm PEX Pipe
- Up to 150 mm uPVC Pipe
- Up to 100 mm uPVC Pipe
- Up to 110 mm HDPE Pipe
- Up to 25 mm NBN Conduit
- HiFire 1B Damper
- Up to 50 mm Gal Pipe through Supapanel or Promaseal Batt
- Up to 50 mm or 80 mm Copper Pipe through Supapanel or Promaseal Batt
- Boss UniWrap or Reply intumescent strips
- Boss Firematic 300
- Promat Promaseal
- Promat Promastop UniCollars or Multicollars
- HB Fuller FireSound Fire Rated Acoustic Sealant
- HB Fuller FulaFlex FR Hybrid Polymer Fire Rated Sealant

Installer of passive fire products to verify correct installation to respective manufacturers requirements.

TABLE 7:
PIPES CABLES AND THROUGH SUPAPANEL

| Material identification and product name | Penetration Type | | FRL |
|--|--|------|-----------|
| PROMASEAL A Acrylic sealant 30mm cone and PROMASEAL Supawrap | 3 x 2.5mm cable (PVC sheathed) | A.1 | -/120/120 |
| Boss Fire Mastic 300 | 3 x 2.5mm cable (PVC sheathed) | A.1 | -/120/120 |
| PROMASEAL Bulkhead Batt and PROMASEAL Supawrap | 150 x 50mm cable tray with D1 and/or D2 Config Cables | A.2 | -/120/120 |
| Boss FireMastic 300 and Boss Thermal defence wrap | 150 x 50mm cable tray with D1 and/or D2 Config Cables | A.2 | -/120/90 |
| PROMASEAL A Acrylic sealant 30mm cone and PROMASEAL Supawrap | Power Cable up to 3 x 3C+E 20mm | A.3 | -/120/120 |
| Boss Fire Mastic 300 and Boss Thermal defence wrap | Power Cable up to 3 x 3C+E 20mm | A.3 | -/120/120 |
| PROMASEAL Conduit collar (CFC32) | 20mm Pex Pipe | A.4 | -/120/120 |
| Boss Fire Mastic HPE or Boss FireMastic | 300 20mm Pex Pipe | A.4 | -/120/120 |
| PROMASEAL Conduit collar (CFC32) | 25mm Pex Pipe | A.5 | -/120/120 |
| Promastop Unicollar plus Armaflex | 50-70 mm Pex-Al-Pex | A.6 | -/120/30 |
| PROMASEAL Retrofit collar (FC150) | 150mm uPVC pipe | A.7 | -/120/120 |
| PROMASEAL Retrofit collar (FC100) | 100mm uPVC pipe | A.8 | -/120/120 |
| Boss Maxi Collar | 100mm uPVC pipe | A.8 | -/120/120 |
| PROMASEAL Retrofit collar (FC100) | 110mm HDPE pipe | A.9 | -/120/120 |
| PROMASEAL Conduit collar (CFC32) | Up to 25mm NBN Conduit | A.10 | -/120/120 |
| Boss FireMastic HPE or Boss FireMastic 300 | Up to 25mm NBN Conduit | A.10 | -/120/120 |
| PROMASEAL A Acrylic sealant 30mm cone | Up to 30mm bunch of 2.5mm ² cables | | -/120/120 |
| Boss Fire Mastic 300 and Boss Thermal defence wrap | Up to 30mm bunch of 2.5mm ² cables | | -/120/120 |
| Hi Fire Mech Damper | HiFire IB Damper - mechanical | | -/120/120 |
| Blendair SHD and MFSD series fire dampers | 125 mm strip of 16 mm fire rated plasterboard on one side of opening | | -/120/- |
| Wastech Chute Doors | Garbage self-closing hopper door | A.11 | -/120/45 |
| Boss Fire Mastic 300 and Boss P40 Mak wrap | Up to 50mm Gal pipe | A.15 | -/120/120 |
| Boss Fire Mastic 300 and Boss Thermal defence wrap | 32mm or up to 50 mm or 80 mm Copper pipe | A.16 | -/120/120 |
| Promaseal A and Promashield or Promaseal SupaWrap | 32 mm to 150 mm Copper pipe | A.14 | -/120/120 |
| | | | |



| A1 | |
|------------------------|--|
| 3 x 2.5 mm Cable | |
| Service | |
| Product Name | Boss FireMastic HPE or Boss FireMastic 300 Fire Grade Mastic |
| Aperture Side | Close fit core hole up to 25 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service with 25mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of the wall. |
| Fire Resistance Level | -/120/120 |
| | |
| Product Name | Promat Promaseal Fire Grade Mastic Promaseal Supawrap |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS200022 R2.1 dated 06.04.2020 |
| Installation | Complete infill around service with 30mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of wall. Promaseal Supa Wrap 600 mm on each side. |
| Fire Resistance Level | -/120/120 |
| | |
| A2 | |
| 150 x 50 mm Cable tray | |
| Service | |
| Product Name | Boss Fire Mastic-HPE Fire Grade Mastic + Wrap |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS200332 R1.0 dated 04.12.2020 Complete infill around service with fire mastic. |
| Installation | Install BOSS Thermal Defence Wrap in accordance with BOSS installation instruction. |
| Fire Resistance Level | -/120/90 |



| | |
|-----------------------|--|
| A3 | Power Cable up to 3 x 3C+ E 20mm |
| Service A1 | |
| Product Name | Boss Fire Mastic-HPE Fire Grade Mastic |
| Aperture Side | Close fit core hole up to 125 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service with 25mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of wall. |
| Fire Resistance Level | -/120/120 |
| Service | |
| Product Name | Promat Promaseal Fire Grade Mastic Promaseal Supawrap |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS200022 R2.1 dated 06.04.2020 |
| Installation | Complete infill around service with 30mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of the wall. Promaseal Supa Wrap 600 mm on each side. |
| Fire Resistance Level | -/120/120 |



| | |
|-----------------------|---|
| A4 | 20 mm PEX Pipe |
| Service A1 | |
| Product Name | Boss Fire Mastic-HPE Fire Grade Mastic |
| Aperture Side | Close fit core hole up to 125 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service with 25mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of wall. |
| Fire Resistance Level | -/120/120 |
| Service | |
| Product Name | PROMASTOP Unicollar FC 32 Promaseal Acrylic Sealant |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Bodycote Warringtonfire 2253502.1 dated 2008 |
| Installation | Install fire collar as per Promat installation instructions on both sides of the wall. Install Promaseal acrylic sealant between the separating element within the Promastop Unicollar and pipe to a depth of 10 mm. Two layers of 13 mm fire grade plasterboard is required on a single side of the Supapanel. |
| Fire Resistance Level | -/120/120 |
| A5 | 25 mm PEX Pipe |
| Service A1 | |
| Product Name | Boss Fire Mastic-HPE Fire Grade Mastic |
| Aperture Side | Close fit core hole up to 60 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire RIR FRT 190033 R1.0 dated 27.02.2019 |
| Installation | Complete infill around service with 25mm deep fire mastic controlled by foam backing rod. Sealant finished flush with the wall on both sides of wall. |
| Fire Resistance Level | -/120/120 |
| Service | |
| Product Name | PROMASTOP Unicollar FC 32 Promaseal Acrylic Sealant |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS200022 R2.1 dated 06.04.2020 |
| Installation | Complete infill around service with 30mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 |



| | |
|-----------------------|--|
| | mm fillet on both sides of the wall. Promaseal Supa Wrap 600 mm on each side. |
| Fire Resistance Level | -/120/120 |
| A6 | 50-70 mm PEX Pipe |
| Service | |
| Product Name | Promaseal Unicollar plus Armaflex (25 mm thickness) |
| Aperture Side | Close fit core hole up to 60 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations A-14-946 dated 26.02.2015 |
| Installation | Install Promastop Unicollar as well as Armaflex with a thickness of 25 mm. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|--|
| A7 | 150 mm uPVC Pipe – Fire Collar |
| Service | |
| Product Name | Promaseal FC Collar FC150 |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS190113 R7.0 dated 09.09.2021 |
| Installation | Install fire collar as per Boss installation instructions on both sides of the wall. Two layers of 13 mm fire grade plasterboard is required on single side of the Supapanel. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|--|
| A8 | 100 mm uPVC Pipe |
| Service | |
| Product Name | Boss 100 mm MaxiCollar |
| Aperture Side | Close fit core hole up to 60 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire RIR FRT 190033 R1.0 dated 27.02.2019 |
| Installation | Install fire collar as per Boss installation instructions on both sides of the wall. Two layers of 13 mm fire grade plasterboard is required on single side of the Supapanel. |
| Fire Resistance Level | -/120/120 |

| | |
|---------------|---|
| A9 | 110 mm HDPE Pipe |
| Service | |
| Product Name | Boss Fire Mastic-HPE Fire Grade Mastic or Boss 300 Mastic |
| Aperture Side | Close fit core hole up to 60 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations |



| | |
|-----------------------|--|
| | Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service with 25mm deep fire mastic controlled by foam backing rod. Sealant finished with a nominal 25 mm fillet on both sides of wall. |
| Fire Resistance Level | -/120/120 |
| Service | |
| Product Name | Promaseal FC Collar FC100 |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS190113 R7.0 dated 09.09.2021 |
| Installation | Install fire collar as per Promat installation instructions on both sides of the wall. Two layers of 13 mm fire grade plasterboard is required on a single side of the Supapanel. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|---|
| A10 | Up to 25 mm NBN Conduit |
| Service | NBN Conduit |
| Product Name | Boss Fire Mastic-HPE or Boss FireMastic 300 Fire Grade Mastic |
| Aperture Side | Close fit core hole up to 25 mm in diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service with fire mastic. Sealant finished with a nominal 20 mm fillet on both sides of wall. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|---|
| A11 | Wastech Garbage Chute |
| Service | Garbage self-closing hopper door |
| Product Name | Wastedch Chute Doors |
| Aperture Side | Close fit hole 1200 mm x 1200 mm |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FRT200126 R1.0 dated 03 July 2020 |
| Installation | Opening to be supported by Steel L angles and C channels around perimeter screw fixed to the wall. Door is to be fixed to opening as per manufactures installation instructions. |
| Fire Resistance Level | -/120/45 |

| | |
|---------------|---------------------------------------|
| A12 | Fyreguard Access Panel |
| Service | Wall Access panel |
| Product Name | Fyreguard Access Panel |
| Aperture Side | Close fit hole up to 1200 mm x 1500mm |



| | |
|-----------------------|--|
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations BRANZ FC10241-001 Issue 2 dated 27 July 2020 |
| Installation | Opening to be supported by Steel L angles and C channels around perimeter screw fixed to the wall. Access door is to be fixed to opening as per manufactures installation instructions. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|--|
| A13 | HiFire 1B Damper |
| Service | High Fire Heating |
| Product Name | Ruskin IBS Fire Damper |
| Aperture Side | Close fit hole 1200 mm x 1200 mm |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FRT190122 R1.0 dated 24 June 2019 |
| Installation | Two sets of 1200 mm high x 15 mm wide x 15 mm high x 1.15 mm thick galvanised steel L angle installed at nominal 80 mm apart from each other |
| Fire Resistance Level | -/120/- |
| | Where the damper is attached to the wall directly, if there are no combustible elements within 100 mm from the edge of the channel perimeter for a distance of 2 m, the installed system will maintain the fire resistance level as listed. No insulation criteria is required where BCA C4D15(2)(a)(iii) is satisfied. |

| | |
|-----------------------|---|
| A14 | Holyoake Passive Fire Damper |
| Service | Fire Damper |
| Product Name | Holyoake IBD-FS |
| Aperture Side | 1200 mm Wide max x 1200 mm high max, single unit |
| Test Evidence | Tested system CSIRO-FCO-3356, 5 December, 2019 |
| Installation | The Holyoake IBD-FS fire damper is installed as a single unit in a penetration of 1200mm x 1200mm maximum. A Steel C channel is installed around the opening with 20mm 8g screws at maximum 200mm centres on one side. 4 x 40mm x 60mm x 2mm steel angles are to be bolted to the damper body on each side of the perimeter. One layer 16mm fire rated plaster on one side of the wall 125mm wide. |
| Fire Resistance Level | -/120/- |

| | |
|---------------|----------------------|
| A15 | Up to 50 mm Gal Pipe |
| Service | Up to 50 mm Gal Pipe |
| Product Name | Boss FM300 |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system |



| | |
|-----------------------|---|
| | Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire 49599300.7 dated 22/02/2019 |
| Installation | Complete infill around service fire mastic. Sealant finished with a nominal 20mm fillet on both sides of wall. If there are no combustible elements within 100mm from the edge of the service for a distance of 2m, the installed system does not require the insulation criteria to be satisfied. i.e. a thermal wrap is not required. No insulation criteria is required where BCA Clause C3.15(a)(ii) is satisfied. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|--|
| A16 | 32 mm up to 80 mm Copper Pipe |
| Service | 32 mm to 80 mm Copper Pipe |
| Product Name | Boss FM300 and Boss Thermal Defence Wrap |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS190346 R1.5 dated 04.08.2021 |
| Installation | Complete infill around service with fire mastic. Sealant finished with a nominal 20mm fillet on both sides of wall. Installation advice from BOSS is for the wall itself to be 116mm thick to achieve the required FRL of -/120/120. This is based on typical light weight and masonry wall systems. The Supapanel itself maintains an FRL of at least -/120/120. Therefore, based on the tested system the thickness can be reduced to the size of the Supapanel and the ability to maintain an FRL of -/120/120 is maintained. If there are no combustible elements within 100mm from the edge of the service for a distance of 2m, the installed system does not require the insulation criteria to be satisfied. i.e. a thermal wrap is not required. No insulation criteria is required where BCA Clause C4D15(2)(a)(iii) is satisfied. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|---|
| A17 | 32 to 150 mm Copper Pipe |
| Service | 32 mm to 150 mm Copper Pipe |
| Product Name | Promaseal Acrylic Sealant For 32 mm to 100 mm Promashield For 100 mm to 150 mm Promaseal SupaWrap 600 mm each side |
| Aperture Side | Close fit core hole |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations Warringtonfire FAS200022 R2.1 dated 06.04.2020 |
| Installation | Complete infill around service with fire mastic. Sealant finished with a nominal 20 mm fillet on both sides of wall. If there are no combustible elements within 100 mm from the edge of the service for a distance of 2 m, the installed system does not require the insulation criteria to be satisfied. i.e. a thermal wrap is not required. No insulation criteria is required where BCA Clause C4D15(2)(a)(iii) is satisfied. |
| Fire Resistance Level | -/120/120 |

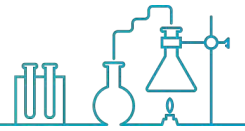


| | |
|-----------------------|--|
| A18 | 25 mm and 40 mm Copper Pipe |
| Service | Wall |
| Product Name | Promaseal Acrylic Sealant and Armaflex (25 mm thick) |
| Aperture Side | Close fit core hole plus Armaflex diameter |
| Test Evidence | Tested system Clause C4D15(2)(a)(iii) Openings for service installations FSRG A-14-946 dated 26/02/2015 |
| Installation | If there are no combustible elements within 100 mm from the edge of the penetration for a distance of 2 m, the installed system does not require the insulation criteria to be satisfied i.e. a thermal wrap is not required. No insulation criteria is required where BCA Clause C4D15(2)(a)(iii) is satisfied. Complete infill around service fire mastic. FR Armaflex 400 mm long either side of the penetration and through the wall. |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|---|
| A19 | HB Fuller FireSound Fire Rated Acoustic Sealant |
| Service | Wall |
| Product Name | HB Fuller FireSound Fire Rated Acoustic Sealant |
| Aperture Side | |
| Test Evidence | Tested system FireTslab Test report PF23046 |
| Installation | |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|---|
| A20 | HB Fuller FulaFlex FR Hybrid Polymer Fire Rated Sealant |
| Service | Wall |
| Product Name | HB Fuller FulaFlex FR Hybrid Polymer Fire Rated Sealant |
| Aperture Side | |
| Test Evidence | Tested system FireTslab Test report PF23046 |
| Installation | |
| Fire Resistance Level | -/120/120 |

| | |
|-----------------------|--|
| A21 | Pyropanel PromaSeal Fire Grade Mastic |
| Service | Wall |
| Product Name | Pyropanel PromaSeal Fire Grade Mastic |
| Aperture Side | |
| Test Evidence | Tested system Pyropanel FSRG A-14-946 |
| Installation | |
| Fire Resistance Level | -/120/120 |



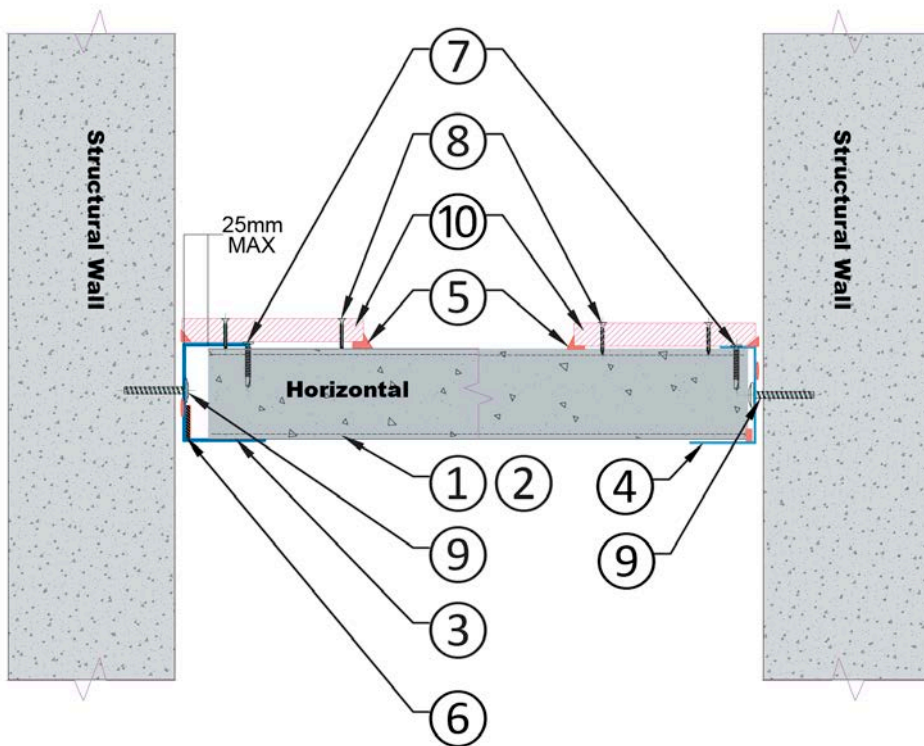
| | |
|-----------------------|--|
| A22 | BOSS FireMastic-300 |
| Service | Wall |
| Product Name | Boss Fire Mastic-3000 |
| Aperture Side | |
| Test Evidence | Tested system PFITS PF 1190667 R4.0 |
| Installation | |
| Fire Resistance Level | -/120/120 |

12 DETAILED DRAWINGS

FIGURE 35:
SUPAPANEL HORIZONTAL

SUPAPANEL HORIZONTAL

TRACKS ARE PROTECTED BY PLASTERBOARDS FOR THERMAL PERFORMANCE
- SCREW ON ONE SIDE ONLY

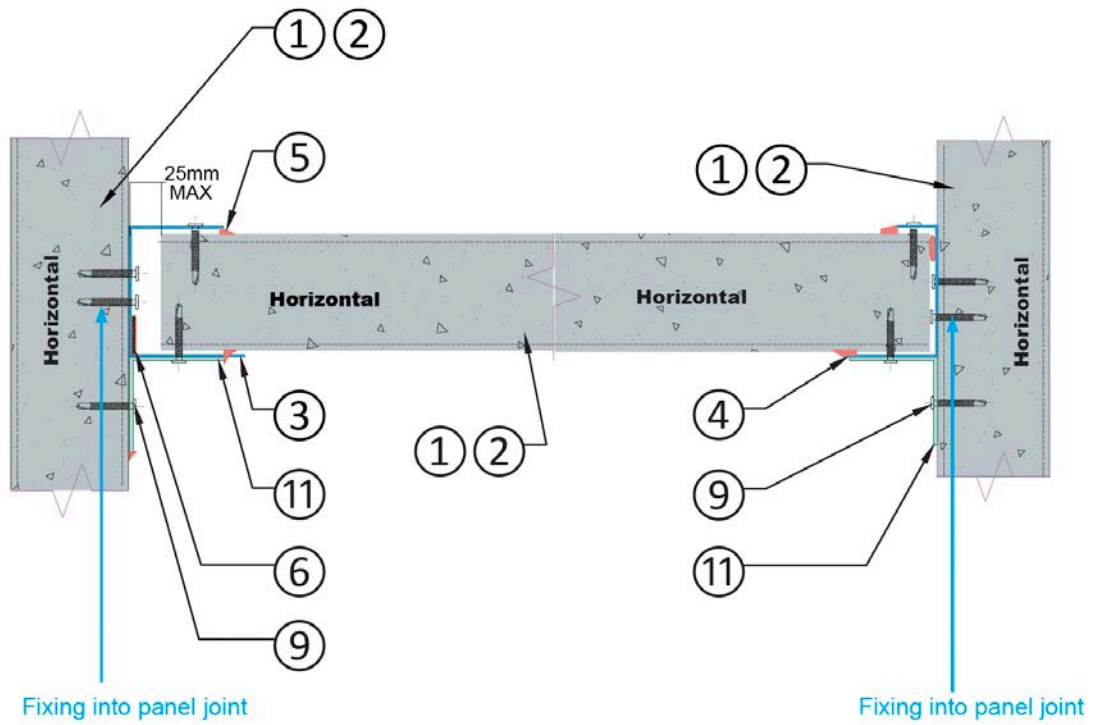


Tracks are protected by plasterboards for thermal performance – screw on one side only as required.

FIGURE 36:
SUPAPANEL T JUNCTION – HORIZONTAL INTO HORIZONTAL PANELS

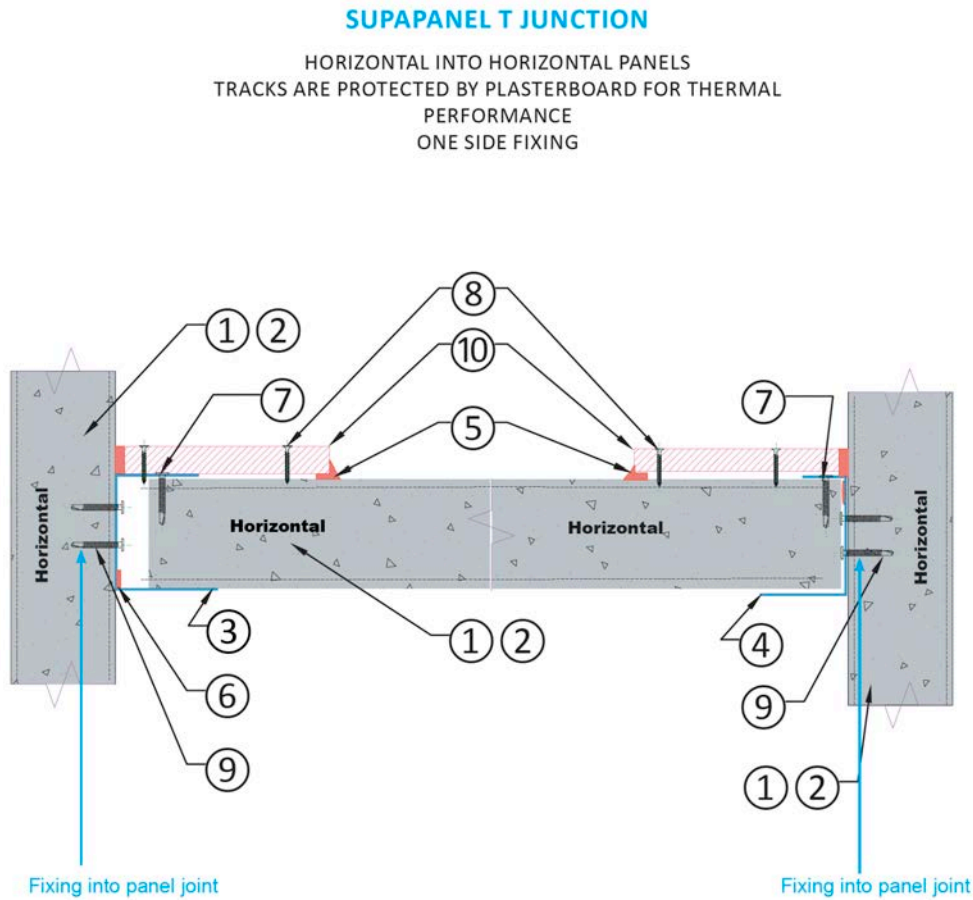
SUPAPANEL T JUNCTION

HORIZONTAL INTO HORIZONTAL PANELS
TRACKS ARE PROTECTED BY ANGLES FOR THERMAL PERFORMANCE
- ONLY FOR SCREW ON BOTH SIDE



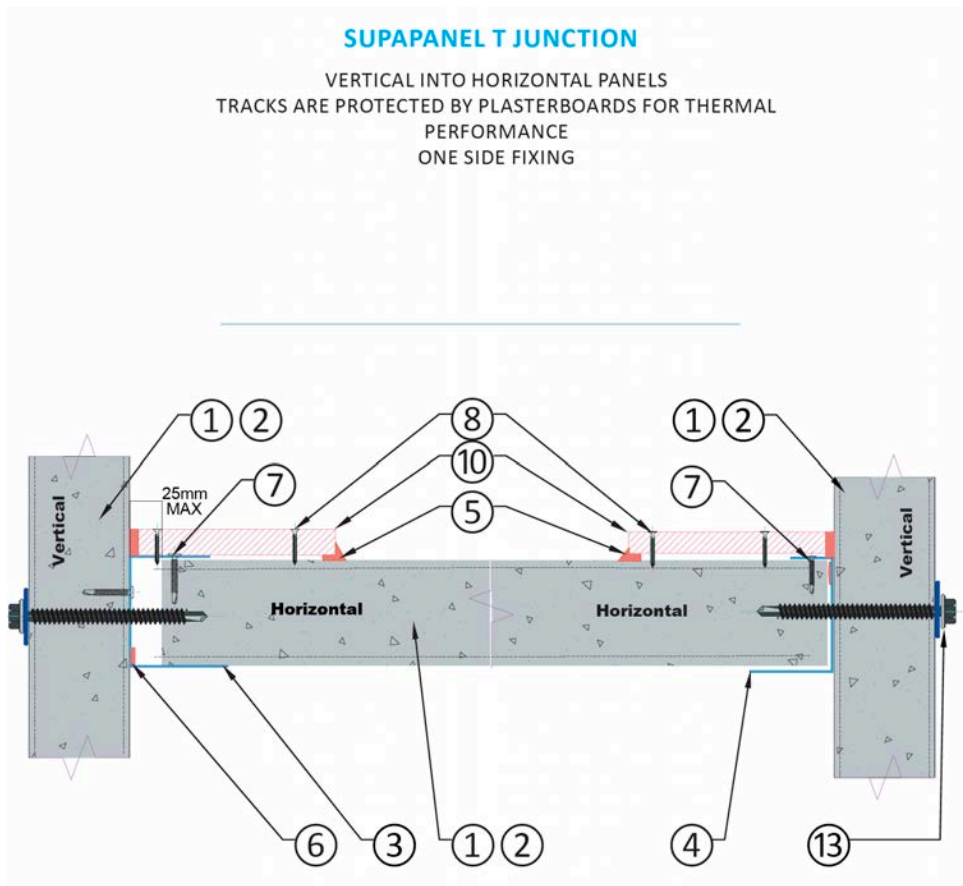
Horizontal into horizontal panels, tracks are protected by angles for thermal performance – screw on both sides.

FIGURE 37:
 SUPAPANEL T JUNCTION – HORIZONTAL INTO HORIZONTAL PANELS



Horizontal into horizontal panels, tracks are protected by plasterboards for thermal performance.

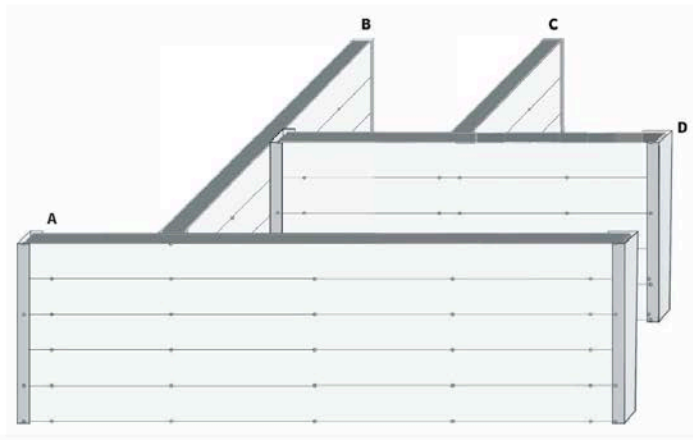
FIGURE 38:
 SUPAPANEL T JUNCTION – VERTICAL INTO HORIZONTAL PANEL



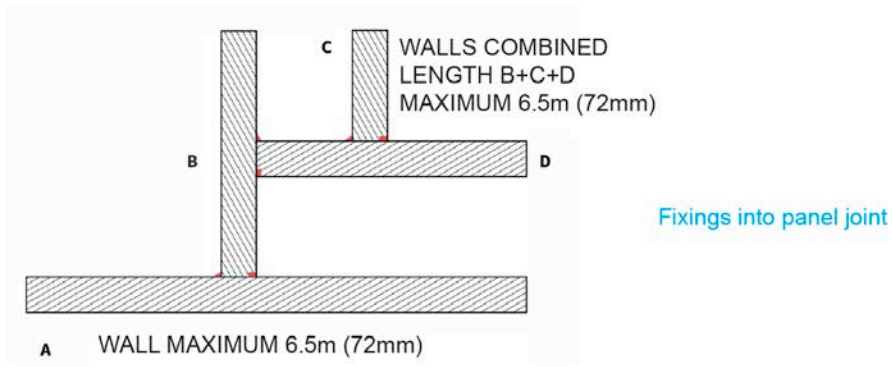
Vertical into horizontal panels, tracks are protected by plasterboards for thermal performance.

FIGURE 39:
HANGING SHAFT CONSTRUCTION TO STRUCTURAL WALL

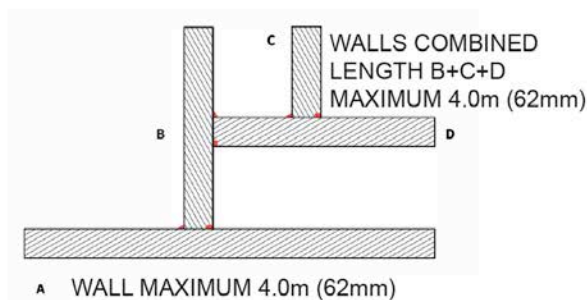
HANGING SHAFT CONSTRUCTION TO STRUCTURAL WALL



72MM SUPAPANEL



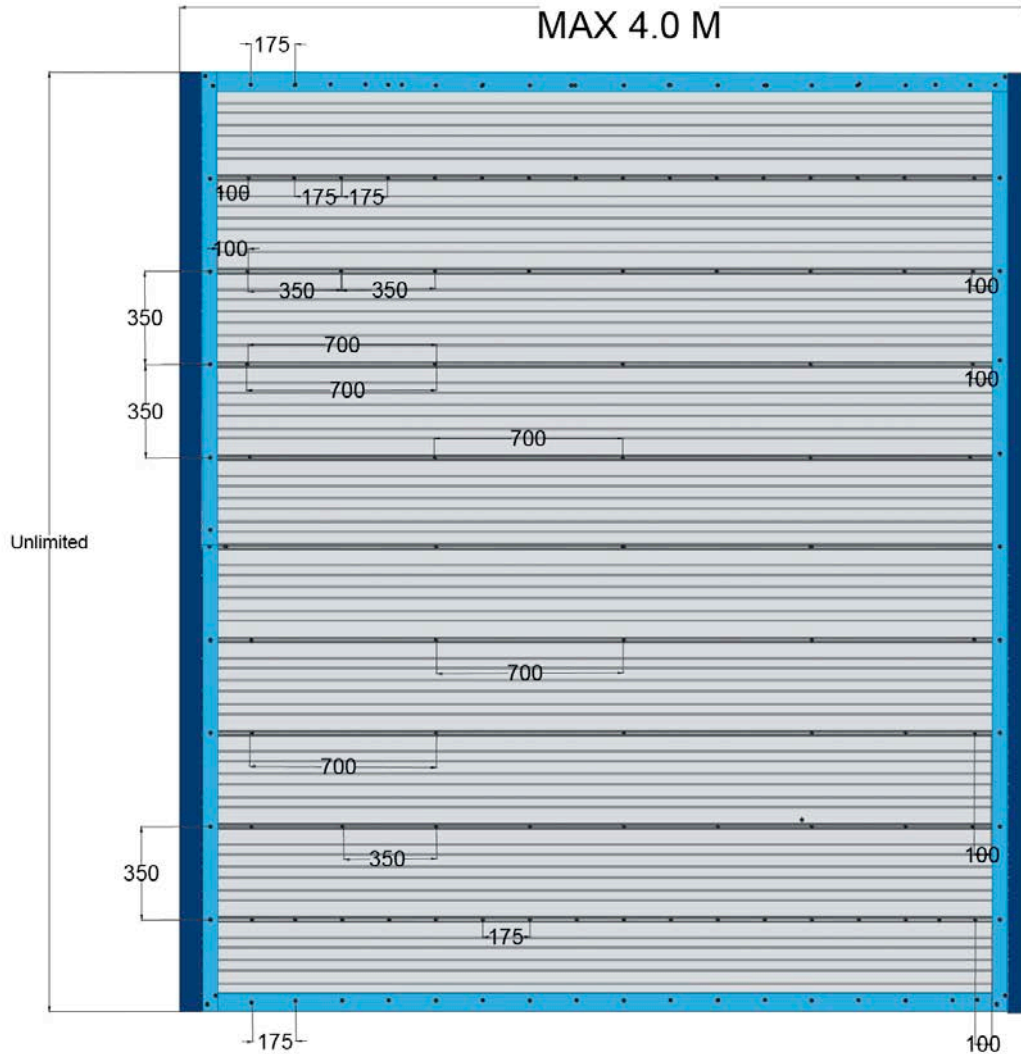
62MM SUPAPANEL



Wall combined length b+c+d, maximum 6.5 m for 72 m and 4.0 m for 62 mm Supapanel

FIGURE 40:
WALLS LESS THAN 4.0 M

62MM SUPAPANEL MAXIMUM SPAN 4.0 M



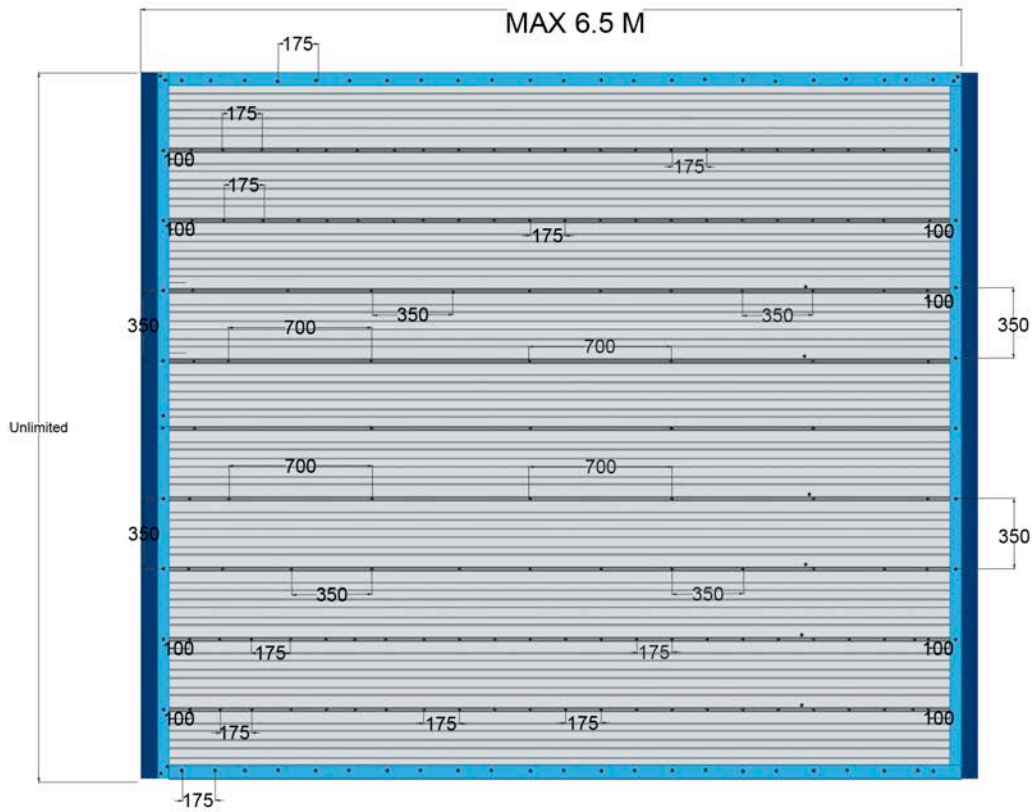
Fixings Orientation :
For walls less than 4.0M

- First screw within 100 mm from end of panels as per diagram
- 350 mm fixings required in the side tracks
- First layer requires 175 mm fixings in the joints
- Second layer requires 350 mm fixings in the joints
- Subsequent 700 mm centres in the joints

Typical screw fixings for 62 mm Supapanel walls up to 4.0 m width

FIGURE 41:
WALLS LESS THAN 6.5 M

72MM SUPAPANEL MAXIMUM SPAN 6.5 M

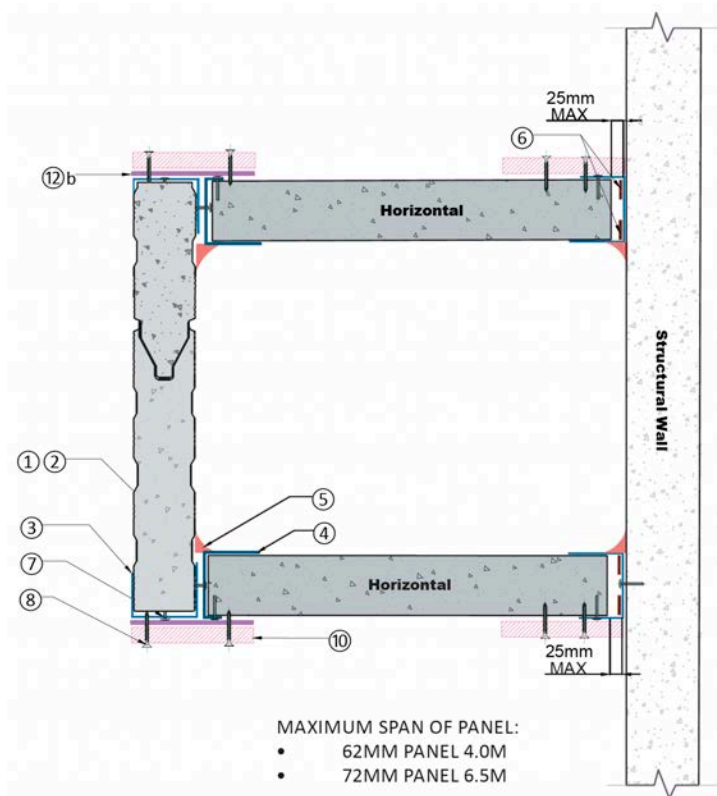


Fixings Orientation :
For walls less than 6.5M

- First screw within 100 mm from end of panels as per diagram
- 350 mm fixings required in the side tracks
- First two layers require 175 mm fixings in the joints
- Next layer requires 350 mm fixings in the joints
- Subsequent 700 mm centres in the joints

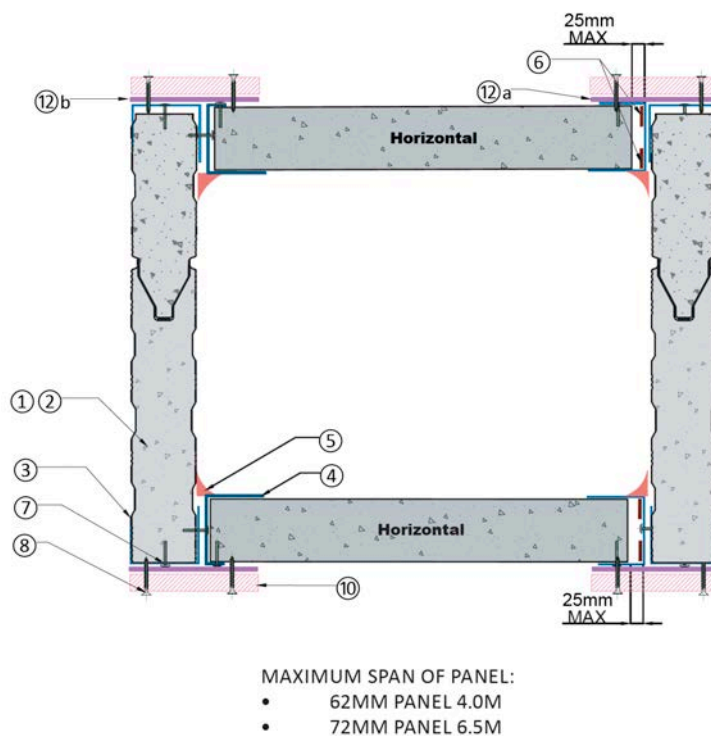
Typical screw fixings for 72 mm Supapanel walls up to 6.5 m width

FIGURE 42:
HORIZONTAL SUPAPANEL TO STRUCTURAL WALL



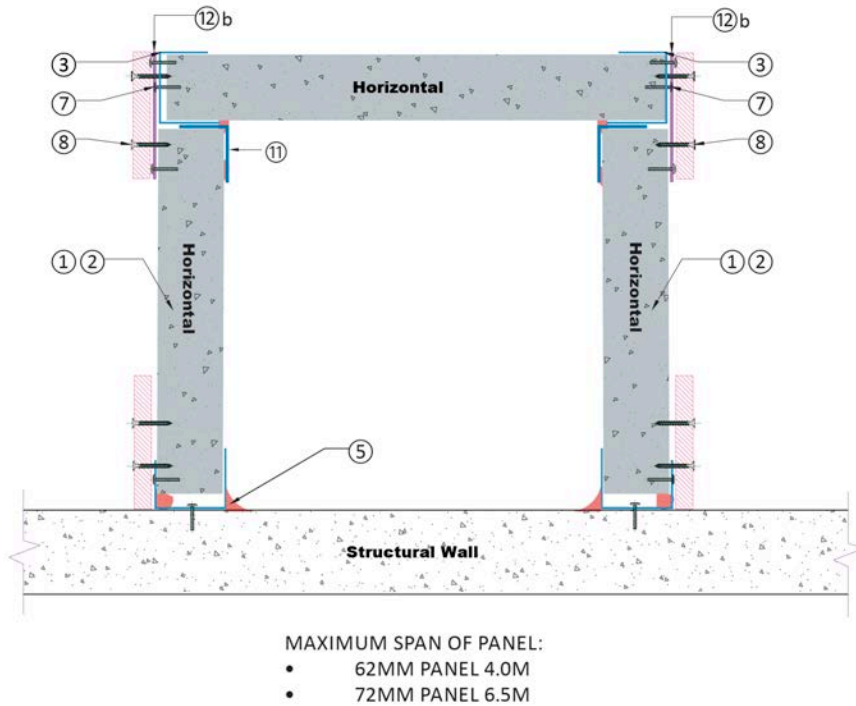
Vertical Supapanel to horizontal Supapanel to structural wall, tracks are protected by plasterboards for thermal performance.

FIGURE 43:
HORIZONTAL SUPAPANEL TO VERTICAL SUPAPANEL



Horizontal Supapanel to vertical Supapanel, tracks are protected by plasterboards for thermal performance.

FIGURE 44:
HORIZONTAL SUPAPANEL TO HORIZONTAL SUPAPANEL - OPTION



Horizontal Supapanel to horizontal Supapanel, tracks are protected by plasterboards for thermal performance.

FIGURE 45:
HORIZONTAL SUPAPANEL TO HORIZONTAL SUPAPANEL - OPTION

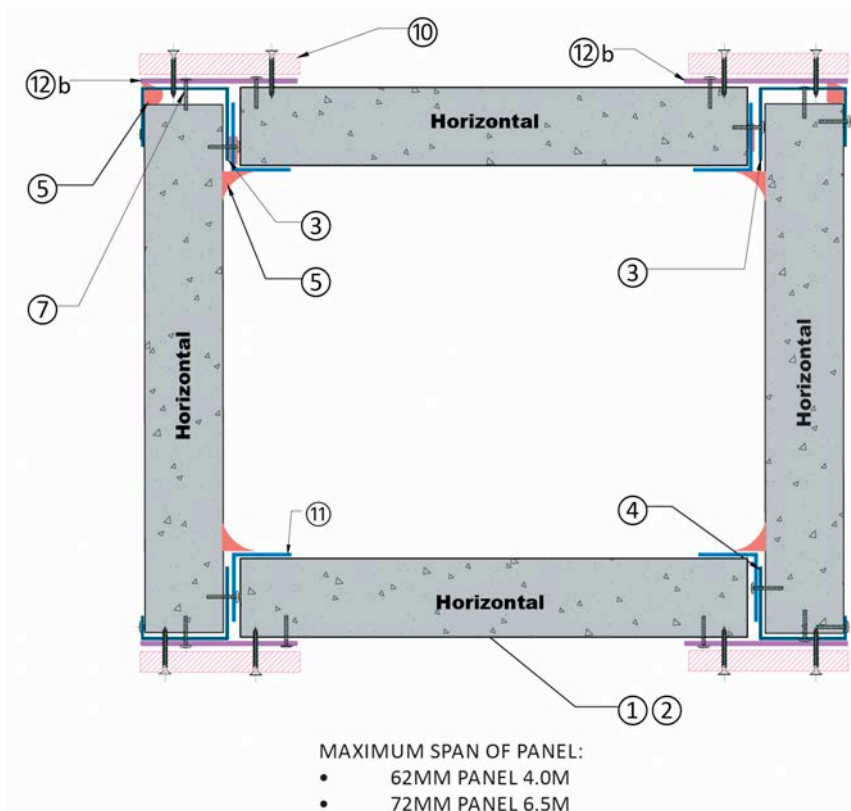
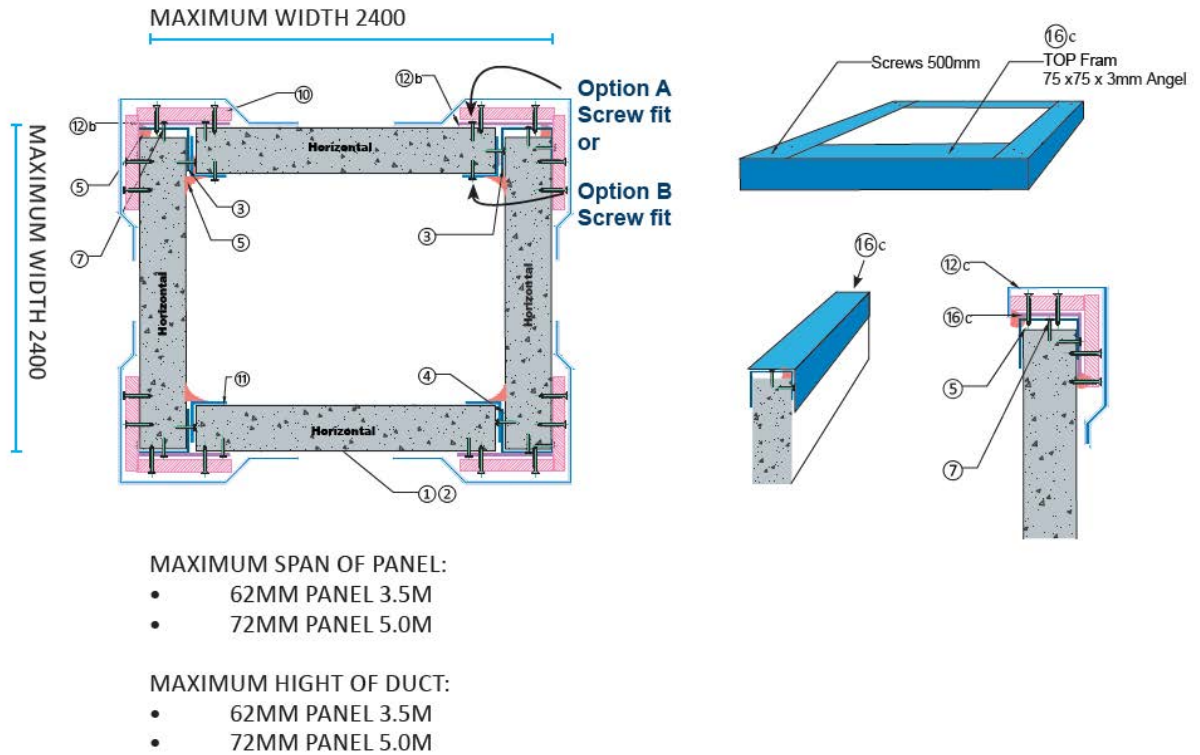
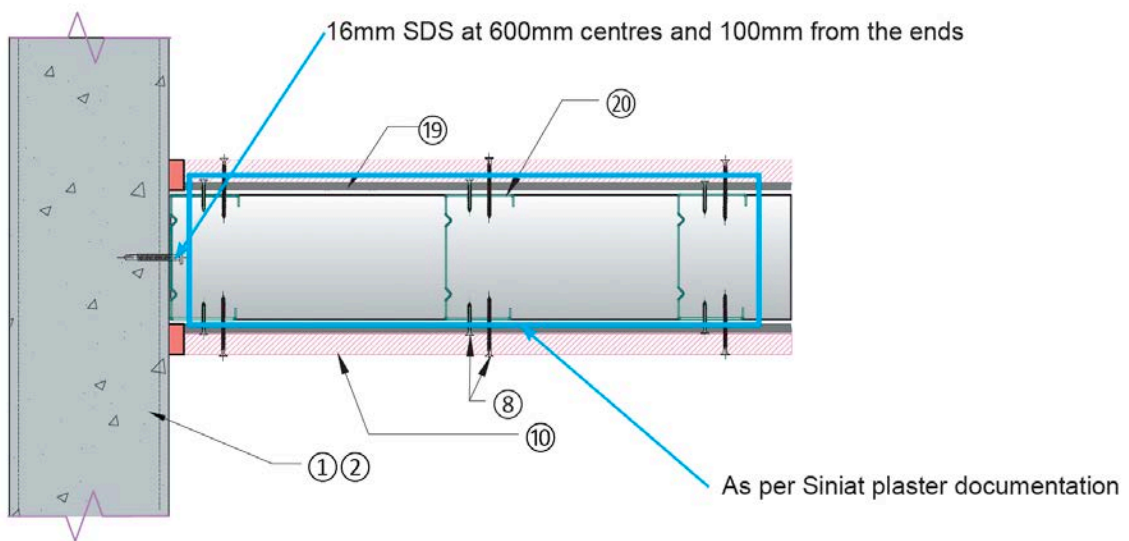


FIGURE 46:
HORIZONTAL SUPAPANEL TO HORIZONTAL SUPAPANEL
OPTION FREE STANDING BOX / CHIMNEY OPEN TOP



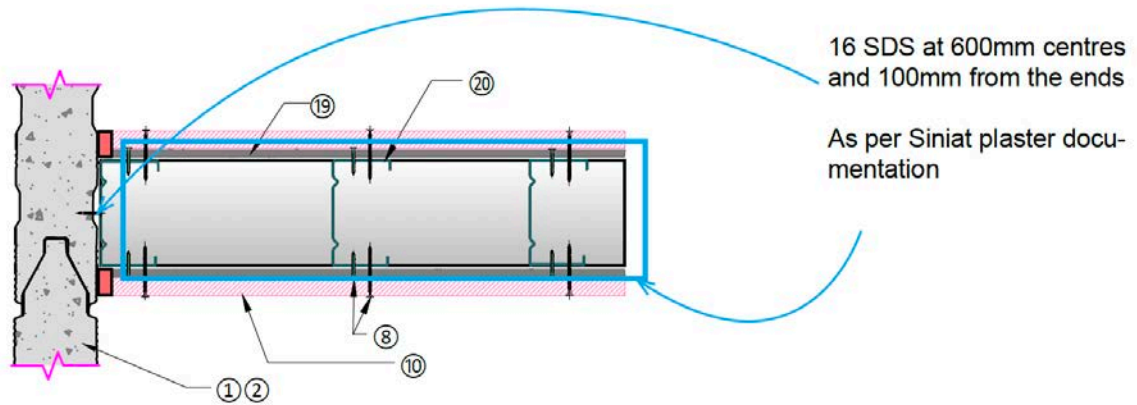
Horizontal Supapanel to horizontal Supapanel, tracks are protected by plasterboards for thermal performance.

FIGURE 47:
SUPAPANEL TRANSITION DETAIL PLASTERBOARD SHAFTLINER WALL PLAN VIEW



T intersection of 1 hour plaster system into 62 mm or 72 mm Supapanel system

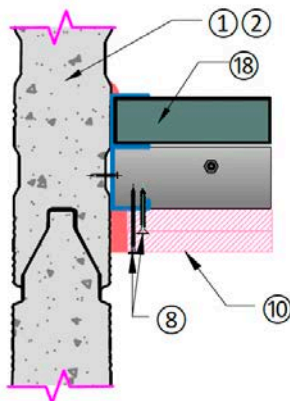
FIGURE 48:
SUPAPANEL TRANSITION DETAIL PLASTERBOARD SHAFTLINER WALL PLAN VIEW



T intersection of 1 hour plaster system into 62 mm or 72 mm Supapanel system

FIGURE 49:
SUPAPANEL TRANSITION DETAIL SHAFTLINEER WALL PLAN VIEW

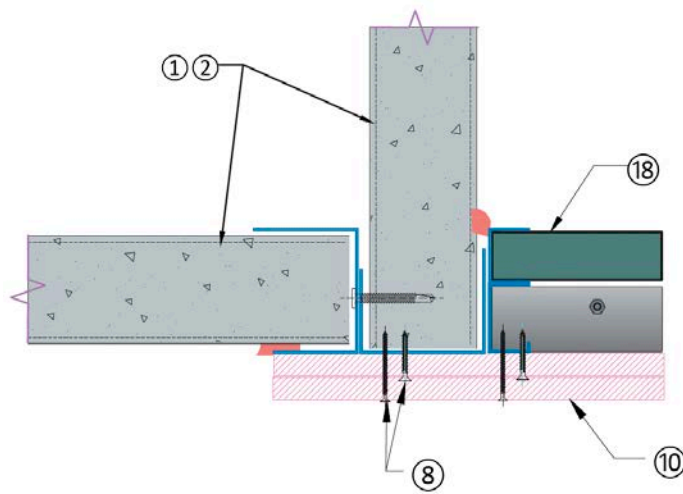
SINIAT CONNECTION DETAILS TO SUPAPANEL



Fix together using steel framing screws into face of Supapanel at 200mm maximum centres vertically, and 100mm maximum from ends

T intersection of 2 hour plaster system into 62 mm or 72 mm Supapanel system

FIGURE 50:
SUPAPANEL SINIAT TRANSITION DETAIL SHAFTLINEER WALL PLAN VIEW



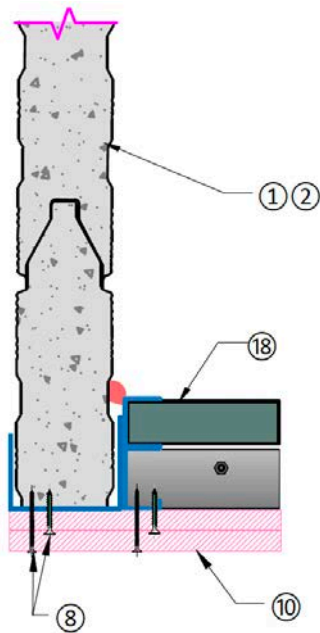
Fix together using steel framing screws into steel track at 600mm maximum centres vertically, and 100mm maximum from ends

16mm SDS at 600mm centres and 100mm from the ends

As per Siniat plaster documentation

T intersection of 2 hour plaster system into 62 mm or 72 mm Supapanel system

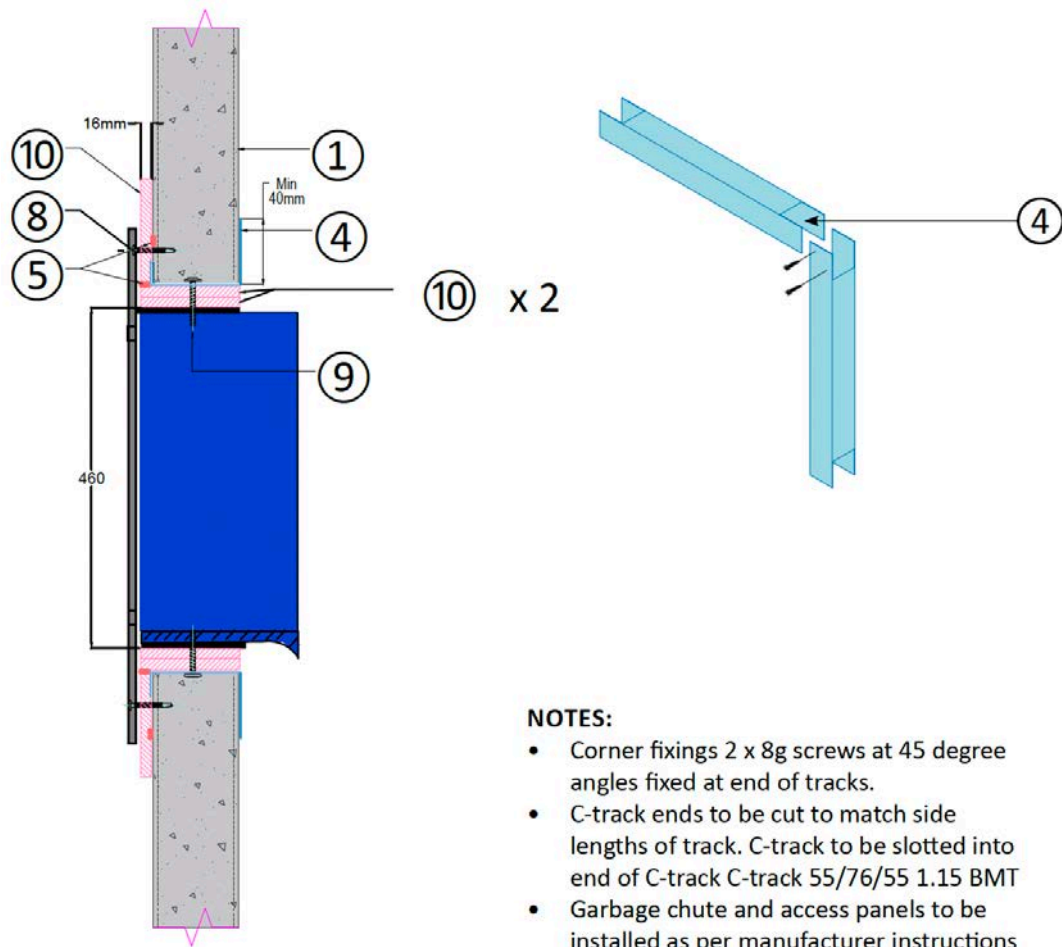
FIGURE 51:
SUPAPANEL TRANSITION DETAIL SHAFTLINEER WALL PLAN VIEW



Fix together using steel framing screws into steel track at 600mm maximum centres vertically, and 100mm maximum from ends

Corner junction of 2 hour shaft lines system connected to 72 mm or 62 mm Supapanel systems

FIGURE 52:
SUPAPANEL ACCESS HATCH AND WASTE CHUTE DETAILS

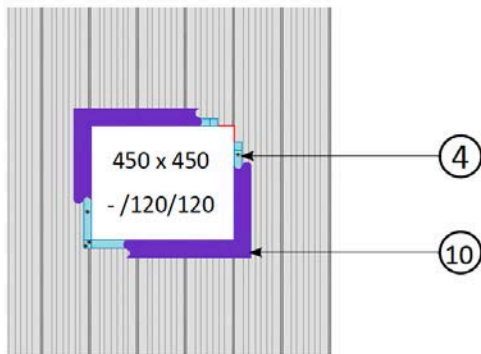


NOTES:

- Corner fixings 2 x 8g screws at 45 degree angles fixed at end of tracks.
- C-track ends to be cut to match side lengths of track. C-track to be slotted into end of C-track C-track 55/76/55 1.15 BMT
- Garbage chute and access panels to be installed as per manufacturer instructions

Access panel and garbage chute products to be installed as per supplier instructions

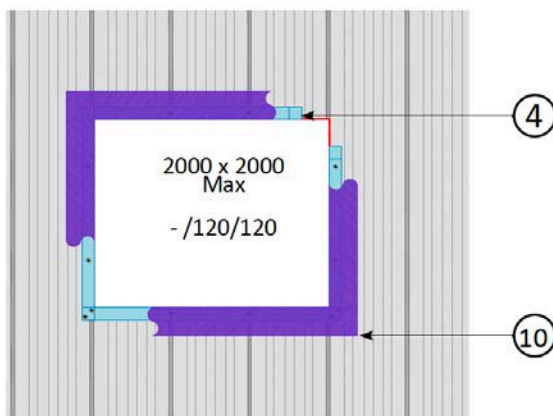
FIGURE 53:
SUPAPANEL OPENING DETAIL



If thermal fire rating isn't needed around the perimeter, plasterboard is not required. However, it becomes necessary based on specific thermal rating requirements. Refer to the notes for details.

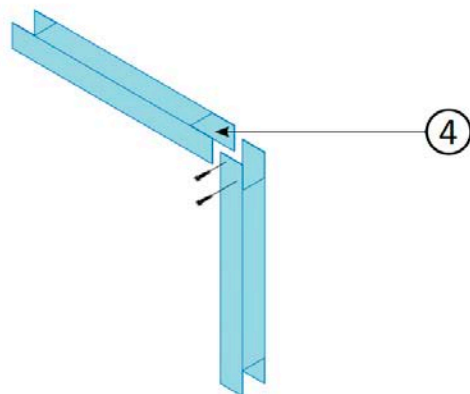
NOTES:

- If opening exceeds 450mm in either length or height then 16mm fire shield or 6mm magnesium board at 125mm is required.
- Additional layers of 125mm strips of fire rated plasterboard may be required to match wall thickness requirements for certified tested dampers.
- All track ends to overlap
- 72mm and 62mm Supapanel



NOTES:

- Apertures 450-2000mm require FRPB or MgO strips.
- Additional layers of 125mm strips may be required to match wall thickness required for certified tested dampers.
- All track ends to overlap
- 72mm and 62mm Supapanel

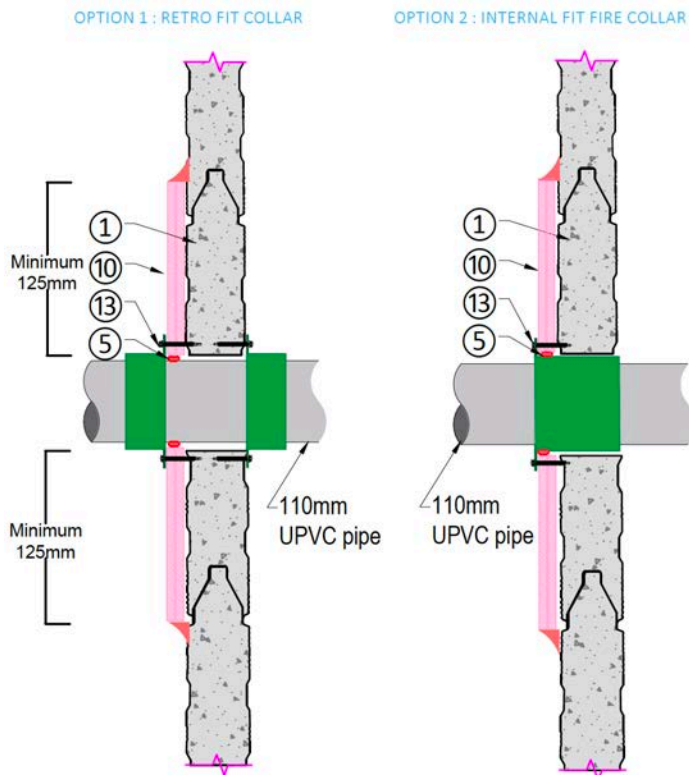


NOTES:

- Corner fixings 2 x 8g screws at 45 degree angles fixed at end of tracks.
- C-track ends to be cut to match side lengths of track. C-track to be slotted into end of C-track C-track 55 x 76 x 55 1.15 BMT

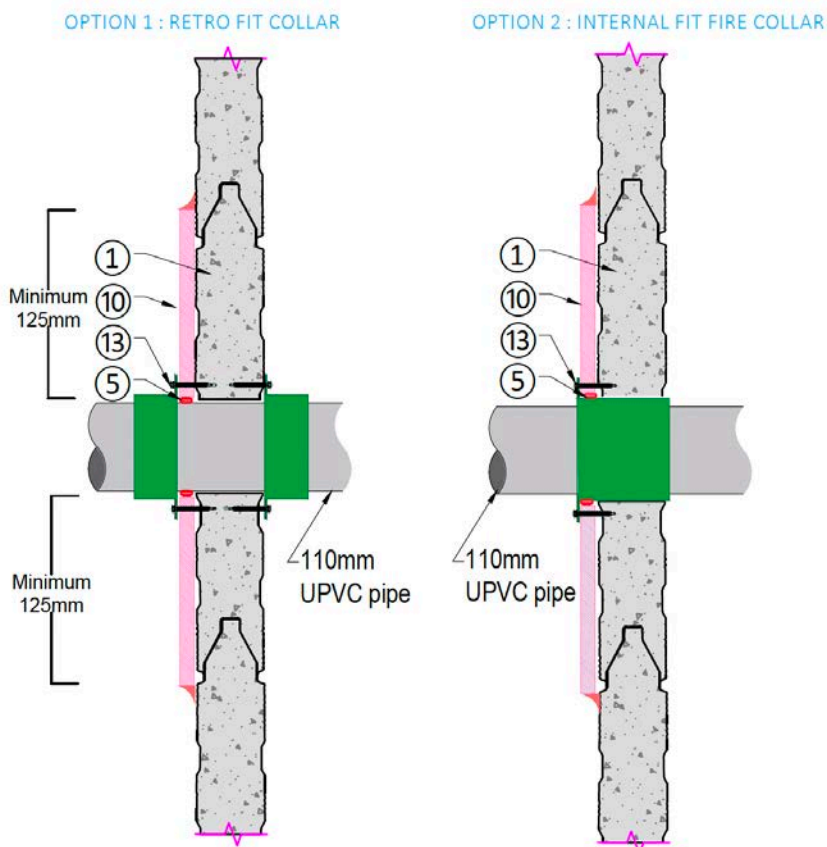
General opening details and linings for dampers, cable trays and square openings in Supapanel 72 mm and 62 mm panel wall systems

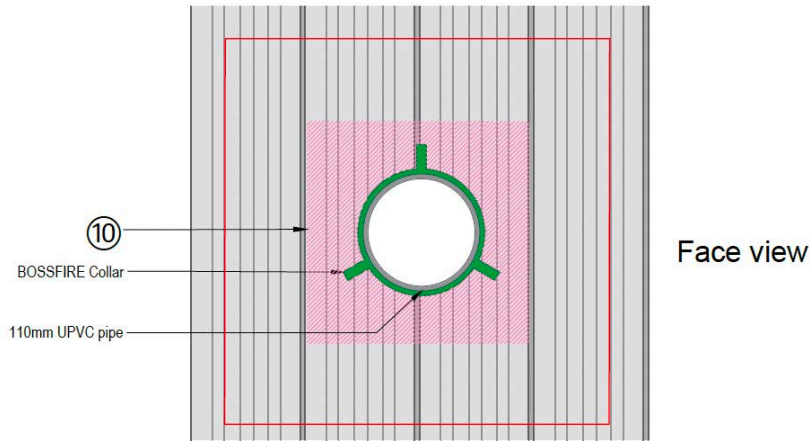
FIGURE 54:
SUPAPANEL PENETRATION 62 MM



PVC and HDPE pipe penetration detail through 62 mm Supapanel with two layers 16 mm fire rated plasterboard

FIGURE 55:
SUPAPANEL PENETRATION 72 MM

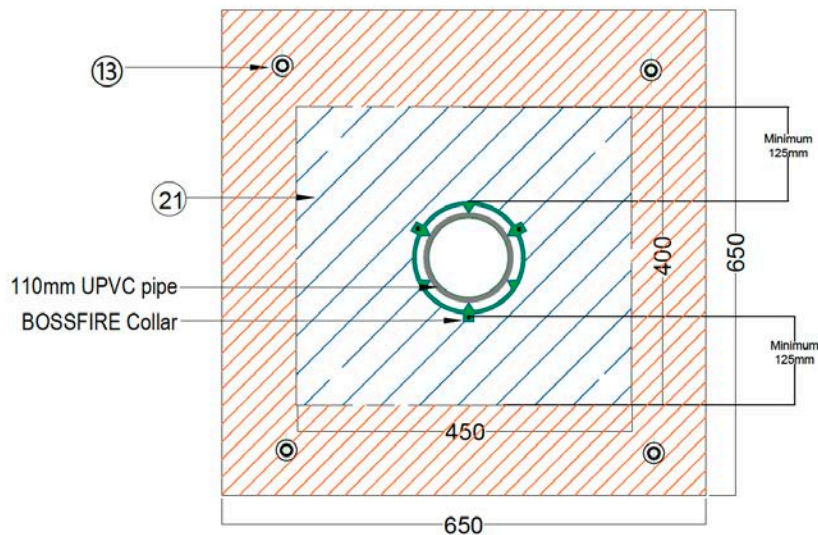
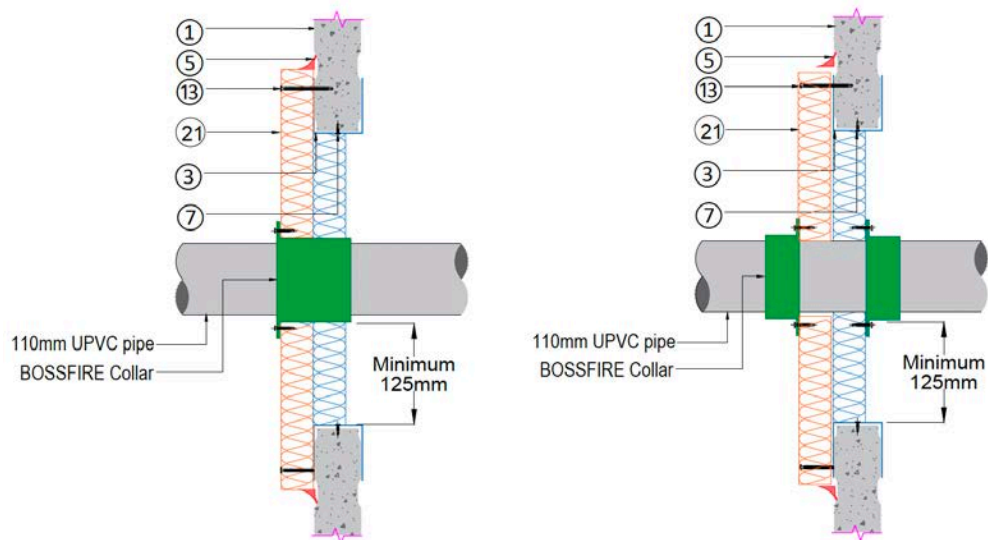




PVC and HDPE Pipe penetration detail through 72 mm Supapanel with one layers 16 mm fire rated plasterboard.

FIGURE 56:
SUPAPANEL PENETRATION 62 MM

ROCKWOOL BAT PASSIVE FIRE PENETRATION DETAILS

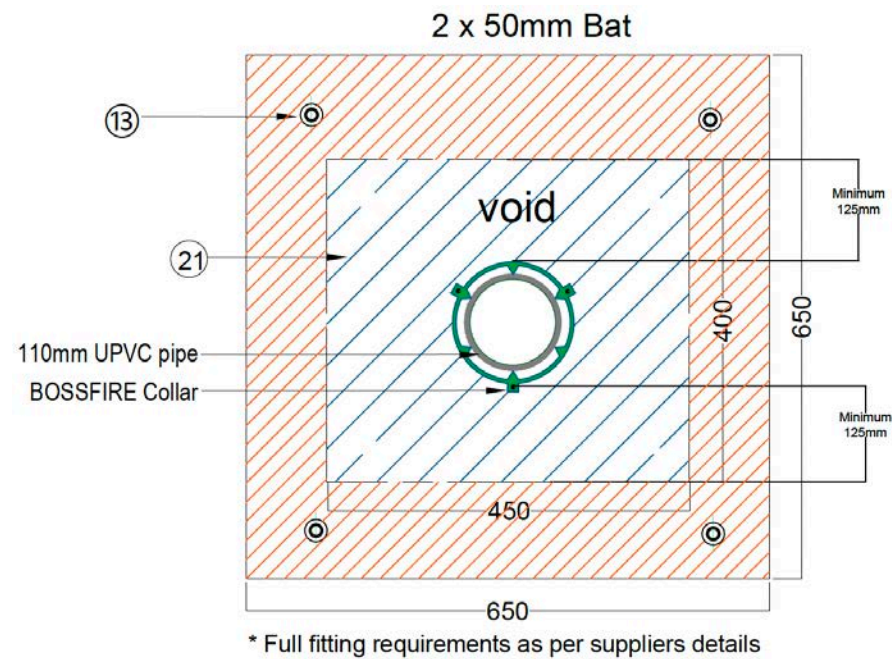
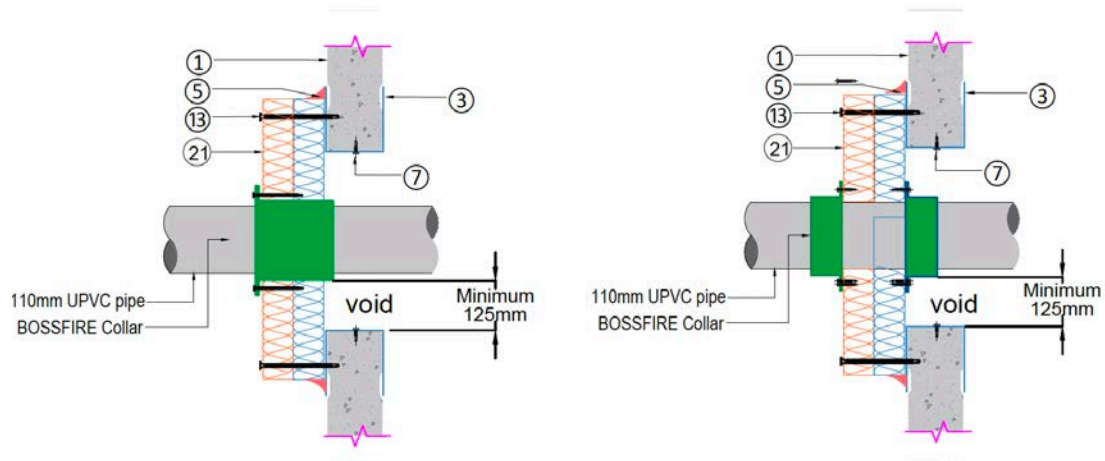


* Full fitting requirements as per suppliers details

PVC and HDPE pipe penetration detail through Rockwool fire rated batt system in framed opening

FIGURE 57:
SUPAPANEL PENETRATION 72 MM

OPTIONAL ROCKWOOL BAT



Variation PVC and HDPE pipe penetration detail through Rockwool fire rated batt system in framed opening.

13 CONCLUSION OF PERFORMANCE CAPABILITY

Supapanel being a 425mm wide x 62mm and 72mm thick panel (nominal 350mm between panel-to-panel joints) comprising of an aerated cement core encased in a 0.3 to 0.4mm thick mild galvanised steel 250 MPa skin with a 425 Kg concrete core. The 0.35 mm thick steel casing was subjected to testing to AS1530.4: 2014. The below table nominates the maximum vertical span for the 62mm and 72mm thick Supapanel panels.

TABLE 8:
SUPAPANEL APPLICATION SUMMARY

| Supapanel wall thickness | 62 mm Supapanel | 62 mm Supapanel with one side caulked joint or 13 mm fire rated plasterboard | 62 mm Supapanel with One 16 mm fire rated plasterboard on one face | 72 mm Supapanel | Maximum vertical span between structural elements or vertical Supapanel wall |
|--|-----------------|--|--|-----------------|--|
| Maximum wall span | 4000 mm | 4000 mm | 4000 mm | 6500 mm | Unlimited |
| Maximum lineal meters of cross wall connected to primary spanning wall | 4000 mm | 4000 mm | 4000 mm | 6500 mm | Unlimited |
| Fire Resistance Level | -/60/60 | -/90/90 | -/180/120 | -/120/120 | -/120/120 |
| Fire core door system | -/60/30 | -/90/30 | -/120/30 | -/120/30 | -/120/30 |
| Penetration passive fire product | -/60/60 | -/90/90 | -/120/120 | -/120/120 | -/120/120 |
| Access hatches | -/60/30 | -/90/30 | -/120/30 | -/120/30 | -/120/120 |
| Ducting fire dampers | -/60/- | -/90/- | -/120/- | -/120/- | -/120/- |

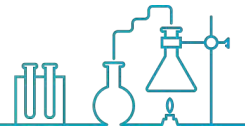


14 APPENDIX A

Summary of Supapanel Test Report and Listing of Supporting Test Report

The following information sources were used as supporting evidence in the evaluation of the system.

| | |
|---|--------------------|
| 1. National Construction Code, Volume One, Building Code of Australia, Class 2 to 9 Buildings, 2022 | |
| 2. International Fire Engineering Guidelines, Australian Building Codes Board, Canberra, 2005 | |
| 3. Ian Bennie & Associates 2021: 085-55-S7, | June 21, 2022 |
| 4. Ian Bennie & Associates 2021: 085-51-S4, | November 30, 2021 |
| 5. Report Bird engineering assessment evaluation, | March 16, 2022 |
| 6. Warringtonfire FRT 200129, | June 10, 2020 |
| 7. PFits (FireTSLab) PF 19066 R4.0, | November 26, 2020 |
| 8. CSIRO FCO-2872, | August 10, 2016 |
| 9. FireTSLab PF 23046, | September 13, 2023 |
| 10. CSIRO FSU 1870, | August 23, 2019 |
| 11. Warringtonfire FAS 200022 R2.1, | April 6, 2020 |
| 12. Warringtonfire FAS 225350, | January 2, 2008 |
| 13. Warringtonfire FAS 200332 RI.0, | December 4, 2020 |
| 14. Warringtonfire FAS 190113 R7.0, | August 9, 2021 |
| 15. Warringtonfire FAS 190346 R1.5, | April 8, 2021 |
| 16. Warringtonfire FAS 190346 R1.5, | April 4, 2022 |
| 17. Warringtonfire RIP FRT 190033 R1.0, | February 27, 2019 |
| 18. Warringtonfire FAS 27776 | April 11, 2023 |
| 19. Warringtonfire FAS 200126 R1.0, | July 3, 2020 |
| 20. Warringtonfire 49599300-7, | February 22, 2019 |
| 21. CSIRO-FCO-3356, | December 5, 2019 |
| 22. Warringtonfire FRT 190122 24 R1.0, | June 24, 2019 |
| 23. BRANZ FC 10241-001, | July 2, 2020 |
| 24. PYROPANEL FSRG A-14-946, | February 2, 2015 |
| 25. CSIRO FCO-3292, | February 4, 2018 |



15 APPENDIX B – ROBERT BIRD ENGINEERING ASSESSMENT

MELBOURNE OFFICE

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PO Box 472, Collins Street West
Melbourne VIC 8007 Australia
p: +61 (0) 3 8677 7555 | f: +61 (0) 3 8677 7566
www.robertbird.com

Reference: JB:DF CO/ST 21626M

16 March 2022

K8 Australia Pty Ltd
7/344 Lorimer Street
580 St Kilda Road
PORT MELBOURNE VIC 3207

Attention: David Visser

Dear David,

RE: 72MM SUPAPANEL MAXIMUM HEIGHT VS WIND PRESSURE VS DEFLECTION CHARTS – INTERIM STRUCTURAL CERTIFICATE

Robert Bird Group – Consulting Structural Engineers, were commissioned by David Visser from Wall Technologies Pty Ltd to prepare an Interim Structural Design Certificate for the 72mm Supapanel System **MAXIMUM HEIGHT VS WIND PRESSURE VS DEFLECTION CHARTS** based on the available test data and installations tabulated below and derived via methods of theoretical interpolation of testing data.

Test Data Summary

Robert Bird Group undertook this theoretical desktop assessment and detailed design work for the proprietary installations as specifically tested and reported by Ian Bennie Associates as tabulated below to formulate theoretical interpolations of various spans:

- a) Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m³@3600 Span, Report No. 2021-085-S1-S4 (Amended) dated 3rd February 2022.
- b) Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m³@6000 Span under maximum 300 and 600 Pa testing loads received on January 2022.

Based on the above testing report and data, the test data summaries are as follows:

1. 3.6m high Supapanel tests dated 23rd September 2021:

- 4 sets of 1000mm wide x 72mm thick K8 Supapanel – 0.35BMT/380 kg/m³ at 3600mm spans were installed by K8 Australia. The testing panels were screwed to the top and bottom tracks on one side only, as well as to the side tracks on both sides. The testing panels were connected together with the screws on one side only. The deflection measurement sensors were installed at the panel joints in the middle of the testing panels opposite to the screwed side.
- The top and side tracks were the C section of 50/75/50 x 0.9BMT. The bottom tracks were the J section of 20/75/50 x 0.9BMT. The top and bottom tracks were fixed to the testing frame, the side tracks were spanning between the top and bottom tracks.
- At the K8 Australia's request, the testing method was changed to only include Structural SLS, Structural ULS test procedures and the default performance requirements of AS/NZS 4284:2008: Testing of Building Facades. The nominated SLS pressure is +/- 1750 Pa. The actual SLS pressure is +1750 Pa and -1710 Pa. The nominated ULS pressure is +/- 3000 Pa.
- All successive member residual displacement of the testing panels is less than 3mm, therefore all testing results can be adopted in our theoretical desktop assessment based on AS/NZS 4284:2008

- The testing sample passed the requirements of the test as the pressures of +/- 3.0 KPa were sustained for 10 seconds without any sign of failure. No measurement results were provided in the testing report.

2. 6m high Supapanel tests:

- 2 sets of 1000mm wide x 72mm thick and 1 set of 1750mm wide x 72mm thick K8 Supapanel – 0.35BMT/380 kg/m³ at 6000mm spans were installed by K8 Australia. The fixing details of the testing panels were the same as the 3.6m high testing panels. The deflection measurement sensors were installed at the panel joints in the middle of the testing panels opposite to the screwed side.
- The track sizes and its fixing details are the same as the tracks used in the 3.6m high Supapanel tests except the top track was 50/75/50 x 1.15BMT.
- The testing method was also based on AS/NZS 4284:2008. The actual SLS testing pressure is +/- 300 Pa and +600/-610 Pa.
- Even though the successive member residual displacement exceeded 3mm during the tests under the SLS testing pressure of +600/-610 Pa, the residual displacement is less the maximum residual displacement specified by K8 Australia in Appendix C - Nondefault Structural SLS Performance Requirements. Therefore, all testing results are accepted in our theoretical desktop assessment.
- The testing sample passed the requirements of the test as the pressures of +/- 1.4 KPa were sustained for 10 seconds without any sign of failure. No measurement results were provided in the testing report.

Please refer to above detailed test reports for exact test set up and graphics associated with the installation which we understand Wall Technologies Pty Ltd will summarize into a formal Installation and Design Manual. The final manual will be subject to final review by Robert Bird Group Pty Ltd and we will provide a subsequent update to this Interim Structural Certificate for final reference purposes.

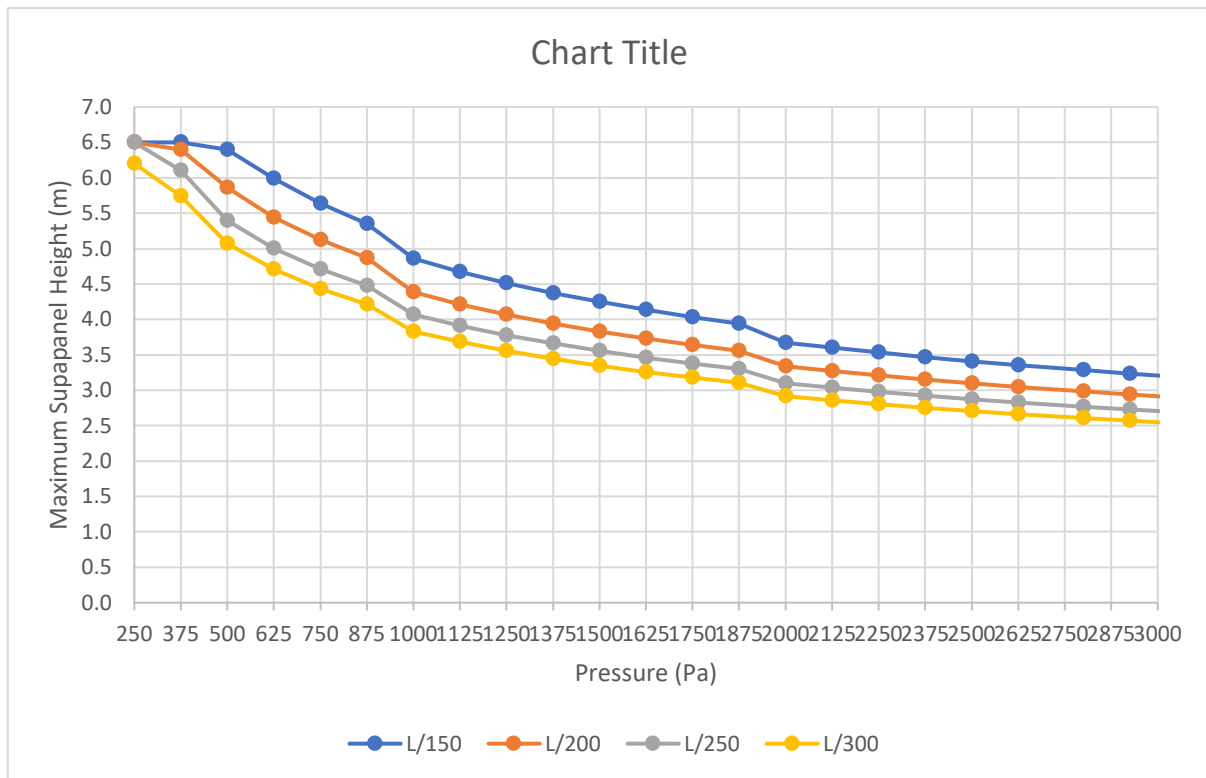
This interim structural certificate provided herewith is based on the wall installation, as tested for the 72mm thick Supapanel supported vertically by a proprietary top deflection head track installation with nominal 25mm gap, and bottom track snug fit as diagrammatically configured on the Supapanel Shop Drawing of EXT-WFT_02-01 dated 17 September 2021. We note that Robert Bird Group has not assessed the fire condition as part of this structural wind load study. Noting this certificate is for various face pressure and deflection in 125 Pascal intervals from 250 Pa up to 3000 Pa in face pressure.

Assessment Basis and Installation Summary

- The structural assessment of 72mm Supapanel MAXIMUM HEIGHT VS WIND PRESSURE VS DEFLECTION CHARTS was undertaken based on the applied pressure vs mid span net displacement, as tested above.
- The Supapanel wall system used in the 3.6m and 6m high Supapanel testing typically comprised of 2 # 350mm wide core samples combined and interconnected with a half width core each side to form the 3.6m and 6m high x 1.0m wide tested system except one testing wall system comprised of 4 # 350mm wide core samples combined with a half width core each side to form the 6m high x 1.75m wide tested system. Each core contained 380 kg/m³ density concrete with the screw fixings only installed between panels on the positive pressure face.
- The testing report from Ian Bennie & Associates provides an outline for this engineering review undertaken of the wind testing data and how this data was utilised to validate the certification of the Supapanel products with 0.35mm BMT. The testing application for this stage is limited to 3.6m and 6.0m maximum height as per the tested panels for the specified 'Safe Working and Ultimate Wind Loads' in the testing reports. These wind loads have been determined for Region A zones to AS1170.2-2011 and are not applicable to cyclonic regions.
- Significant variations of the deflection measurements were found in the 6m H (600Pa) Supapanel tests. We have excluded the testing measurements that are 25% more than the average values to improve the accuracy of our analysis results for the Supapanel with the deflection limit not more than span/250. We have also excluded the testing measurements that are 30% more than the average values for the Supapanel with the deflection limit between span/200 and span/150.

- The 1.15mm thick track capacities and deformation have been assessed for the 6m high testing panel to identify if the excessive residual deflection in the testing panels was partially caused by the top track. We have found the above track is adequate and its deformation has a minor impact to the panel residual deflection.
- The track fixing details have not been assessed as part of this interim certification.
- Durability, fire and cyclonic loading have not been assessed as part of this interim certificate.

| Pressure (Pa) | Maximum Supapanel Height (m) | | | |
|---------------|------------------------------|-------|-------|-------|
| | L/150 | L/200 | L/250 | L/300 |
| 250 | 6.5 | 6.5 | 6.5 | 6.2 |
| 375 | 6.5 | 6.4 | 6.1 | 5.7 |
| 500 | 6.4 | 5.9 | 5.4 | 5.1 |
| 625 | 6.0 | 5.4 | 5.0 | 4.7 |
| 750 | 5.6 | 5.1 | 4.7 | 4.4 |
| 875 | 5.4 | 4.9 | 4.5 | 4.2 |
| 1000 | 4.9 | 4.4 | 4.1 | 3.8 |
| 1125 | 4.7 | 4.2 | 3.9 | 3.7 |
| 1250 | 4.5 | 4.1 | 3.8 | 3.6 |
| 1375 | 4.4 | 3.9 | 3.7 | 3.4 |
| 1500 | 4.2 | 3.8 | 3.6 | 3.3 |
| 1625 | 4.1 | 3.7 | 3.5 | 3.3 |
| 1750 | 4.0 | 3.6 | 3.4 | 3.2 |
| 1875 | 3.9 | 3.6 | 3.3 | 3.1 |
| 2000 | 3.7 | 3.3 | 3.1 | 2.9 |
| 2125 | 3.6 | 3.3 | 3.0 | 2.9 |
| 2250 | 3.5 | 3.2 | 3.0 | 2.8 |
| 2375 | 3.5 | 3.2 | 2.9 | 2.8 |
| 2500 | 3.4 | 3.1 | 2.9 | 2.7 |
| 2625 | 3.4 | 3.0 | 2.8 | 2.7 |
| 2800 | 3.3 | 3.0 | 2.8 | 2.6 |
| 2925 | 3.2 | 2.9 | 2.7 | 2.6 |
| 3050 | 3.2 | 2.9 | 2.7 | 2.5 |



Interim Structural Certificate (Pending Final Installation and Design Manual)

This letter is provided to K8 Australia Pty Ltd and Wall Technologies Pty Ltd as an Interim Structural Certificate for the 72mm Supapanel MAXIMUM HEIGHT VS WIND PRESSURE VS DEFLECTION CHARTS based on theoretical interpolation of the tested installations.

Robert Bird Group herby certify that the 72mm Supapanel MAXIMUM HEIGHT VS WIND PRESSURE VS DEFLECTION CHARTS as tabulated above have been validated in accordance with all relevant test data provided for our assessment, AS/NZS 4284:2008, Section 8 in AS/NZS 4600-2018, Non Default Structural SLS Performance Requirements by the client, theoretical interpolation of test data and using all available data at this time and based on the list of constraints and design & installation assumptions noted above.

A final structural certificate will be provided pending our review of the final Installation and Design Manual.

ISSUE / AMENDMENT AUTHOR:
WEI CHEN

.....
Author of Issue / Amendment
Signing for and on behalf of
Robert Bird Group Pty Ltd
PE0001695

REVIEWER:
JOHN BAMBINO

.....
Reviewer of Issue / Amendment
Signing for and on behalf of
Robert Bird Group Pty Ltd
PE0000468



CONDITIONS AND LIMITATIONS

This assessment report does not provide an endorsement by Assurance of the actual product evaluated.

The conclusions of this assessment may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazards under all conditions.

Because of the nature of fire testing, and the consequent difficulty in quantifying the uncertainty of measurement, it is not possible to provide a stated degree of accuracy. The inherent variability in test procedures, materials and methods of construction, and installation may lead to variations in performance between elements of similar construction.

The assessment can therefore only relate to the actual prototype test specimens, testing conditions and methodology described in the referenced documents, and does not imply any performance abilities of constructions of subsequent manufacture.

This assessment is based on information and experience available at the time of preparation. The published procedures for the conduct of tests and the assessment of test results are the subject of constant review and improvement and it is recommended that this report is reviewed on or, before, the stated expiry date.

This report is prepared in good faith and with due care for information purposes only, and should not be relied upon as providing any warranty or guarantee. In particular, attention is drawn to the nature of the inspection and investigations undertaken and the limitations these impose in determining with accuracy the state of the building, its services or equipment and life safety.

Assurance's involvement in the Project is limited to the role outlined in our 'Scope of Service' of the quote. This report reflects that role.

Any reliance on, or use of, this report for purposes outside the scope of service is at the user's own risk.

Assurance shall not be held liable for any loss or damage resulting from any defect of the building or its services or equipment or for any non-compliance of the building or its services or equipment with any legislative or operational requirement, whether or not such defect or non-compliance is referred to or reported upon in this report, unless such defect or non-compliance should have been apparent to a competent engineer undertaking the evaluation of the type undertaken for the purpose of preparation of this report.

Assurance has carefully reviewed and applied to the best of our ability the requirements of local Legislation, the current NCC and the Australian Fire Engineering Guidelines. Any changes to the reference documents including the NCC should warrant a review of this report.

This report is provided to the client at their request to evaluate the product performance under fire safety performance analysis. Assurance provides no warranty that this report will be approved by building authorities, future legislation or changes to the building code that would impact this evaluation where a deemed to satisfy solution may be required, further evaluation is needed or be subject to a fire order or new legislation for its design.

Assurance has relied upon the information provided by the client such as the architectural plans, building photos and construction detail. Assurance has not audited these documents or the building and assumes the information provided by the client on these documents is accurate. Assurance cannot provide any warranty that our report accuracy is maintained should the information provided have errors.



Global Reach
Local Knowledge



Page 72 of 72

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---- END OF REPORT ---

