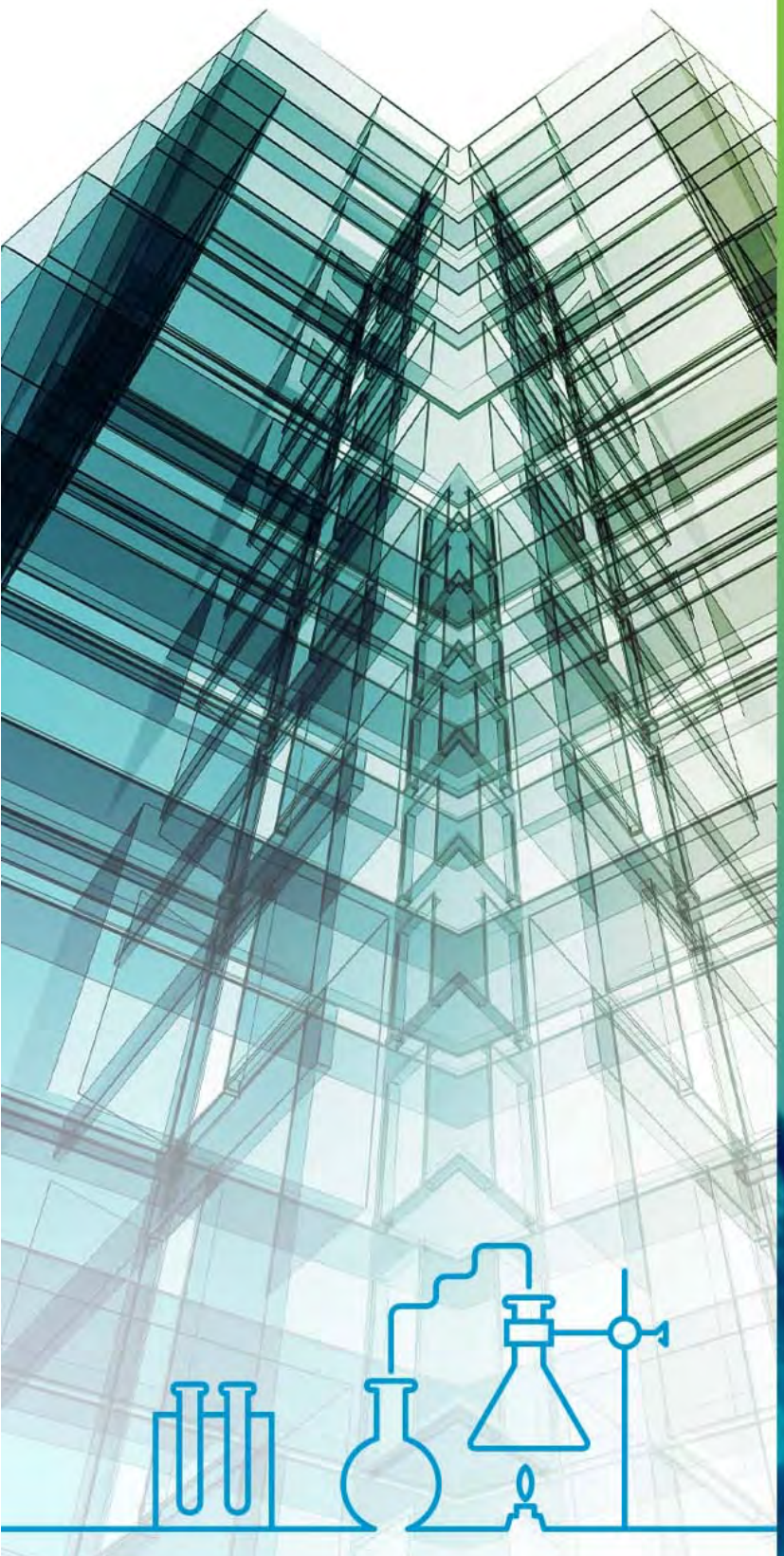

K8 Supapanel
FIRE ASSESSMENT REPORT
STAIR INSTALLATION

AS 1530.4-2014

IGNE-9170-01R I01R00

Issued: 31.03.2025

Valid for:

- NCC Vol 1 BCA 2022

DOCUMENT REVISION HISTORY

Issue	Revision	Date	Purpose of Issue	Prepared by	Reviewed by
01	00 D01	04.03.2025	Issued internally for review	TL	BHB
01	00	31.03.2025	Issued to client	TL	BHB

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BEng (ANU)
Lead Engineer

Authorised by
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Chartered Professional Engineer
CPEng, NER (Fire Safety / Mech) 2590091, RPEQ 11498, BDC-1875, PRE0000303, DEP0000317, PE0001872
MFireSafety (UWS), Beng (UTS), GradDipBushFire (UWS), DipEngPrac (UTS), DipEng (CIT)

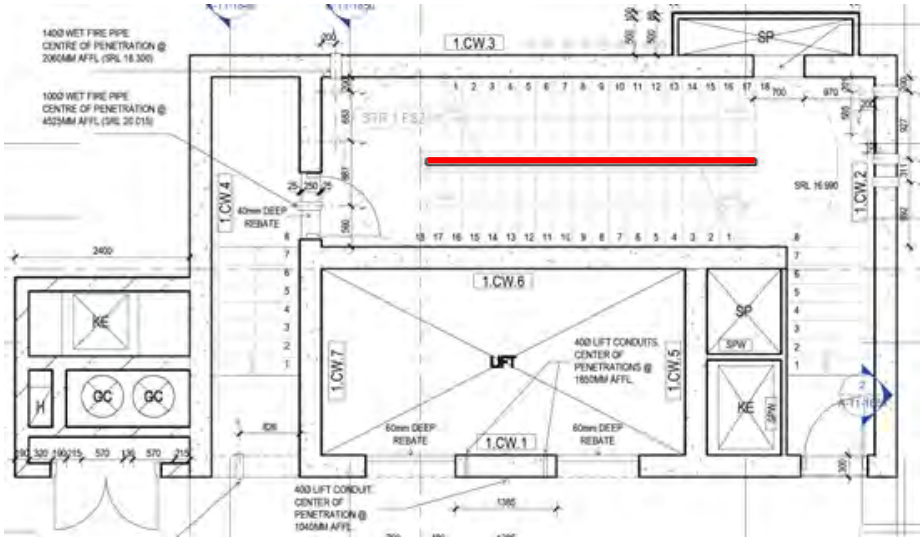
TABLE OF CONTENTS

1 INTRODUCTION

1.1 Assessment Objectives

The purpose of this assessment is to report the applicable use and compliance of the 72mm wide K8 Supapanel against the requirements of the National Construction Code – Volume One – Building Code of Australia 2022 (BCA) to be used as a non-combustible infill panel wall system associated with the stair construction within buildings. The assessment considers the testing undertaken by Warringtonfire, Fire TS Lab and the Robert Bird Group evaluation – see attached.

FIGURE 1:
STAIR INFILL PANEL LOCATION



This assessment considers the additional span above the tested 3m height to a 6 m height. A 6.5 m length of panel was tested by Ian Bennie and Associates to AS/NZS 4284:2008 and evaluated by Robert Bird Group in assessment 20603A-01 dated 02 December 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 pascal for the 3.6m length specimen a deflection of 17.3 mm was measured. At 600 pascal 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 m does present a reduction in performance.

Testing of the wall system in accordance with AS 1530.4-2014 has been undertaken by pfits 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. The initial development test demonstrated the ability for the panel to achieve an ongoing ability to maintain integrity for greater than 4 hours as well as the method and process of thermal transmission through the joints in which the insulation criteria fail. The additional pilot testing was undertaken by Warringtonfire in their report FRT200129 the 62mm

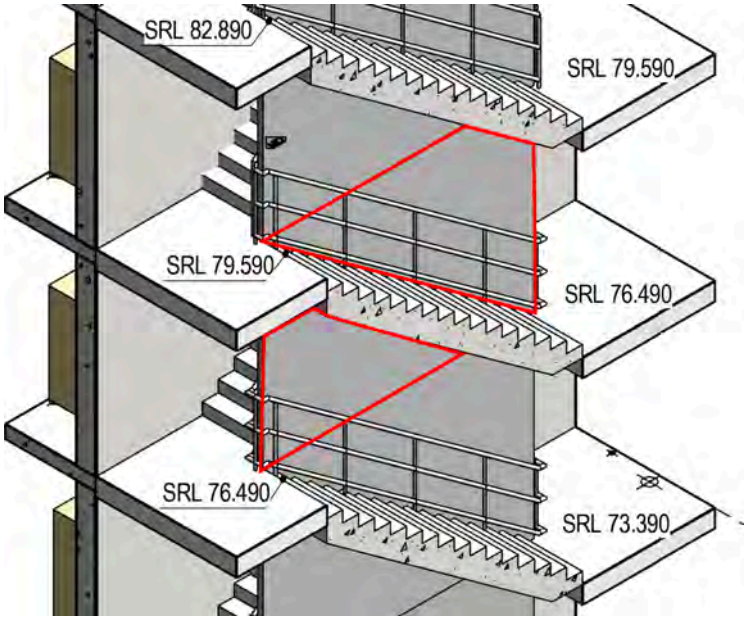
Supapanel wall system with a 16mm plasterboard liner. The specimen achieved no failure of integrity and resulted in insulation failure at 165 minutes. The resultant FRL is determined by Warringtonfire to be -/180/120. The 72mm wide K8 Supapanel was tested by Ignis Labs in their pilot wall test apparatus. The pilot wall system with fire grade mastic over the joints resulted no failure in integrity and insulation failure after 122 minutes resulting in an FRL as determined by Ignis Lab to be -/120/120. During the Warringtonfire test a deflection of up to 130 mm was measured at the peak point of the 240 minute test. During the 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 integrity over the 240 minute 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 is able 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. This is enhanced based on the subject installation and fixing over the stair connection.

The following image details the proposed installation of Superpanel within the stair configuration in a set panel.

FIGURE 2:

STAIR CONFIGURATION



This report is issued by Benjamin Hughes-Brown, Accredited Laboratory Signatory and Chartered Professional Engineer and signatory of Ignis Labs for use under the Deemed-to-Satisfy requirements of the BCA Volume 1. This report is by an Accredited Testing Laboratory, NATA accreditation 20534 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.

1.2 System Overview

The K8 Supapanel is a 420mm deep x 62mm and 72mm thick panel (nominal 350mm between panel to panel joints) comprised an aerated cement core encased in a 0.3 to 0.4mm thick mild galvanised steel 250 MPa skin with a 320kg to 380kg concrete core. The 0.3mm thick steel casing was subjected to testing. The following figures detail the 62mm and 72mm wide panels characteristics.

FIGURE 3:
62 MM SUPAPANEL

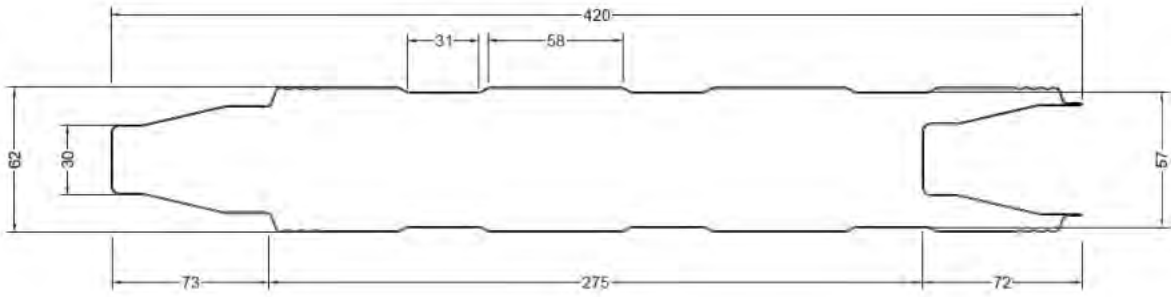
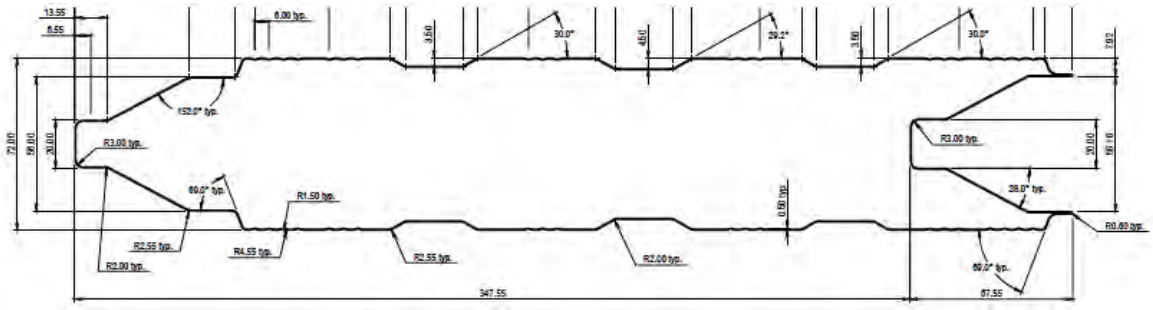


FIGURE 4:
72 MM SUPAPANEL



1.3 Summary of Evidence

The Wall Technologies wall system has been tested by Warringtonfire, Fire TS Lab and Ignis Labs in accordance with AS 1530.4:2014. The K8 Supapanel, being a 62mm panel as well as 72mm panel width achieves the following Fire Resistance Levels:

A | Wall System A1 - Fire Resistance Level – 62mm thick
The A1 wall system consists of a 62mm K8 Supapanel

BCA Clause
Clause A5.4
AS 1530.4:2014

Supporting Evidence — **Test Report**
Pfits test report — PF19066 R1.0 21.01.2020

Application
The K8 Supapanel is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/60/60.

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

Fire Resistance Level

Structural Adequacy	-
Integrity	60
Insulation	60

B | Wall System A2 - Fire Resistance Level – 62mm thick + joint mastic

The A2 wall system includes a 62mm panel and mastic installed over the joints.

BCA Clause	Test Report
Clause A5.4	
AS 1530.4:2014	

Supporting Evidence	Test Report
Pfits test report	PF19066 R1.0 21.01.2020
Ignis Solutions joint evaluation	IGNS-9137

Application

The K8 Supapanel with joint mastic is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/90/90.

Installation Conditions

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

Fire Resistance Level

Structural Adequacy	-
Integrity	90
Insulation	90*

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

C | Wall System A3 - Fire Resistance Level – 62mm thick + 13mm fire grade plasterboard

The A3 wall system includes the 62mm panel and 13mm fire grade plasterboard panel.

BCA Clause	Test Report
Clause A5.4	
AS 1530.4:2014	

Supporting Evidence	Test Report
Pfits test report	PF19066 R1.0 21.01.2020
Ignis Solutions evaluation	IGNS-9137

Application

The K8 Supapanel with 13mm fire grade plasterboard is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/90/90.

Installation Conditions

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

Fire Resistance Level

Structural Adequacy	-
Integrity	90
Insulation	90*

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

D | Wall System A4 - Fire Resistance Level – 62mm thick + 16mm fire grade plasterboard

The A4 wall system includes the 62mm panel and 16mm fire grade plasterboard panel.

BCA Clause	Test Report
Clause A5.4	
AS 1530.4:2014	

Supporting Evidence	Test Report
Warringtonfire	FRT200129 R1.0 10.06.2020

Application

The K8 Supapanel with 16mm fire grade plasterboard is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/120/120.

Installation Conditions

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

Fire Resistance Level

Structural Adequacy	-
Integrity	120
Insulation	120*

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

E | Wall System A5 - Fire Resistance Level – 72mm thick + fire mastic over joints	
The A5 wall system includes the 72mm panel with fire grade mastic.	
BCA Clause	**Test Report**
Clause A5.4 AS 1530.4:2014	
Supporting Evidence	**Test Report**
Ignis Labs	IGNL-5043-04-03R I01R00 30.05.2021
Application	
The K8 Supapanel with fire grade mastic over the joint is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/120/120.	
Installation Conditions	
The K8 Supapanel is to be installed in accordance with K8 Installation Guide 2020.	
Fire Resistance Level	
Structural Adequacy	-
Integrity	120
Insulation	120

F | Wall System A6 - Fire Resistance Level – 72mm thick + intumescent strip	
The A6 wall system includes the 72mm panel with fire grade mastic.	
BCA Clause	**Test Report**
Clause A5.4 AS 1530.4:2014	
Supporting Evidence	**Test Report**
FireTSLab	PF23046 13.09.2023
Application	
The K8 Supapanel with intumescent strip over the joint is considered suitable for installation where a wall that achieves a Fire Resistance Level of at least -/120/120.	
Installation Conditions	
The K8 Supapanel is to be installed in accordance with K8 Installation Guide 2020.	
Fire Resistance Level	
Structural Adequacy	-
Integrity	120
Insulation	120

1.4 Wind Load 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 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.

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) Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m^3@3600 Span, Report No. 2021-085-S1-S4 (Amended) dated 3rd February 2022.

b) Superpanel Test Report: K8 Supapanel - 0.35BMT/380 kg/m^3@6000 Span under maximum 300 and 600 Pa testing loads received on 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 highx1.75m wide tested system. Each core

contained 380 kg/m^3 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 0.35 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 K8 Supapanel has the capacity to maintain its integrity and fixing over a span of 6m when subject to Safe Working and Ultimate Wind Loads.

2 NATIONAL CONSTRUCTION CODE COMPLIANCE

2.1 General

The following Clauses of the BCA (including all related State and Territory variations) have been evaluated and is of the opinion of Ignis Labs to satisfy the following parts of the Building Code of Australia.

Volume One and Two – Building Code of Australia 2022

2.1.1 Clause A5G5 Fire-resistance of building elements

i. Schedule 5 Clause 2(b) 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.

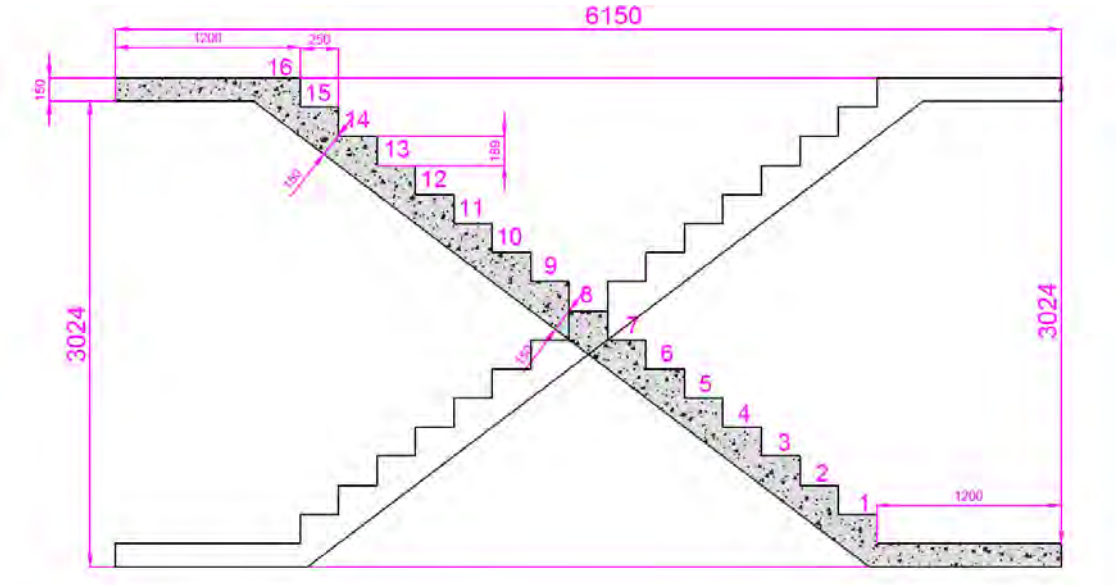
ii. 72 mm Supapanel FRL of at least -/120/120.

3 INSTALLATION

The installation of Supapanel to maintain the required fire resistance level over the span from 3.6 m to 6.5m is documented in the attached drawings by K8. This includes screw spacing and fixings.

The C-track is to be fixed to each landing of the stair landings.

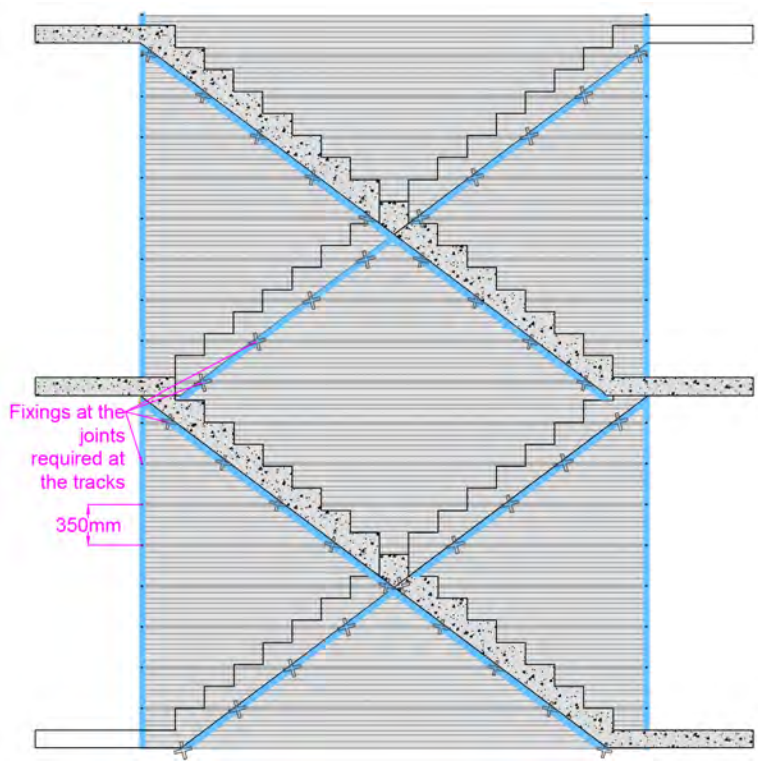
FIGURE 5:
STAIR SIZE AND DIMENTIONS



The following figure outlines the proposed installation and fixing system of the K8 Panels within the stair.

FIGURE 5:

STAIR SIZE AND DIMENTIONS



The following figure outlines the stair spine wall mix between where a separating non fire wall occurs and the fire separating part is located within the wall. Where the fire wall part of the stair occurs, it is important that any gap between the K8 Supapanel and stair treads is fire sealed.

FIGURE 5:

STAIR FIRE WALLS AND NON FIRE WALLS

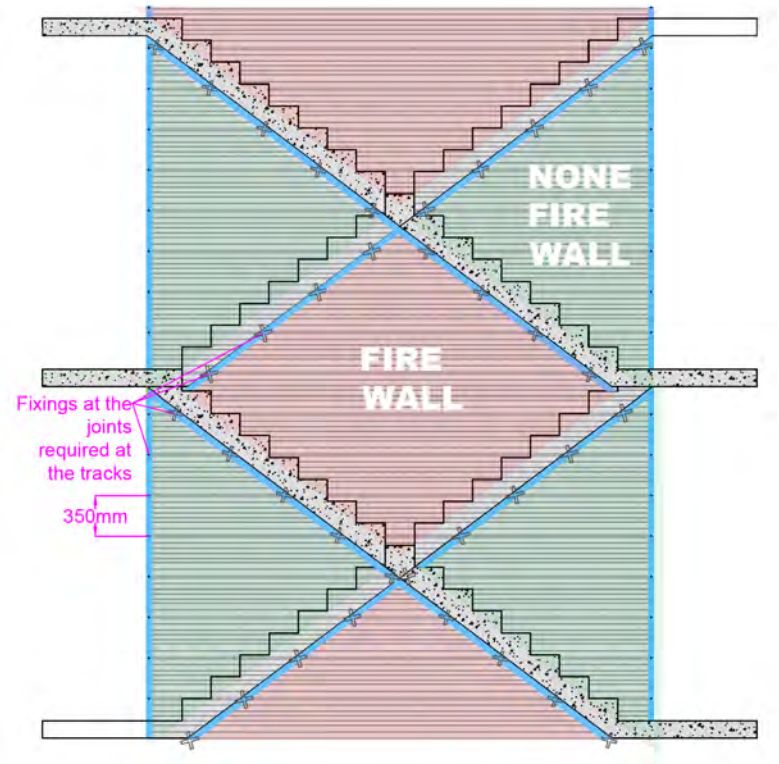
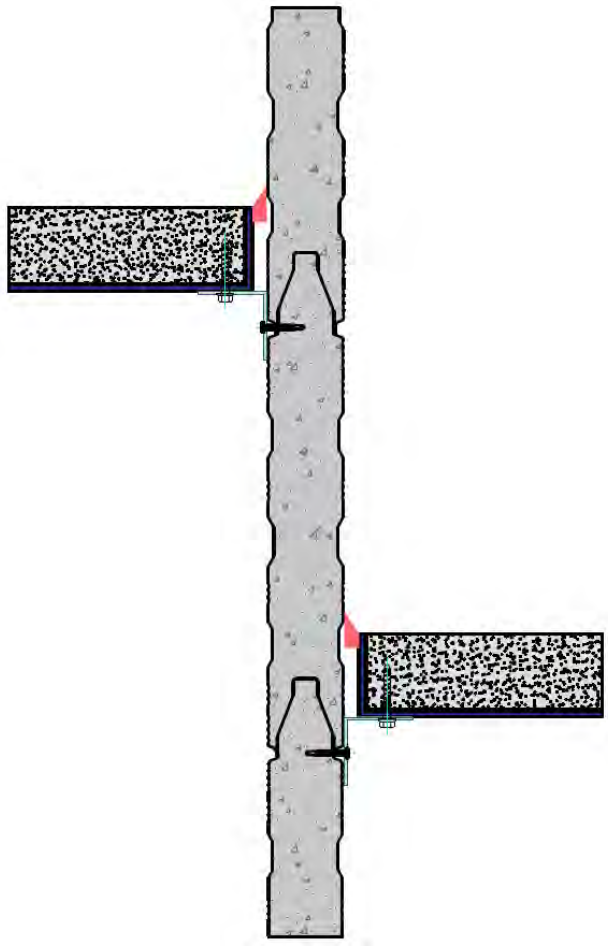


FIGURE 5:

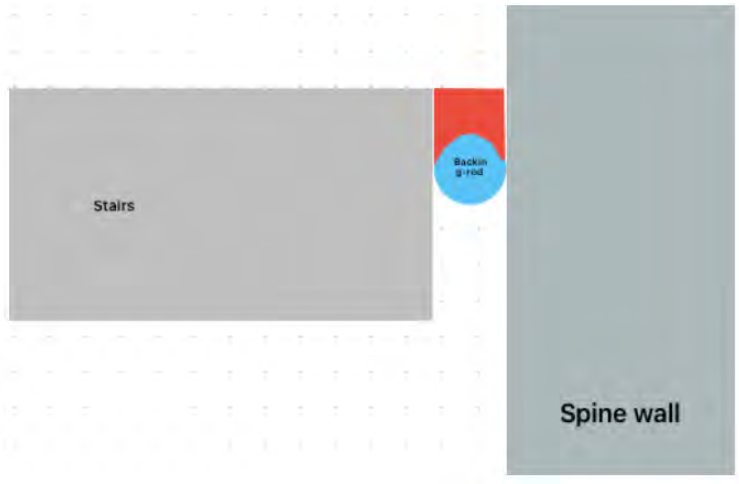
STAIR CONNECTION TO K8 SUPAPANEL WITH FIRE SEAL LOCATION



Any gap between the stringer and stairs is to be treated with backing rod and mastic 20 mm deep and to a maximum width of 40mm as per the image below.

FIGURE 5:

GAP INFILL DETAIL – OPTION 1



Any gap greater than 40 mm will require infill with mineral wool and steel capping, being either steel angle or flashing fixed to the stair stringer and the Supapanel or sealed with fire grade mastic.

FIGURE 6:

GAP INFILL DETAIL OPTION 1 AND 2

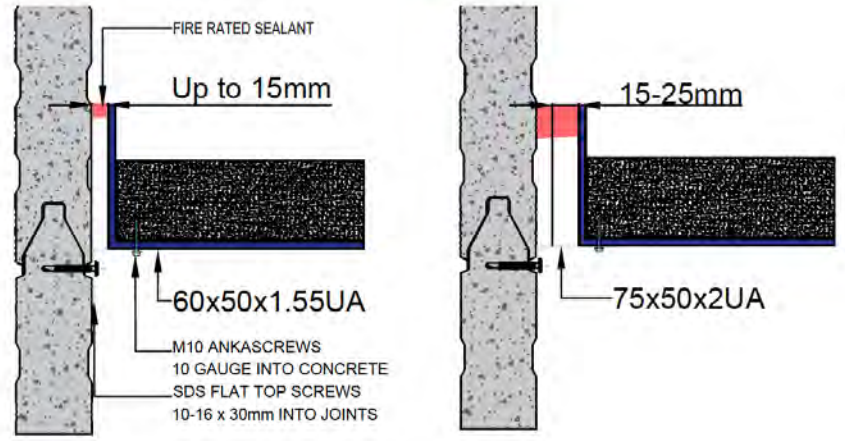


FIGURE 7:

GAP INFILL DETAIL – OPTION 3 AND 4

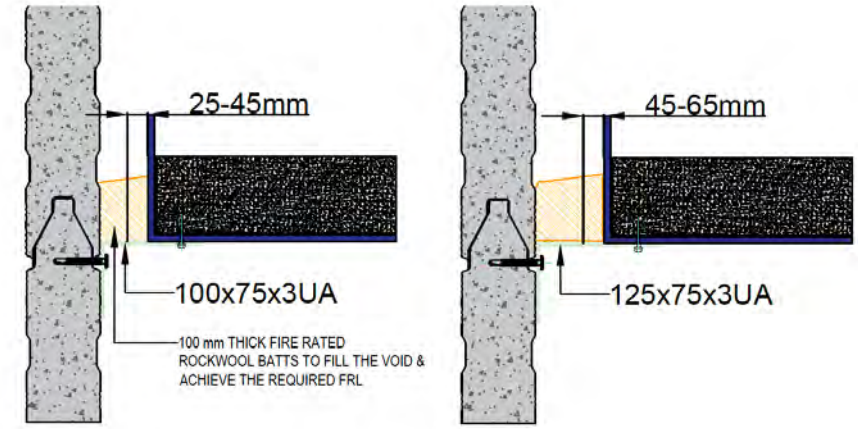
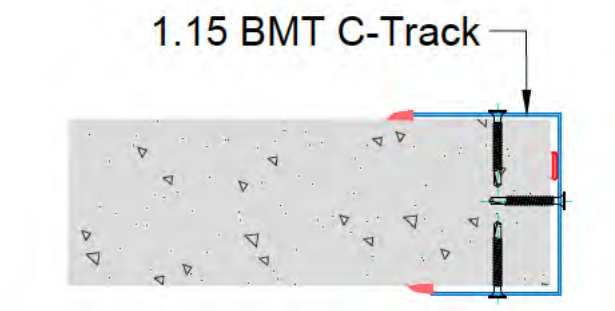


FIGURE 7:

K8 SUPAPANEL END CAPPING



3.1 Limitations

Any variations with respect to the size or construction detail other than those identified in this report may invalidate the conclusions drawn.

This report details the methods of construction, test conditions and the results obtained when the specific element of construction described herein was tested following the procedure outlined in as 1530.4. Any significant variation with respect to size, constructional details, loads, stresses, edge or end conditions, other than that allowed under the field of direct application in the relevant test method, is not covered by this report.

Because of the nature of fire resistance testing and the consequent difficulty in quantifying the uncertainty of measurement of fire resistance, it is not possible to provide a stated degree of accuracy of the result.

4 DIRECT FIELD OF APPLICATION

This assessment report is by an Accredited Testing Laboratory, Ignis Labs holds NATA accreditation 20534 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. Ignis Labs holds accreditation to AS 1530.4- 2014, AS 4072.1-2005.

Warringtonfire was an accredited laboratory with NATA No. 3277 at the time of testing and reporting.

Fire TS Lab is accredited with IANZ and recognised by NATA through a mutual recognition agreement under the International Laboratory Accreditation Cooperation. BCA Clause A5G3(1)(d) identifies Evidence of Suitability in relation to a report issued by the defined term Accredited Testing Laboratory. The BCA defines an Accredited Testing Laboratory being one of the following:

(a) An organisation accredited by the National Association of Testing Authorities Australia (NATA) to undertake the relevant tests.

(b) An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.

(c) An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.

In relation to Warringtonfire, they are now known as Jensen Hughes, in accordance with the definition of an Accredited Testing Laboratory under the BCA, option (c) is applied being an organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken. At the time the reference testing in this report was conducted by Warringtonfire, they were accredited with NATA to the scope listed.

In relation to Fire TS Lab, they are located in New Zealand and accredited with IANZ, being an equivalent accreditation body to NATA. In accordance with the definition of an Accredited Testing Laboratory, option (b), an organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement. IANZ and NATA are accredited and members of the International Laboratories Accreditation Cooperative (ILCA) being signatories to an international mutual recognition agreement. In accordance with this agreement, IANZ and by extension Fire TS Lab satisfy the definition of an Accredited Testing Laboratory.

4.1 Limitations

Any variations with respect to the size or construction detail other than those identified in this report may invalidate the conclusions drawn.

4.2 Term of Validity

This evaluation is valid for the National Construction Code of Australia - Volume One - Building Code of Australia 2022.

5 ROBERT BIRD EVALUATION

Robert Bird Group
Member of the Surbana Jurong Group

Robert Bird Group Pty Ltd
ABN 67 010 580 248 | ACN 010 580 248

Reference: 25084M-RBG-ZZ-XX-CO-ST-00001-JB:DF-250312-Rev A

12 March 2025

David Visser
K8 Australia Pty Ltd
7/344 Lorimer Street
PORT MELBOURNE VIC 3027

Dear David,

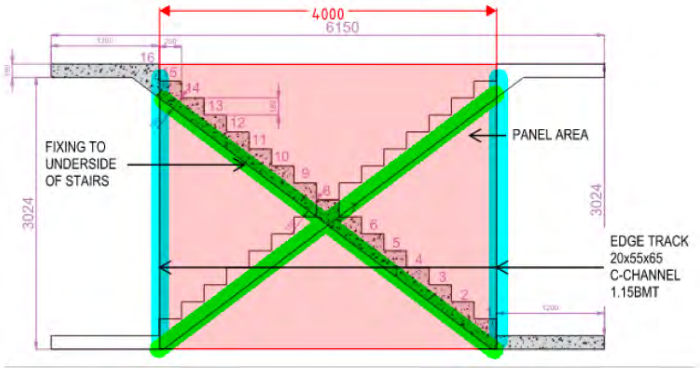
RE: STRUCTURAL CERTIFICATE – SUPAPANEL STAIR SEPARATION ANGLE BRACKET AND FIXING

Robert Bird Group – Consulting Structural Engineers, were commissioned by David Visser from K8 Australia Pty Ltd in accordance with briefing meeting held at RBG office on 27th February 2025, to prepare this Structural Design Certificate for the Supapanel Stair Separation angle bracket and fixing for configuration noted below.

This certificate is based on the inputs and assumptions presented below and desktop calculations undertaken based on first principles and code-based design to Australian Standards.

Inputs and Assumptions

Figure 1: Sectional view of stair separation panel.



This design assessment is for the under-stair support angle. Our analysis is based on the following inputs and assumptions:

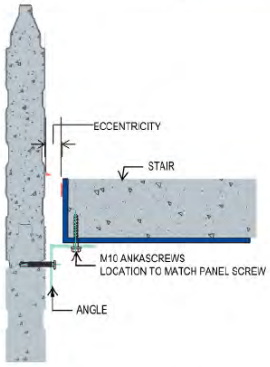
- Panels used are 72mm K8 Supapanel, with panel weight of 40kg/m².
- Load cases:

MELBOURNE
Tower 4, Collins Square
Level 19, 727 Collins Street
Melbourne VIC 3000 Australia
PO Box: 472,, Collins Street West VIC 8007
p: +61 (0)3 8677 7555 | w: robertbird.com

- Lateral load assessed is 0.25kPa to account for pressurisation effect of stair shaft to meet NCC requirement. This is assessed as a combination loading along with gravity load.
- In fire case, only gravity load (i.e. panel self-weight) is considered and considering of 50% effective anchors on a supporting edge.
- For this certification, we assume all gravity loads of the panels are fully taken by supporting edge at underside of stair flight.

- Floor-to-floor height of 3.2m, and panel width of 4.0m max.
- Panels are fixed to stair landings on both sides as well as 20x40x75mm J-track (1.15BMT), using at least 270MPa steel.
- Screw fixings between panels and both angle and C-channel are 10g @ 350 c/c (vertically) Powers+ or equivalent.
- Allowable deflection of height/100 and height/150 have been considered. Refer to previous RBG certification for span tables.
- 4 eccentricities are assessed for construction tolerances: 15mm, 25mm, 45mm and 65mm gaps.
  - Anchors towards stair is M10 WERCS AnkaScrews (60mm embedment), with location to match screw towards panels. Spacings between screws are approximately 580mm centres in this application.
  - Angle is continuous throughout the length of each stair flight.

Figure 2: Panel anchor eccentricity towards stair structure.



- The incumbent engineer is responsible for checking the base build structure to take gravity and lateral load applied by the panels supports.

Assessment & Summary

Floor-to-floor geometry is compliant with span tables previously produced (max 4m span horizontally). 75mm deep 1.15BMT C-channel track to each end of wall shows adequate capacity under 0.25kPa pressure load in both strength and serviceability limit states.

- Our assessment shows that fire case is critical case scenario.
- Total floor-to-floor panel weight is 512kg. Installation comprises of 9 (nine) No. 10g screws anchoring points per floor to carry total panel weights in fire case, hence shear load is 128kg/screw. This is acceptable based on testing completed on 18th November 2020 which demonstrated anchoring screw has breaking shear capacity of 215kg/screw.

- Assessment on angle is summarised in Table 1 below.

Table 1: Panel & stair gap summary.

Clear Gap Between Panel and Stair	Up to 15mm	15-25mm	25-45mm	45-65mm
Angle Size (long leg horizontal)	**65x50x1.55UA**	**75x50x2UA**	**100x75x3EA**	**125x75x3EA**
Min. edge distance for M10 screws	**30mm**	**30mm**	**30mm**	**30mm**

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 Supapanel Stair Separation Angle Bracket and Fixing.

Robert Bird Group herby certify that the Supapanel stair separation angles as assessed within this certificate have been validated in accordance with the relevant input data provided for our assessment, using design principles from AS4100 and AS4600, and based on the list of constraints and design & installation assumptions noted above.

We note the angle bracket sizes and anchor requirement are limited for the purpose of this certificate as noted in the table.

A further structural certificate update can be provided in due course pending our review of the final Installation and Design Manual in conjunction with this certificate to be completed by Wall technologies Pty Ltd in due course.

Yours faithfully

ROBERT BIRD GROUP PTY LTD

Kevin Jo
Senior Engineer

John Bambino
Regional Director (VIC + TAS)
MIEAust, CPEng NER PE0000468

Robert Bird Group
Member of the Surbana Jurong Group

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www.robertbird.com

Reference: JB:DF CO/ST 20603A-01

2 December 2022

K8 Australia Pty Ltd
7/344 Lorimer Street
PORT MELBOURNE VIC 3207

Attention: David Visser

Dear David,

RE: STRUCTURAL CERTIFICATE – SUPAPANEL STAIR SEPARATION END POSTS

Robert Bird Group – Consulting Structural Engineers, were commissioned by David Visser from K8 Australia Pty Ltd in accordance with our engagement letter dated 5th August 2022, to prepare this Structural Design Certificate for the Supapanel Stair Separation end posts.

This certificate is based on the inputs and assumptions presented below and desktop calculations undertaken based on first principles and code based design to Australian Standards.

Inputs, Assumptions, and Assessment Basis

Our analysis is based on the following inputs and assumptions:

- Posts are supporting vertical (panel self-weight) and lateral (wind, seismic) loads from horizontally spanning, 62mm or 72mm thick Supapanel. Supapanel span is up to 6.5m, with tabulated values from 4.0m up in increments of 0.5m (linear interpolation is allowable).
- Gravity load is self-weight only for the purpose of this certificate.
- Lateral loads are also restrained by the stair structure as noted in Figure 1, as advised by David Visser. Thus only half of the lateral load is distributed to the post (distributed as 100% to top down to 0% at bottom, or vice-versa). This relies on the panel being installed hard up against the stair on both sides.
- Lateral load deflection is restrained by the C-track and the post, assumed to be working compositely. This requires the C-track to be continuous throughout the full height of the post. Any cuts or discontinuities in the C-track will compromise the composite action.
- The analysis relies upon the screw fixings between the C-track and the RHS post transferring both gravity and lateral loads. Screw fixings between the C-track and the RHS post are to be 8g @ 700 c/c Powers+ or equivalent.
- This work is based on first principle, analysis of standard sections and capacity data readily available in the marketplace hence does not involve any new R&D works.
- This assessment is for internal panels only.
- Allow for up to 250 pascals lateral load (unfactored, serviceability load) to match BCA testing requirement. Lateral loads of 150Pa and 200Pa have also been analysed and tabulated. The project engineer is responsible for calculating the required lateral loads and selecting the applicable table (linear interpolation is allowable).
- We understand there is a separated handrail eliminating any human trafficable balustrade load consideration.
- The panel weight is 32kg/m².
- The load of the wall will transfer to each floor, so each length of post is only taking one level of panel gravity loads.
- The incumbent engineer is responsible for checking the base build structure to take gravity and lateral load applied by the posts.

- Screw fixings between C-track and panel are to both sides of the track, at maximum 700mm spacing (every second panel), or as required by the panel design (as noted in separate certificates), whichever is more onerous.
- C-track thickness is minimum 0.9mm BMT, using at least 250Mpa steel. One end of the wall has a 50mm lip and a 63mm lip on the sides with 25mm air gap between the panel and the column. The other end has a 50mm lip and a 25mm lip fully engaged.
- Allowable deflection of height/100 and height/150 have been considered and tabulated (linear interpolation is allowable), with no absolute maximum deflection limiting the calculation. Advice from David Visser is that this is considered acceptable as there is nothing attached to the walls and the panels themselves will cope easily with defection in this direction. We note the stair structure is much stiffer than the post so it is likely that this will be a limiting factor in the capability of the panel to deflect when subject to lateral loads. This will lead to second-order effects, increasing bending moment in the panel at the interface with stair. This has not been assessed as analysis of the panel itself is beyond the scope of this certificate.
- Analysis is for 65x35x3.0 RHS and 65x35x4.0 RHS posts, orientated in their minor axis for lateral loading. The maximum height of panel which can be accommodated on each post size has been tabulated, based on parameters mentioned above.
- Fixings to the slab are: one anchor fixing into the slab (top and bottom) were the posts rest on the slab, and two fixings on the brackets were side mounted, as noted on attached drawings. All fixings are assumed to be into base building 32MPa concrete. Fixings assumed to be M10 Concrete Screw-bolts (Ramset Ankascrew or equivalent) with 50mm embedment, min. 30mm edge distance to face of concrete, min 30mm bolt spacing.
- Brackets are 100x100x5EA as noted on drawings.
- Fixing between brackets and posts are: 6mm continuous fillet weld or 4 No. Powers Series 500 10g screws at bottom of panel (taking vertical and lateral load) and 2 No. Powers Series 500 10g screws at top of panel (taking lateral load only). M8 Hex Head Screws may be used in lieu of 10g screws.
- The panel tracks are proposed to be attached to the columns with panels in place. This is assumed to provide an in plane stiffening effect about the minor axis for the purpose of this assessment.
- Durability, Fire and Cyclonic Loading has not been assessed as part of this certificate.
- Details show the post fitted hard up against slab below and slab above, which will lead to the post taking gravity loads from when the slab above deflects under imposed loading. The post has not been designed for this. A slotted-hole type connection at the top should be used to allow for vertical deflection of the slab above, as marked up on the attached drawings.

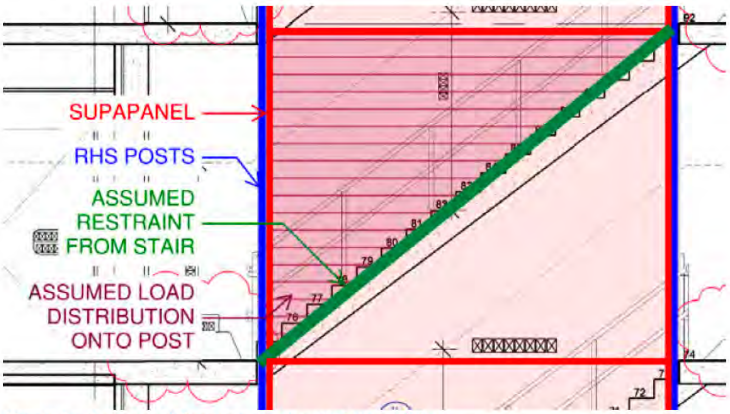


Figure 1 – Supapanel Geometry and restraint conditions

Design Tables

The following tables provide maximum height values for a range of deflection, lateral pressure, panel span and post sizes.

Allowable Deflection = Height/150								
	SLS Lateral Pressure =150Pa			SLS Lateral Pressure =200Pa			SLS Lateral Pressure =250Pa	
Supapanel	Max Height (mm)			Max Height (mm)			Max Height (mm)	
Span mm	65x35x4.0	65x35x3.0		65x35x4.0	65x35x3.0		65x35x4.0	65x35x3.0
6500	4350	4250		3950	3850		3700	3550
6000	4500	4350		4050	3950		3800	3650
5500	4600	4500		4200	4050		3900	3800
5000	4750	4650		4350	4200		4000	3900
4500	4950	4800		4500	4350		4150	4050
4000	5150	5000		4650	4550		4350	4200

Table 1 – Maximum post heights: Allowable deflection = height/150

Allowable Deflection = Height/100								
	SLS Lateral Pressure =150Pa			SLS Lateral Pressure =200Pa			SLS Lateral Pressure =250Pa	
Supapanel	Max Height (mm)			Max Height (mm)			Max Height (mm)	
Span mm	65x35x4.0	65x35x3.0		65x35x4.0	65x35x3.0		65x35x4.0	65x35x3.0
6500	5000	4850		4550	4400		4200	4100
6000	5150	5000		4650	4550		4350	4200
5500	5300	5150		4800	4650		4450	4350
5000	5450	5300		4950	4800		4600	4450
4500	5650	5500		5150	5000		4750	4650
4000	5900	5700		5350	5200		4950	4800

Table 2 – Maximum post heights: Allowable deflection = height/100

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 Supapanel Stair Separation end posts.

Robert Bird Group herby certify that the Supapanel stair separation end posts as assessed within this certificate have been validated in accordance with the relevant input data provided for our assessment, using design principles from AS4100 and AS4600, and based on the list of constraints and design & installation assumptions noted above.

We note the maximum panel height and length are limited for the purpose of this certificate as noted in the tables.

A further structural certificate update can be provided in due course pending our review of the final Installation and Design Manual in conjunction with this certificate to be completed by Wall technologies Pty Ltd in due course.

Yours faithfully

ROBERT BIRD GROUP PTY LTD

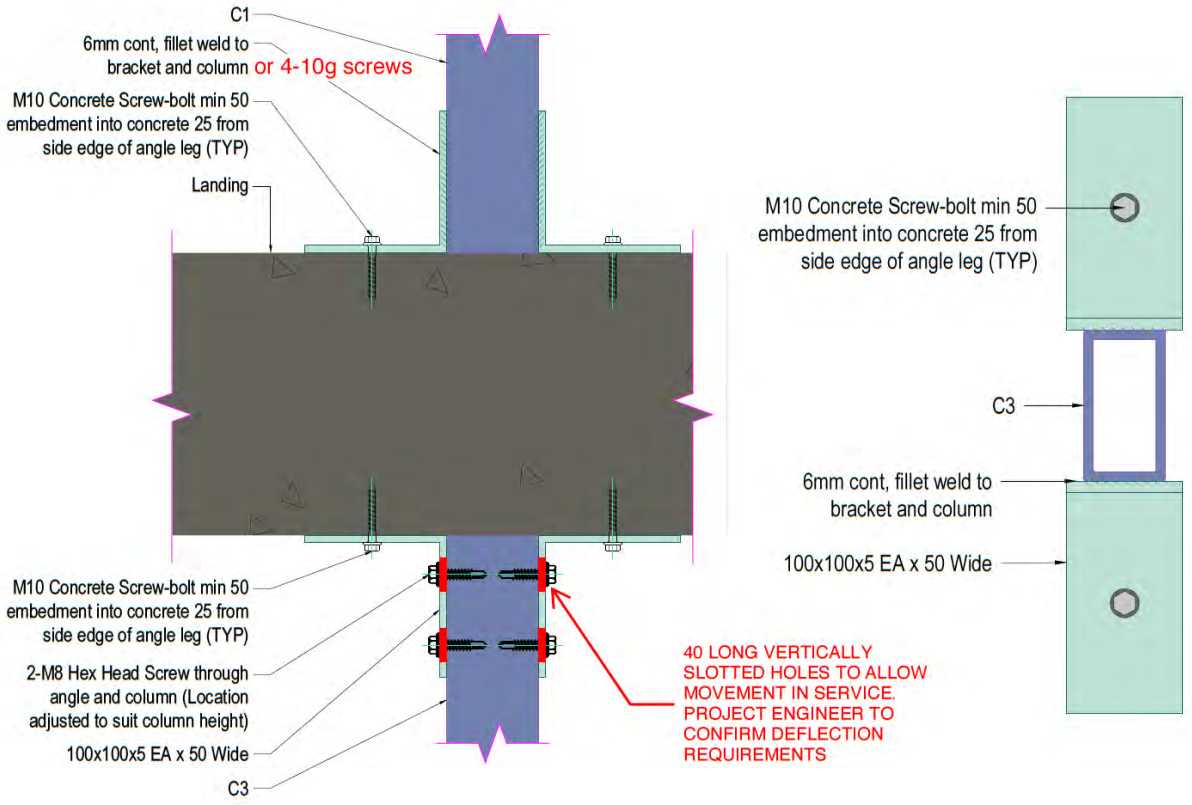
Dated: 2 December 2022

RICKY FEIGIN (Author)
Associate
Professional Engineer registration number PE0000079

JOHN BAMBINO (Reviewer)
General Manager – Southern Region
MIEAust, Professional Engineer registration number PE0000468

Encl.

- Typical stair details used for assessment



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	-	-	-	Drawing Title	By: K8 Australia
	-	-	-	-	Rev No: 01
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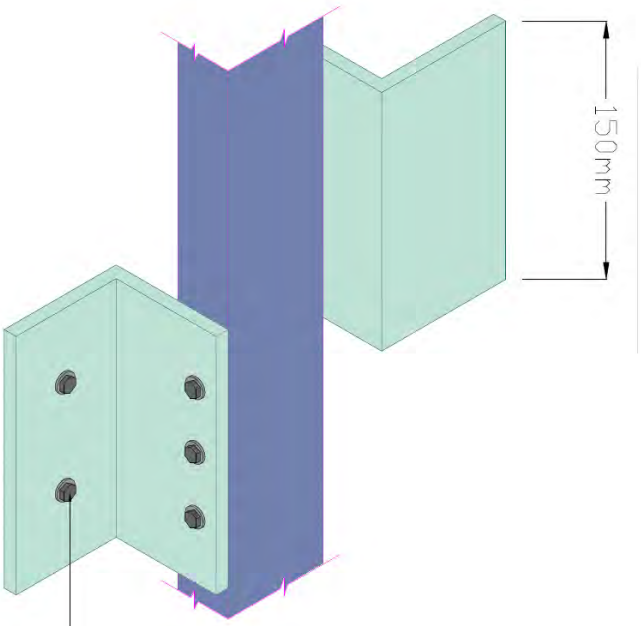

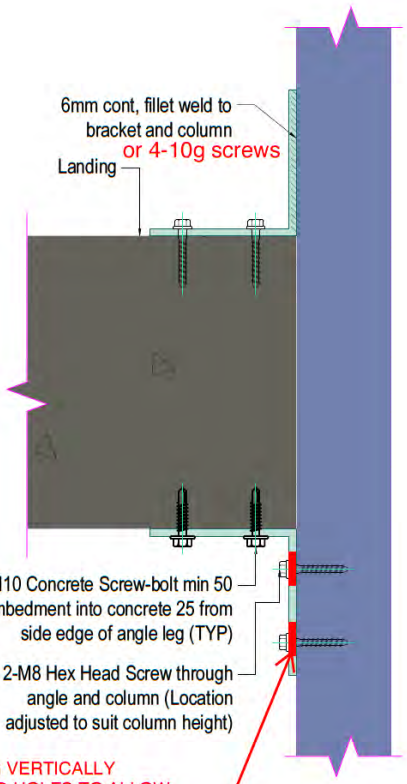

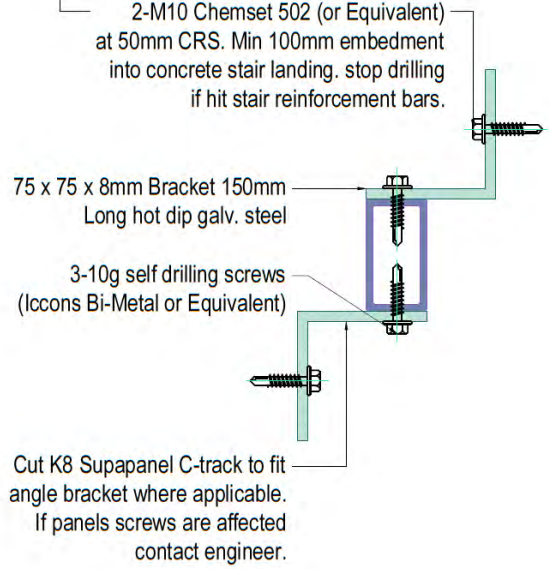

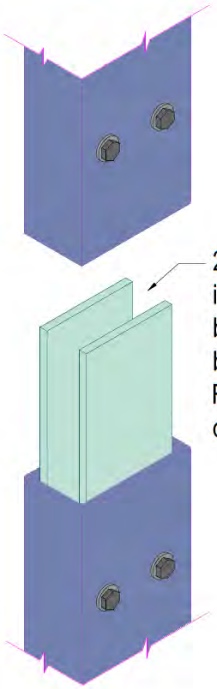

2-50x150x4mm Steel plates placed inside top of column. Drill 2 holes in bottom of plates and thread 2-M10 bolts through top of column and plates. Repeat for bottom of column and top of plates.

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	-	-	-	Victoria Place / K8 Supapanel	Rev No: 01
	-	-	-		Sheet: 1 of 1
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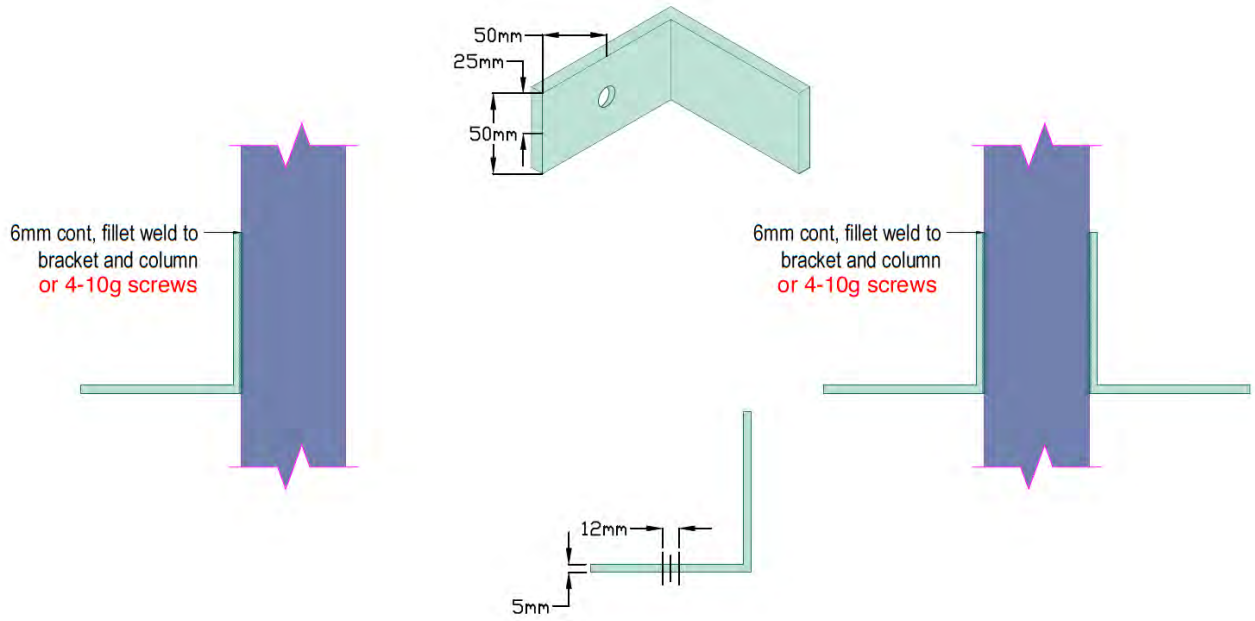
Bracket 1
100x100x5 EA 50mm Wide



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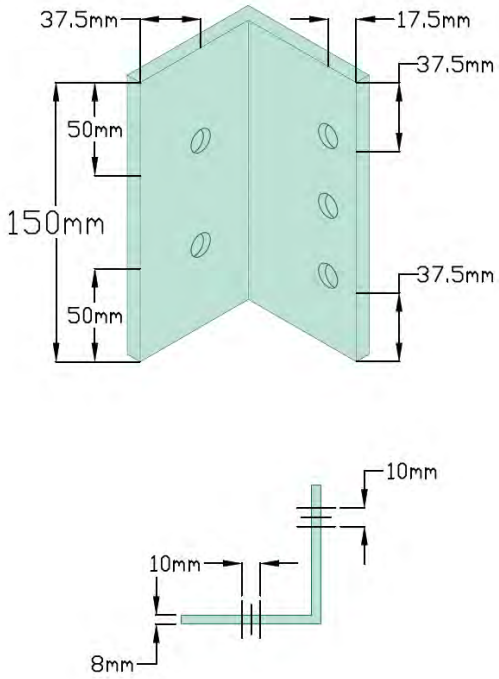
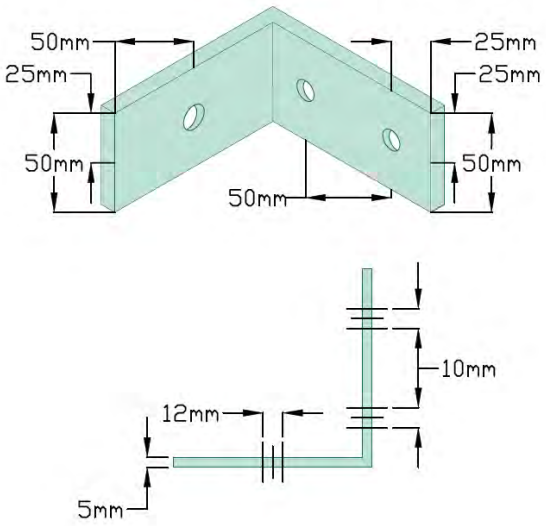
75x75x8 EA 150mm Wide



Bracket 3
100x100x5 EA 50mm Wide



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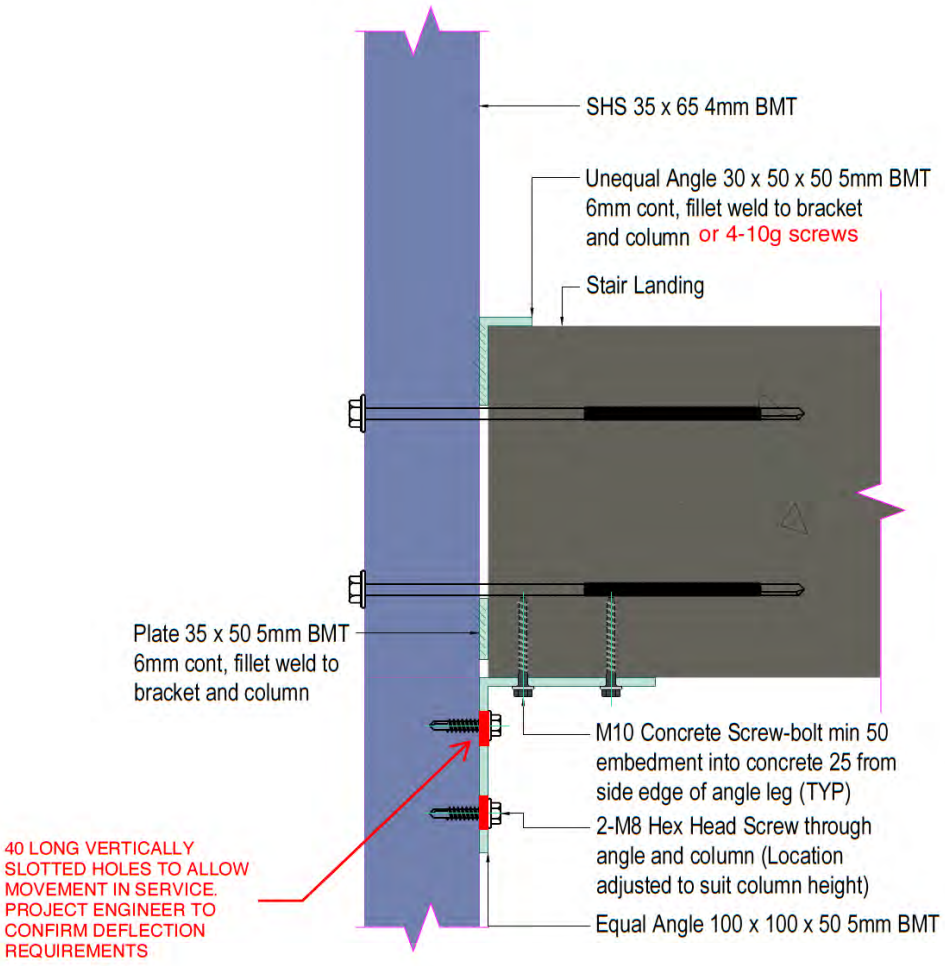

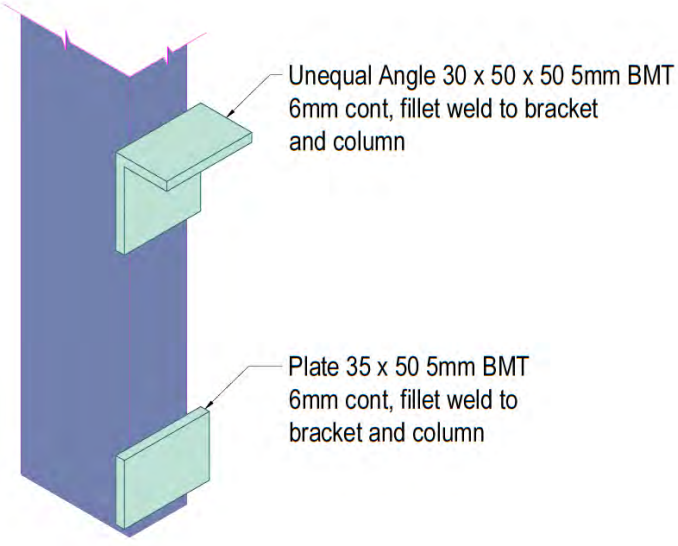

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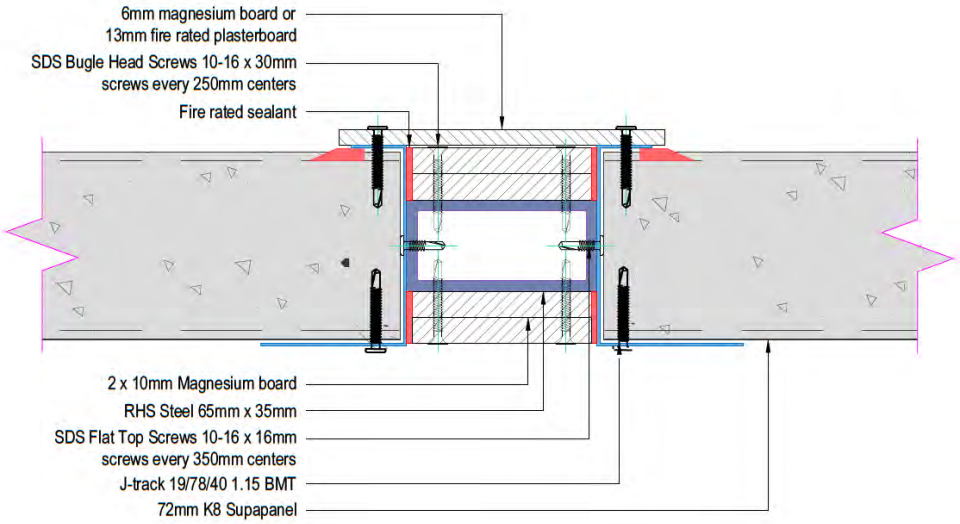

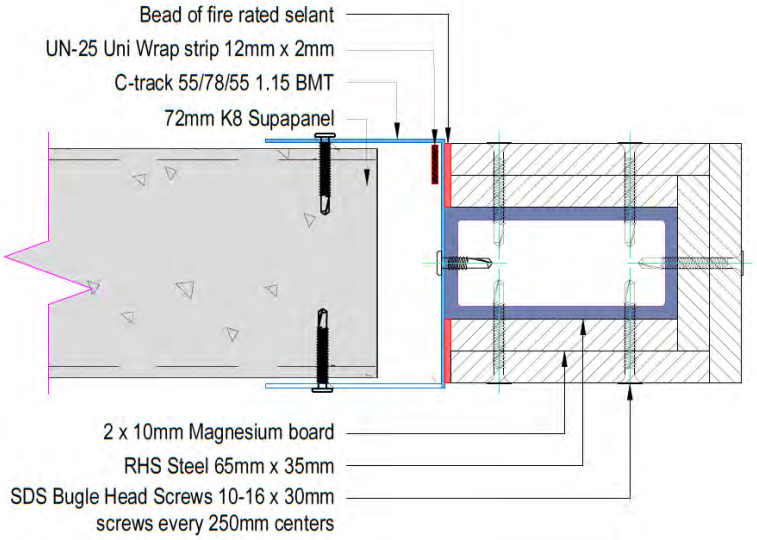

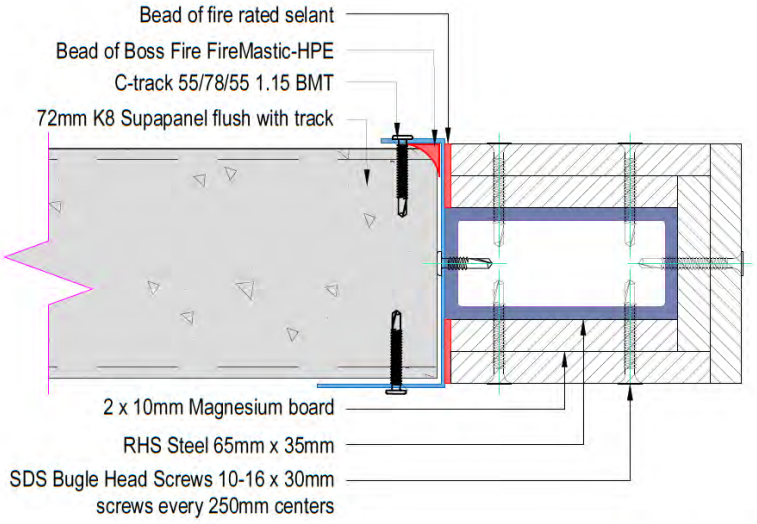

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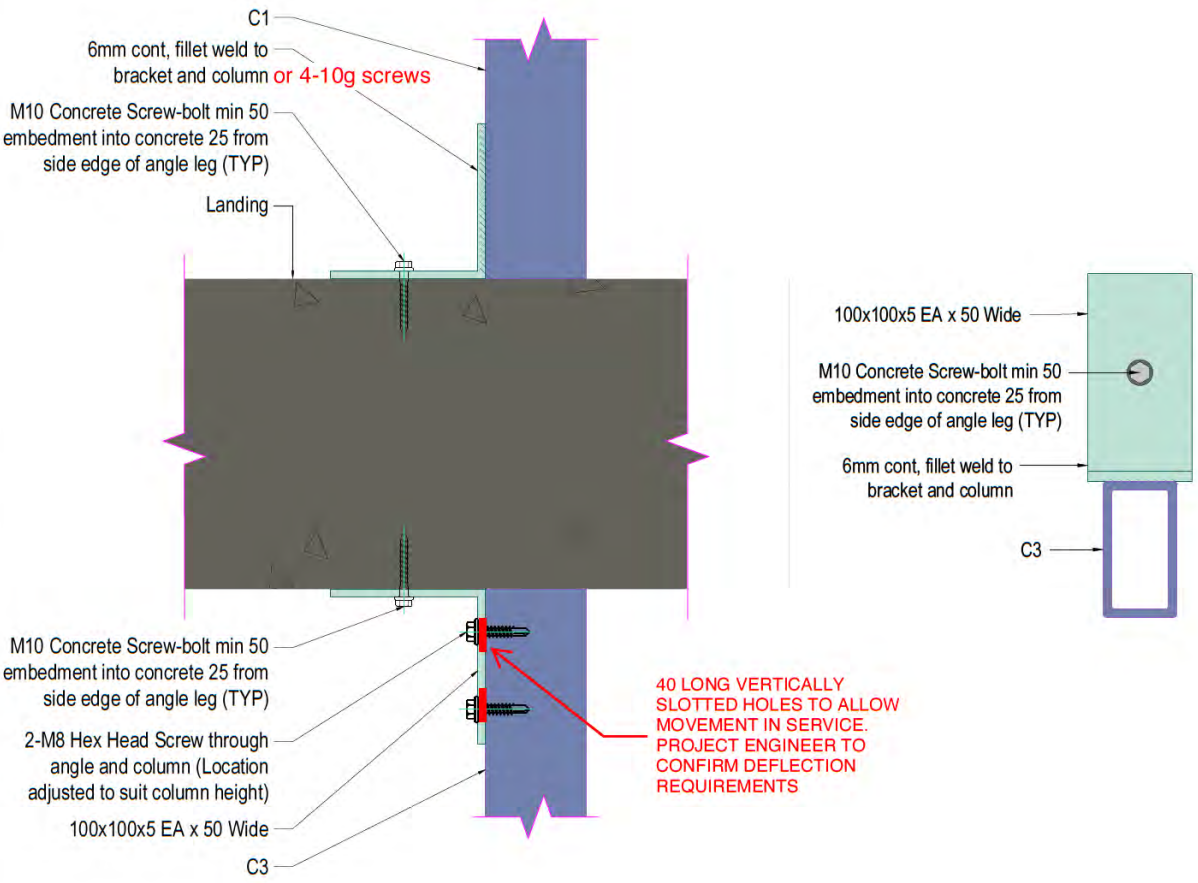

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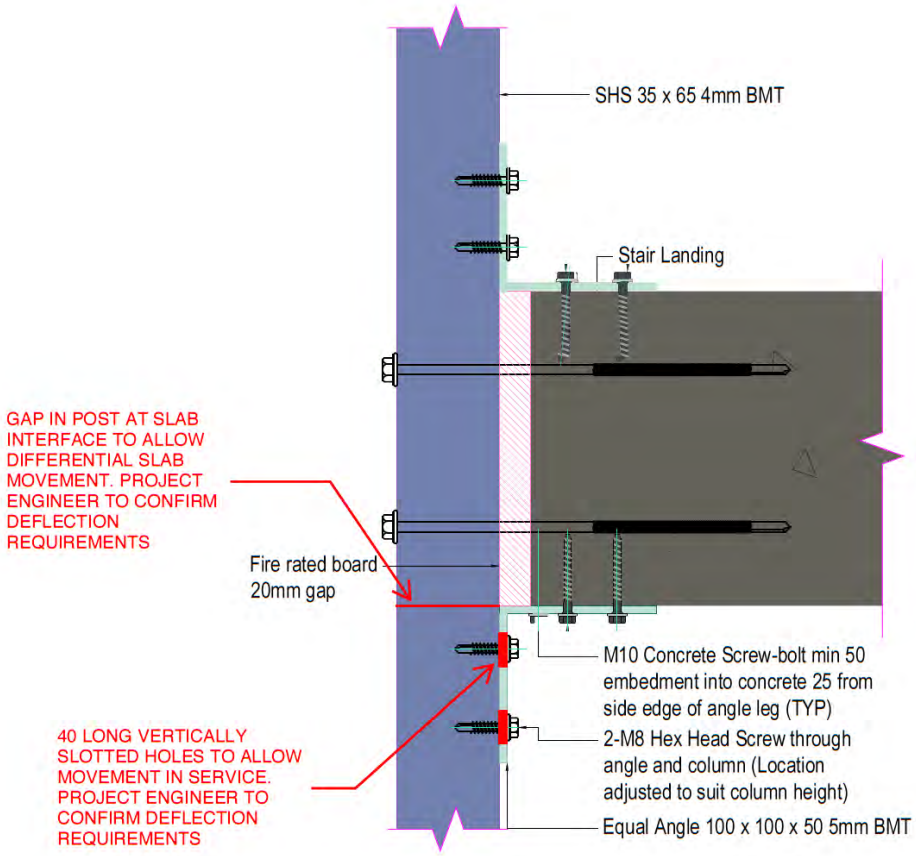

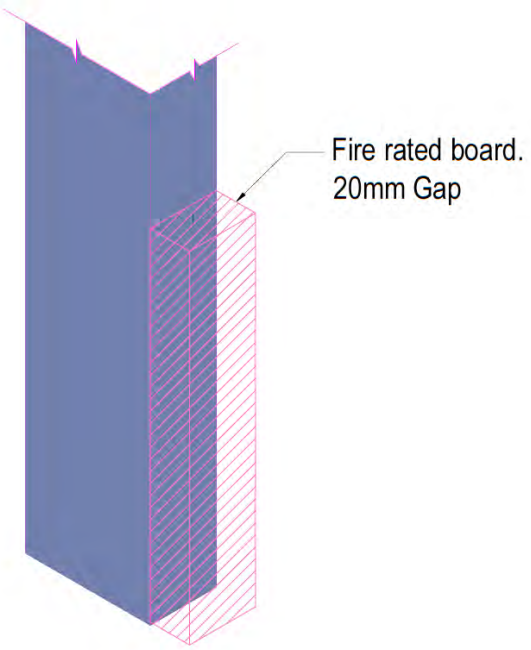

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	-	-	-		Sheet: 1 of 1	

CONDITIONS AND LIMITATIONS

This assessment report does not provide an endorsement by Ignis Labs 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.

Ignis Lab'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.

Ignis Labs 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.

Ignis Labs 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. Ignis Labs 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.

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

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