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BUILDING CONFIDENCE

PRACTITIONER EDUCATION SERIES

Proactive Inspections Program Findings: Separating Walls

VICTORIA State Government

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WELCOME

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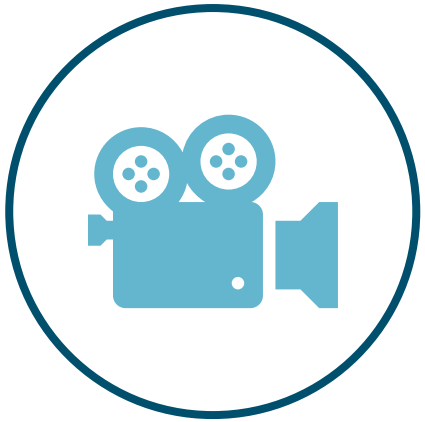
Technical & Regulation

Before we begin

Recording



Questions

Feedback Survey

Common issues with separating walls

Separating walls

Objective

Clips/brackets

Alignment

Floor/Ceiling junctions

External wall junctions

Sealing

Damage

Air Gap

Health

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Performance Requirements

P2.3.1 Spread of fire

(a) A Class 1 building must be protected from the spread of fire from—

(i) another building other than an associated Class 10 building; and

(ii) the allotment boundary, other than a boundary adjoining a road or public space.

(see Figure 2.3.1)

(b) A Class 10a building must not significantly increase the risk of fire spread between Class 2 to 9 buildings.

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3.7.3.2 Separating walls

(a) A *separating wall* between Class 1 buildings, or a wall that separates a Class 1 building from a Class 10a building which is not associated with the Class 1 building must—

(i) have either—

(A) an FRL of not less than 60/60/60; or

(B) be of masonry construction not less than 90 mm thick; and

(ii) commence at the footings or ground slab (see Figure 3.7.3.1), except for horizontal projections to which 3.7.3.5 applies (see Figure 3.7.3.4); and

(iii) extend—

(A) if the building has a *non-combustible* roof covering, to the underside of the roof covering (see Figure 3.7.3.1 and Figure 3.7.3.2); or

(B) if the building has a *combustible* roof covering, to not less than 450 mm above the roof covering (see Figure 3.7.3.1); and

(iv) comply with (b) to (e) and 3.7.3.3 as applicable.

(b) A *separating wall* of *lightweight construction* must be tested in accordance with Specification C1.8 of the NCC Volume One.

(c) A *separating wall* complying with (a)(iii)(A)—

(i) must not be crossed by timber or other *combustible* building elements except for roof battens with dimensions of 75 x 50 mm or less, or roof sarking; and

(ii) must have any gap between the top of the wall and the underside of the roof covering packed with mineral fibre or other suitable *fire-resisting* material.

(d) Where a building has a masonry veneer *external wall*, any gap between the *separating wall* and the external masonry veneer must be—

(i) not more than 50 mm; and

(ii) packed with a mineral fibre or other suitable fire resistant material with the packing arranged to maintain any weatherproofing requirements of Part 3.3.4.

(e) Eaves, verandahs and similar spaces that are open to the roof space and are common to more than one Class 1 dwelling must be separated by a *non-combustible* vertical lining (see Figure 3.7.3.2 Diagram b).

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(B) be of masonry construction not less than 90 mm thick; and

(ii) commence at the footings or ground slab (see Figure 3.7.3.1), except for horizontal projections to which 3.7.3.5 applies (see Figure 3.7.3.4); and

(iii) extend—

(A) if the building has a *non-combustible* roof covering, to the underside of the roof covering (see Figure 3.7.3.1 and Figure 3.7.3.2); or

(B) if the building has a *combustible* roof covering, to not less than 450 mm above the roof covering (see Figure 3.7.3.1); and

(iv) comply with (b) to (e) and 3.7.3.3 as applicable.

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(e) Eaves, verandahs and similar spaces that are open to the roof space and are common to more than one Class 1 dwelling must be separated by a *non-combustible* vertical lining (see Figure 3.7.3.2 Diagram b).

Note: **FRL** = Fire Resistance level

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Fire Resistance

The Gyprock Party Wall systems in this manual have been assessed by Exova Warringtonfire in accordance with the general principles of AS1530.4. They are suitable for the stated FRL when designed in accordance with the noted building and structural considerations, and when installed in accordance with the details in this manual. The load bearing element of the FRL applies only to walls supporting non-fire rated structures such as floors and roofs within the same fire compartment.

FIRE RESISTANCE LEVEL (FRL) RATING OF INTERTENANCY WALLS

The fire resistance level (FRL) rating performance of the PowerPanel50 Intertenancy Wall System detailed in this guide has been derived from CSIRO fire assessment report FCO-3255.

Fire Resistance

The Partiwall® system has been fire tested at CSIRO's laboratory at North Ryde in Sydney. The performance of various system configurations has been assessed in CSIRO's assessment number FSV 0381, FCO-2256, FCO-2713, FCO-1446 and FCO-2016.

The Partiwall system provides Fire Resistance Levels (FRL) of 60/60/60 and 90/90/90. In the case of a fire, the structural adequacy and load bearing capacity is provided by the wall frame on the other side of SHAFTLINER™ fire barrier.

FIRE

The GTEK™ Protect System has been fire tested at Exova Warringtonfire AUST Pty Ltd in VIC.

The GTEK™ Protect System provides Fire Resistance Levels (FRL) of 60/60/60. In the case of a fire, the structural adequacy and load bearing capacity is provided by the wall frame on the other side of the GTEK™ Protect 25mm.

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FIGURE 3 – BEFORE THE FIRE

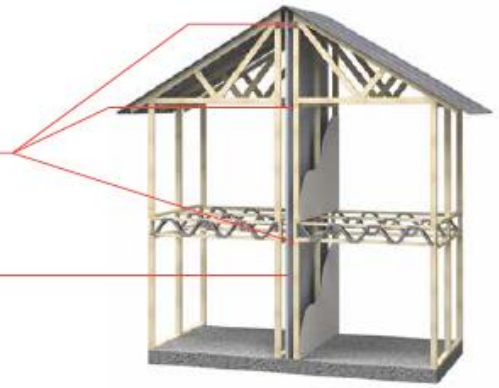

FIGURE 4 – DURING THE FIRE

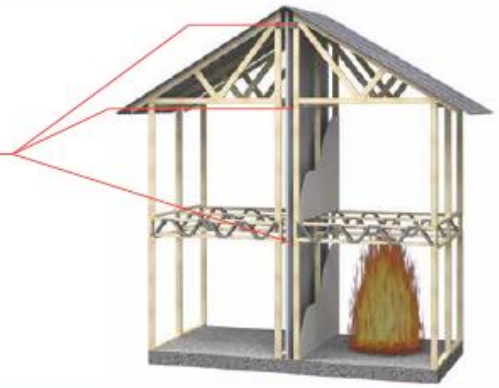

FIGURE 5 – AFTER THE FIRE

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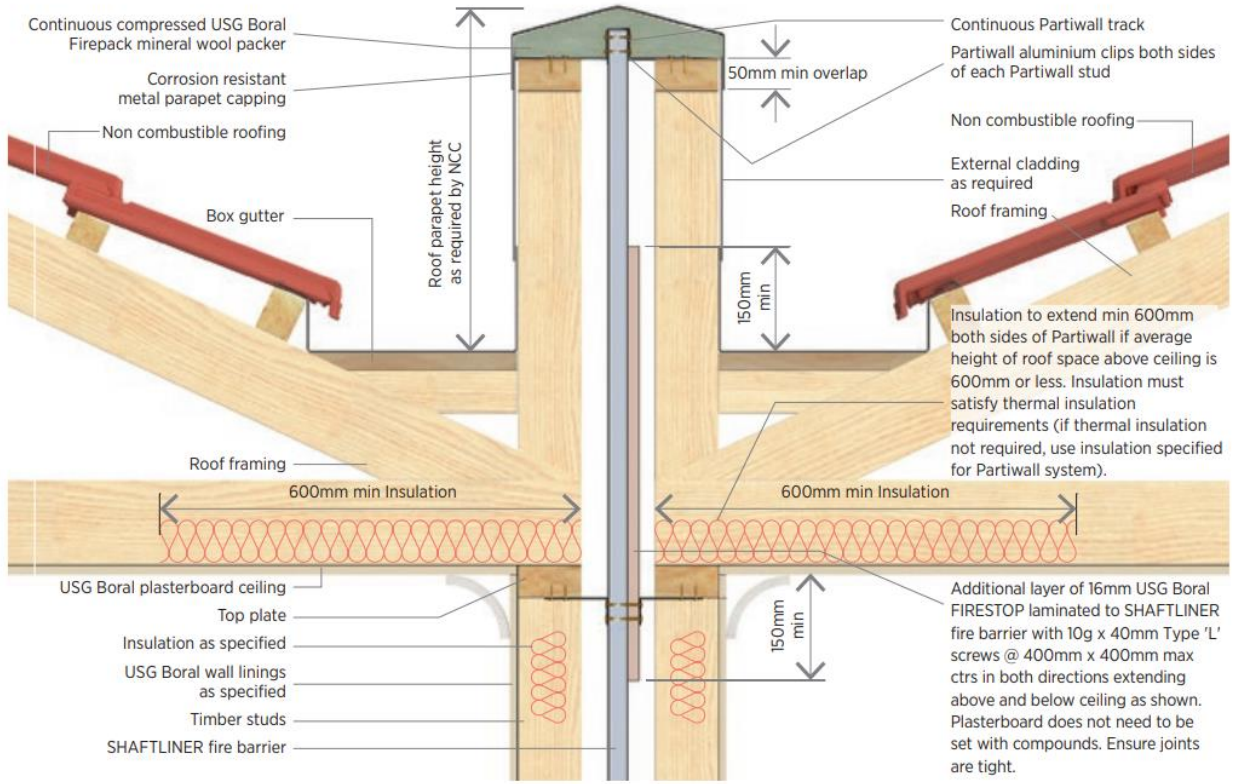
Support Clip Separation

Clips on each side of the SHAFTLINER™ fire barrier must be spaced at no more than 3000mm vertically and 600mm horizontally unless noted otherwise.

Every Partiwall® stud and end track is to be fixed to timber frame on both sides with Partiwall aluminium clips.

Figure 11: **Roof Parapet Junction Detail – FRL 60/60/60**



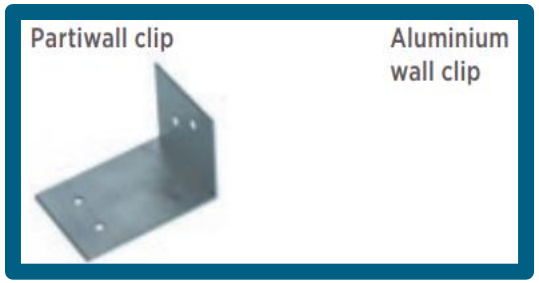


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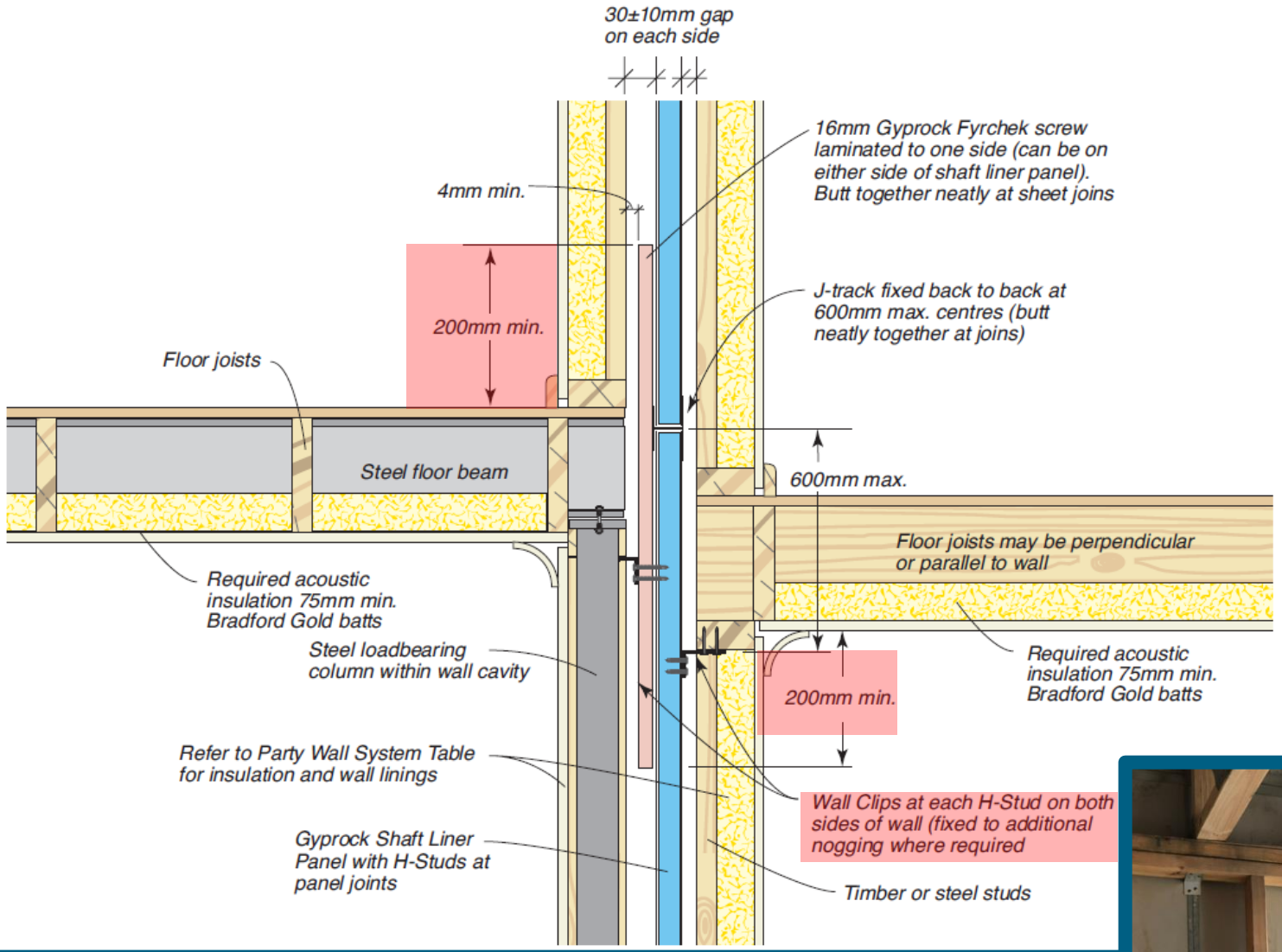
Figure 37: Detail For Steel Column And Beam Support



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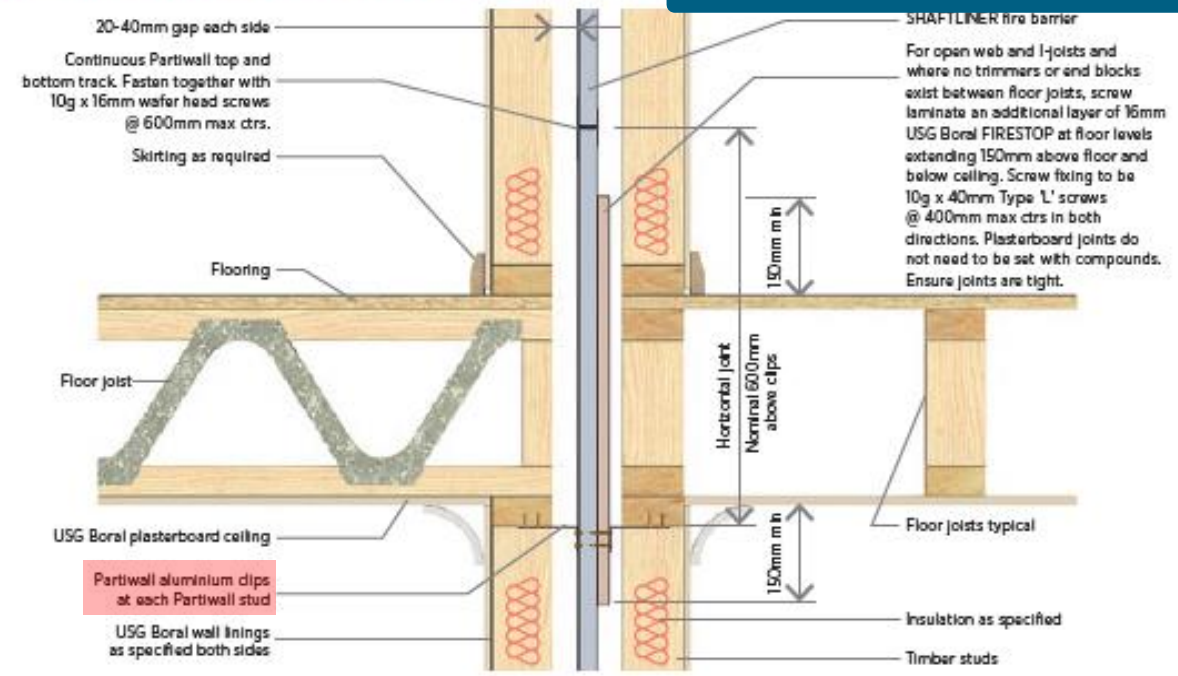
Installation Procedure (PW60.1)

- Ensure that SHAFTLINER™ panels, Partiwall® studs and end tracks are the same length. Cut to length if required.
- **In a multi-level SHAFTLINER fire barrier, Partiwall studs at upper levels must align with the studs below.**
- Partiwall aluminium clips must be installed progressively as SHAFTLINER fire barrier is erected.
- Partiwall aluminium clips must be spaced at maximum 600mm horizontally and 3000mm vertically.
- For aligned floors Partiwall aluminium clips must be directly opposite on both sides of the Partiwall studs.
- For offset floors Partiwall aluminium clips can be staggered in line with floors on each side of the wall (refer Figure 7).
- Fix Partiwall aluminium clips to Partiwall studs with 2 x 10g x 16mm Type 'D' drill point wafer head screws (2 x 10g x 30mm Type 'D' drill point wafer head screws if fixing through 16mm FIRESTOP® plasterboard).
- Fix Partiwall aluminium clip to timber frame with 2 x 6g x 25mm Type 'W' timber screws or 2 x 2mm x 30mm galvanised nails.
- SHAFTLINER fire barrier must be adequately braced against wind forces until the building is enclosed.

Figure 9: **Floor/Wall Junction Detail 1 - FRL 60/60/60**



Note:
1. Floors may be staggered to meet design requirements (refer Figure 10 for details).
2. Floor joists can be of any type and can run parallel or perpendicular to SHAFTLINER™ fire barrier.

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The following requirements are essential to maintain the fire-rating integrity and acoustic performance of the GTEK™ Protect System:

- Use only the specified GTEK™ Protect Aluminium Clips to attach the GTEK™ Protect H Studs to framing members. In the event of a fire, this aluminium clip is designed to melt to allow the framing members on the fire side to fall away leaving the GTEK™ Protect 25mm intact.
- Other than the clips, there should be no attachments to the GTEK™ Protect 25mm.
- There should be no penetrations through the GTEK™ Protect 25mm apart from approved penetrations in the roof space. Refer to a Building Surveyor for advice.

SUPPORT CLIP SEPARATION

Clips each side of the GTEK™ Protect 25mm must be spaced at no more than 3000mm vertically and 600mm horizontally.

GTEK™ PROTECT SYSTEM COMPONENTS – TABLE 1

GTEK™ Protect Components – supplied by BGC

GTEK™ Protect 25mm	3000 x 600 x 25mm 3600 x 600 x 25mm	

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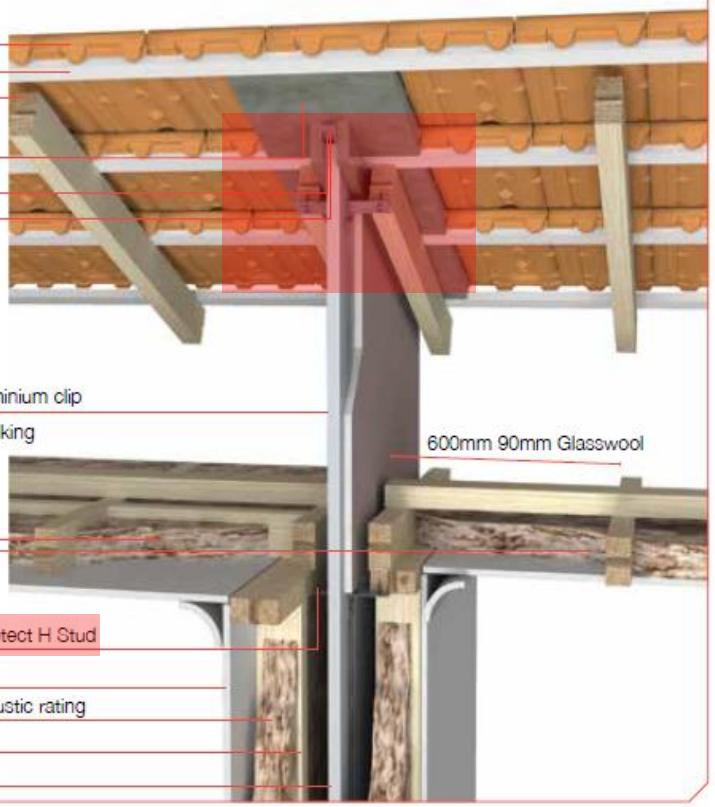
SUPPORT CLIP SEPARATION

Clips each side of the GTEK™ Protect 25mm must be spaced at no more than 3000mm vertically and 600mm horizontally.

FIGURE 16 – PITCHED ROOF - WALL/ROOF



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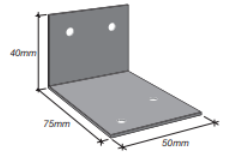
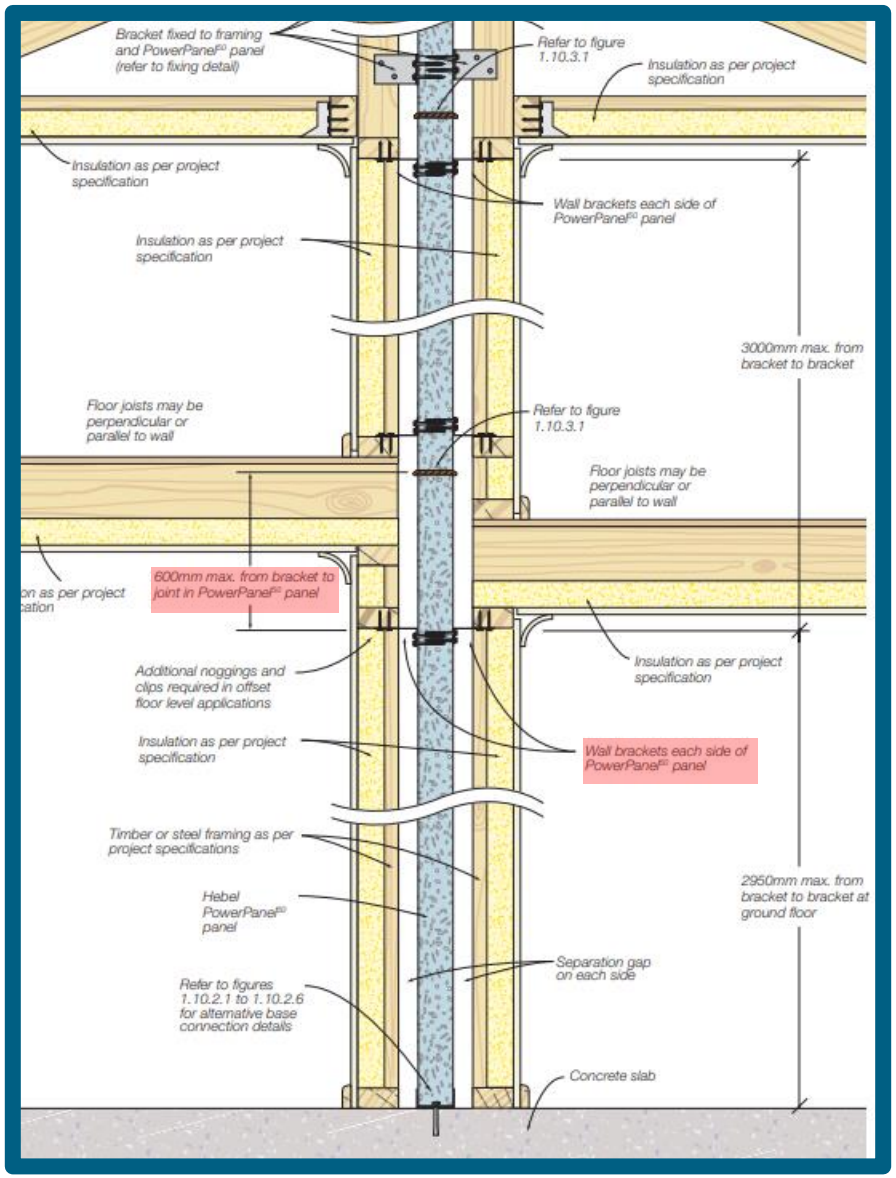
Hebel Wall Brackets	The brackets are proprietary components which enable the Hebel PowerPanel[50] to be fixed to the wall frame. This provides a cavity space, which can result in increased acoustic insulation performance. The bracket is nominally 75 x 40 x 1.6mm BMT x 50mm wide aluminium angle. Used in 50mm Hebel Intertenancy Wall Systems.	



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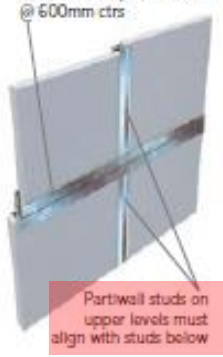
Step 7: **Install top rail**

- Using full track lengths, fit Partiwall top track over the installed SHAFTLINER panels and Partiwall studs.
- Push top track fully down over the top of Partiwall studs.
- Screw fix top and end track junctions with 10g x 16mm Type 'D' drill point wafer head screws.

Step 8: **Next level of SHAFTLINER fire barrier**

- Using full track lengths, install Partiwall bottom track for the upper level of SHAFTLINER fire barrier back-to-back with the top track below and leaving 6mm gap between track lengths. Screw fix each track length with 10g x 16mm wafer head screws at 600mm maximum centres and at each end.
- Install SHAFTLINER panels, Partiwall studs and clips as per level below. **Partiwall studs must align with studs below.**



Installation Procedure (PW60.1)

- Ensure that SHAFTLINER™ panels, Partiwall® studs and end tracks are the same length. Cut to length if required.
- **In a multi-level SHAFTLINER fire barrier, Partiwall studs at upper levels must align with the studs below.**
- Partiwall aluminium clips must be installed progressively as SHAFTLINER fire barrier is erected.
- Partiwall aluminium clips must be spaced at maximum 600mm horizontally and 3000mm vertically.
- For aligned floors Partiwall aluminium clips must be directly opposite on both sides of the Partiwall studs.
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- SHAFTLINER fire barrier must be adequately braced against wind forces until the building is enclosed.

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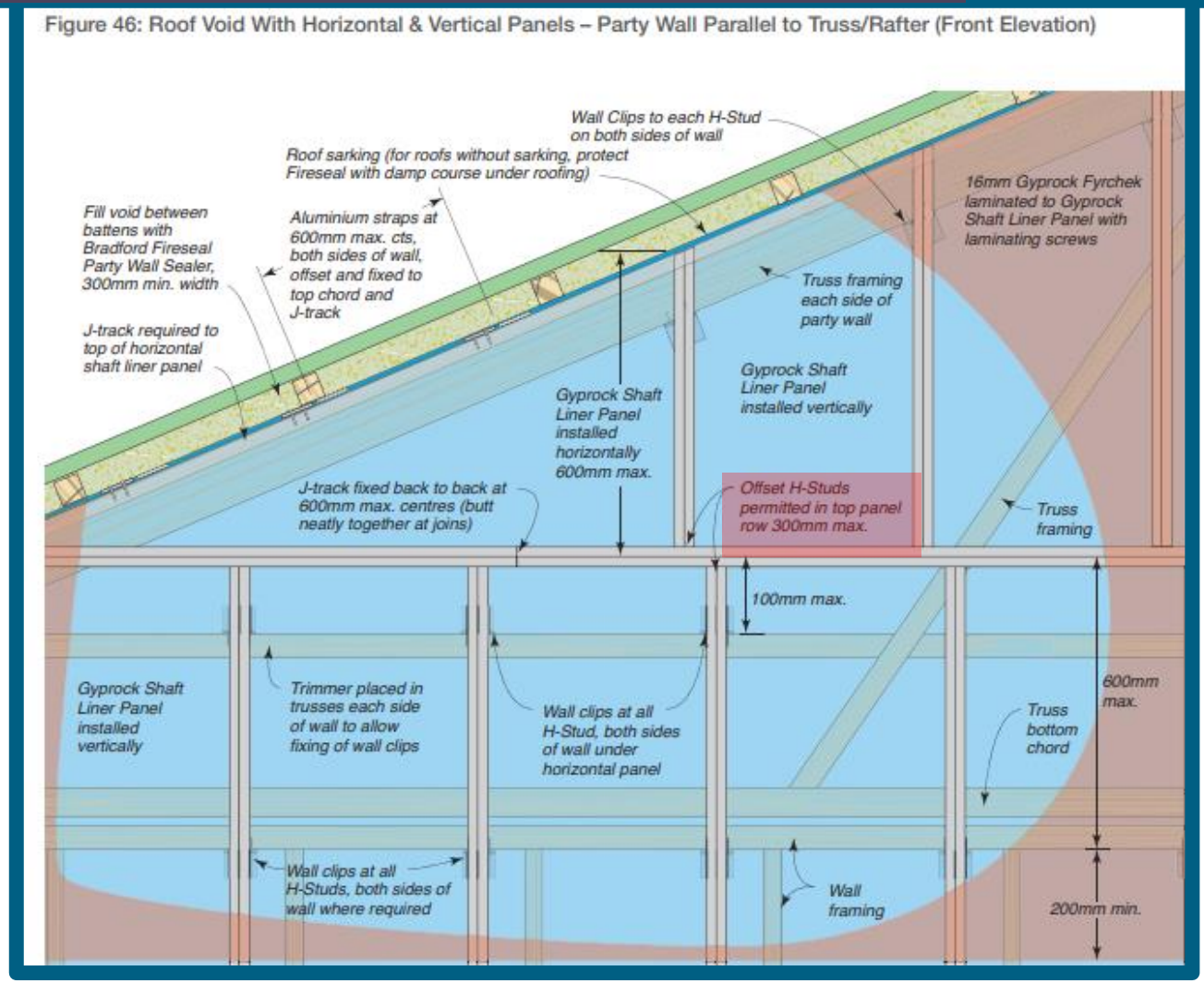
Shaft Liner Framing and Panels	
Party Wall H-Studs have been used for vertical framing between panels, and back-to-back J-Tracks for horizontal framing between storeys.	❑
Party Wall H-Studs align at each storey except in the roof space where an offset is permitted. J-Tracks are located within 600mm of Party Wall clip locations	❑

Figure 46: Roof Void With Horizontal & Vertical Panels – Party Wall Parallel to Truss/Rafter (Front Elevation)



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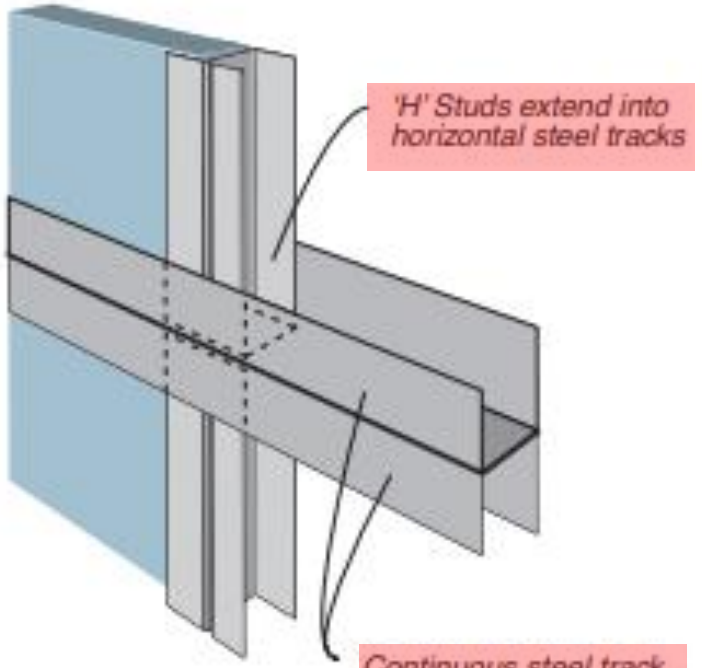
Typical application detail.



Don'ts

- Don't use damaged materials.
- Don't penetrate the SHAFTLINER other than in the roof space as per Boral's details.
- Don't exceed specified clip spacing.
- Don't use steel clips.
- **Don't use Partiwall H-studs in lieu of Partiwall track as edge tracks nor at horizontal joint in SHAFTLINER fire barrier.**
- Don't cut tracks between Partiwall studs. Tracks should be used in full lengths.
- Don't run services in the gap between SHAFTLINER fire barrier and framework.

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Figure 36: Detail At Upper Storey Framed Floor

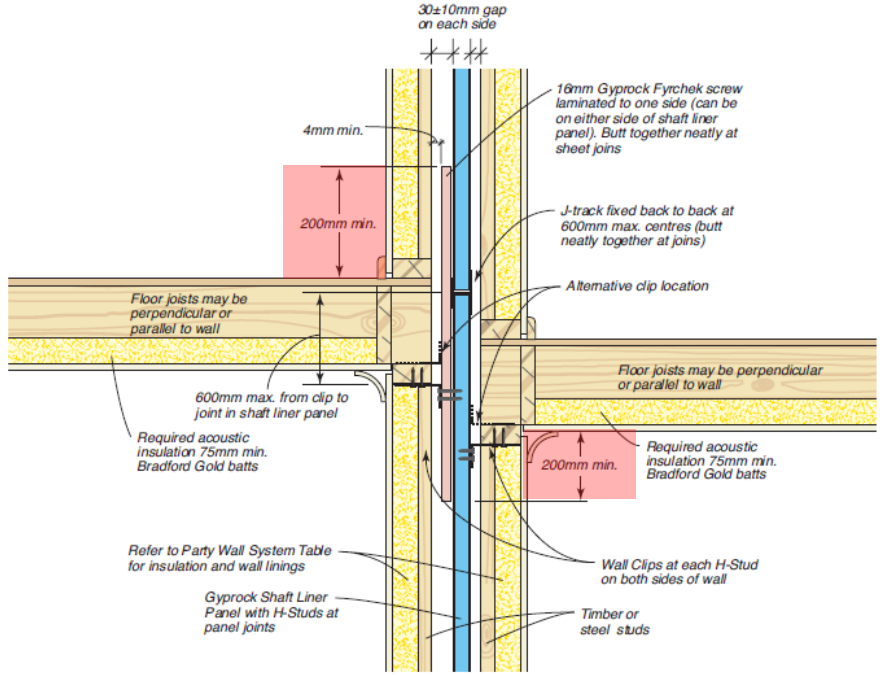

Figure 7: Ground Floor Fire Barrier Installed

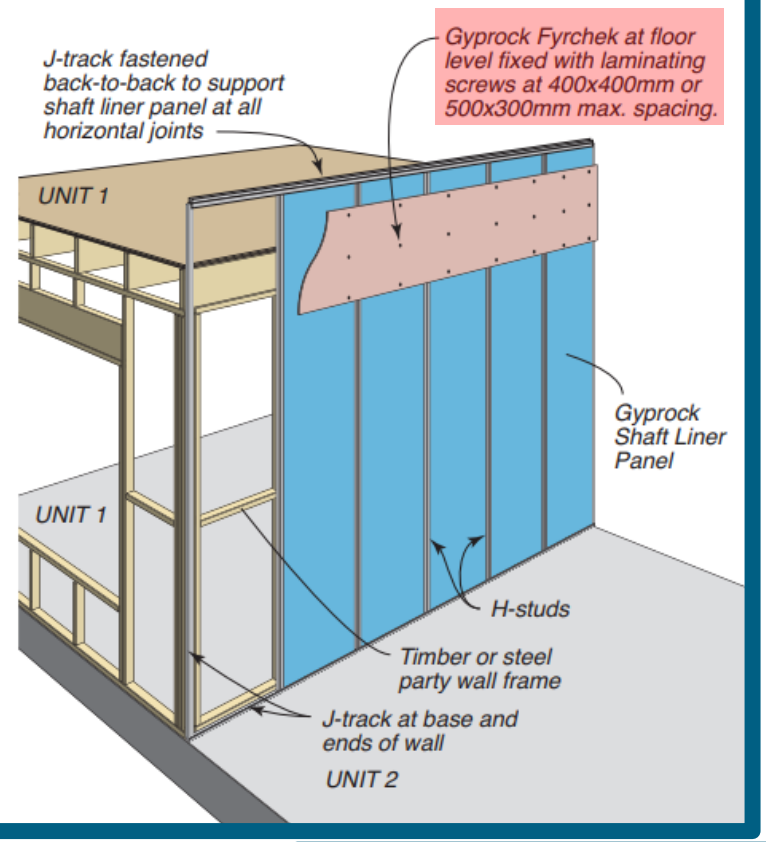

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FIGURE 14 – TYPICAL FLOOR/WALL JUNCTION 1

20-40mm gap each side

GTEK™ Protect 25mm and GTEK™ Protect H Studs

Continuous top and bottom track. Fasten together with 10 gauge screws @ 600mm max ctrs

Where no trimmers or end blocks exist between floor joists, screw laminate an additional layer of GTEK™ Fire 16mm @ floor levels extending 150mm, above floor and below ceiling. Fixings @ 400mm x 400mm ctrs

Flooring

Skirting as required

All gaps to be sealed with Firemastic sealant

Floor joist

GTEK™ Ceiling plasterboard as specified

GTEK™ Protect Aluminium Clips @ each stud

GTEK™ plasterboard as specified both sides

90mm Glasswool as specified

Timber studs

Notes: 1) Floors may be staggered to meet design requirements.
2) Floor joists can be of any type and can run parallel or perpendicular to GTEK™ Protect 25mm

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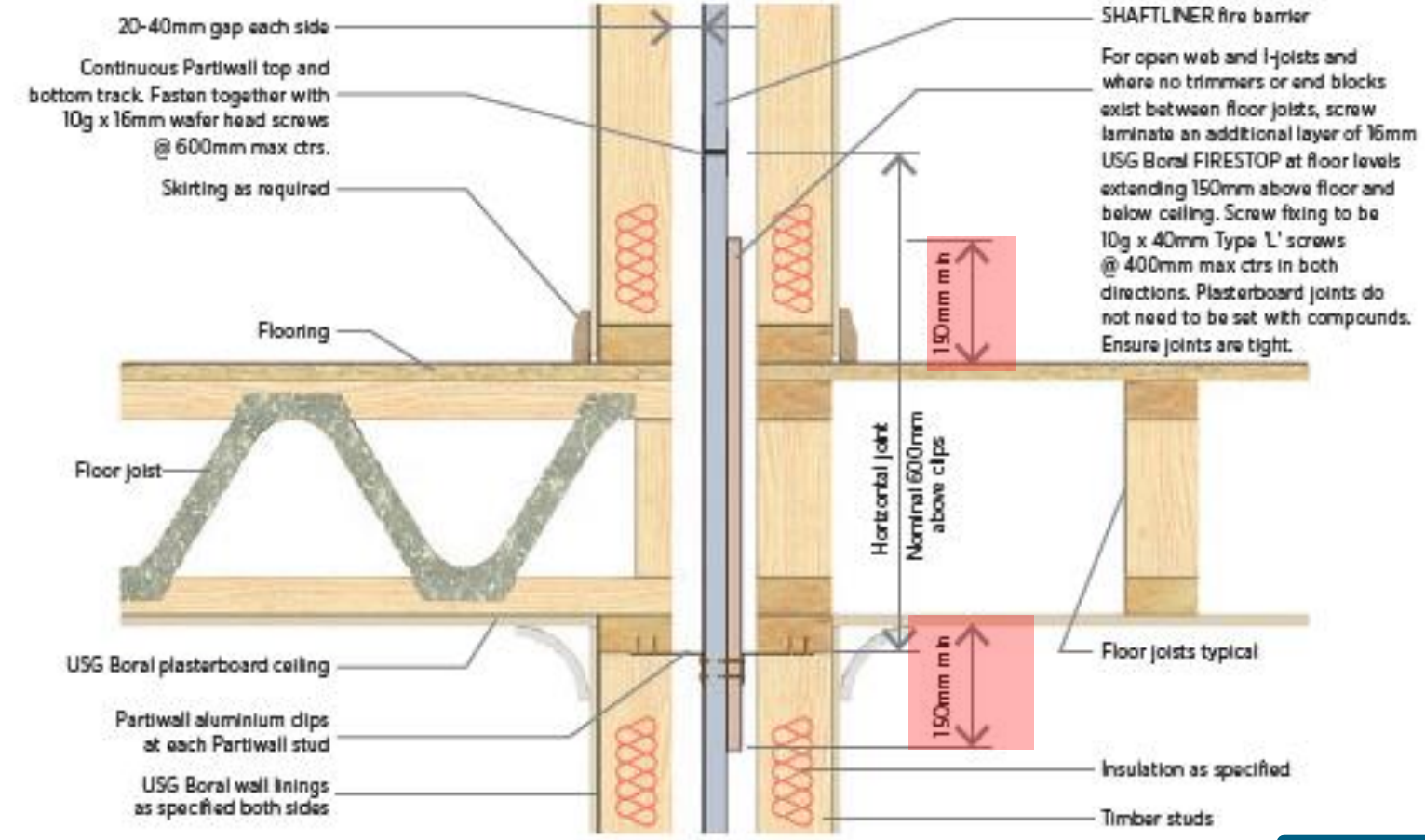
Figure 9: **Floor/Wall Junction Detail 1 - FRL 60/60/60**



Note:
1. Floors may be staggered to meet design requirements (refer Figure 10 for details).
2. Floor joists can be of any type and can run parallel or perpendicular to SHAFTLINER™ fire barrier.

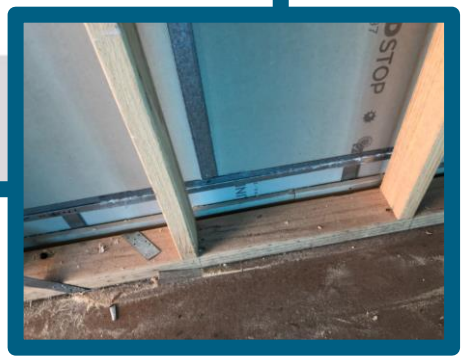


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Figure 11: **Roof Parapet Junction Detail – FRL 60/60/60**

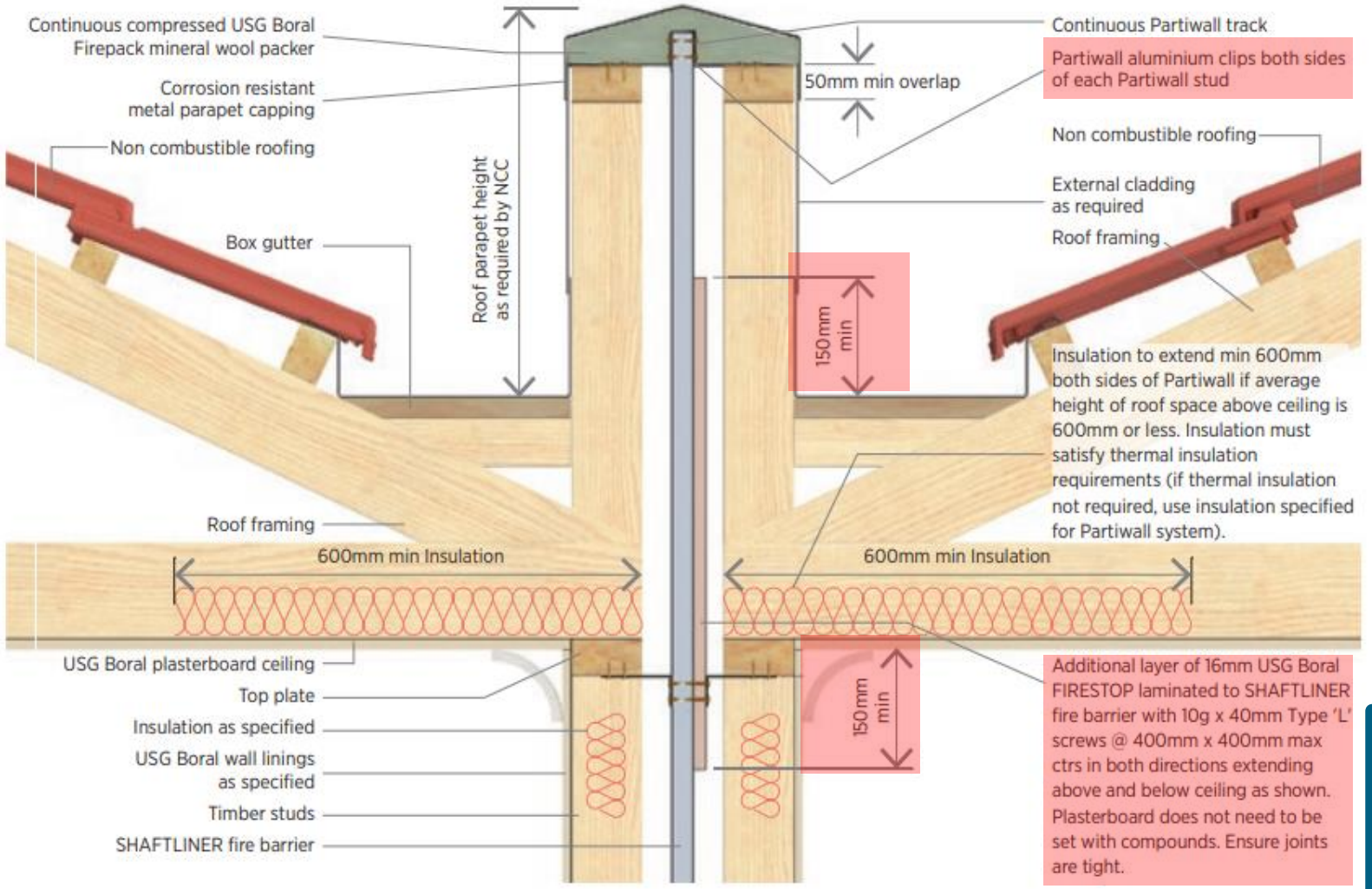

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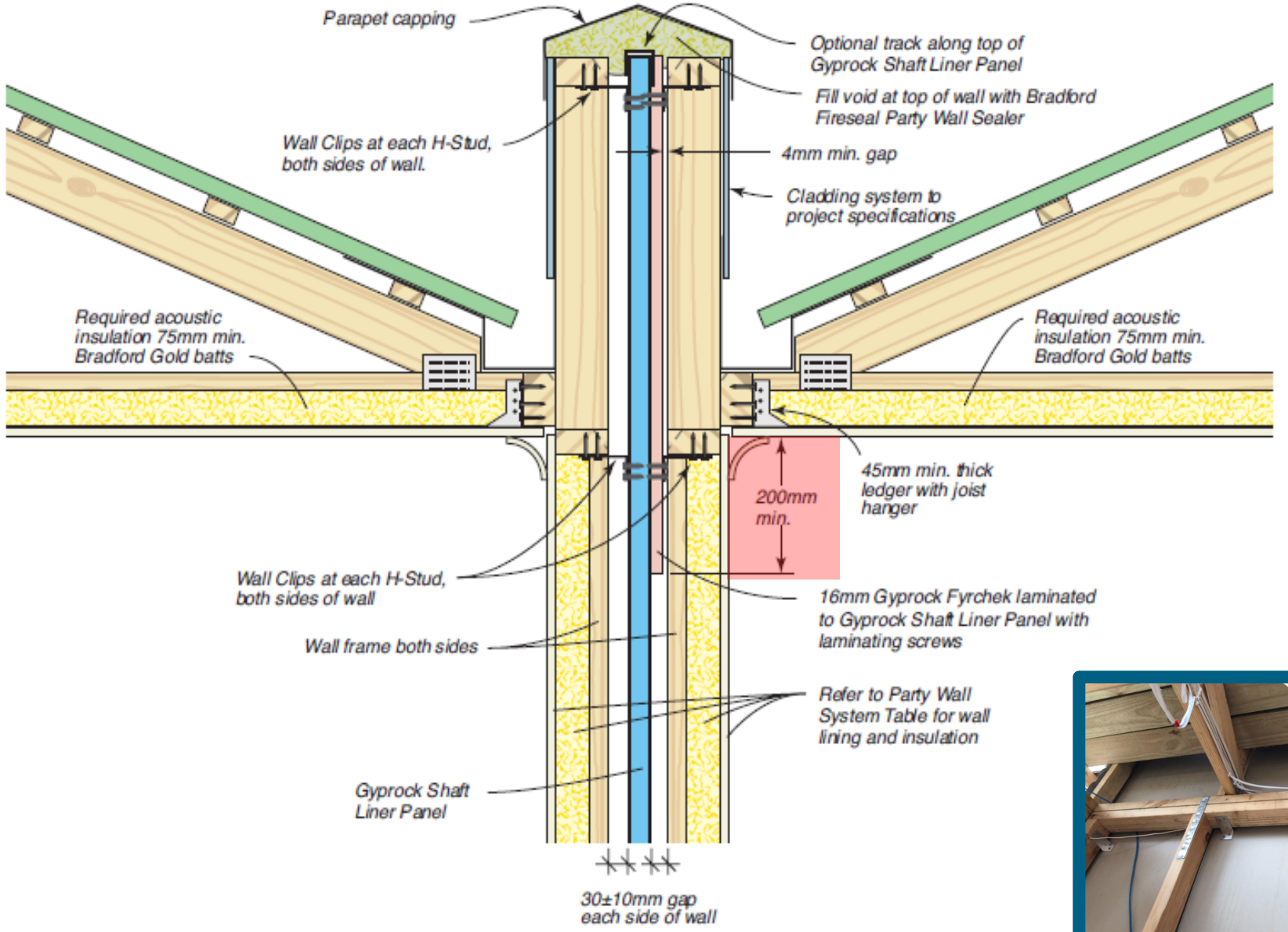
Figure 42: Detail At Roof/Ceiling And Parapet



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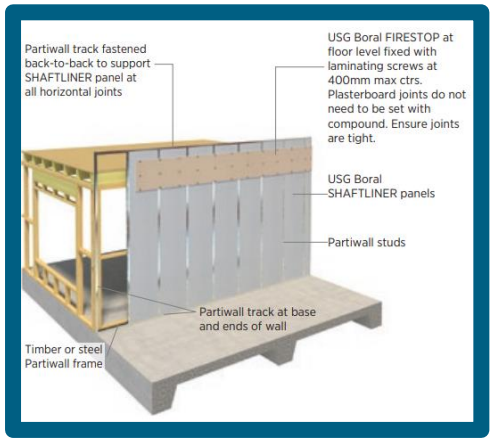

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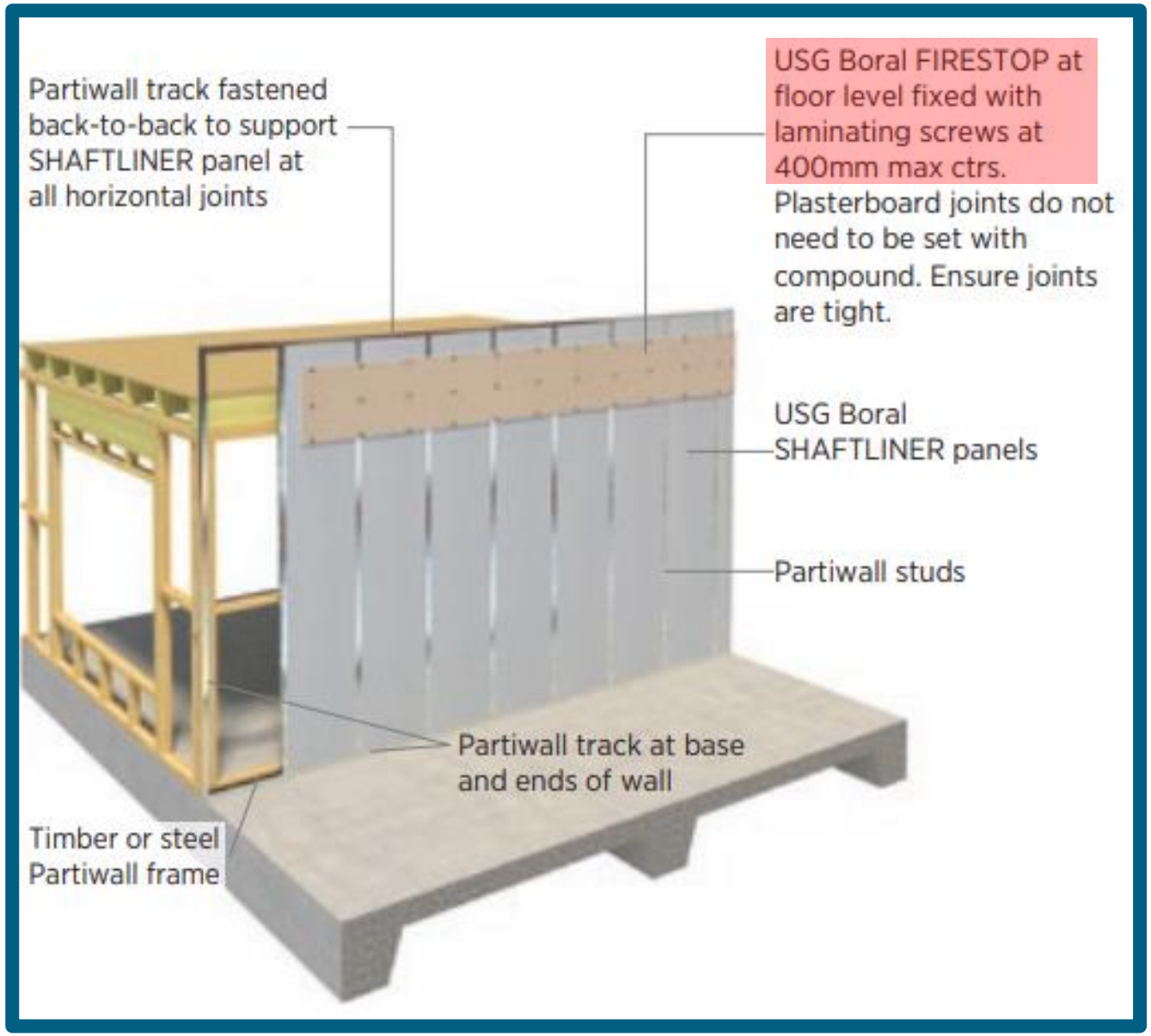

Product Image	Item Description
	6g x 25mm Type 'W' Timber Screws
	10g x 40mm Type 'L' Laminating Screws Pkt 1000

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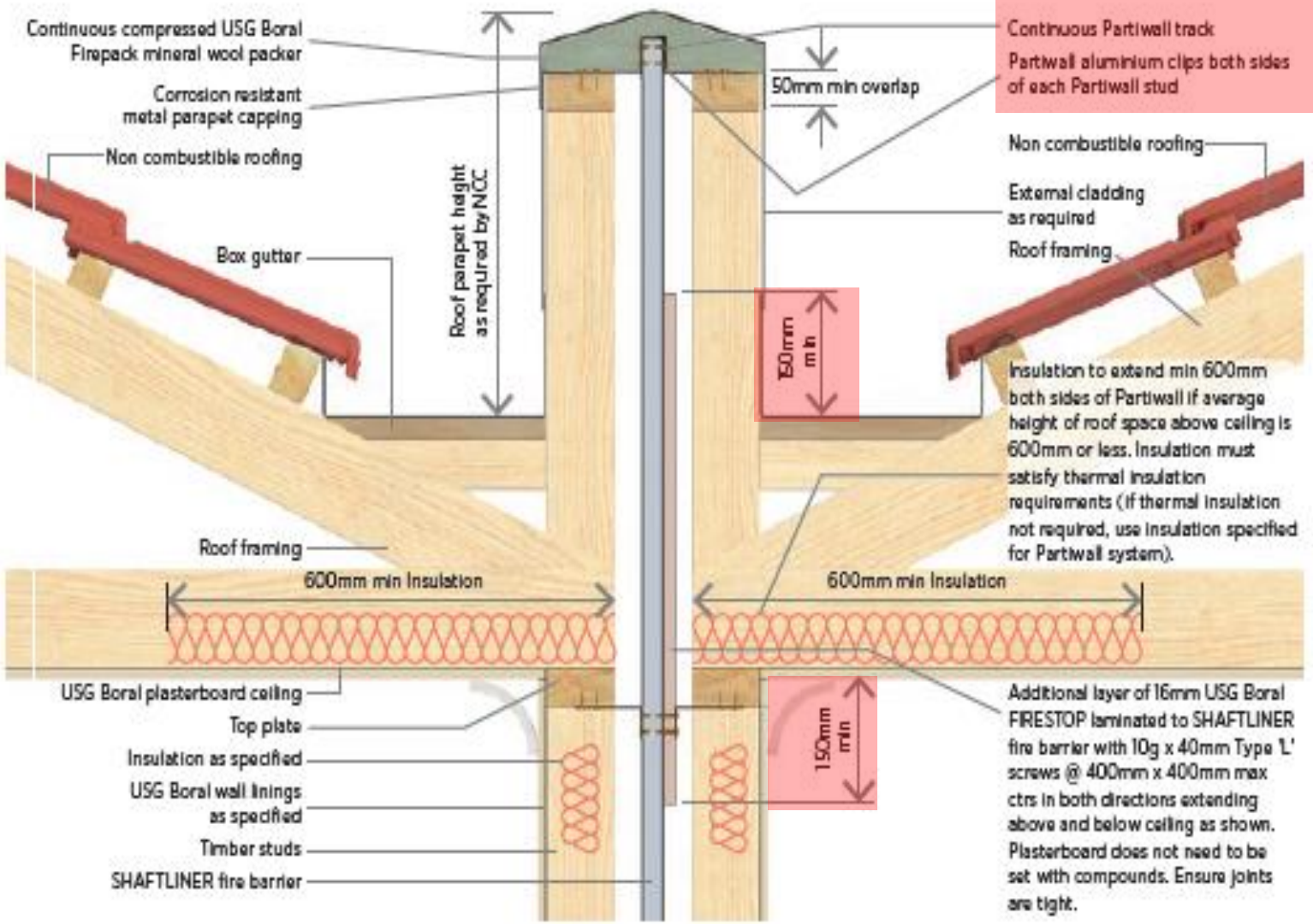
Figure 11: **Roof Parapet Junction Detail – FRL 60/60/60**



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Separating walls

- Objective
- Clips/brackets
- Alignment
- **Floor/Ceiling junctions**
- External wall junctions
- Sealing
- Damage
- Air Gap
- Health

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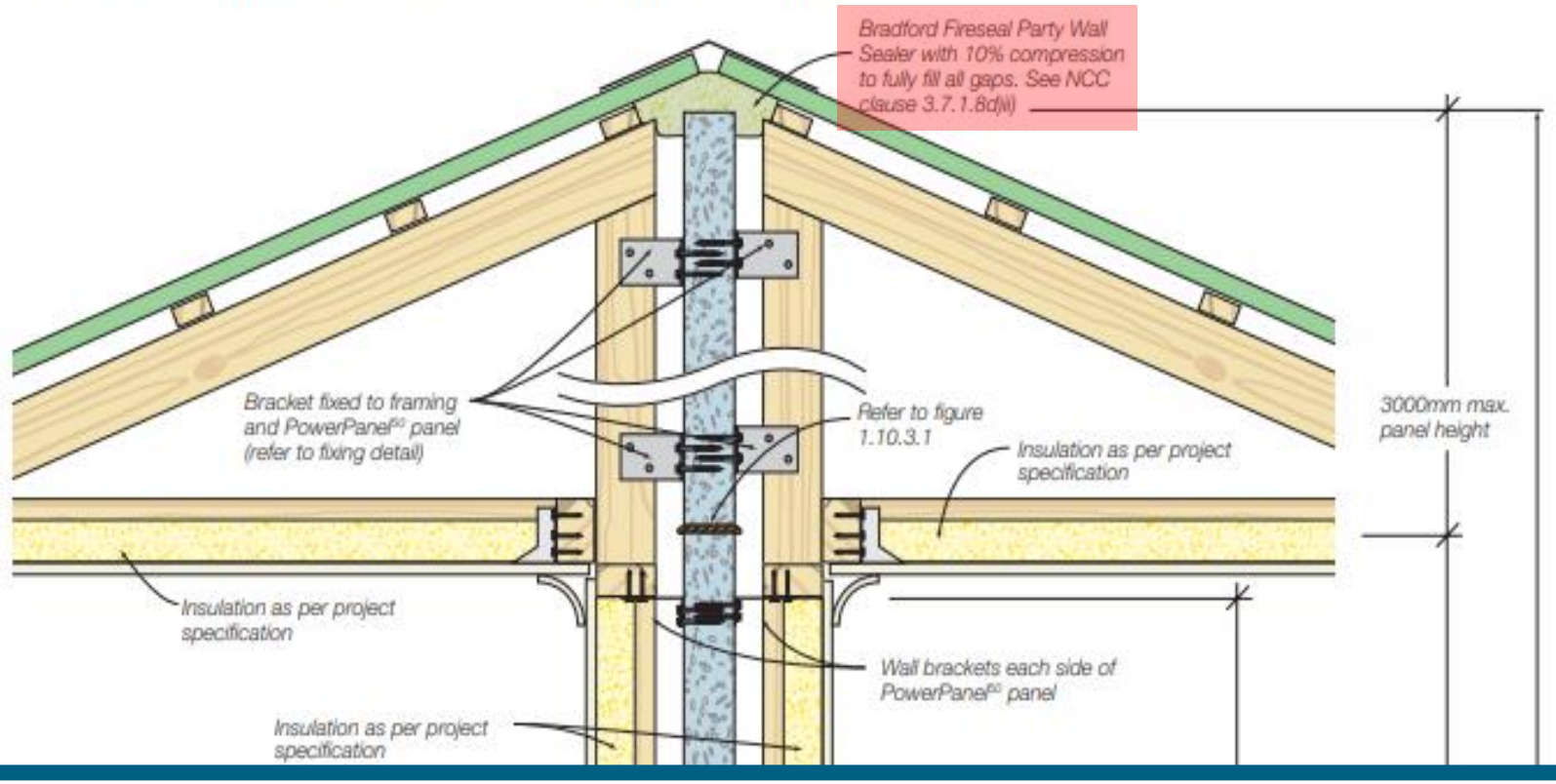
Figure 1.10.1.1 Vertical cross section of PowerPanel[50] Intertenancy Walls

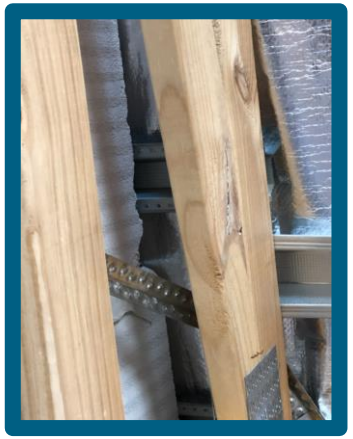


3.7.3.2 Separating walls

(c) A *separating wall* complying with (a)(iii)(A)—

(i) must not be crossed by timber or other *combustible* building elements except for roof battens with dimensions of 75 x 50 mm or less, or roof sarking; and

(ii) must have any gap between the top of the wall and the underside of the roof covering packed with mineral fibre or other suitable *fire-resisting* material.



Separating walls

VICTORIAN BUILDING AUTHORITY

BUILDING CONFIDENCE

Separating walls

Figure 53: Junction Of Party Wall And External Wall With Lightweight Cladding Direct Fixed to Studs – Plan View

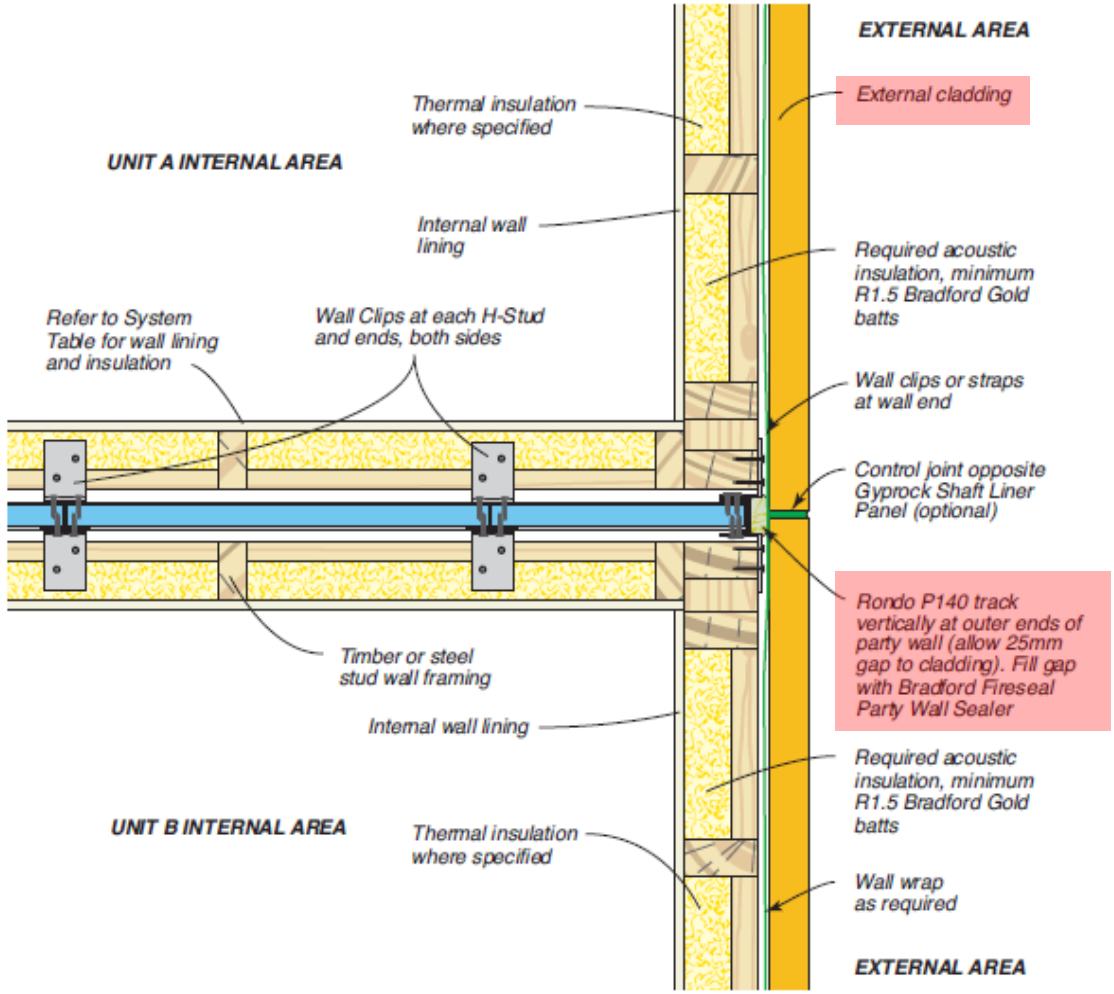


Figure 54: Junction Of Party Wall And External Wall With Lightweight Cladding Direct Fixed to Studs – Plan View

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BUILDING CONFIDENCE

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- Objective
- Clips/brackets
- Alignment
- Floor/Ceiling junctions
- **External wall junctions**
- Sealing
- Damage
- Air Gap
- Health

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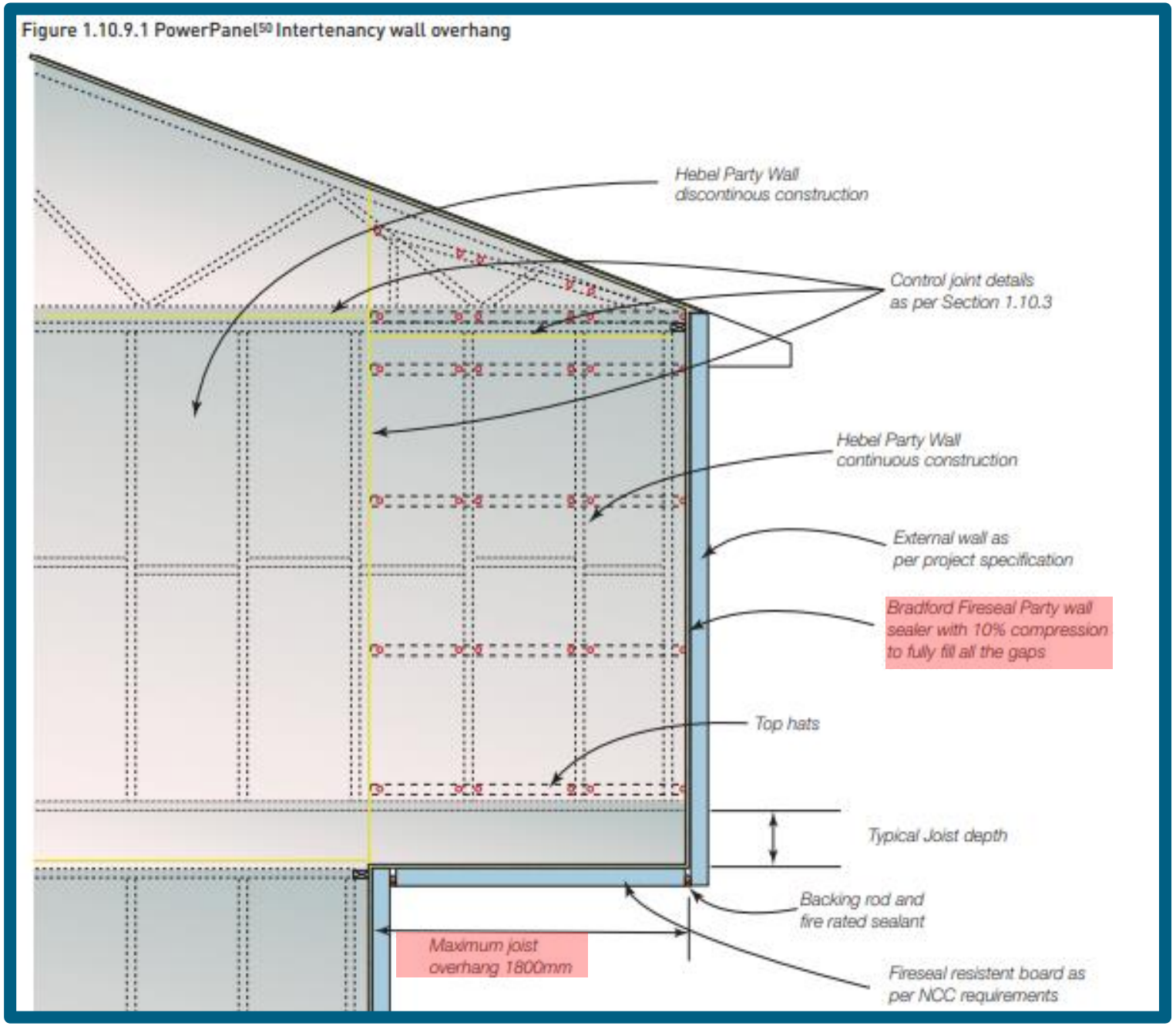
Figure 1.10.9.1 PowerPanel[50] Intertenancy wall overhang



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VICTORIAN BUILDING AUTHORITY

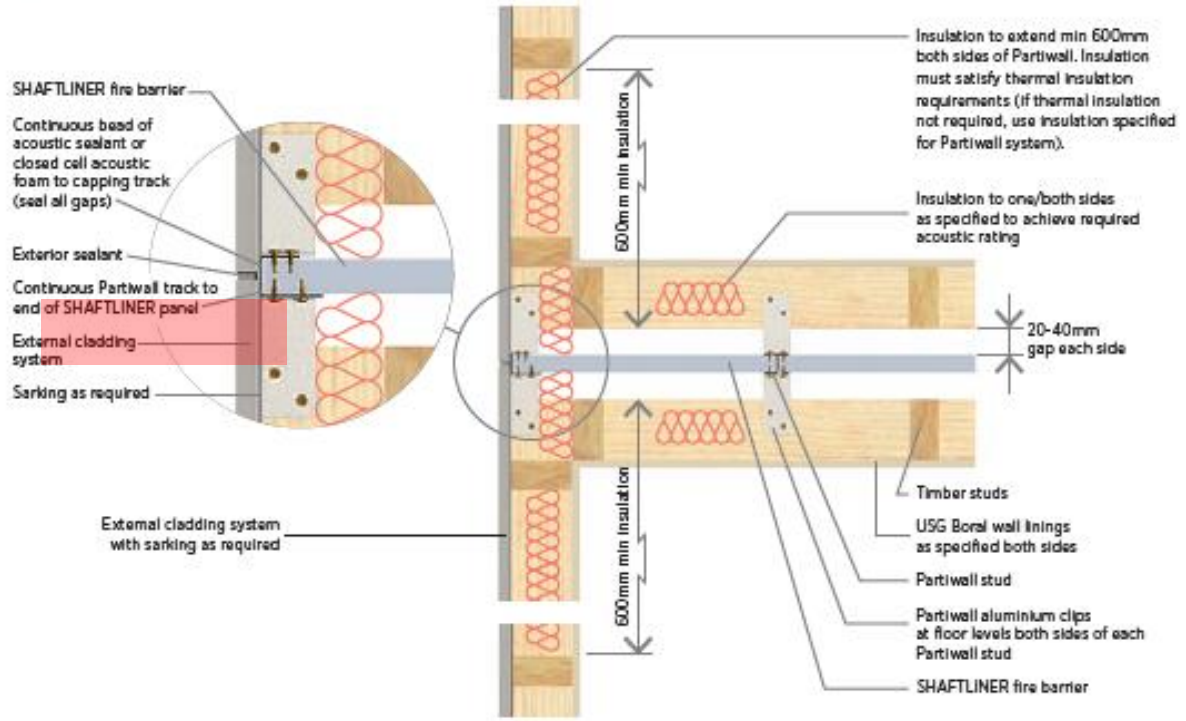
BUILDING CONFIDENCE

Separating walls

VICTORIAN BUILDING AUTHORITY

BUILDING CONFIDENCE

Figure 22: **Clad Wall Junction Detail – FRL 60/60/60**



Step 4: **Continue installing SHAFTLINER panels and Partiwall studs**

- Continue to install SHAFTLINER panels and Partiwall studs until reaching end of wall.
- As framing progresses fix Partiwall studs to timber framing with Partiwall aluminium clips.
- Cut the last SHAFTLINER panel in line with the end of Partiwall base track. Fit Partiwall end track tightly over the edge of the panel and screw fix end and base tracks junction with 10g x 16mm drill point wafer head screws both sides.
- Fix end track to timber frame with Partiwall aluminium clip.

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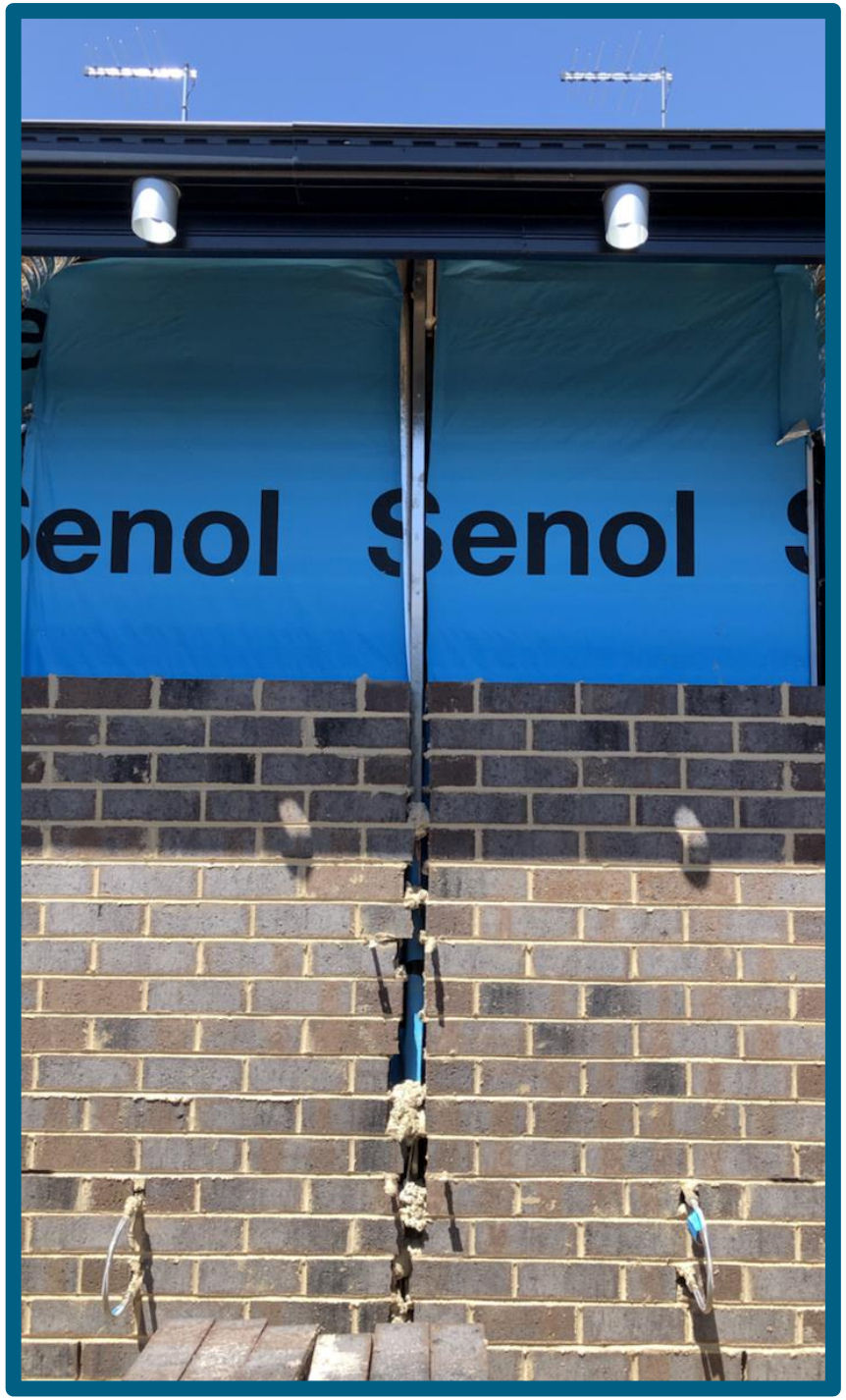

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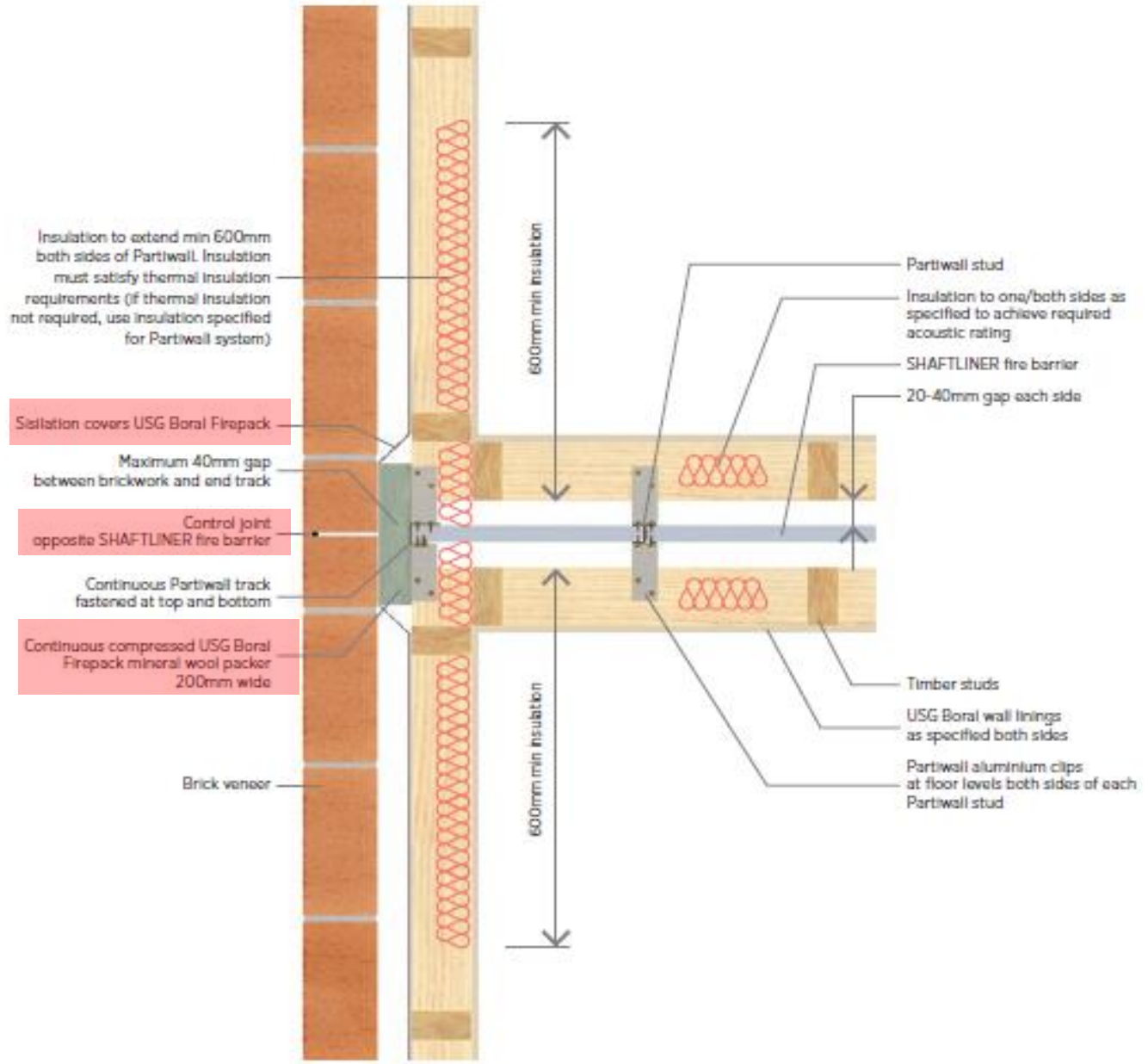
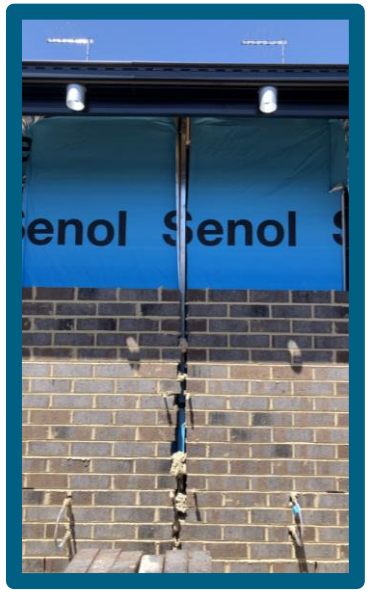
BUILDING CONFIDENCE

Figure 24: **Brick Veneer Wall Junction Detail 1 – FRL 60/60/60**





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BUILDING CONFIDENCE

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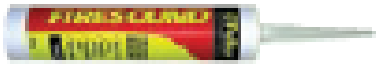
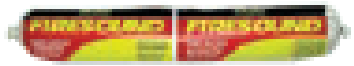
Step 5: **Seal base track**

- Apply continuous Firesound™ sealant along Partiwall® base track/floor junction on one side only

	Firesound® mastic, 450g tube	FBSOUND450
	Firesound mastic, 600ml sausage	FBSOUND900

Separating Walls

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BUILDING CONFIDENCE

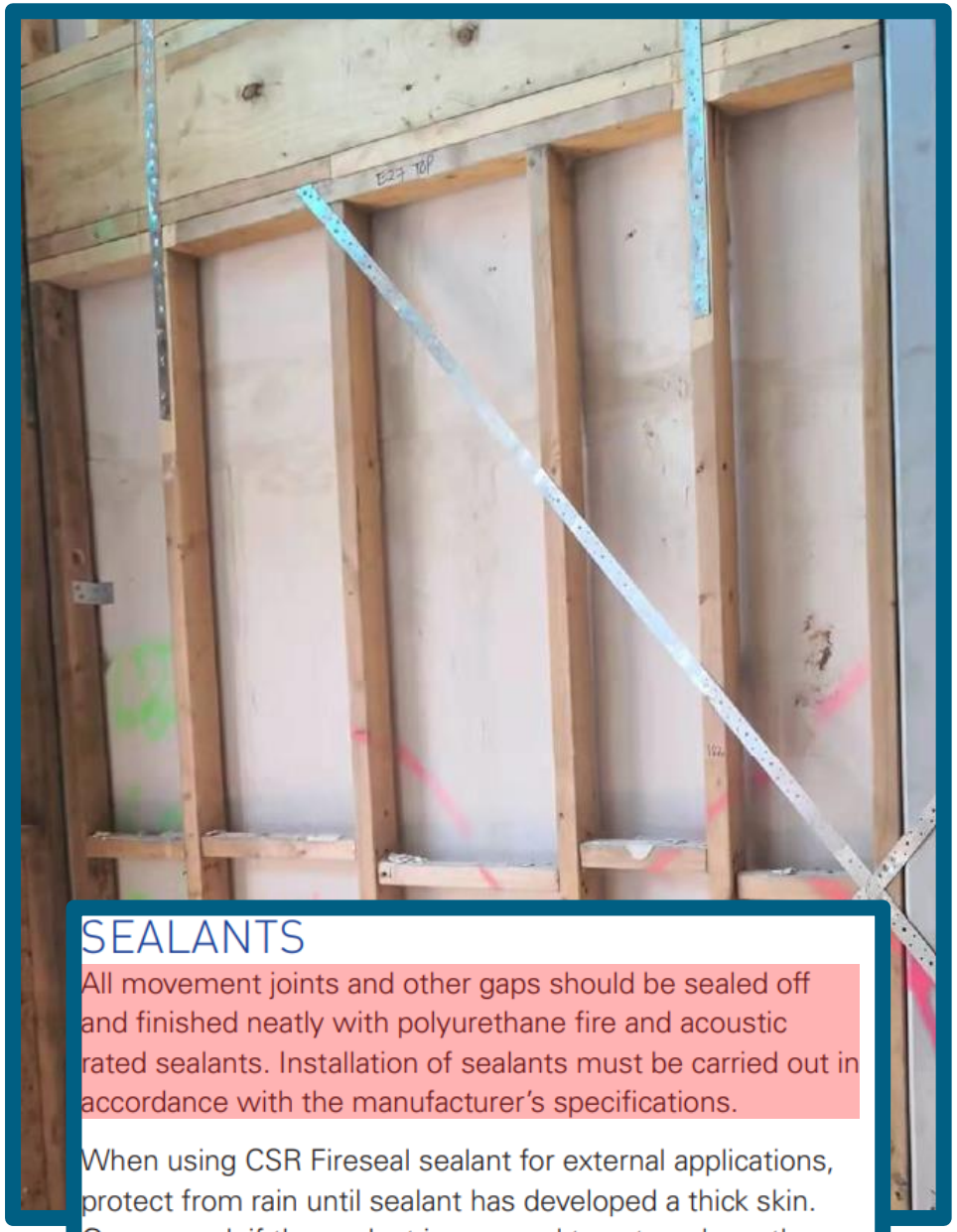
Separating walls

VICTORIAN BUILDING AUTHORITY

BUILDING CONFIDENCE

HEBEL ADHESIVE

Hebel Adhesive is applied to the panel with a 50mm Hebel notched trowel. When the panels are pushed together the joints are to be 2-3mm thick. Sufficient pressure must be applied to the panels when gluing to ensure the adhesive is fully bedded across the joint. Scrape off any excess adhesive protruding from the joints and fill any gaps. Adhesive is to be mixed to the proportions and consistency as per the instructions on the bag.



SEALANTS

All movement joints and other gaps should be sealed off and finished neatly with polyurethane fire and acoustic rated sealants. Installation of sealants must be carried out in accordance with the manufacturer's specifications.

When using CSR Fireseal sealant for external applications, protect from rain until sealant has developed a thick skin. Once cured, if the sealant is exposed to external weather conditions for a longer period of time the sealant should be painted over with a compatible external grade acrylic coating.

Separating walls

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Don'ts

- Don't use damaged materials.
- Don't penetrate the SHAFTLINER other than in the roof space as per Boral's details.
- Don't exceed specified clip spacing.
- Don't use steel clips.
- **Don't use Partiwall H-studs in lieu of Partiwall track as edge tracks nor at horizontal joint in SHAFTLINER fire barrier.**
- Don't cut tracks between Partiwall studs. Tracks should be used in full lengths.
- Don't run services in the gap between SHAFTLINER fire barrier and framework.

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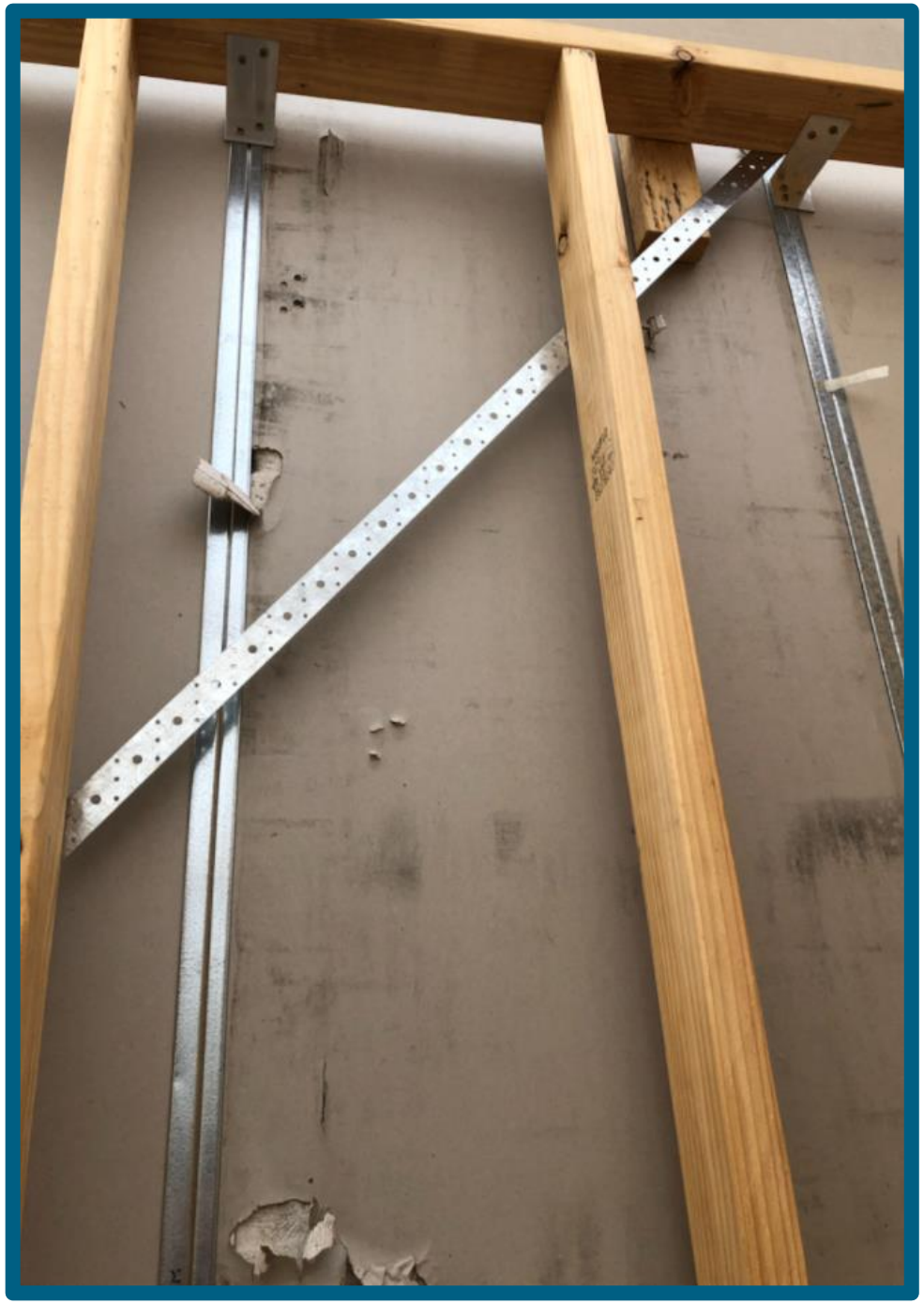
BUILDING CONFIDENCE



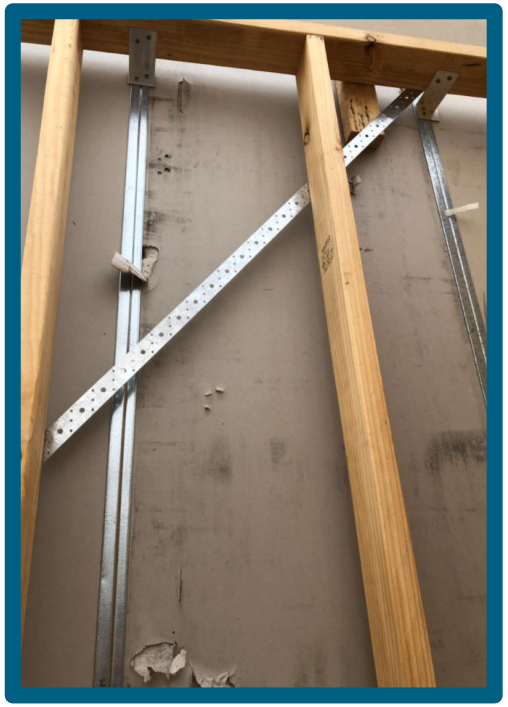
Separating walls

VICTORIAN BUILDING AUTHORITY

BUILDING CONFIDENCE

Exposure to Weather

Once erected, it is recommended that the central barrier of Gyprock Shaft Liner Panels and Fyrchek plasterboard are protected from rain. The use of a covering can prevent the formation of mould, and can avoid delays in allowing boards to dry before internal linings are applied. The use of Shaft Liner Panel MP is recommended to reduce the occurrence of mould during the construction period. In any case, the central barrier may be left exposed to weather for up to one month if required. Panels with physical damage to either the core or paper face must be replaced.



Separating walls

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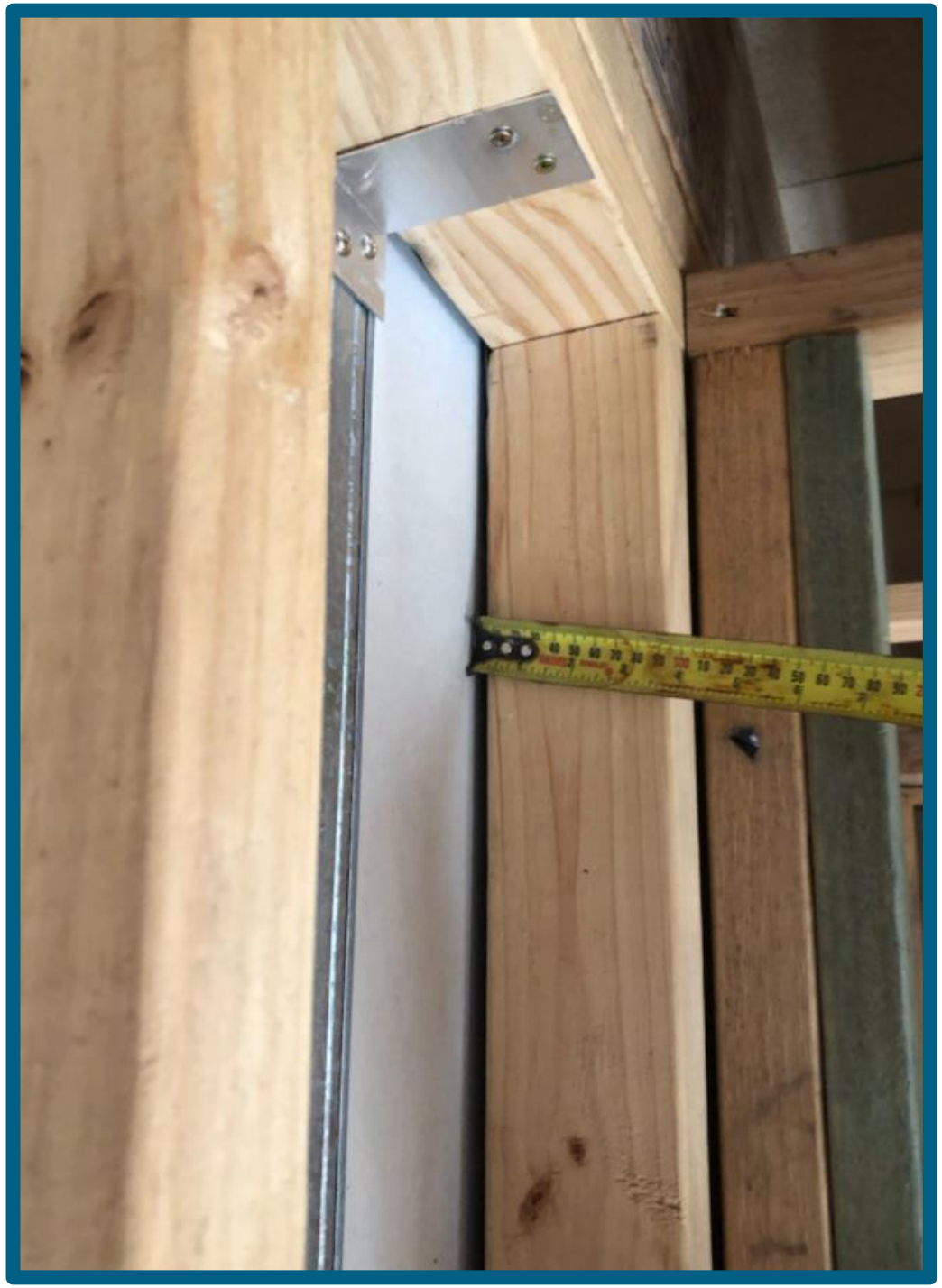
BUILDING CONFIDENCE

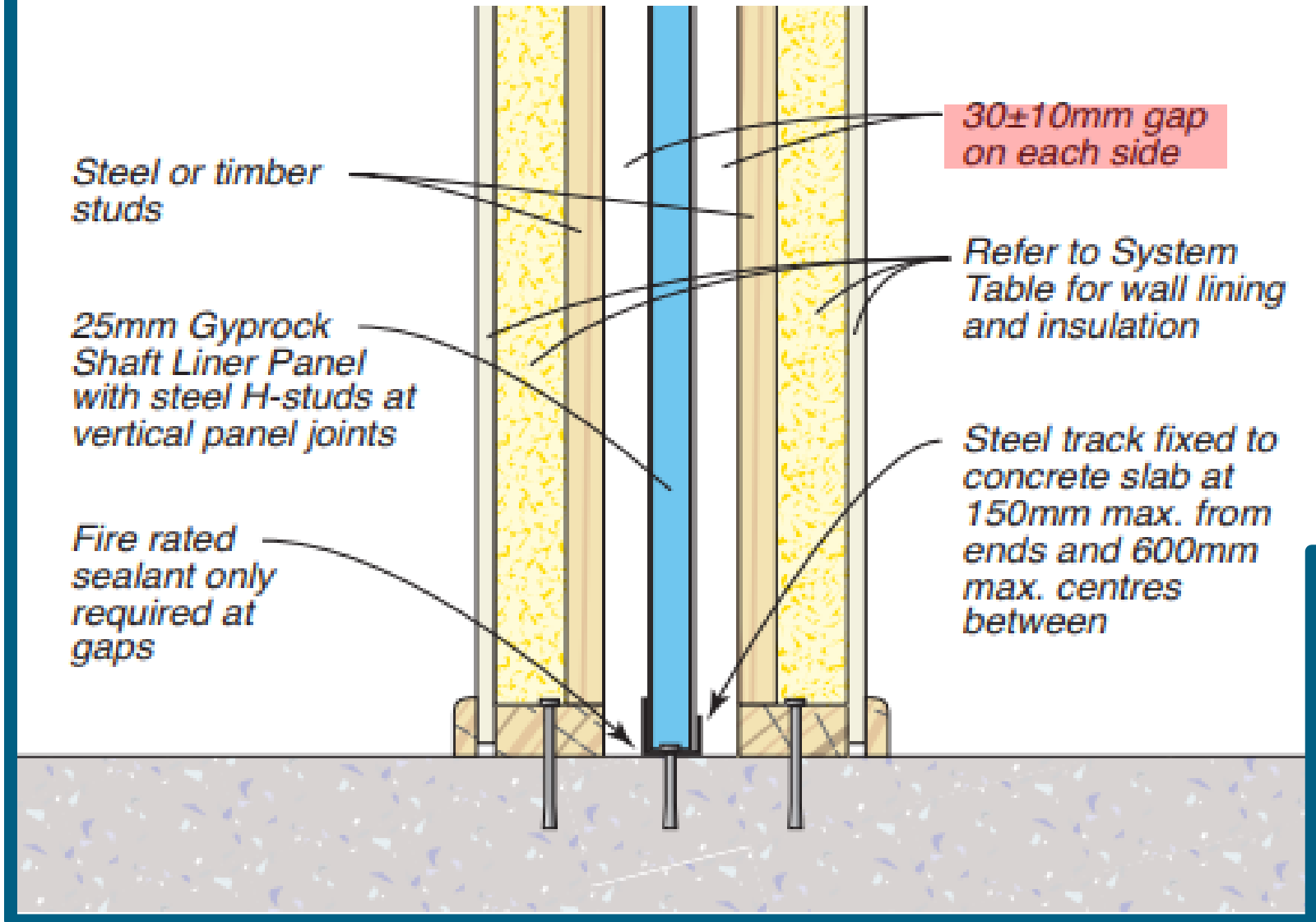


Separating walls

VICTORIAN BUILDING AUTHORITY

BUILDING CONFIDENCE

Figure 11: Base At Flat Slab With Pinned J-Track



Separating walls

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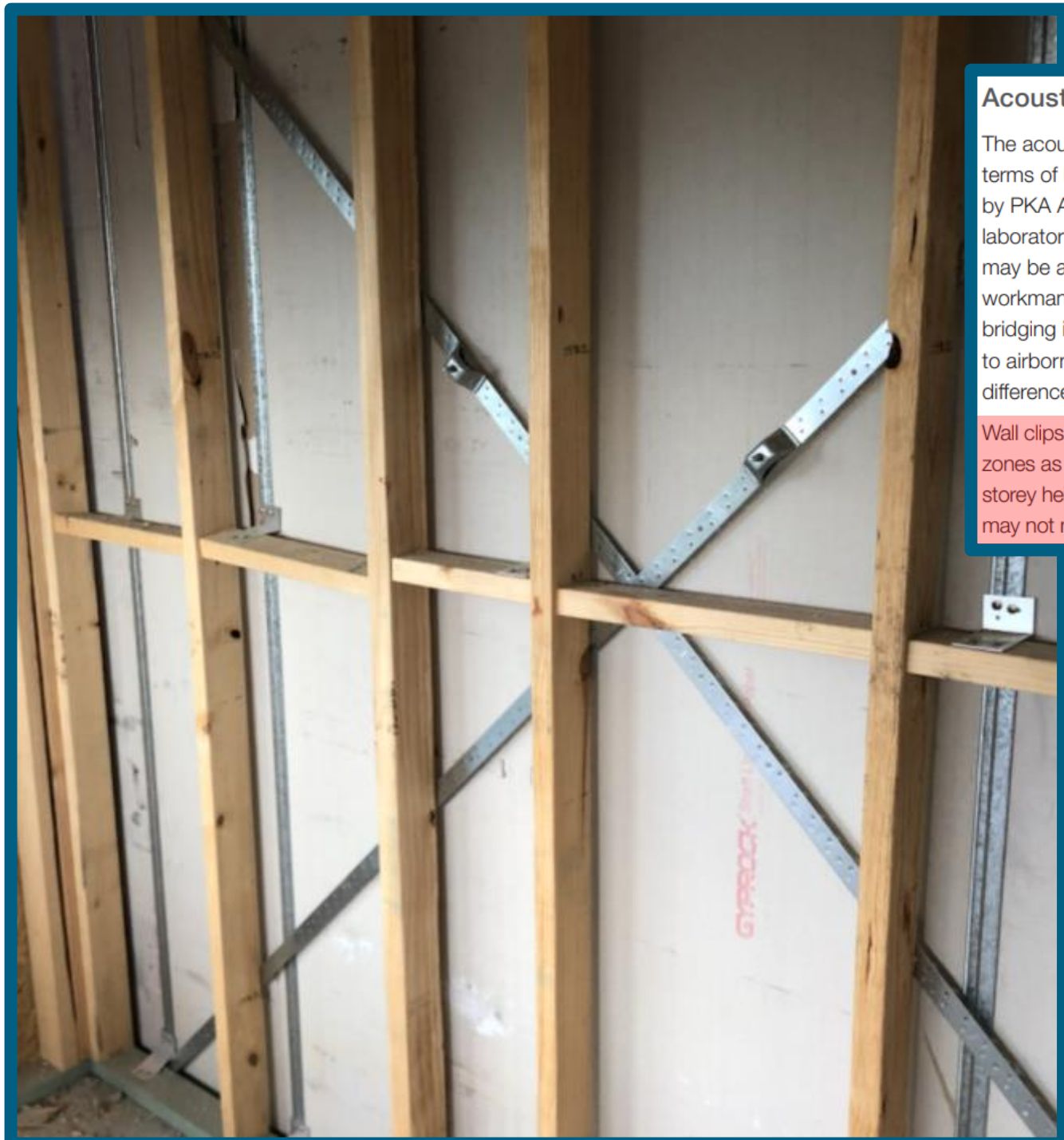
BUILDING CONFIDENCE



Acoustic Performance

The acoustic performance of wall systems is expressed in terms of R_w and $R_w + C_{tr}$. The systems have been assessed by PKA Acoustic Consulting, and the ratings refer to expected laboratory performance. The site performance of the systems may be affected by sound flanking, the effectiveness of workmanship, and the inclusion of structural elements and bridging items. The building designer must pay special attention to airborne and structural flanking paths to minimise the difference between laboratory and field performance.

Wall clips are only to be installed at or within floor and ceiling zones as shown in the details. Using additional clips within the storey height will reduce the acoustic performance of the wall, and may not meet the requirement for discontinuous construction.

- Objective
- Clips/brackets
- Alignment
- Floor/Ceiling junctions
- External wall junctions
- Sealing
- Damage
- **Air Gap**
- Health

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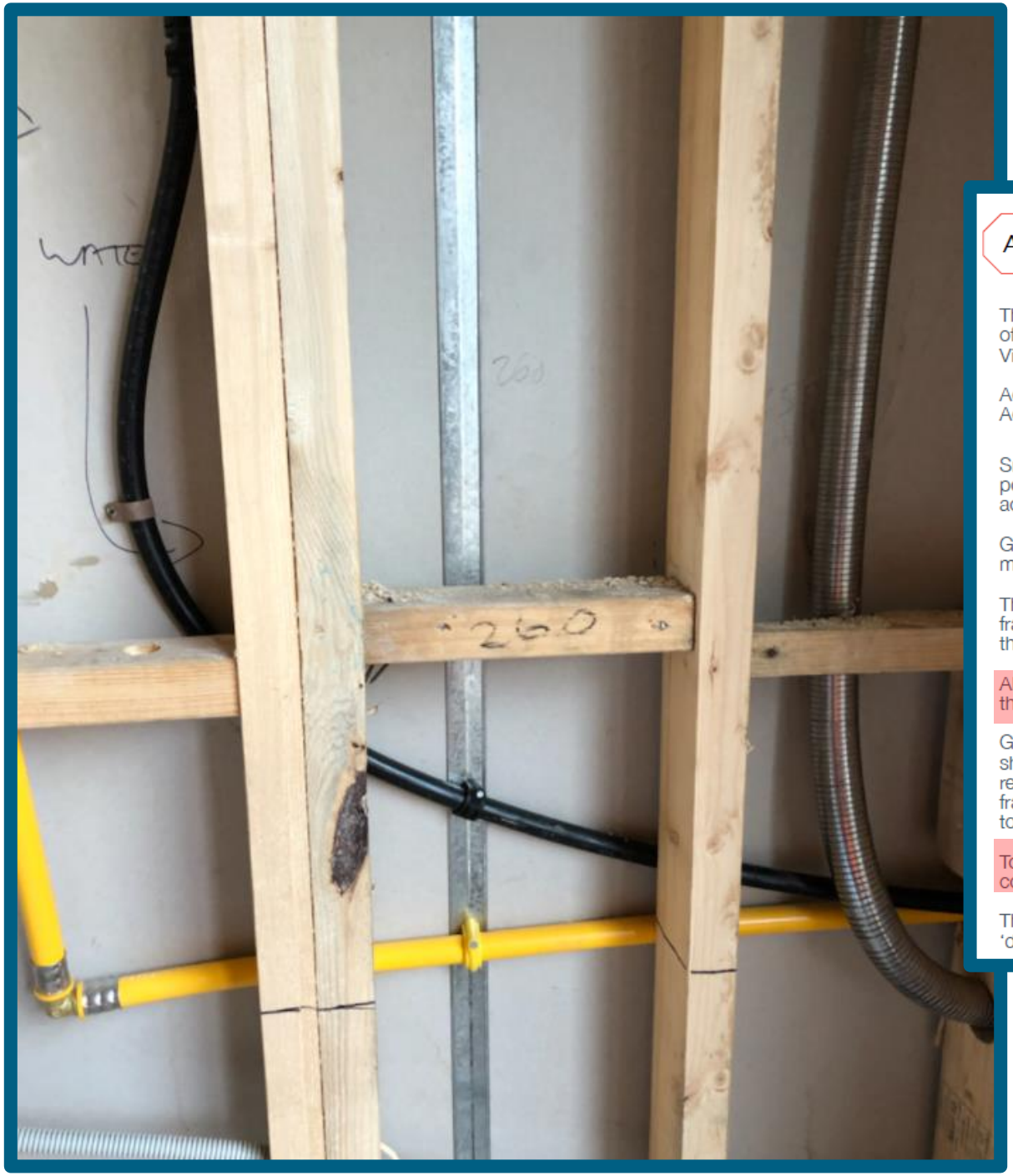
BUILDING CONFIDENCE



GTEK docs to be obtained

ACOUSTIC

The GTEK™ Protect System has been the subject of a series of acoustic tests at the CSIRO Acoustic Laboratory at Clayton, Victoria.

Acoustical estimates have been determined by Marshall Day Acoustics.

Small penetrations of linings in occupancy areas such as power points, switches, light fittings and pipes do not need to be acoustically sealed.

GTEK™ Protect 25mm base and internal lining junctions with floors must be sealed with an approved fire acoustic sealant.

The clear distance between the GTEK™ Protect 25mm and wall framing on both sides should not be less than 20mm nor more than 40mm.

All services should be run through the framing. Insulation thicker than the stud framing is allowed.

GTEK™ Fire 16mm laminated to the GTEK™ Protect 25mm should not come into contact with the stud or floor framing. It is recommended the gap between GTEK™ Protect 25mm and timber framing be increased to a minimum 25mm on the GTEK™ Fire side to ensure adequate clearance.

To maintain acoustic performance, service pipes must not be in contact with the GTEK™ Protect 25mm.

The GTEK™ System Protect complies with BCA requirements for 'discontinuous construction'.

Separating walls

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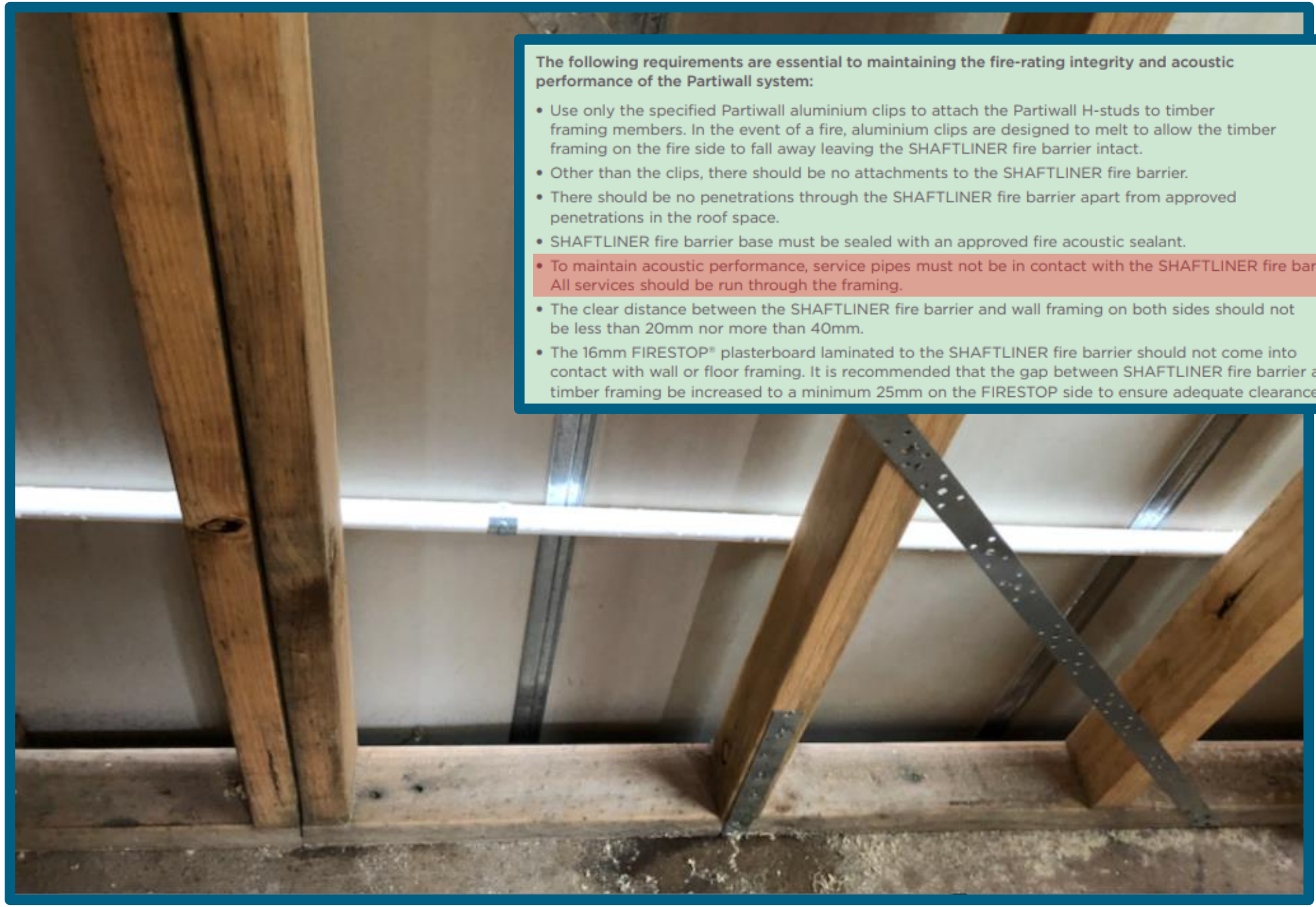
BUILDING CONFIDENCE



The following requirements are essential to maintaining the fire-rating integrity and acoustic performance of the Partiwall system:

- Use only the specified Partiwall aluminium clips to attach the Partiwall H-studs to timber framing members. In the event of a fire, aluminium clips are designed to melt to allow the timber framing on the fire side to fall away leaving the SHAFTLINER fire barrier intact.
- Other than the clips, there should be no attachments to the SHAFTLINER fire barrier.
- There should be no penetrations through the SHAFTLINER fire barrier apart from approved penetrations in the roof space.
- SHAFTLINER fire barrier base must be sealed with an approved fire acoustic sealant.
- To maintain acoustic performance, service pipes must not be in contact with the SHAFTLINER fire barrier. All services should be run through the framing.
- The clear distance between the SHAFTLINER fire barrier and wall framing on both sides should not be less than 20mm nor more than 40mm.
- The 16mm FIRESTOP® plasterboard laminated to the SHAFTLINER fire barrier should not come into contact with wall or floor framing. It is recommended that the gap between SHAFTLINER fire barrier and timber framing be increased to a minimum 25mm on the FIRESTOP side to ensure adequate clearance.

Separating walls

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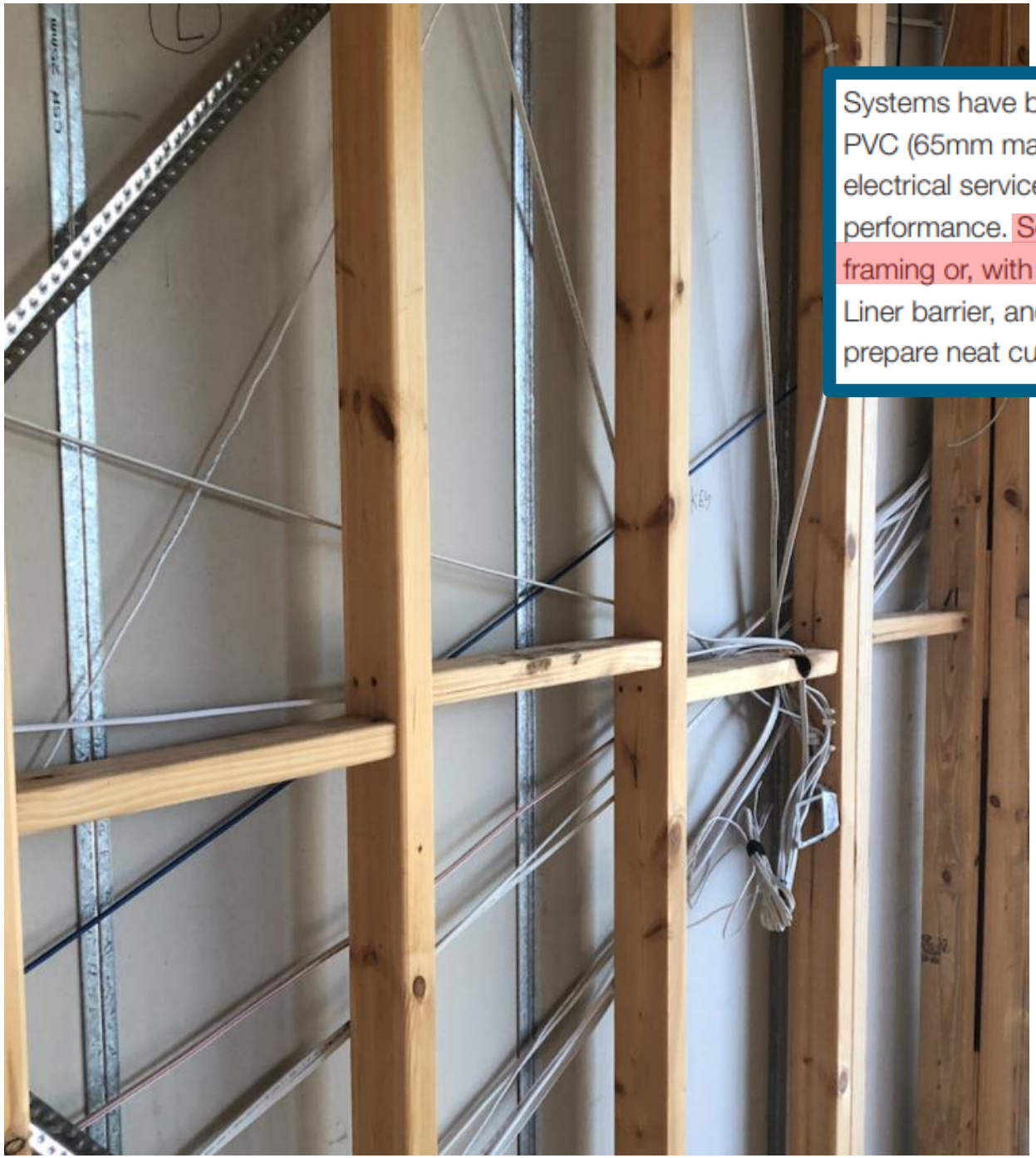

Systems have been fire tested with services including PVC (65mm max. diameter), copper plumbing, GPO's and electrical services installed in both wall leaves with acceptable performance. Services may be installed through the stud framing or, with a minimum 10mm clearance to the central Shaft Liner barrier, and may be fixed to the back of studs. Simply prepare neat cut holes with a 6mm maximum clearance.

Separating walls

- Objective
- Clips/brackets
- Alignment
- Floor/Ceiling junctions
- External wall junctions
- Sealing
- Damage
- Air Gap
- **Health**

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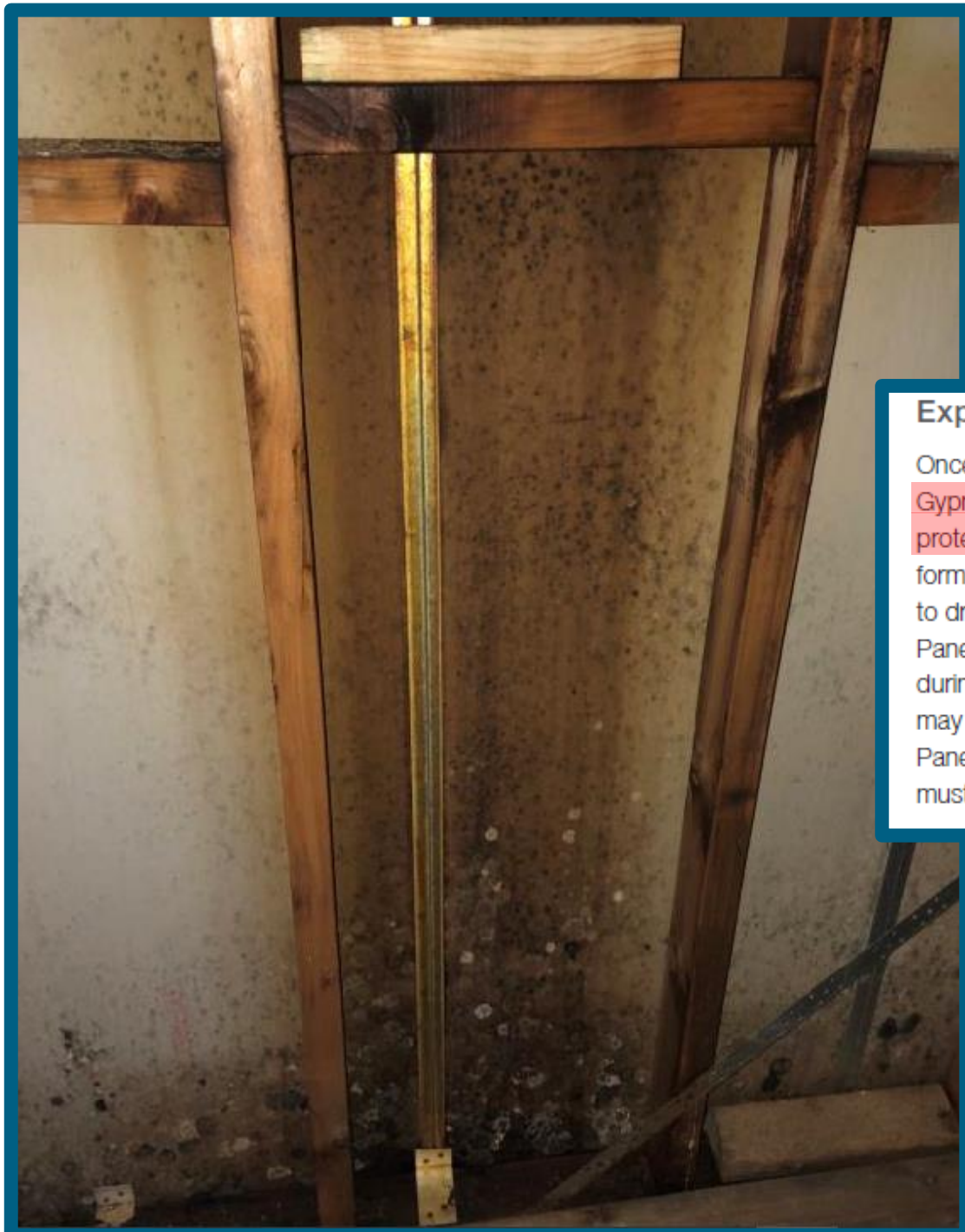

Exposure to Weather

Once erected, it is recommended that the central barrier of Gyprock Shaft Liner Panels and Fyrchek plasterboard are protected from rain. The use of a covering can prevent the formation of mould, and can avoid delays in allowing boards to dry before internal linings are applied. The use of Shaft Liner Panel MP is recommended to reduce the occurrence of mould during the construction period. In any case, the central barrier may be left exposed to weather for up to one month if required. Panels with physical damage to either the core or paper face must be replaced.

Separating walls

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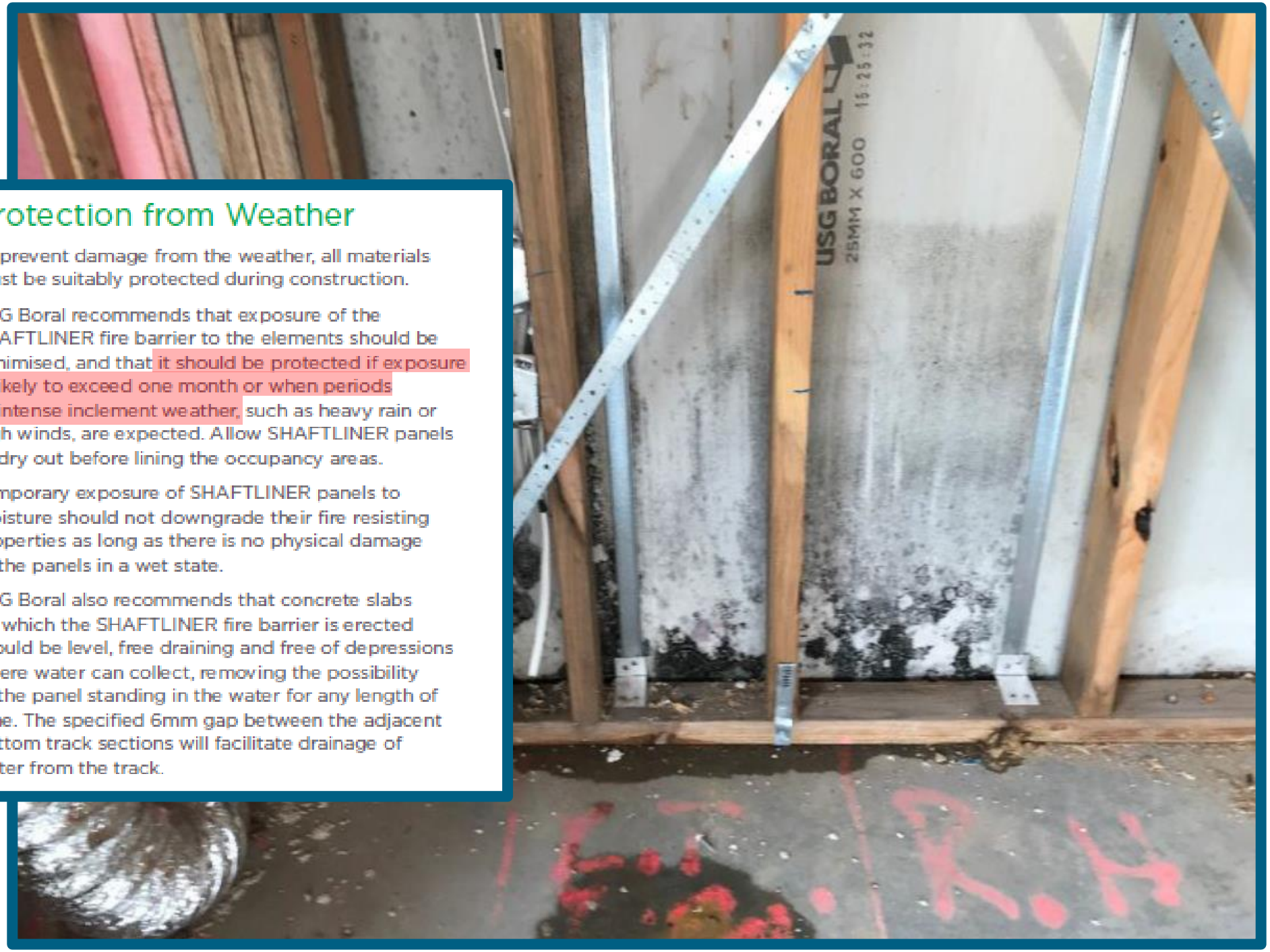
Protection from Weather

To prevent damage from the weather, all materials must be suitably protected during construction.

USG Boral recommends that exposure of the SHAFTLINER fire barrier to the elements should be minimised, and that it should be protected if exposure is likely to exceed one month or when periods of intense inclement weather, such as heavy rain or high winds, are expected. Allow SHAFTLINER panels to dry out before lining the occupancy areas.

Temporary exposure of SHAFTLINER panels to moisture should not downgrade their fire resisting properties as long as there is no physical damage to the panels in a wet state.

USG Boral also recommends that concrete slabs on which the SHAFTLINER fire barrier is erected should be level, free draining and free of depressions where water can collect, removing the possibility of the panel standing in the water for any length of time. The specified 6mm gap between the adjacent bottom track sections will facilitate drainage of water from the track.

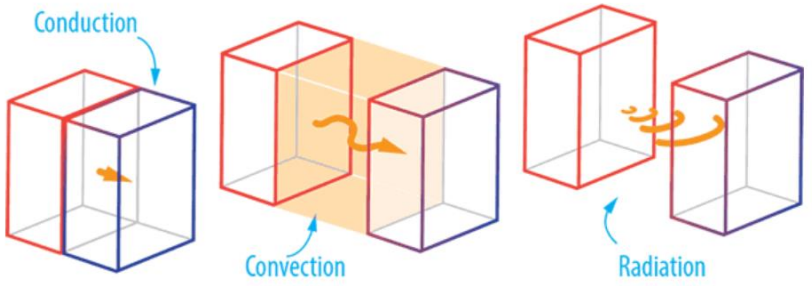


References

Product	Installation guide referenced
Hebel	https://hebel.com.au/uploads/downloads/HELIT152_FEB20_Low_Rise_Intertenancy_50mm_DIGuide.pdf
Gyprock	https://www.gyprock.com.au/-/media/gyprock/content/documents/design/system-information/gyprock-party-wall-manual-gyp513-2021.pdf
Boral	https://www.usgboral.com/content/dam/USGBoral/Australia/Website/Documents/English/installation-guide/UB1037_Partiwall_Brochure_A4_digital_21_08_18.pdf
GTEK	https://gtekplasterboard.com.au/wp-content/uploads/2017/01/BGCGTEK_PROTECT.pdf
National Construction Code 2019 Volume 2	https://ncc.abcb.gov.au/sites/default/files/ncc/NCC_2019_Volume_Two_Amendment%201.pdf

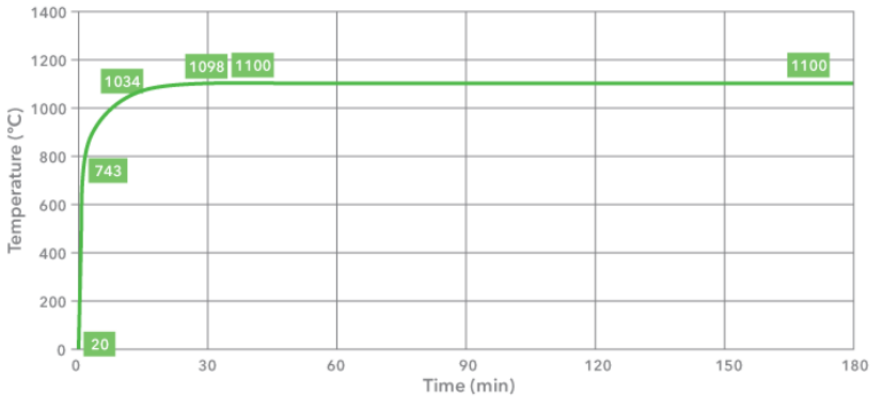
Fire performance of separating walls

- Heat transfer:
  - Conduction
  - Convection
  - Radiation

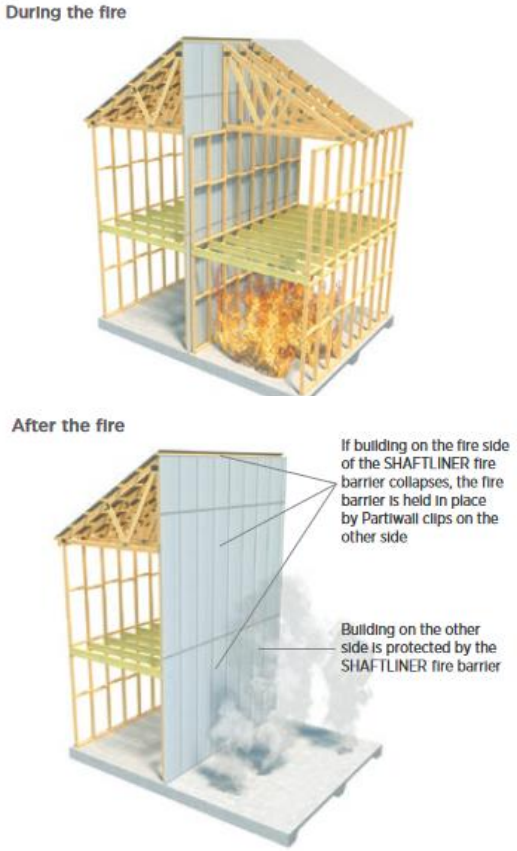


https://www.ceramicx.com/information/support/why-infrared-types-of-heat-transfer/

- Fire Resistance Level (FRL):
  - Structural adequacy
  - Integrity
  - Insulation



https://www.promat.com/en-au/construction/projects/expert-area/33637/international-fire-curves-fire-safety/

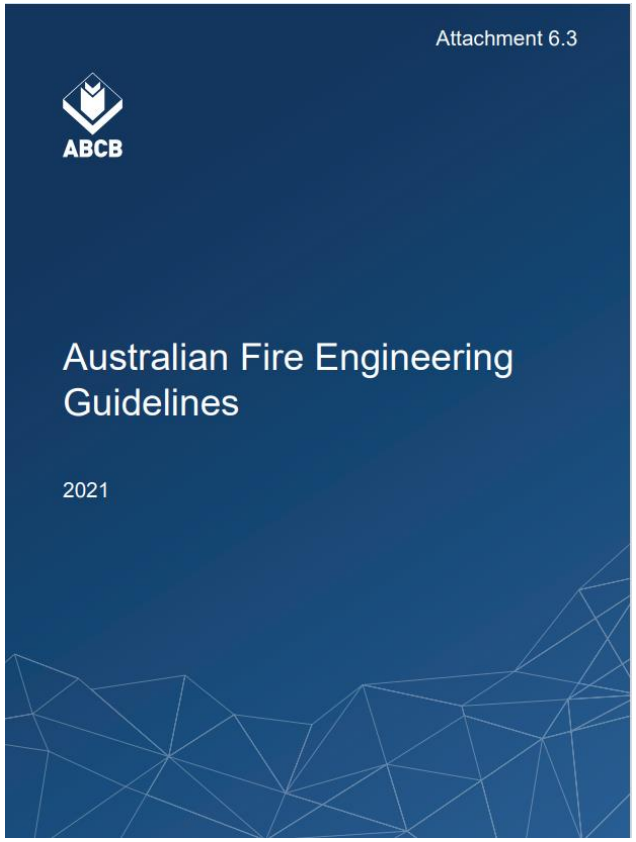


https://www.usgboral.com/content/dam/USGBoral/Australia/Website/Documents/English/installation-guide/UB1037_Partiwall_Brochure_A4_digital_21_08_18.pdf

Performance assessments

NCC 2019

- Performance Requirements
  - Deemed-to-Satisfy Solution
  - Performance Solution
- Evidence of suitability
- Schedule 5
  - Fire-resistance



https://ncc.abcb.gov.au/

Thank you

More information regarding The PIP Quarterly report can be found on the VBA website:

- **For the website go to https://www.vba.vic.gov.au/plumbing/complaints-compliance-enforcement/proactive-inspections-program/quarterly-reports**


Q & A