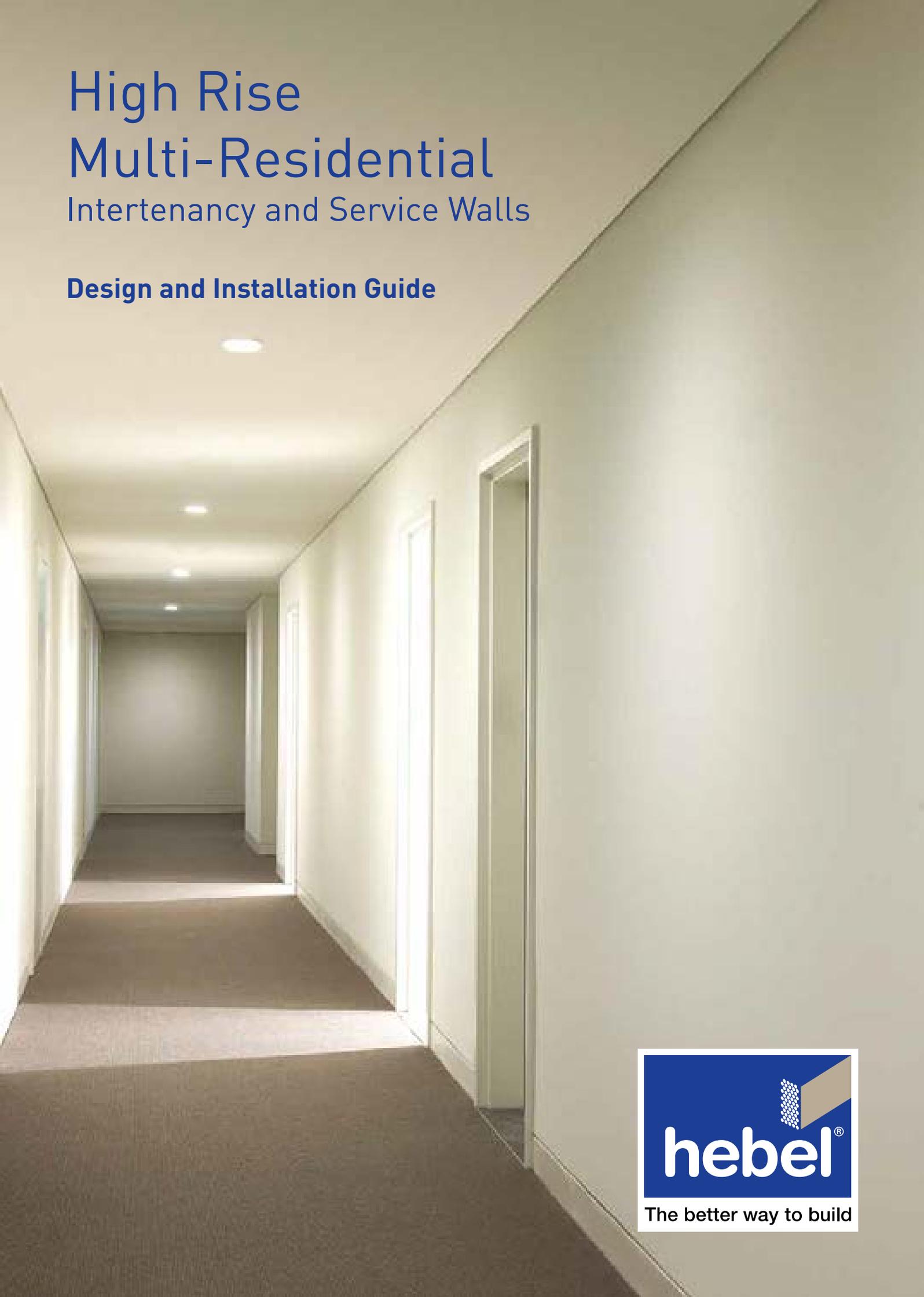


High Rise Multi-Residential Intertenancy and Service Walls

Design and Installation Guide



Contents

This Design Guide has been prepared as a source of information to provide general guidance to consultants – and in no way replaces the services of the professional consultant and relevant engineers designing the project.

It is the responsibility of the architectural designer and engineering parties to ensure that the details in this Design and Installation Guide are appropriate for the intended application.

The recommendations of this guide are formulated along the lines of good building practice, but are not intended to be an exhaustive statement of all relevant data.

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Better buildings are constructed with Hebel



Hebel is a lightweight steel-reinforced Autoclaved Aerated Concrete (AAC) that has been used in Europe for over 70 years and here in Australia for over 20 years.

Hebel. A high-performance lightweight concrete panel system

Hebel is the innovative and sustainable, high-performance and lightweight concrete panel system of the future – available today.

Easy to install, strong and solid Hebel steel reinforced panels are highly versatile and can be used on all sites to provide extremely solid, safe and highly secure internal walls with high levels of sound resistance and absorption. They are also not affected by dampness.

Hebel systems can achieve (and often exceed) BCA requirements and are extremely fire-resistant with thermal absorbing properties that assist in improved energy ratings for the building and have been independently certified as meeting the requirements of Good Environmental Choice Australia (www.geca.org.au)

Hebel. Proven, scientifically tested and trusted by leading builders

The Hebel system has a solid track record of trusted performance and reliability characteristics that make it the accepted industry standard in internal wall systems.

Building with the Hebel internal wall system means simpler construction methods, delivers faster construction timetables and lowers risk of non-compliance with the BCA.

Australian made and backed by CSR

Hebel is 100% manufactured in Australia by CSR Building Products Limited, so you can rely on product quality, technical expertise, warranty and stocked supplies. With CSR you can trust that everything has been proven, tested and continually improved.

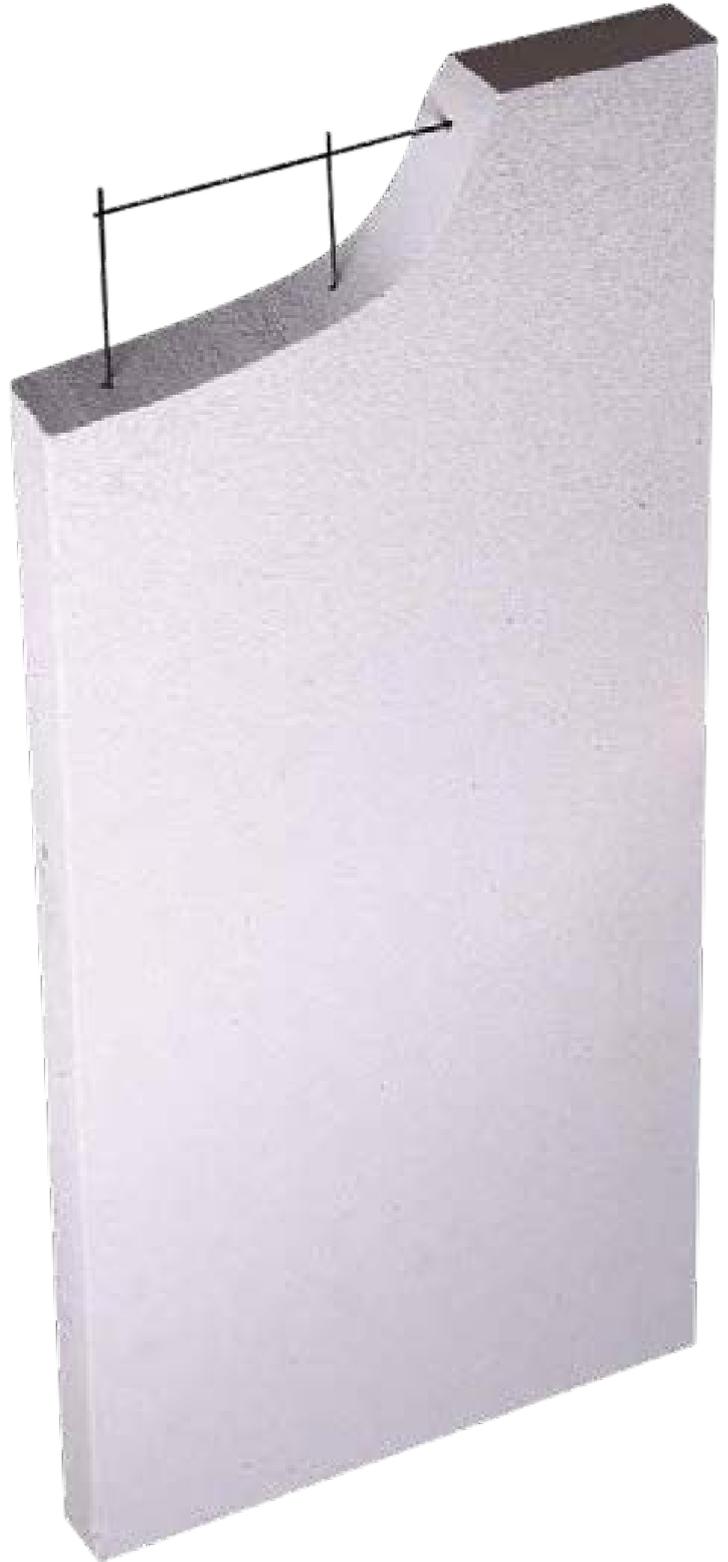


HEB-2006
GECA 08-2005–
Environmentally
Innovative Products

Hebel. Better to build with...

At the heart of the Hebel system is the Hebel PowerPanel - a 75mm thick, steel reinforced building panel made from AAC (Autoclaved Aerated Concrete) which is supplied in various lengths and profiles to suit external and internal walls for framed construction.

The unique Hebel attributes are best summarised with the Hebel 'tick' below:



Fastest Masonry Wall System

Hebel Intertency walls are fast to construct while giving you the peace of mind of masonry wall. Building with Hebel means a cleaner, safer work area during construction and less clean-up at completion of building.

for all the best reasons



Lightweight yet solid and tough as masonry

Lightweight Hebel PowerPanels ensure lighter loads on structures compared to traditional masonry. This can lead to substantial savings in supportive

concrete floors in multi-storey developments. Hebel PowerPanels also provide a high degree of security between units with the application of direct fixed plasterboard or render providing the solid feel associated with masonry.



Highly fire resistant for peace of mind and added security

Hebel is non-combustible and renowned for its highly fire resistant properties and achieves a FRL (Fire Resistance Levels) from 90 minutes through to 240 minutes* (tested at CSIRO). Another reason when building with Hebel, you're building with peace-of-mind for your own future, as well as the ultimate home owners of your building.

**Note: Fire Resistance Levels were achieved with the overall PowerPanel system.*



A comforting thought for a comfortable living environment

Hebel's unique AAC construction provides superior insulation qualities for a masonry product. The unique

combination of thermal resistance, along with thermal mass, make building with Hebel a smart choice for meeting Australia's increasing building efficiency regulations.

For unit owners, the thermal efficiencies of Hebel reduce the reliance on heating and cooling appliances – the combined effects of using a heater less in winter and fans or air conditioning less in summer can have a big impact on rising energy costs.



Sustainability for a better world in the long term starts today

Hebel delivers a diverse number of environmental benefits over brick and concrete. In an independent Life Cycle Assessment (the leading methodology used to quantify the environmental impacts of a product's entire life) undertaken by Good Environment Choice Australia in accordance with international standard ISO 14 024, Hebel was found to have clear environmental benefits across all key environmental criteria.

To be awarded the label, products must have a 30% lower impact than alternatives. Hebel uses 61% and 64% less embodied energy and 64% and 55% less greenhouse gas emissions than the comparative products, concrete and brick veneer respectively.

As environmental consciousness and social responsibility increases, Hebel is striving to set new sustainability standards in building materials and residential living.



A sound reason for better acoustic qualities

Hebel pioneered the introduction of lightweight wall panels providing acoustic performance levels at or above $R_w + C_{tr} = 50$ in high rise multi-residential buildings.

BCA acoustic compliance is simple and easy to achieve with a system that has the benefits of lightweight construction with steel reinforced masonry between the walls.

Hebel PowerPanel is used in a wide range of building construction applications

Intertency Walls and other acoustic sensitive areas

The many benefits of using Hebel internal wall systems include acoustic performance to significantly reduce both sound and impact noise transmission between units and rooms. All Hebel acoustic walls have good impact noise resistance due to separated wall leaf construction (discontinuous).

Service and other internal walls

Hebel offers a wide range of additional intertenancy wall solutions for many high-rise buildings, which in addition to their acoustic values provide excellent thermal and fire resistant properties.

External Facade Walls*

Hebel PowerPanel can also be used for External Facade Walls. This lightweight product provides substantial cost savings compared to traditional masonry (i.e. bricks and pre-cast concrete.)

*See High Rise Multi-Residential Facades Design Guide at www.hebelaustralia.com.au.

-  Intertency walls
-  Common area walls
-  Internal walls
-  External facade walls
-  Shaft walls
-  Service walls
-  Basement plenum walls
-  Curved or angled internal walls
-  Boundary Walls



Applications in Intertency and Service Walls

Walls best suited for requirements of BCA sound insulation:

Intertency (Party) Walls

Hebel wall systems used as separating party walls between different apartment units. These walls require a minimum sound insulation of $R_w + C^r = 50\text{dB}$ with intertency walls between units having discontinuous construction. We have a variety of systems to suit your needs (see pages 8-13).

Common Area Walls

Hebel wall systems can be used as corridor walls to separate apartment units from common area spaces. Typically, these walls require a minimum sound insulation of $R_w = 50\text{dB}$ with apartment walls having discontinuous construction from habitable areas to plant rooms and lift shafts. We have a variety of systems to suit your needs (see pages 14-19).

Internal Walls

Hebel wall systems can be used in other non-legislated areas to provide added sound insulation, and provide a solid feel for bedroom areas from living/ entertainment areas or common rooms. The common fixing systems for Hebel walls means most Hebel wall types are easily combined in the one interior layout. We have a variety of systems to suit your needs.

Walls best suited for Service walls:

Shaft Walls

Hebel shaft wall systems enclose lift and service shaft penetrations between floors on multi-residential constructions. These walls not only provide acoustic suppression but excellent fire resistance. (see pages 20-21)

Service Walls

Hebel wall systems are commonly used as separating walls to isolate and secure plant rooms from other areas of the building. Hebel walls provide for excellent fire resistance and are easy to install. (see pages 20-21)

Plenum Walls

The simple construction of single leaf Hebel service walls are ideal for service and plenum walls in basements and other building spaces that do not require a high decorative finish. Hebel internal walls can be simply left in their manufactured finish or simply and cheaply decorated with a texture paint. (see pages 22-23)

Scissor Stairs

Hebel can also be used for Scissor Stair Spine Walls. Please refer to the PowerPanel SP Design Guide (HEB1414).

Boundary Walls

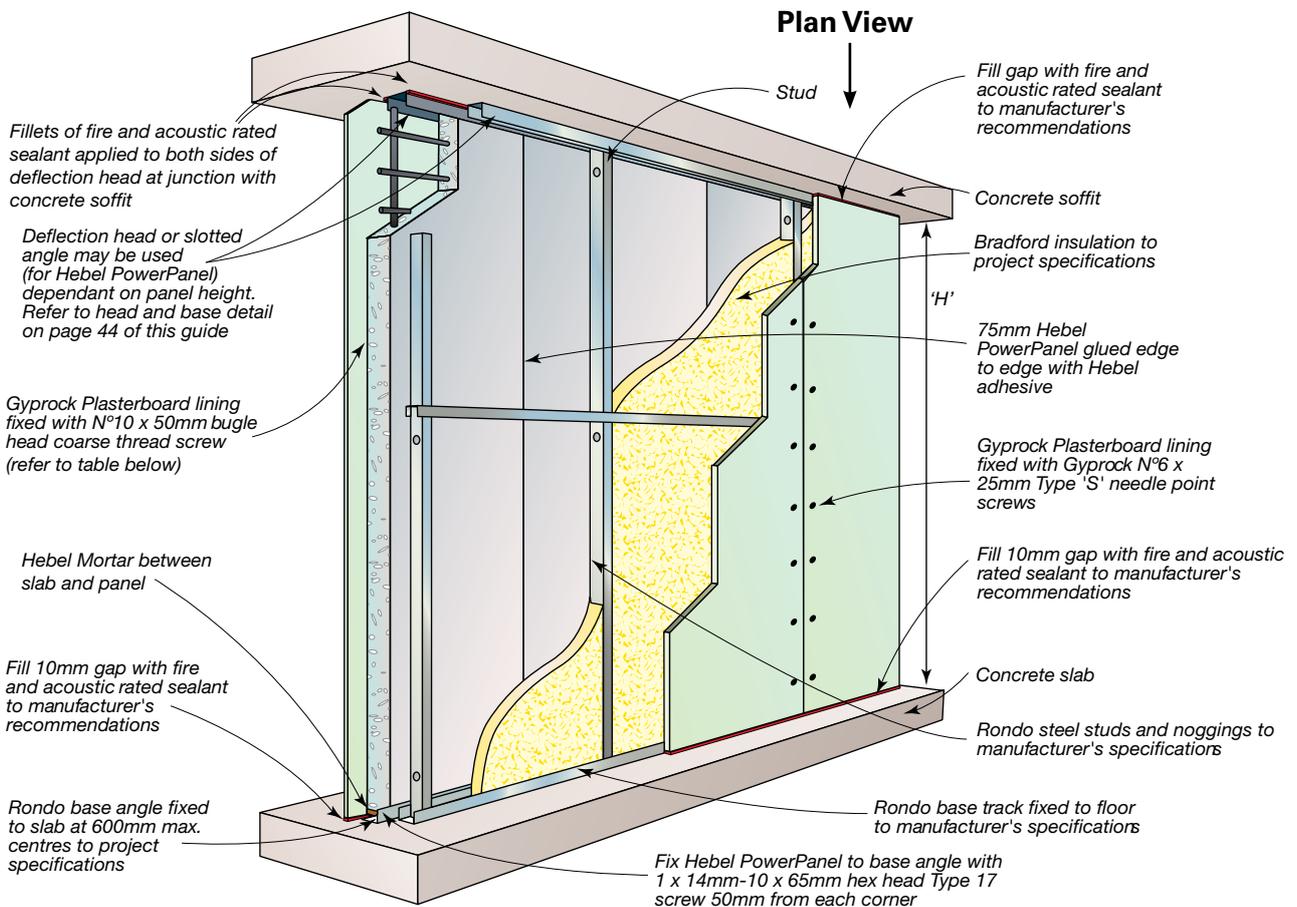
Hebel offer a range of residential and commercial boundary wall solutions. The Hebel PowerPanel+ 125 for Boundary Walls provides a very secure wall that is constructed using a fully concealed fixing system. This creates a very flexible wall solution that achieves a double sided FRL in a wall thickness of only 125mm. This wall system is not only suited to heavy duty internal service walls, but is commonly used to create a cost effective boundary wall with neighboring buildings. The PowerPanel+ 125 Boundary Wall can be installed from inside the building, so is suited to installation where other buildings already exist on the site boundaries. (see page 24)

Note: Curved or angled Internal Walls

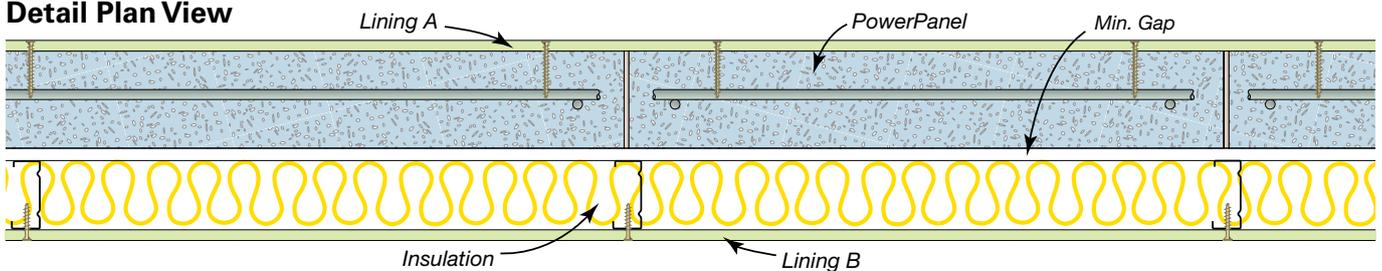
Hebel internal wall systems are constructed using simple tracks or angles that connect the panels to both the floor and soffit. By faceting these connecting tracks the Hebel panel can easily be designed or cut to follow curves or angles with a minimum of construction complexity. In addition, traditional Hebel Blocks can also be used to create intricate curved internal walls.

Intertenancy Wall – Option 1

Recommended for: Narrowest wall width to provide maximum floor space with concealed services on one side



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w +C _{tr} ^(C)	SYSTEM COMPONENT VARIATIONS			
						LINING A	MIN. GAP	INSULATION ^(A)	LINING B
HEB1000	Dry to Dry	185mm	3000 <H≤4200	-/120/120	53dB	13mm Fyrchek	20mm	75mm GLASSWOOL	13mm Fyrchek
HEB1001	Dry to Dry	200mm	3000 <H≤4200	-/120/120	52dB	13mm Fyrchek	35mm	100mm S6 POLYESTER	13mm Fyrchek
HEB1002	Dry to Wet*	185mm	3000 <H≤4200	-/120/120	53dB	13mm Fyrchek	20mm	75mm GLASSWOOL	13mm Aquachek
HEB1003	Dry to Wet*	200mm	3000 <H≤4200	-/120/120	52dB	13mm Fyrchek	35mm	100mm S6 POLYESTER	13mm Aquachek

*Stud side & 'Lining B' is 'Wet' side

Note: Intertenancy wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (810g/m²) Bradford Glasswool Insulation & (10kg/m²) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

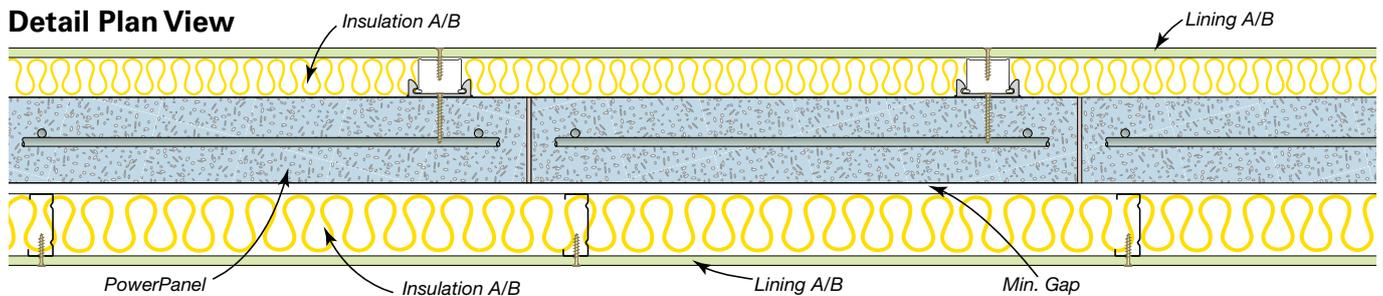
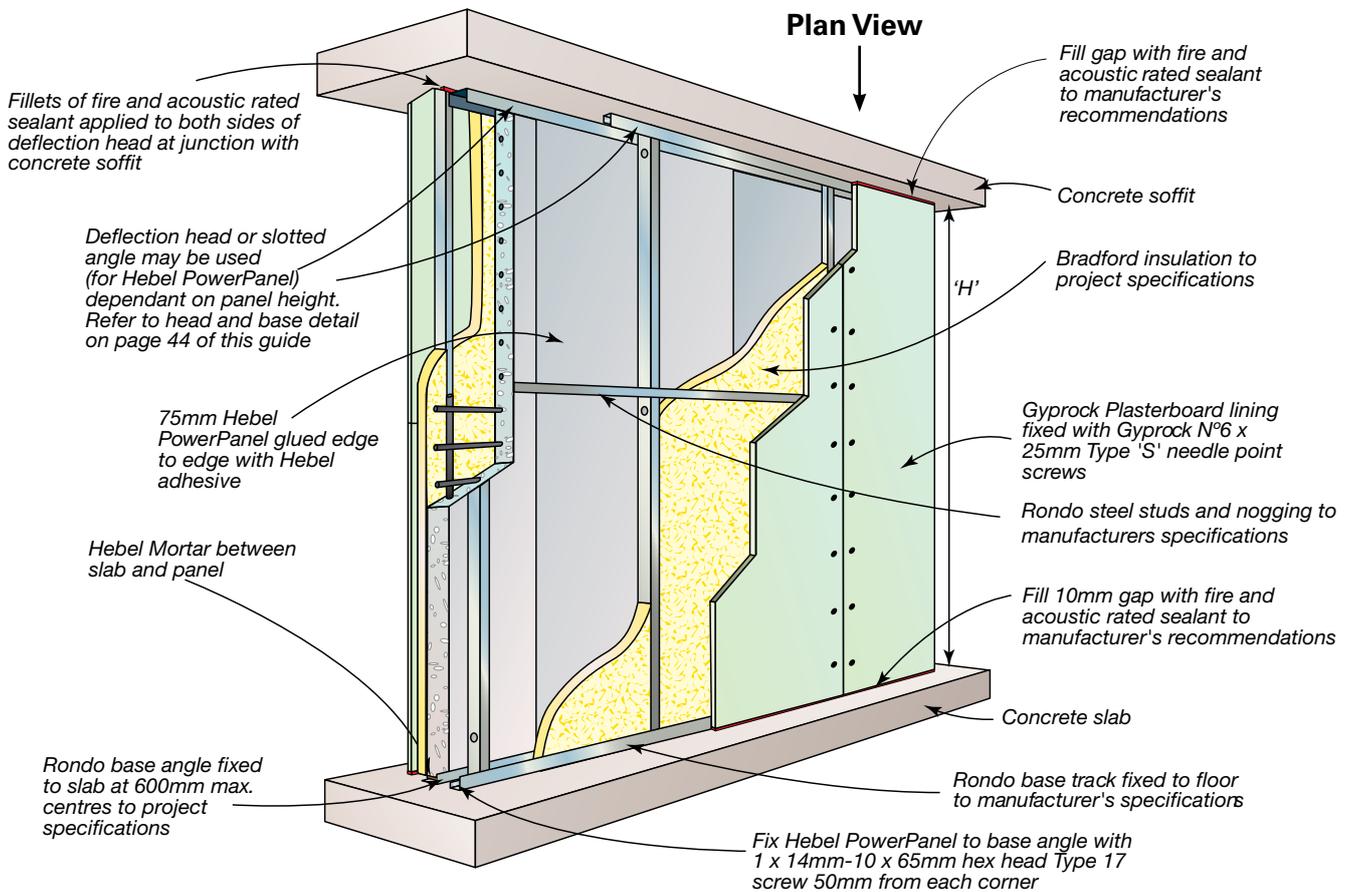
(C) R_w+C_{tr} values are based on acoustic test ATF-1235, ATF-1628 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 20/06/11 provided by Acoustic Logic Consultancy Pty Ltd.

GENERAL NOTES:

- Intertenancy wall systems HEB1000-1003 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
- HEB1000-1003 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa.

Intertenancy Wall – Option 2

Recommended for: Narrowest wall width to provide maximum floor space with concealed water services both sides



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(D)	R _w +C _e ^(D)	SYSTEM COMPONENT VARIATIONS					
						LINING A	FURRING CHANNEL ^(E)	INSULATION A ^(A)	MIN. GAP	INSULATION B ^(B)	LINING B
HEB1008	Dry to Dry	228mm	3000 <H≤4200	-/120/120	51dB	13mm Fyrchek	28mm	50mm GLASSWOOL	35mm	50mm GLASSWOOL	13mm Fyrchek
HEB1009	Dry to Dry	261mm	3000 <H≤4200	-/120/120	50dB	13mm Fyrchek	28mm	75mm S4 POLYESTER	65mm	100mm S6 POLYESTER	16mm Fyrchek
HEB1010	Dry to Wet*	228mm	3000 <H≤4200	-/120/120	51dB	13mm Fyrchek	28mm	50mm GLASSWOOL	35mm	50mm GLASSWOOL	13mm Aquachek
HEB1011	Dry to Wet*	261mm	3000 <H≤4200	-/120/120	50dB	13mm Fyrchek	28mm	75mm S4 POLYESTER	65mm	100mm S6 POLYESTER	16mm Fyrchek
HEB1012	Wet to Wet	228mm	3000 <H≤4200	-/120/120	51dB	13mm Aquachek	28mm	50mm GLASSWOOL	35mm	50mm GLASSWOOL	13mm Aquachek
HEB1013	Wet to Wet	261mm	3000 <H≤4200	-/120/120	50dB	13mm Aquachek	28mm	75mm S4 POLYESTER	65mm	100mm S6 POLYESTER	16mm Fyrchek MR

*Lining B is 'Wet' side

Note: Intertenancy wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m³) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) Denotes (540g/m³) Bradford Glasswool Insulation & (10kg/m³) Polyester Insulation

(C) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

(D) R_w+C_e values are based on acoustic test ATF-1238, ATF-1623 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

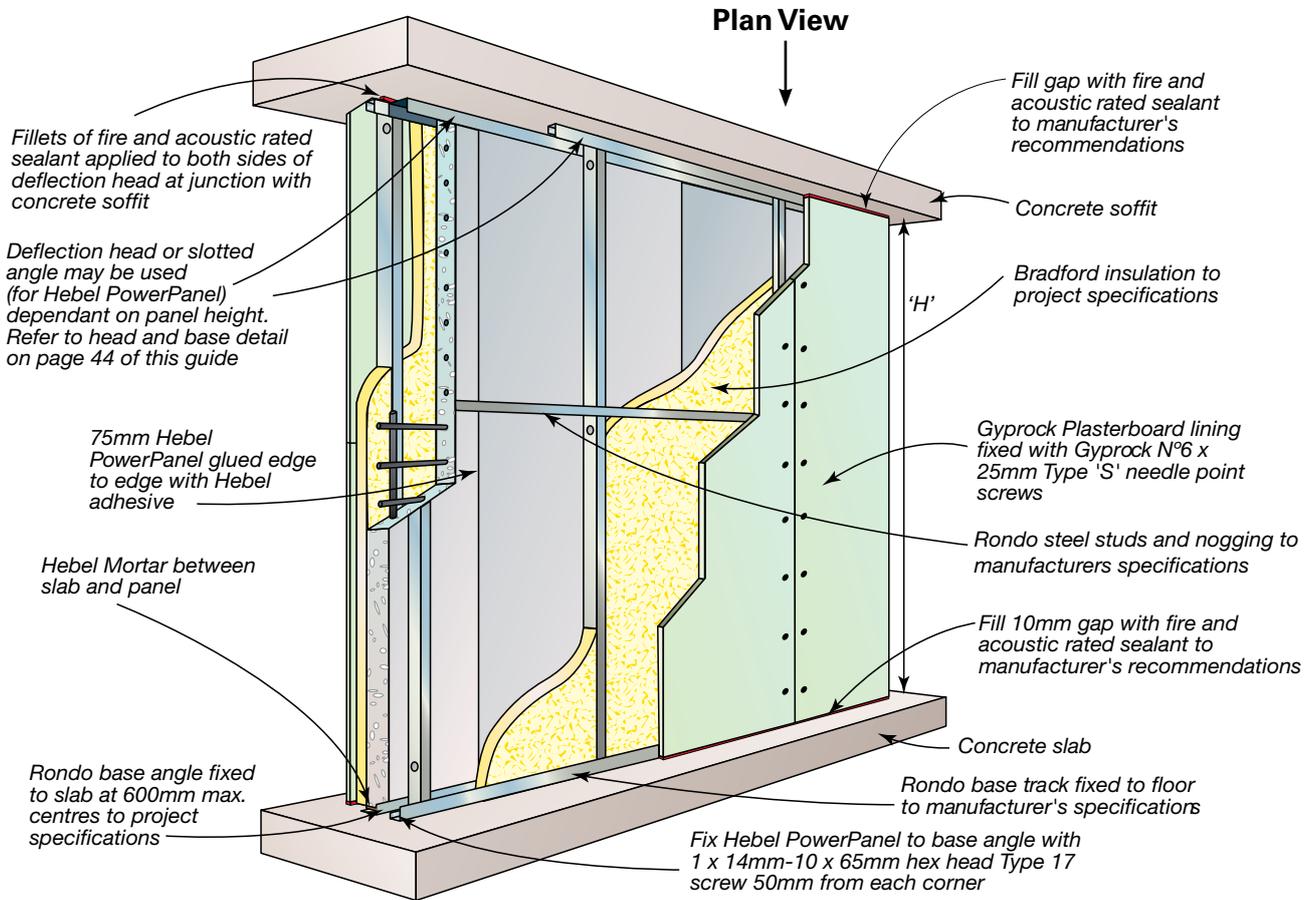
(E) The furring channels are connected to the 75mm PowerPanel using Beta fix clips

GENERAL NOTES:

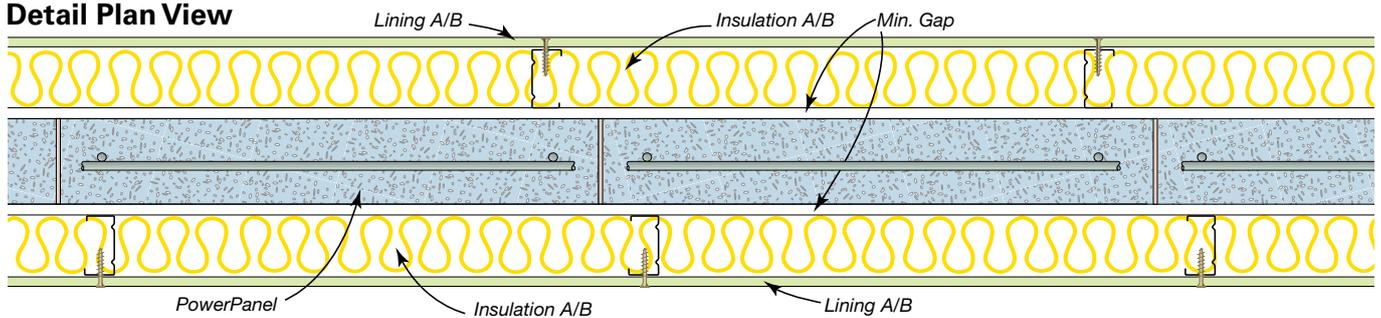
- Intertenancy wall systems HEB1008-1013 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements
- HEB1008-1013 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Intertenancy Wall – Option 3

Recommended for: Used where large water services are required in cavity and provides better acoustic sound rating



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w +C _{tr} ^(C)	SYSTEM COMPONENT VARIATIONS					
						LINING A	INSULATION A ^(A)	MIN. GAP A	MIN. GAP B	INSULATION B ^(A)	LINING B
HEB1020	Dry to Dry	269mm	3000 <H≤4200	-/120/120	52dB	13mm Gyrock CD	50mm GLASSWOOL	20mm	20mm	50mm GLASSWOOL	13mm Gyrock CD
HEB1021	Dry to Dry	269mm	3000 <H≤4200	-/120/120	55dB	13mm Gyrock CD	100mm S6 POLYESTER	20mm	20mm	100mm S6 POLYESTER	13mm Gyrock CD
HEB1022	Dry to Wet*	266mm	3000 <H≤4200	-/120/120	52dB	13mm Gyrock CD	50mm GLASSWOOL	20mm	20mm	50mm GLASSWOOL	10mm Aquachek
HEB1023	Dry to Wet*	266mm	3000 <H≤4200	-/120/120	55dB	13mm Gyrock CD	100mm S6 POLYESTER	20mm	20mm	100mm S6 POLYESTER	10mm Aquachek
HEB1024	Wet to Wet	263mm	3000 <H≤4200	-/120/120	52dB	10mm Aquachek	50mm GLASSWOOL	20mm	20mm	50mm GLASSWOOL	10mm Aquachek
HEB1025	Wet to Wet	263mm	3000 <H≤4200	-/120/120	55dB	10mm Aquachek	100mm S6 POLYESTER	20mm	20mm	100mm S6 POLYESTER	10mm Aquachek

*'Lining B' is 'Wet' side

Note: Intertenancy wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m³) Bradford Glasswool Insulation & (10kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

(C) R_w+C_{tr} values are based on acoustic test ATF-1243, ATF-1621 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

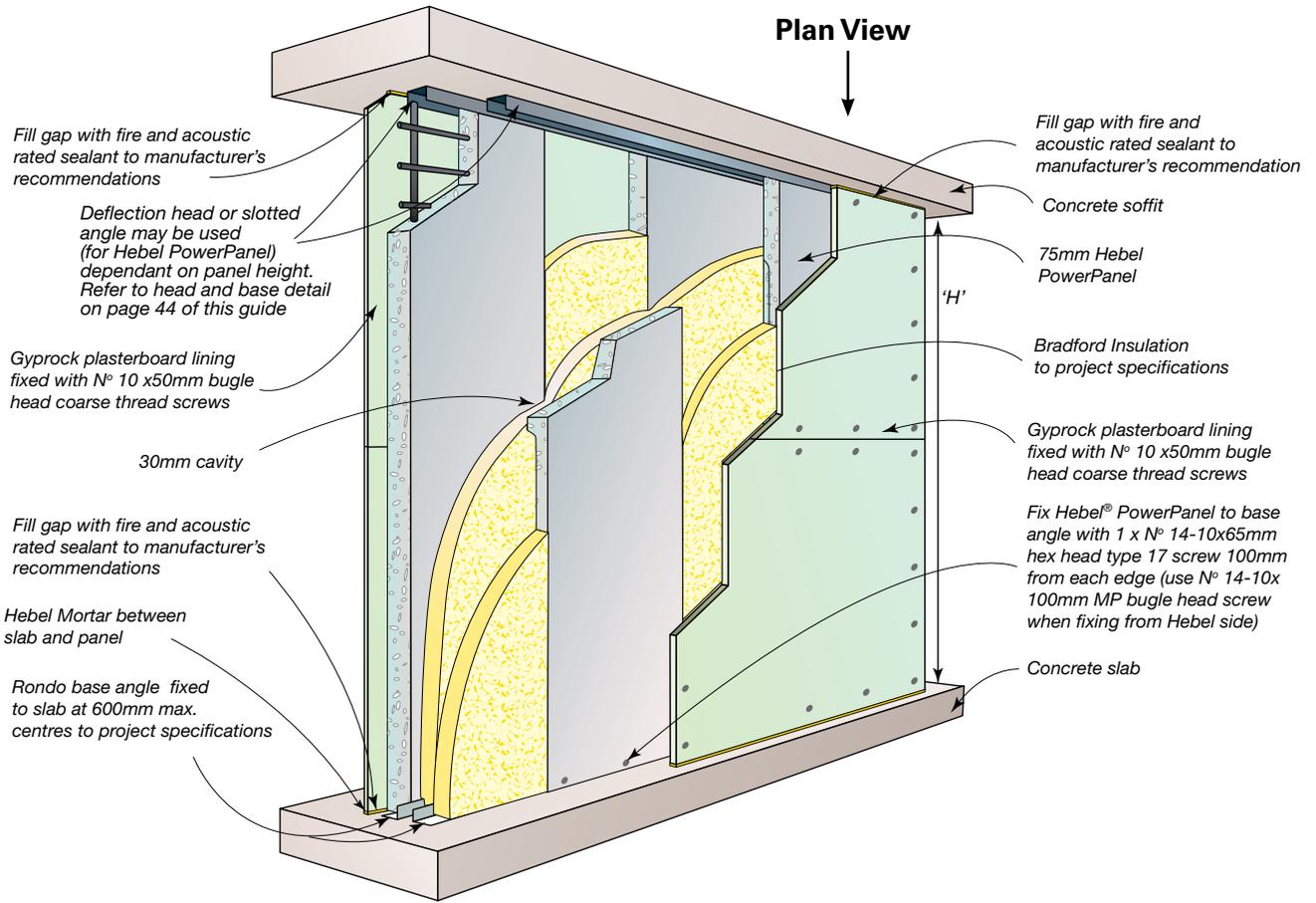
1. Intertenancy wall systems HEB1020-1025 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements

2. HEB1020-1025 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.

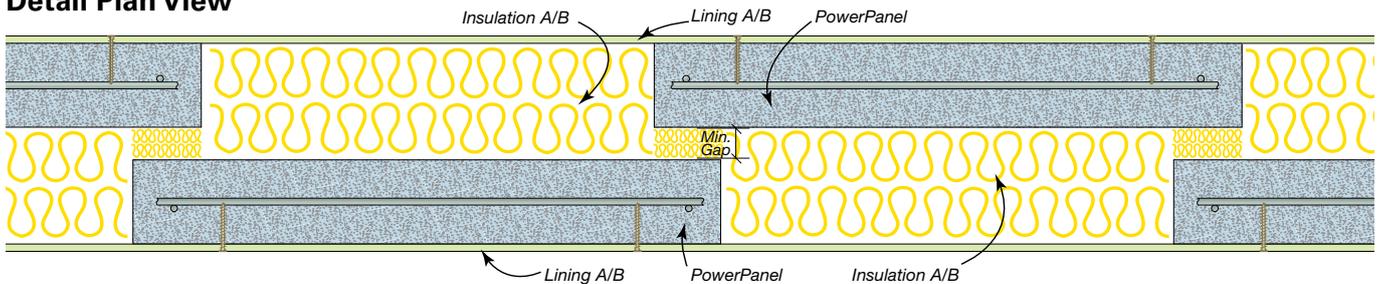
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Intertenancy Wall – Option 4

Recommended for: Eliminating metal wall framing, providing for easy service access on both sides of the wall



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	MIN. R _w +C _t ^(C)	SYSTEM COMPONENT VARIATIONS				
						LINING A	INSULATION A ^(A)	MIN. GAP	INSULATION B ^(A)	LINING B
HEB1032	Dry to Dry	232mm	H≤4000	-/120/120	51dB	13mm Fyrchek × 2	50mm GLASSWOOL × 2	30mm	50mm GLASSWOOL × 2	13mm Fyrchek × 2
HEB1033	Dry to Dry	262mm	H≤4000	-/120/120	50dB	13mm Fyrchek × 2	75mm S4 POLYESTER × 2	60mm	75mm S4 POLYESTER × 2	13mm Fyrchek × 2
HEB1034	Dry to Wet*	232mm	H≤4000	-/120/120	51dB	13mm Fyrchek × 2	50mm GLASSWOOL × 2	30mm	50mm GLASSWOOL × 2	13mm Fyrchek MR × 2
HEB1035	Dry to Wet*	262mm	H≤4000	-/120/120	50dB	13mm Fyrchek × 2	75mm S4 POLYESTER × 2	60mm	75mm S4 POLYESTER × 2	13mm Fyrchek MR × 2
HEB1036	Wet to Wet	232mm	H≤4000	-/120/120	51dB	13mm Aquachek × 2	50mm GLASSWOOL × 2	30mm	50mm GLASSWOOL × 2	13mm Fyrchek MR × 2
HEB1037	Wet to Wet	262mm	H≤4000	-/120/120	50dB	13mm Aquachek × 2	75mm S4 POLYESTER × 2	60mm	75mm S4 POLYESTER × 2	13mm Fyrchek MR × 2

*Lining B' is 'Wet' side

(Note: Intertenancy wall heights ≤ 4000mm will achieve FRL of -/180/180 with alternate 'Lining A' and 'Lining B' for further details on these systems contact Hebel Technical Services to advise on these alternate linings)

(A) Denotes (540g/m³) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with BRANZ fire opinion FAR-2586.2

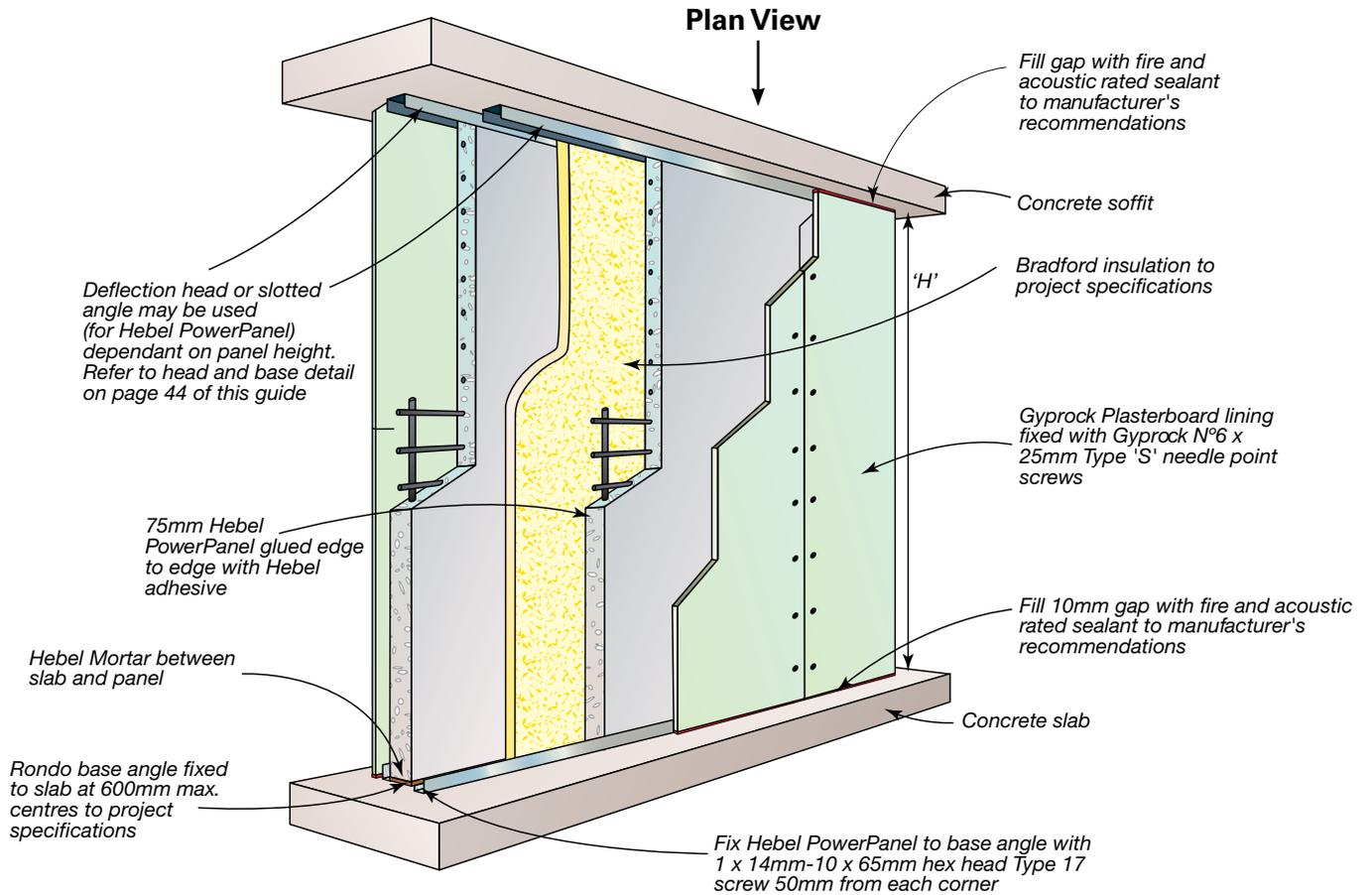
(C) R_w+C_t values are based on acoustic test, ATF-1881 and ATF-1888 and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd for single layer linings only

GENERAL NOTES:

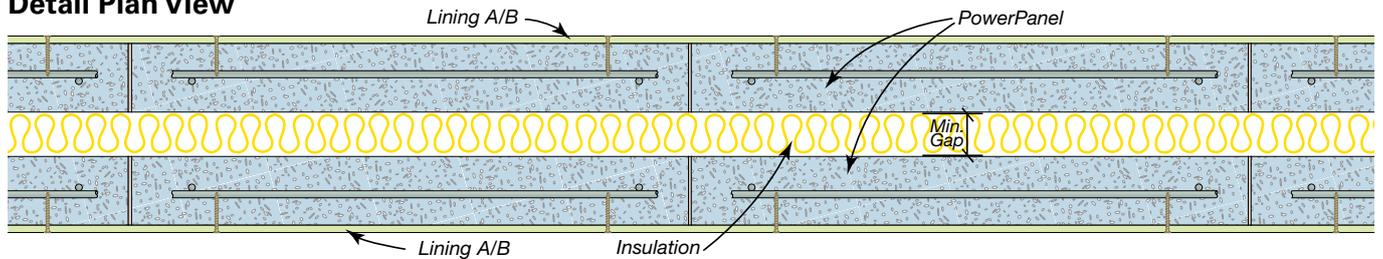
- Intertenancy wall systems HEB1032-1037 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements
- HEB1032-1037 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Intertenancy Wall – Option 5

Recommended for: Walls between units where a solid wall is required on both sides



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w +C _u ^(C)	SYSTEM COMPONENT VARIATIONS			
						LINING A	MIN. GAP	INSULATION ^(A)	LINING B
HEB1044	Dry to Dry	200mm	3600 <H≤4200	-/120/120	59dB	10mm Gyprock CD	30mm	50mm GLASSWOOL	10mm Gyprock CD
HEB1045	Dry to Dry	200mm	3600 <H≤4200	-/120/120	52dB	10mm Gyprock CD	30mm	75mm S4 POLYESTER	10mm Gyprock CD

Note: Intertenancy wall heights > 3000mm and ≤ 3600mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

Intertenancy wall heights ≤ 3000mm will achieve FRL of -/240/240 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

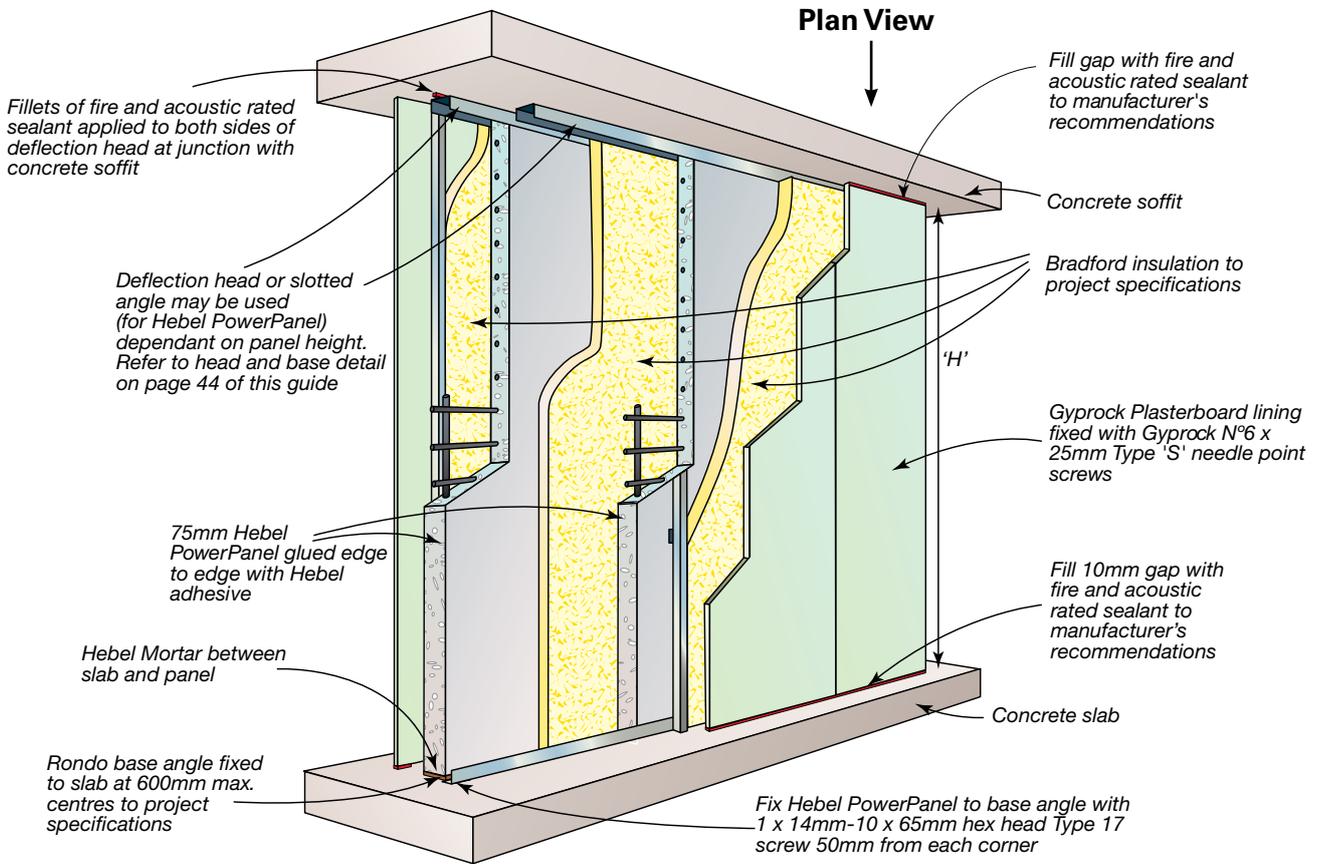
(C) R_w+C_u values are based on acoustic test ATF-1023 and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

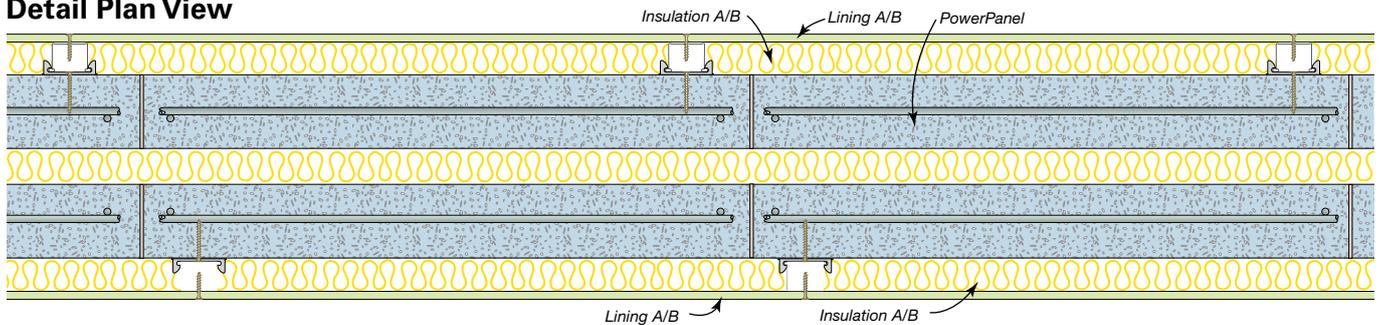
- Intertenancy wall systems HEB1044-1045 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
- HEB1044-1045 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Intertenancy Wall – Option 6

Recommended for: Used to compliment Option 5 where water services are concealed on both sides



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w +C _v ^(C)	SYSTEM COMPONENT VARIATIONS							
						LINING A	INSULATION A ^(A)	FURRING CHANNEL A ^(A)	MIN. GAP	MID INSULATION ^(A)	FURRING CHANNEL B ^(B)	INSULATION B ^(A)	LINING B
HEB1050	Dry to Dry	256mm	3600 <H≤4200	-/120/120	59dB	10mm Gyprock CD	50mm GLASSWOOL	28mm	30mm	NIL	28mm	50mm GLASSWOOL	10mm Gyprock CD
HEB1051	Dry to Dry	276mm	3600 <H≤4200	-/120/120	50dB	10mm Gyprock CD	75mm S4 POLYESTER	28mm	50mm	75mm S4 POLYESTER	28mm	75mm S4 POLYESTER	10mm Gyprock CD
HEB1052	Wet* to Dry	256mm	3600 <H≤4200	-/120/120	59dB	10mm Gyprock CD	50mm GLASSWOOL	28mm	30mm	NIL	28mm	50mm GLASSWOOL	10mm Aquachek
HEB1053	Wet* to Dry	276mm	3600 <H≤4200	-/120/120	50dB	10mm Gyprock CD	75mm S4 POLYESTER	28mm	50mm	75mm S4 POLYESTER	28mm	75mm S4 POLYESTER	10mm Aquachek
HEB1054	Wet to Wet	256mm	3600 <H≤4200	-/120/120	59dB	10mm Aquachek	50mm GLASSWOOL	28mm	30mm	NIL	28mm	50mm GLASSWOOL	10mm Aquachek
HEB1055	Wet to Wet	276mm	3600 <H≤4200	-/120/120	50dB	10mm Aquachek	75mm S4 POLYESTER	28mm	50mm	75mm S4 POLYESTER	28mm	75mm S4 POLYESTER	10mm Aquachek

*Lining B' is 'Wet' side

Note: Intertenancy wall heights > 3000mm and ≤ 3600mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services
Intertenancy wall heights ≤ 3000mm will achieve FRL of -/240/240 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

(C) R_w+C_v values are based on acoustic test ATF-1023 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

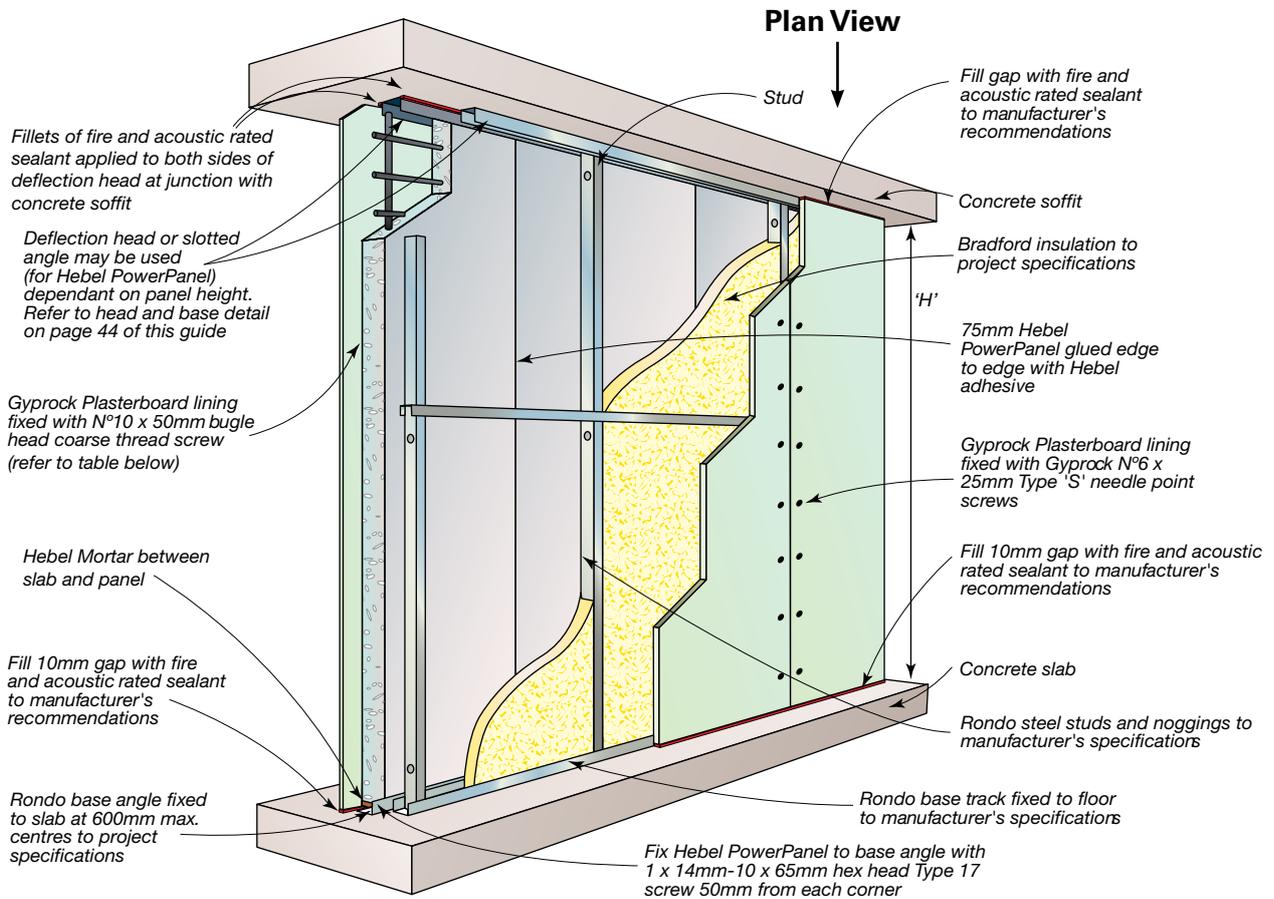
(D) The furring channels are connected to the 75mm PowerPanel using Beta Fix clips

GENERAL NOTES:

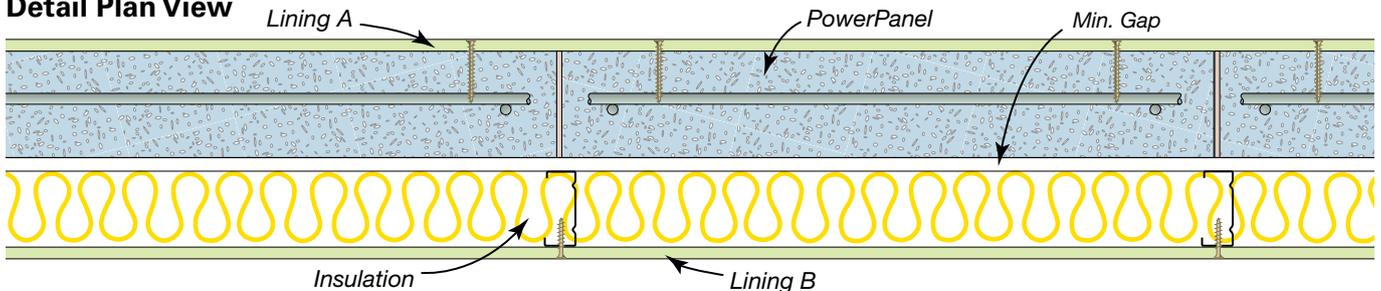
- Intertenancy wall systems HEB1050-1055 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
- HEB1050-1055 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 1

Recommended for: Narrowest wall width to provide maximum floor space with concealed services on one side



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w ^(C)	SYSTEM COMPONENT VARIATIONS			
						LINING A	MIN. GAP	INSULATION(A)	LINING B
HEB1100	Dry to Dry	185mm	3000 <H≤4200	-/120/120	58dB	13mm Gyprock CD	20mm	50mm GLASSWOOL	13mm Gyprock CD
HEB1101	Dry to Dry	179mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	20mm	75mm S4 POLYESTER	10mm Gyprock CD
HEB1102	Dry to Wet*	182mm	3000 <H≤4200	-/120/120	58dB	13mm Gyprock CD	20mm	50mm GLASSWOOL	10mm Aquachek
HEB1103	Dry to Wet*	179mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	20mm	75mm S4 POLYESTER	10mm Aquachek

*Stud side & 'Lining B' is 'Wet' side

Note: Common area wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation,

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

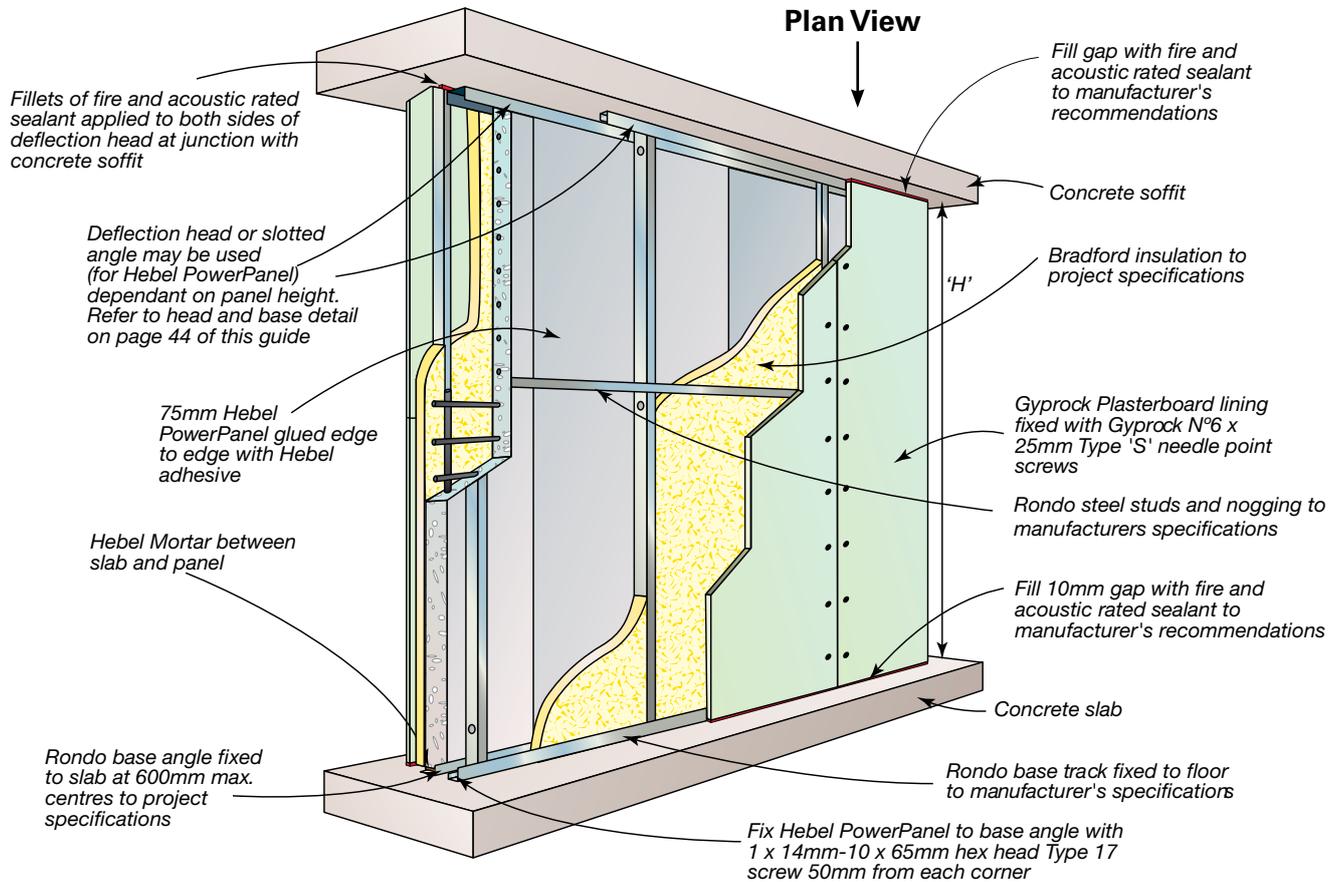
(C) R_w values are based on acoustic test ATF-1625 and acoustic opinion 2010861.1/0505A/R2/NF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd,

GENERAL NOTES:

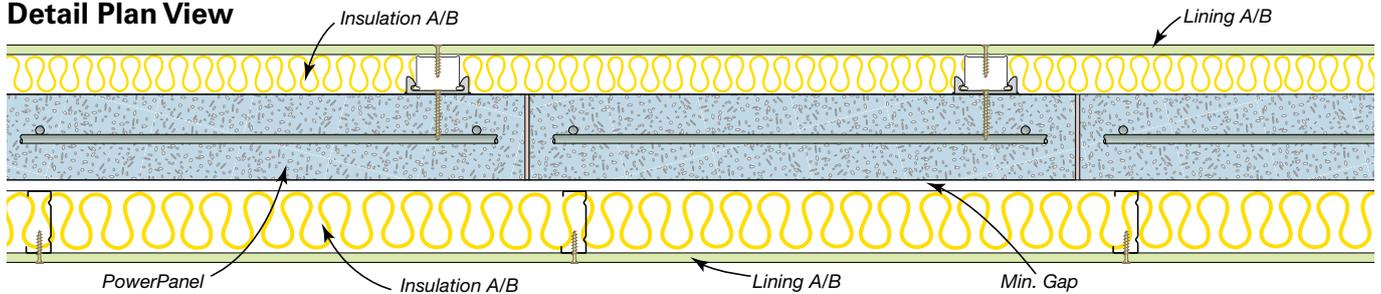
1. Common Area wall systems HEB1100-1103 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
2. HEB1100-1103 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 2

Recommended for: Narrowest wall width to provide maximum floor space with concealed water services both sides



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w ^(C)	SYSTEM COMPONENT VARIATIONS					
						LINING A	FURRING CHANNEL ^(D)	INSULATION A ^(A)	MIN. GAP	INSULATION B ^(A)	LINING B
HEB1108	Dry to Dry	197mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	28mm	NIL* ²	10mm	50mm GLASSWOOL	10mm Gyprock CD
HEB1109	Dry to Dry	199mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	28mm	75mm S4 POLYESTER	12mm	75mm S4 POLYESTER	10mm Gyprock CD
HEB1110	Dry to Wet*	197mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	28mm	NIL* ²	10mm	50mm GLASSWOOL	10mm Aquachek
HEB1111	Dry to Wet*	199mm	3000 <H≤4200	-/120/120	53dB	10mm Gyprock CD	28mm	75mm S4 POLYESTER	12mm	75mm S4 POLYESTER	10mm Aquachek
HEB1112	Wet to Wet	197mm	3000 <H≤4200	-/120/120	53dB	10mm Aquachek	28mm	NIL* ²	10mm	50mm GLASSWOOL	10mm Aquachek
HEB1113	Wet to Wet	199mm	3000 <H≤4200	-/120/120	53dB	10mm Aquachek	28mm	75mm S4 POLYESTER	12mm	75mm S4 POLYESTER	10mm Aquachek

*Lining B is 'Wet' side

*² Insulation A is the furring channel side insulation

Note: Common area wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m³) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

(C) R_w values are based on acoustic test ATF-1238 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

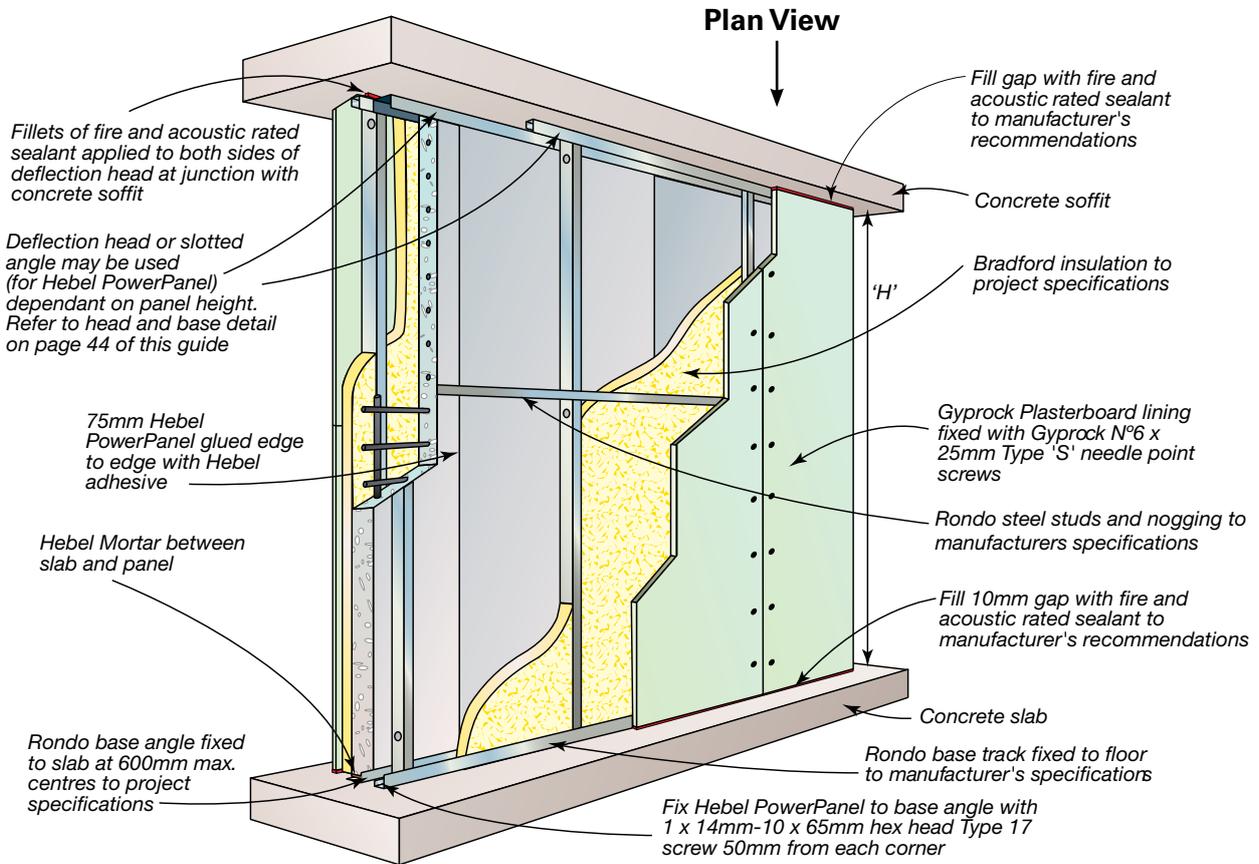
(D) The furring channels are connected to the 75mm PowerPanel using Beta fix clips

GENERAL NOTES:

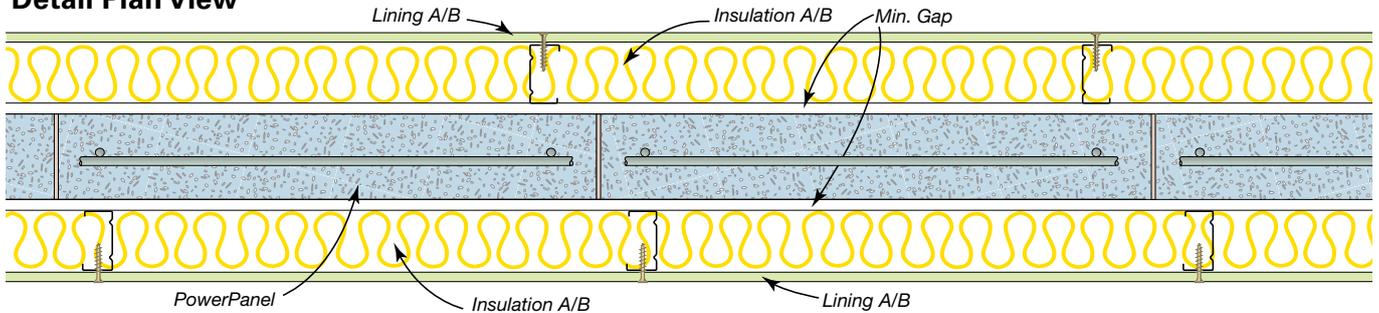
- Common Area wall systems HEB1108-1113 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements
- HEB1108-1113 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 3

Recommended for: Used where large water services are required in cavity and provides better acoustic sound rating



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w ^(C)	SYSTEM COMPONENT VARIATIONS					
						LINING A	INSULATION A ^(A)	MIN. GAP A	MIN. GAP B	INSULATION B ^(A)	LINING B
HEB1120	Dry to Dry	245mm	3000 <H≤4200	-/120/120	50dB	10mm Gyprock CD	NIL	11mm	11mm	50mm GLASSWOOL	10mm Gyprock CD
HEB1121	Dry to Dry	245mm	3000 <H≤4200	-/120/120	50dB	10mm Gyprock CD	NIL	11mm	11mm	100mm S6 POLYESTER	10mm Gyprock CD
HEB1122	Dry to Wet*	245mm	3000 <H≤4200	-/120/120	50dB	10mm Gyprock CD	NIL	11mm	11mm	50mm GLASSWOOL	10mm Aquachek
HEB1123	Dry to Wet*	245mm	3000 <H≤4200	-/120/120	50dB	10mm Gyprock CD	NIL	11mm	11mm	100mm S6 POLYESTER	10mm Aquachek
HEB1124	Wet to Wet	245mm	3000 <H≤4200	-/120/120	50dB	10mm Aquachek	NIL	11mm	11mm	50mm GLASSWOOL	10mm Aquachek
HEB1125	Wet to Wet	245mm	3000 <H≤4200	-/120/120	50dB	10mm Aquachek	NIL	11mm	11mm	100mm S6 POLYESTER	10mm Aquachek

*Lining B' is 'Wet' side

Note: Common area wall heights ≤ 3000mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (10kg/m²) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

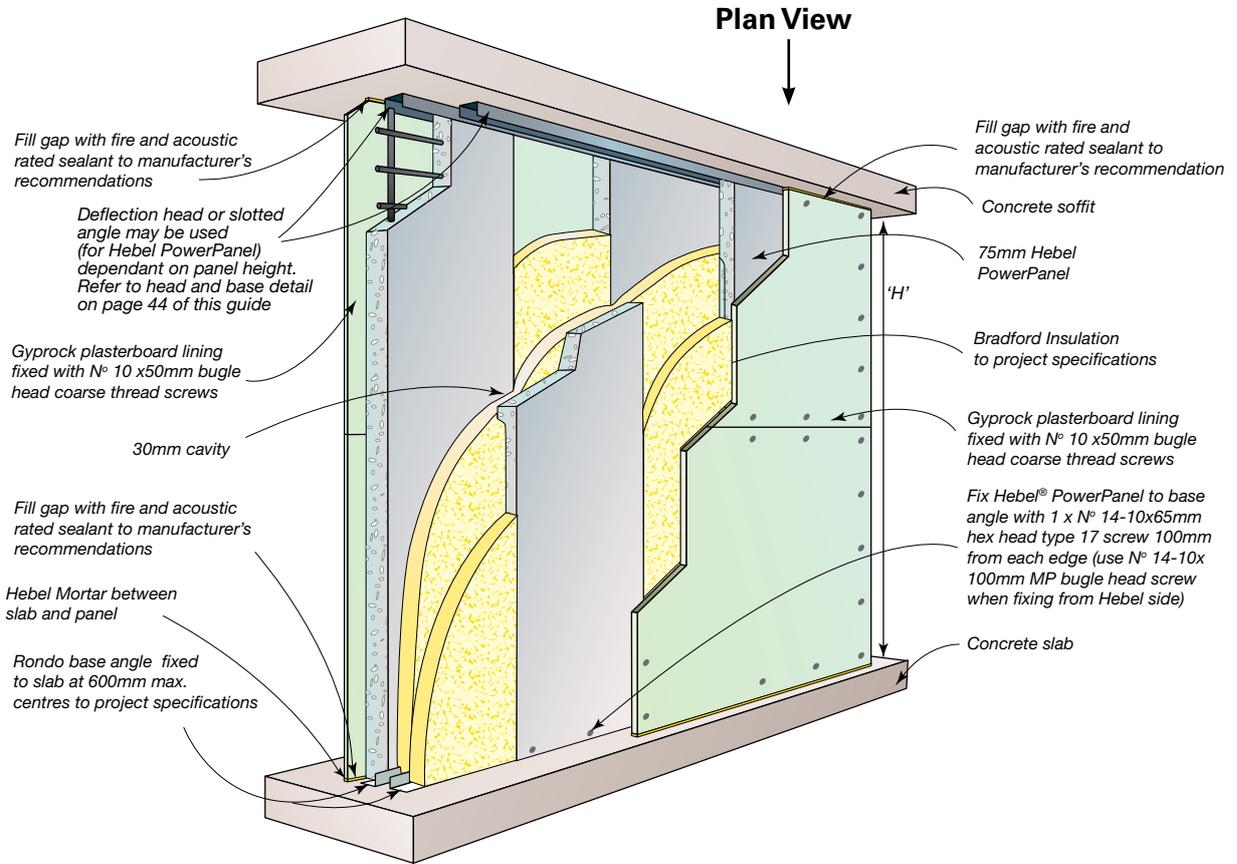
(C) R_w values are based on acoustic test ATF-1243 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

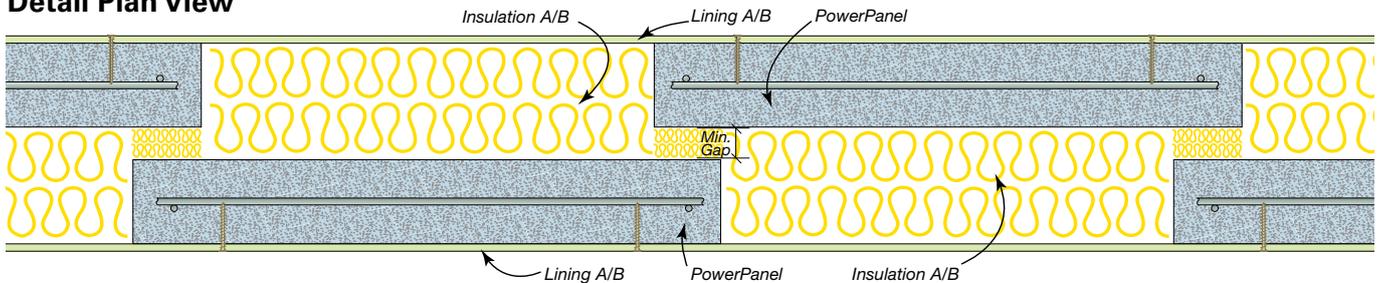
1. Common Area wall systems HEB1120-1125 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements
2. HEB1120-1125 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 4

Recommended for: Eliminating metal wall framing, providing for easy service access on both sides of the wall



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	MIN. R _w ^(C)	SYSTEM COMPONENT VARIATIONS				
						LINING A	INSULATION A ^(A)	MIN. GAP	INSULATION B ^(A)	LINING B
HEB1132	Dry to Dry	232mm	H≤4000	-/120/120	60dB	13mm Fyrchek × 2	50mm GLASSWOOL	30mm	50mm GLASSWOOL	13mm Fyrchek × 2
HEB1133	Dry to Dry	232mm	H≤4000	-/120/120	59dB	13mm Fyrchek × 2	75mm S4 POLYESTER	30mm	75mm S4 POLYESTER	13mm Fyrchek × 2
HEB1134	Dry to Wet*	232mm	H≤4000	-/120/120	60dB	13mm Fyrchek × 2	50mm GLASSWOOL	30mm	50mm GLASSWOOL	13mm Fyrchek MR × 2
HEB1135	Dry to Wet*	232mm	H≤4000	-/120/120	59dB	13mm Fyrchek × 2	75mm S4 POLYESTER	30mm	75mm S4 POLYESTER	13mm Fyrchek MR × 2
HEB1136	Wet to Wet	232mm	H≤4000	-/120/120	60dB	13mm Aquachek × 2	50mm GLASSWOOL	30mm	50mm GLASSWOOL	13mm Fyrchek MR × 2
HEB1137	Wet to Wet	232mm	H≤4000	-/120/120	59dB	13mm Aquachek × 2	75mm S4 POLYESTER	30mm	75mm S4 POLYESTER	13mm Fyrchek MR × 2

*Lining B' is 'Wet' side

(Note: Common wall heights ≤ 4000mm will achieve FRL of -/180/180 with alternate 'Lining A' and 'Lining B' for further details on these systems contact Hebel Technical Services to advise on these alternate linings)

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation for further details on these systems contact Hebel Technical Services

(B) FRL values should be read in conjunction with BRANZ fire opinion FAR-2586.2

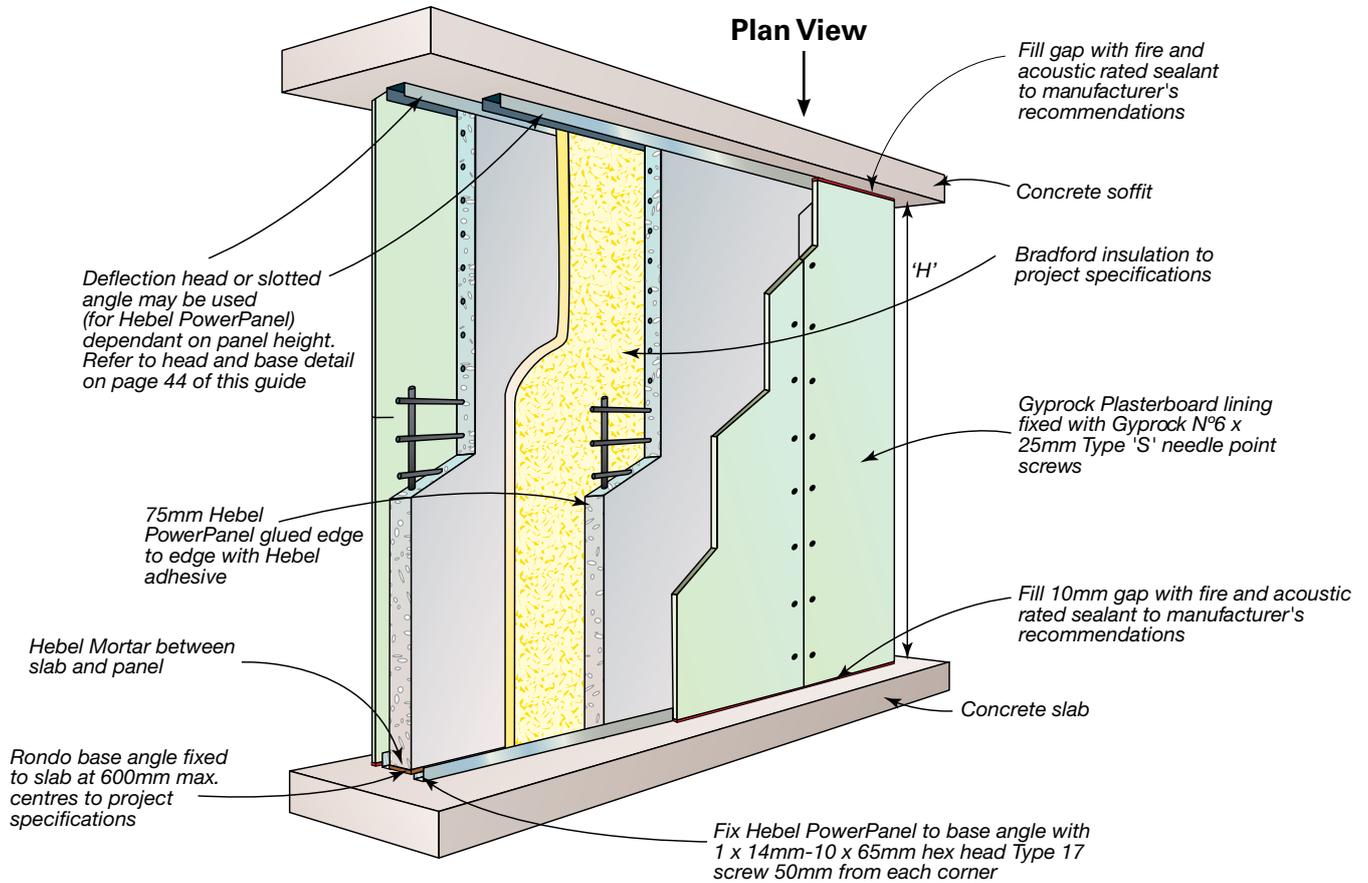
(C) R_w values are based on acoustic test ATF-1835 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd for single layer lining only

GENERAL NOTES:

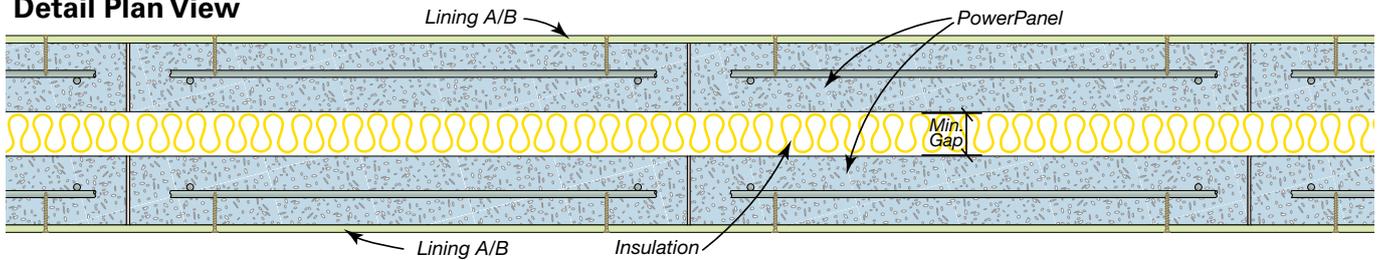
1. Common Area wall systems HEB1132-1137 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements
2. HEB1132-1137 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 5

Recommended for: Walls between units where a solid wall is required on both sides



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w ^(C)	SYSTEM COMPONENT VARIATIONS			
						LINING A	MIN. GAP	INSULATION ^(A)	LINING B
HEB1144	Dry to Dry	200mm	3600 <H≤4200	-/120/120	64dB	10mm Gyprock CD	30mm	50mm GLASSWOOL	10mm Gyprock CD
HEB1145	Dry to Dry	200mm	3600 <H≤4200	-/120/120	50dB	10mm Gyprock CD	30mm	75mm S4 POLYESTER	10mm Gyprock CD

Note: Common area wall heights > 3000mm and ≤ 3600mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services
Common area wall heights ≤ 3000mm will achieve FRL of -/240/240 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m³) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

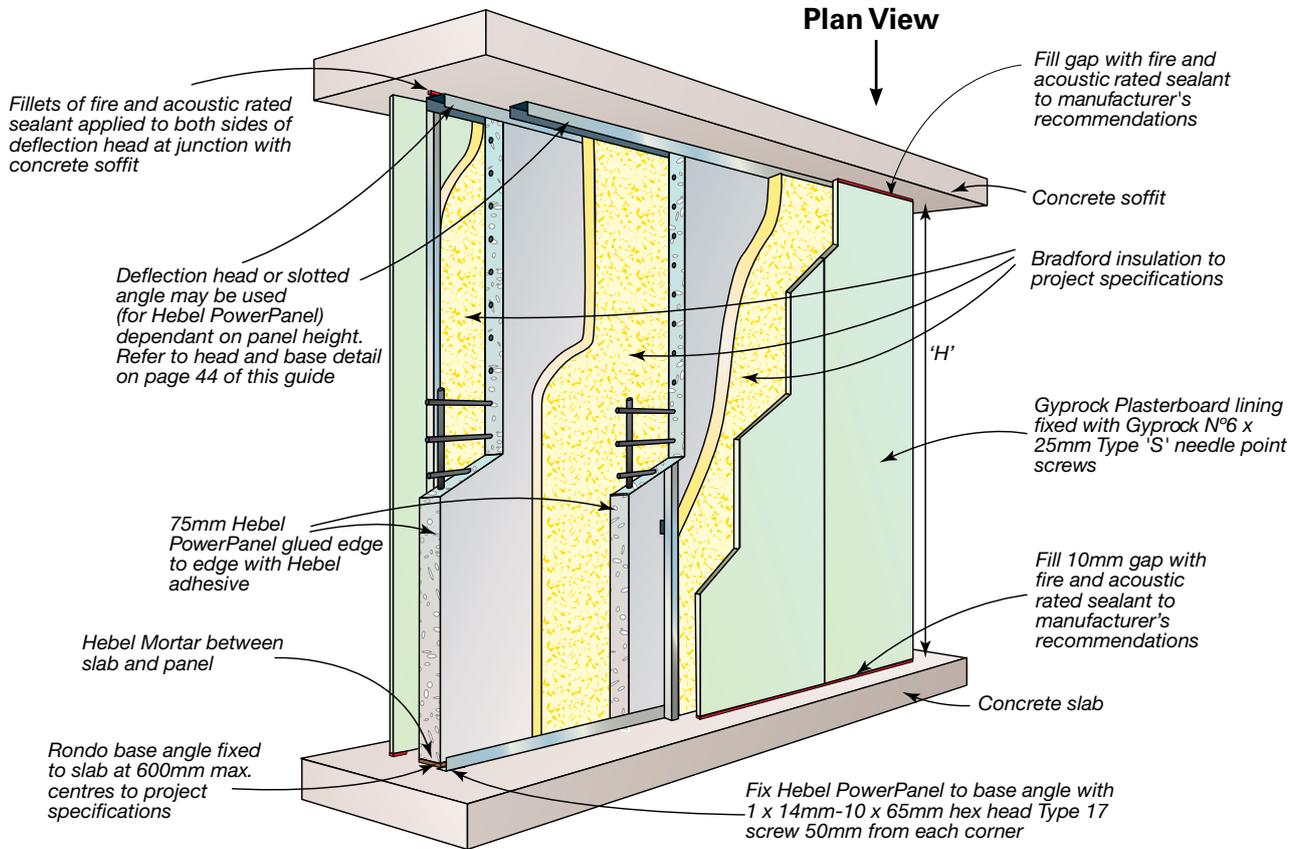
(C) R_w values are based on acoustic test ATF-1023 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

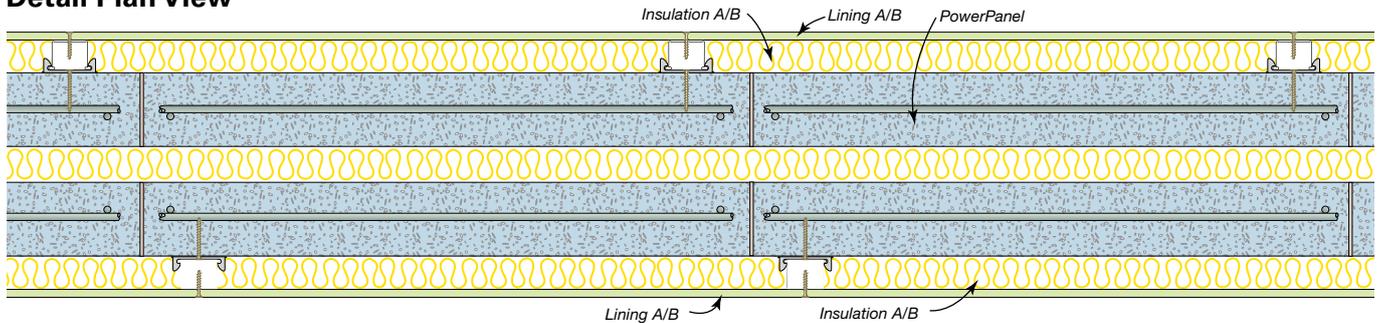
1. Common Area wall systems HEB1144-1145 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
2. HEB1144-1145 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Common Wall – Option 6

Recommended for: Used to compliment Option 5 where water services are concealed on both sides



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w ^(C)	SYSTEM COMPONENT VARIATIONS							
						LINING A	INSULATION A ^(A)	FURRING CHANNEL A ^(D)	MIN. GAP	MID INSULATION ^(A)	FURRING CHANNEL B ^(D)	INSULATION B ^(A)	LINING B
HEB1150	Dry to Dry	256mm	3600 <H≤4200	-/120/120	63dB	10mm Gyprock CD	NIL	28mm	30mm	50mm GLASSWOOL	28mm	NIL	10mm Gyprock CD
HEB1151	Dry to Dry	256mm	3600 <H≤4200	-/120/120	56dB	10mm Gyprock CD	NIL	28mm	30mm	75mm S4 POLYESTER	28mm	NIL	10mm Gyprock CD
HEB1152	Wet* to Dry	256mm	3600 <H≤4200	-/120/120	63dB	10mm Gyprock CD	NIL	28mm	30mm	50mm GLASSWOOL	28mm	NIL	10mm Aquachek
HEB1153	Wet* to Dry	256mm	3600 <H≤4200	-/120/120	56dB	10mm Gyprock CD	NIL	28mm	30mm	75mm S4 POLYESTER	28mm	NIL	10mm Aquachek
HEB1154	Wet to Wet	256mm	3600 <H≤4200	-/120/120	63dB	10mm Aquachek	NIL	28mm	30mm	50mm GLASSWOOL	28mm	NIL	10mm Aquachek
HEB1155	Wet to Wet	256mm	3600 <H≤4200	-/120/120	56dB	10mm Aquachek	NIL	28mm	30mm	75mm S4 POLYESTER	28mm	NIL	10mm Aquachek

*Lining B is 'Wet' side

Note: Common area wall heights > 3000mm and ≤ 3600mm will achieve FRL of -/180/180 for further details on these systems contact Hebel Technical Services

Common area wall heights ≤ 3000mm will achieve FRL of -/240/240 for further details on these systems contact Hebel Technical Services

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073 & FCO-2327

(C) R_w values are based on acoustic test ATF-1023 and acoustic opinion 2010861.1/0505A/R2/VF and email dated 14/09/11 provided by Acoustic Logic Consultancy Pty Ltd

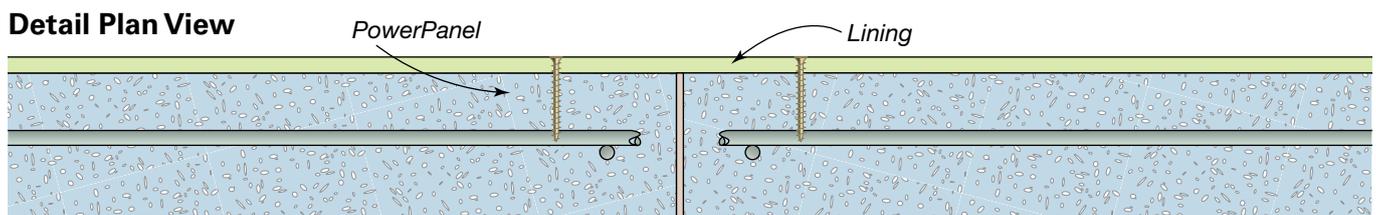
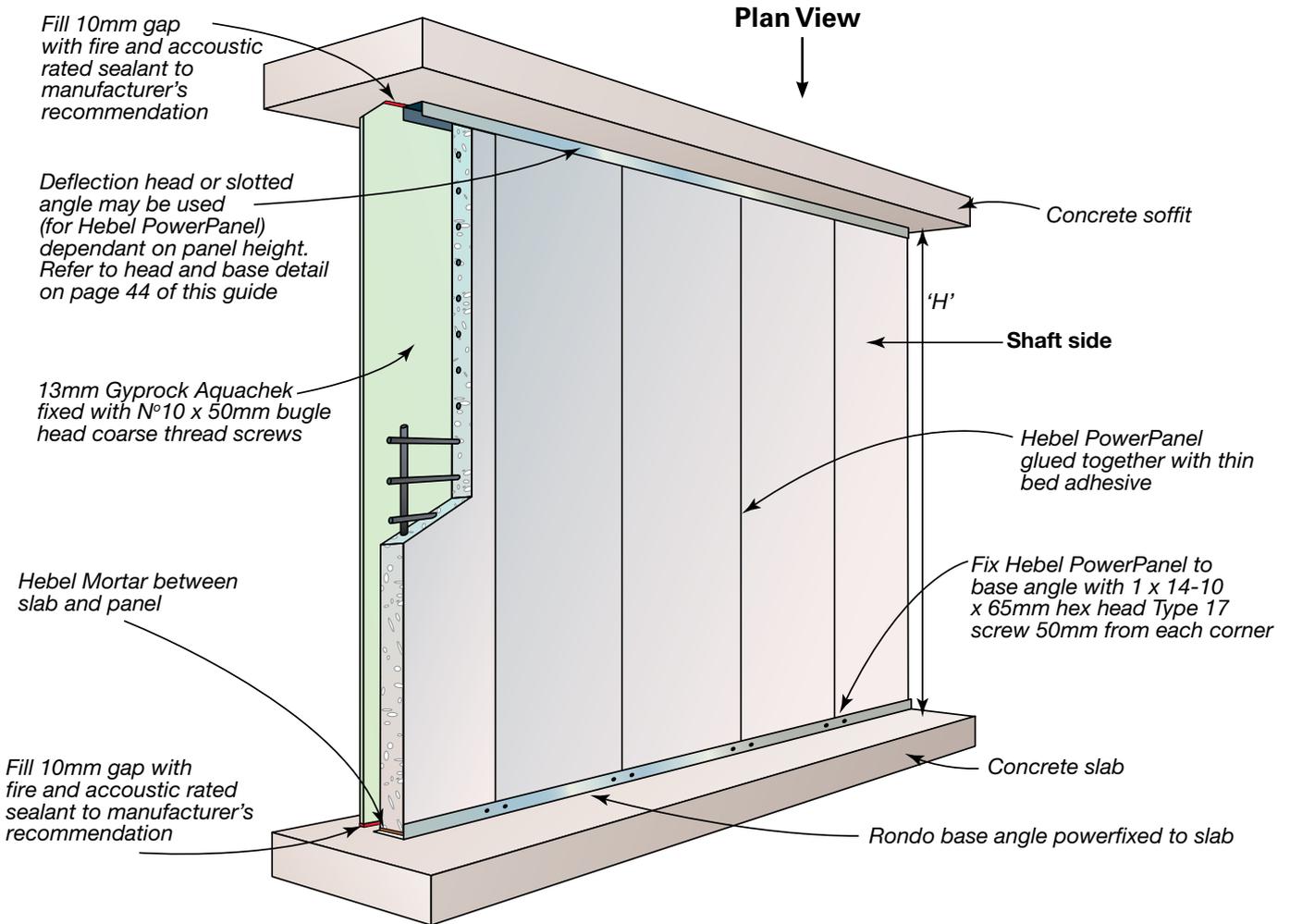
(D) The furring channels are connected to the 75mm PowerPanel using Beta Fix clips

GENERAL NOTES:

- Common Area wall systems HEB1150-1155 meet BCA 2011 deemed-to-satisfy discontinuous construction requirements.
- HEB1150-1155 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Service Shaft Wall – Option 1

Recommended for: Use in Service Shaft Area to Wet Non-Habitable Rooms



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(A)	R _w +C _f ^(B)	SYSTEM COMPONENT VARIATIONS	
						LINING	PANEL
HEB1200	Wet to Shaft	88mm	3000<H≤4200	-/90/90	36dB	13mm Aquachek	75mm PowerPanel
HEB1201	Wet to Shaft	88mm	H≤3000	-/120/120	36dB	13mm Aquachek	75mm PowerPanel

(A) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073, FCO-2327

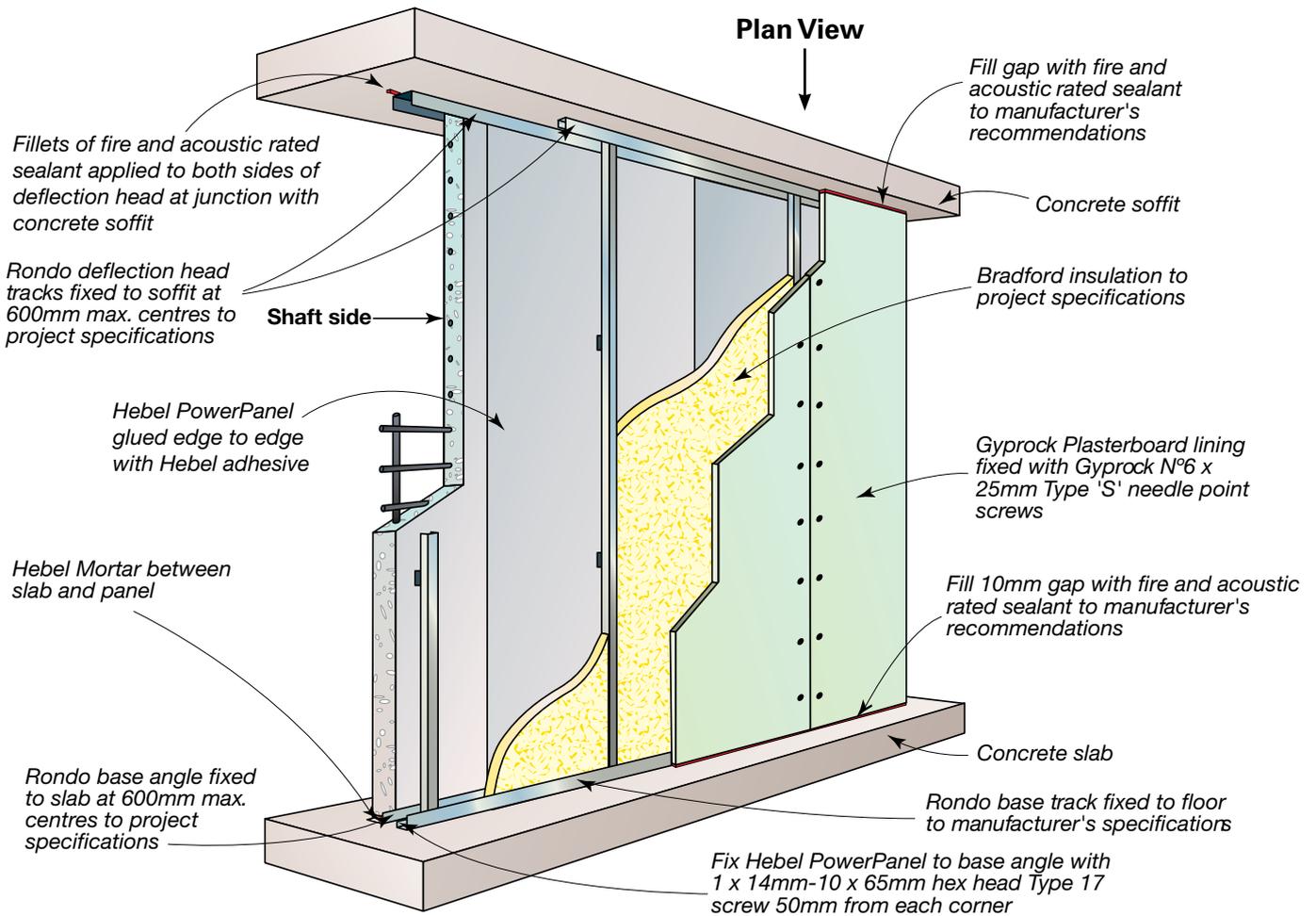
(B) R_w+C_f values are based on acoustic test ATF-1233 acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

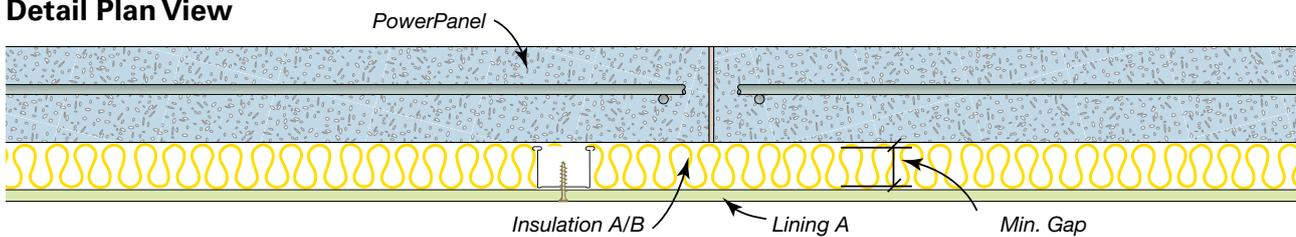
- HEB1200-1201 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Service Shaft Wall – Option 2

Recommended for: General partitions on Service Shaft area to Dry Habitable Rooms



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT	FRL ^(B)	R _w +C _v ^(C)	SYSTEM COMPONENT VARIATIONS				
						LINING A	FURRING CHANNEL ^(D)	MIN. GAP	INSULATION ^(A)	PANEL
HEB1202	Dry to Shaft	131mm	3000<H≤4200	-/90/90	40dB	13mm Fyrchek	28mm	43mm	50mm GLASSWOOL	75mm PowerPanel
HEB1203	Dry to Shaft	131mm	3000<H≤4200	-/90/90	40dB	13mm Fyrchek	28mm	43mm	50mm S4 POLYESTER	75mm PowerPanel
HEB1204	Dry to Shaft	131mm	H≤3000	-/120/120	40dB	13mm Fyrchek	28mm	43mm	50mm GLASSWOOL	75mm PowerPanel
HEB1205	Dry to Shaft	131mm	H≤3000	-/120/120	40dB	13mm Fyrchek	28mm	43mm	50mm S4 POLYESTER	75mm PowerPanel

Note: Shaft wall heights ≤ 3000mm will achieve FRL of -/120/120

(A) Denotes (11kg/m³) Bradford Glasswool Insulation

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073, FCO-2327

(C) R_w+C_v values are based on acoustic test ATF-1237 and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

(D) The furring channels are connected to the 75mm PowerPanel using Beta Fix clips.

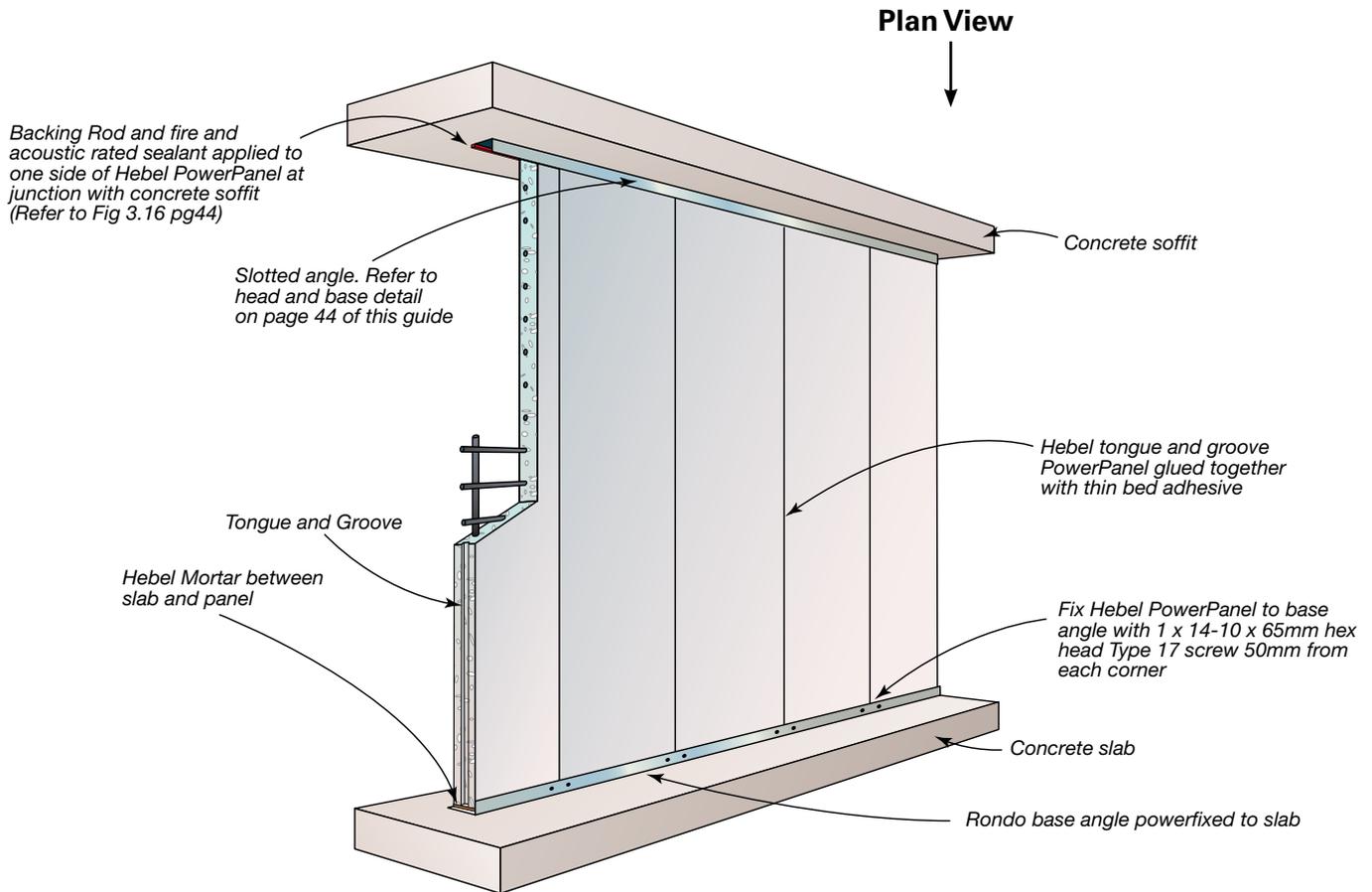
(E) Stud side is 'wet' side

GENERAL NOTES:

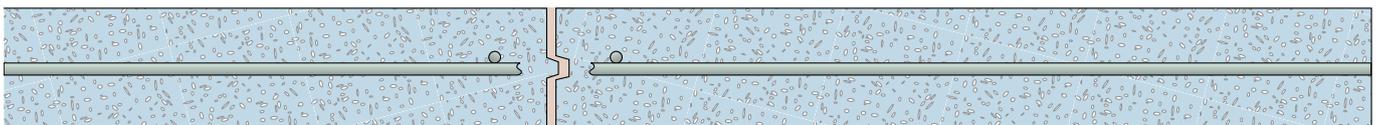
1. HEB1202-1205 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Plenum Wall – Option 1

Recommended for: Excellent fire separation and minimal cost due to the use of tongue and groove panels. Highly suited to plenum walls



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT	FRL ^(A)	R _w ^(B)	R _w +C _r ^(B)	PANEL	PAINT FINISH
HEB1400	Plenum Wall	75mm	H≤3000	-/90/90	33dB	30dB	75mm PowerPanel (Tongue and Groove)	Optional

(A) FRL values should be read in conjunction with CSIRO Fire Opinions FSV-0979

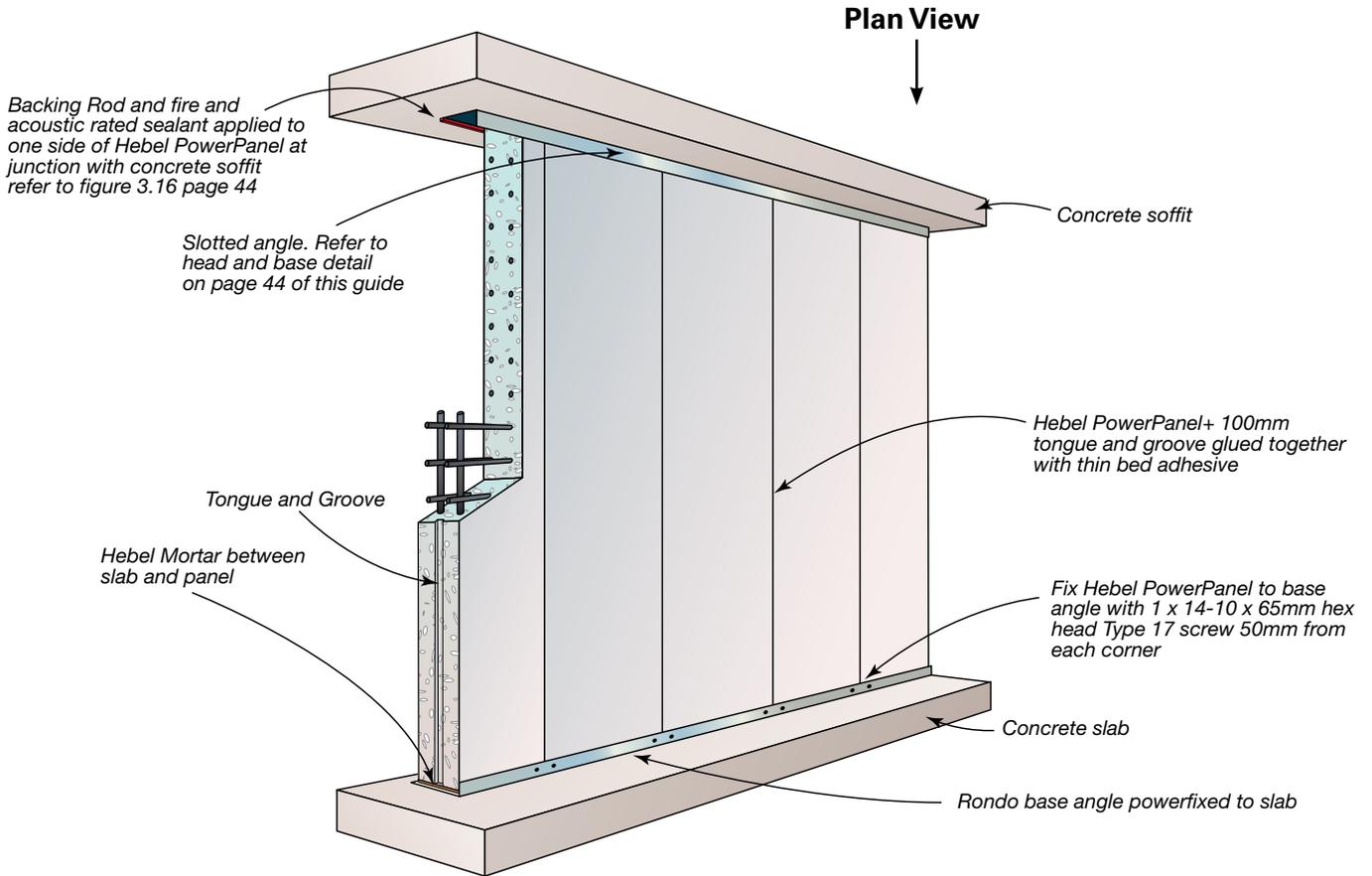
(B) R_w & R_w+C_r values are based on acoustic test ATF-1636A and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

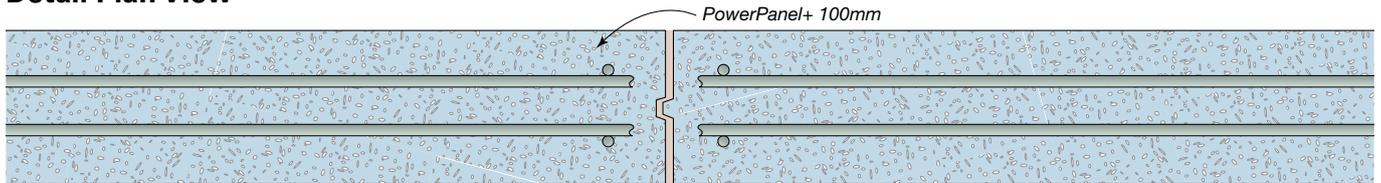
- HEB1400 is designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum. Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Plenum Wall – Option 2

Recommended for: Excellent fire separation at higher wall heights, suited to plenum walls



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT	FRL ^(A)	R _w ^(B)	R _w +C _{tr} ^(B)	SYSTEM COMPONENT VARIATIONS		
							LINING	PANEL	PAINT FINISH
HEB1401	Plenum Wall	100mm	4200<H≤4800	-/60/60	36dB	32dB	NIL	PowerPanel+ 100mm (Tongue and Groove)	Optional
HEB1402	Plenum Wall	113mm	4200<H≤4800	-/60/60	41dB	37dB	13mm Fyrchek	PowerPanel+ 100mm (Tongue and Groove)	NIL
HEB1403	Plenum Wall	100mm	3600<H≤4200	-/90/90	36dB	32dB	NIL	PowerPanel+ 100mm (Tongue and Groove)	Optional
HEB1404	Plenum Wall	113mm	3600<H≤4200	-/90/90	41dB	37dB	13mm Fyrchek	PowerPanel+ 100mm (Tongue and Groove)	NIL
HEB1405	Plenum Wall	100mm	H≤3600	-/120/120	36dB	32dB	NIL	PowerPanel+ 100mm (Tongue and Groove)	Optional
HEB1406	Plenum Wall	113mm	H≤3600	-/120/120	41dB	37dB	13mm Fyrchek	PowerPanel+ 100mm (Tongue and Groove)	NIL

Note: Wall heights > 3600mm and ≤ 4200mm will achieve FRL of -/90/90
 Wall heights ≤ 3600mm will achieve FRL of -/120/120

(A) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073, FCO-2327, FCO-0825

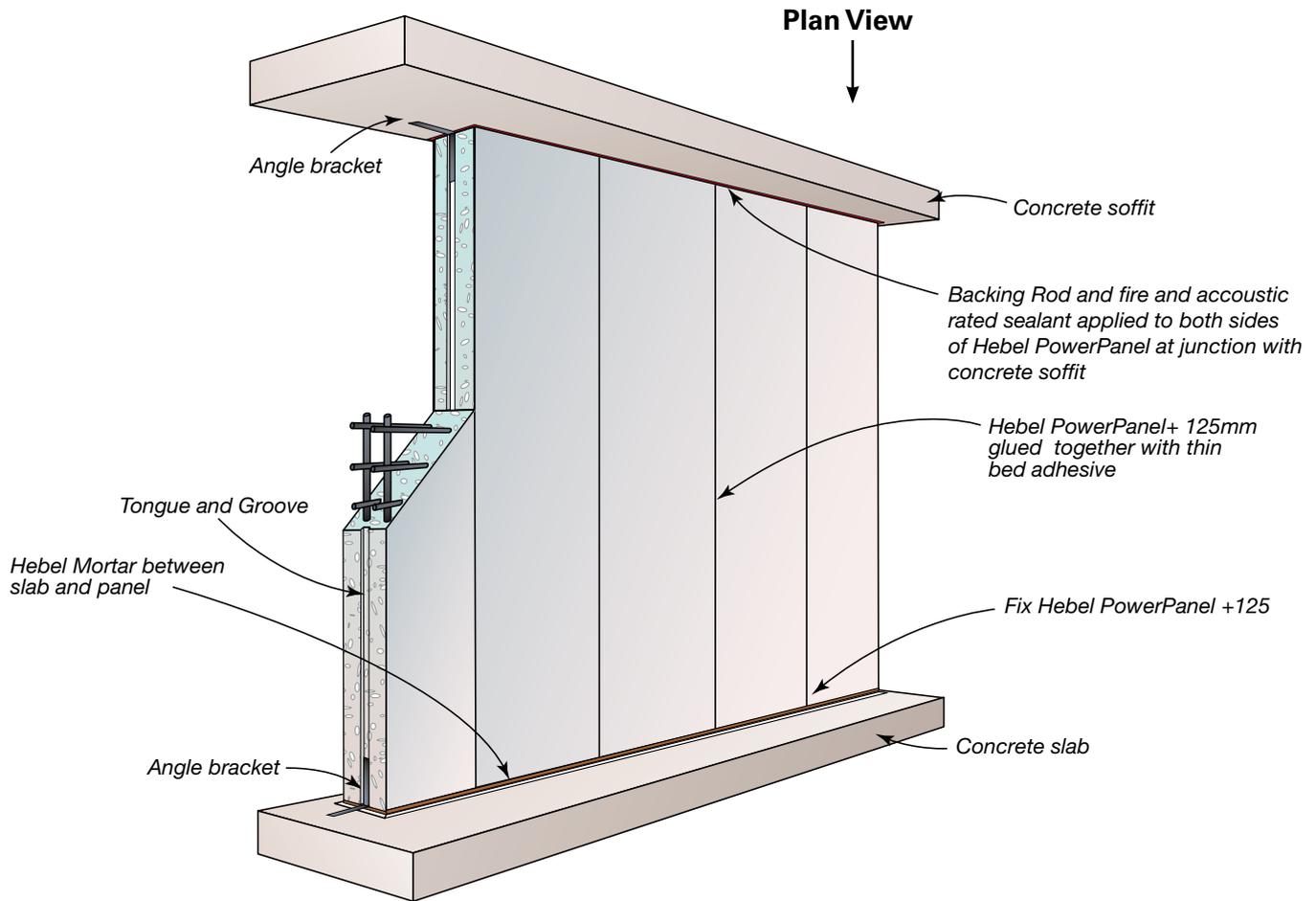
(B) R_w & R_w+C_{tr} values are based on acoustic test ATF-1233, ATF-1636A and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

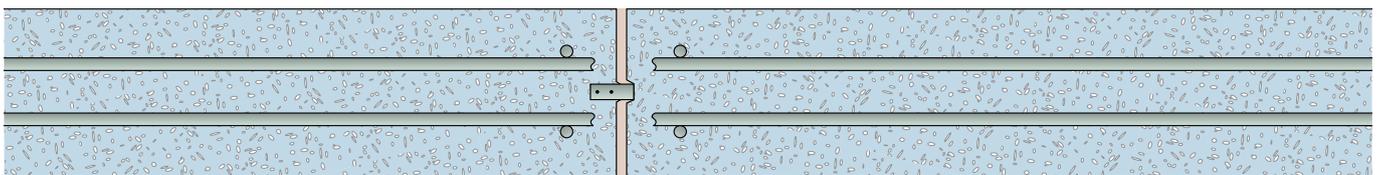
- HEB1401-1406 are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 or 20mm maximum.
 Contact Hebel Technical Services if lateral pressures exceed 0.375kPa

Boundary Wall

Recommended for: Internal and external use. Uses a concealed angle fitting system. Fast and cost effective



Detail Plan View



CODE	APPLICATION	WALL THICKNESS	WALL HEIGHT	FRL ^(B)	R _w +C _v ^(C)	SYSTEM COMPONENT VARIATIONS				
						LINING	PANEL	FURRING CHANNEL	INSULATION ^(A)	PAINT FINISH
HEB1500	Boundary Wall	125mm	H≤5000	-/240/240	33dB	NIL	PowerPanel +125mm (Tongue and Groove)	NIL	NIL	Yes (External)
HEB1501	Boundary Wall	166mm	H≤5000	-/240/240	44dB	13mm Plasterboard	PowerPanel +125mm (Tongue and Groove)	28mm	50mm GLASSWOOL	Yes (External)
HEB1502	Boundary Wall	166mm	H≤5000	-/240/240	44dB	13mm Plasterboard	PowerPanel +125mm (Tongue and Groove)	28mm	50mm S4 POLYESTER	Nil

(A) Denotes (540g/m²) Bradford Glasswool Insulation & (8kg/m³) Polyester Insulation.

(B) FRL values should be read in conjunction with CSIRO Fire Opinions FCO-2073, FCO-2327, FCO-0825 and Exova Warringtonfire Fire Opinion 24648-01.

(C) R_w+C_v values are based on acoustic test ATF-1237, ATF-1636A and acoustic opinion 2010861.1/0505A/R2/VF provided by Acoustic Logic Consultancy Pty Ltd

GENERAL NOTES:

1. HEB1500-1502 are designed to resist a maximum ultimate lateral pressure as outlined in Section 2.4 Structural Performance

1.3 System Components

Hebel PowerPanel

The primary component of Hebel Intertency walls is the 75mm thick Hebel PowerPanel. The panel is manufactured in a range of standard and custom sizes as indicated in Table 1.1.

The standard panel is produced as a stock item, unlike the custom panel, which has to be manufactured and availability is subject to production lead times. Standard panels are manufactured with a NIL profile. Custom panels can be manufactured with a tongue and groove profile for enhanced fire performance.

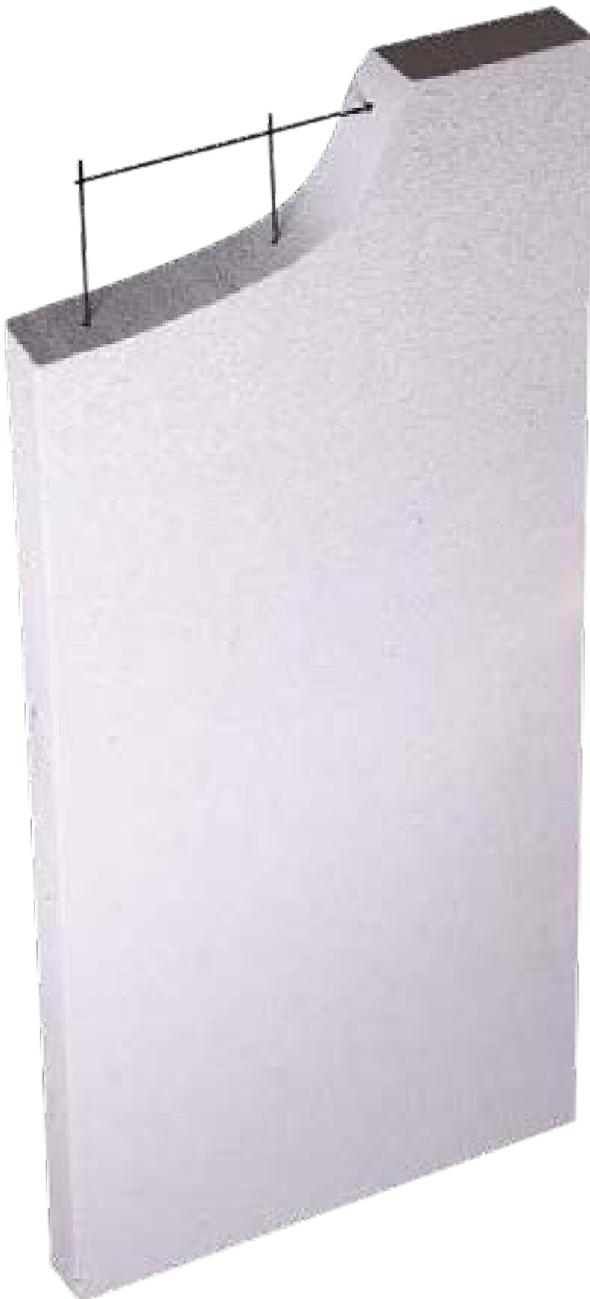


Table 1.1 Standard and Custom Hebel 75mm PowerPanel Sizes

Panel type	Length (mm)	PANEL DIMENSIONS			WEIGHT* (kg/m ²)
		Width (mm)			
		300	450	600	
Standard	1200			✓	49
	2400	✓		✓	49
	2550			✓	49
	2700	✓	✓	✓	49
	2850			✓	49
	3000	✓	✓	✓	49
	3300			✓	49
	3600 [^]			✓	53
	4200 [^]			✓	53
Custom	3000 max [†]			✓	49
	3300			✓	49
	Up to 4200 [^]			✓	53

Note: [†] Panel manufactured with a T&G profile to be used with the Slotted Angle track connection.

* Average panel weight calculated 30% moisture content

[^] Panels over 3300mm use caged mesh.

Hebel recommends that the following components or equivalent be used:

Table 1.2 Typical Hebel Intertenancy Wall Components

Wall components	Intertenancy Wall System Types					
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Hebel PowerPanel	✓	✓	✓	✓	✓	✓
Head track / S10 Head Angle	✓ ²	✓ ²	✓ ²	✓ ²	✓ ²	✓ ²
Base angle	✓	✓	✓	✓	✓	✓
Furring channel		✓				✓
Steel stud framing	✓	✓	✓			
Furring channel mounting clips		✓				
Gyprock™ plasterboard	✓	✓	✓	✓	✓	✓
Promaseal® IBS™ Rod	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
Hebel Adhesive	✓	✓	✓	✓	✓	✓
Hebel Mortar	✓	✓	✓	✓	✓	✓
Bradford Insulation	✓	✓	✓	✓	✓	✓
Fasteners/fixings	✓	✓	✓	✓	✓	✓
Acoustic/fire sealants	✓	✓	✓	✓	✓	✓
Hebel Patch (patching mortar)	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
Hebel Anti-corrosion Protection Paint	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹

Note: ¹ Use as required.

² Deflection head or slotted angle may be used (for Hebel PowerPanel) dependant on panel height. Refer to head base detail on page 44 of this guide.

Table 1.3 Typical Hebel Common Wall Components

Wall components	Common Wall System Types					
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Hebel PowerPanel	✓	✓	✓	✓	✓	✓
Head track / S10 Head Angle	✓ ²	✓ ²	✓ ²	✓	✓ ²	✓ ²
Base angle	✓	✓	✓	✓	✓	✓
Furring channel		✓				✓
Steel stud framing	✓	✓	✓			
Furring channel mounting clips		✓				✓
Gyprock™ plasterboard	✓	✓	✓	✓	✓	✓
Promaseal® IBS™ Rod	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
Hebel Adhesive	✓	✓	✓	✓	✓	✓
Hebel Mortar	✓	✓	✓	✓	✓	✓
Bradford Insulation	✓	✓	✓	✓	✓	✓
Fasteners/fixings	✓	✓	✓	✓	✓	✓
Acoustic/fire sealants	✓	✓	✓	✓	✓	✓
Hebel Patch (patching mortar)	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
Hebel Anti-corrosion Protection Paint	✓ ¹	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹

Note: ¹ Use as required.

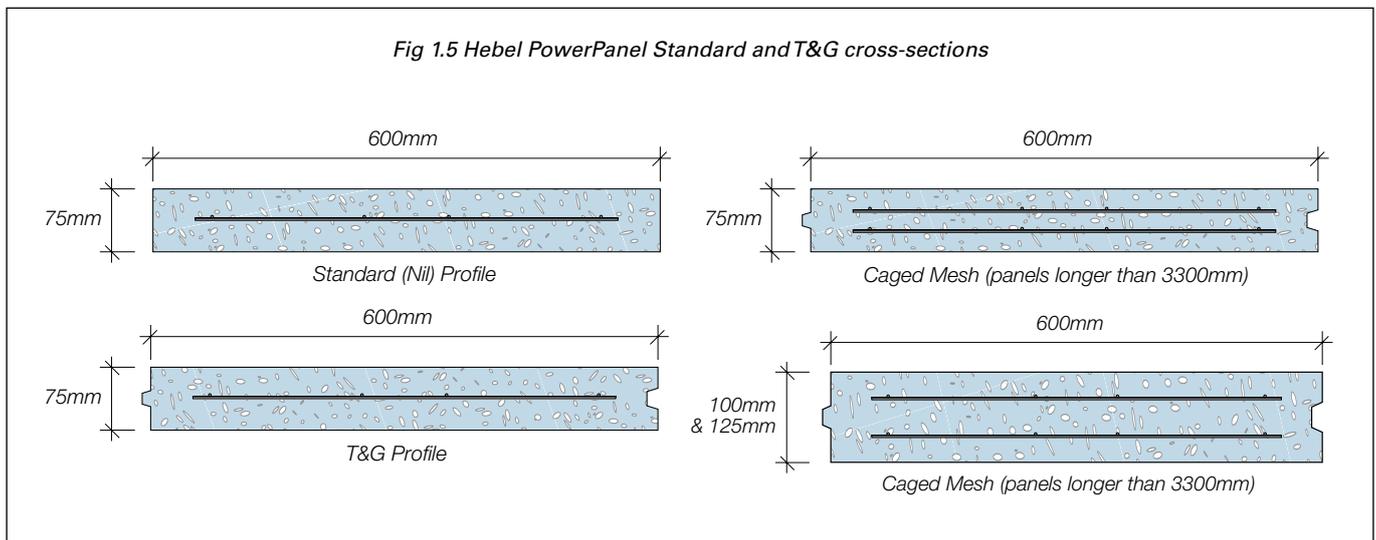
² Deflection head or slotted angle may be used (for Hebel PowerPanel) dependant on panel height. Refer to head base detail on page 44 of this guide.

Table 1.4 Typical Hebel Service Wall Components

Wall Components	Service Wall System Types				
	Service Shaft Option 1	Service Shaft Option 2	Plenum Wall Option 1	Plenum Wall Option 2	Boundary Wall
Hebel PowerPanel	✓	✓	✓		
Hebel PowerPanel+ 100				✓	
Hebel PowerPanel+ 125					✓
Head Track/Slotted Angle	✓	✓	✓ ¹	✓ ¹	
Base Angle	✓	✓	✓	✓	
Furring Channel		✓			(Optional)
Furring Channel Mounting Clips		✓			(Optional)
Gyprock Plasterboard	✓	✓			(Optional)
Promaseal IBS Rod	(Optional)	(Optional)			
Hebel Adhesive	✓	✓	✓	✓	✓
Hebel Mortar	✓	✓	✓	✓	✓
Hebel Patch	✓	✓	✓	✓	✓
Bradford Insulation		✓			
Fasteners / Fixings	✓	✓	✓	✓	✓
Acoustic / Fire Sealants	✓	✓	✓	✓	✓
Hebel Anti-Corrosion Protection Paint	✓	✓	✓	✓	✓
Hebel External Wall Angle Brackets					✓

Note: CSR has engineered and tested the PowerPanel system to comply with the Building Code of Australia and relevant Australian Standards. It cannot guarantee products and accessories not specified and sold by CSR will perform to these standards. The Product Guarantee will only apply if all components used in the system are specified and sold by CSR or its agents.

Note: ¹ Slotted Angle is the only head connection detail permissible to achieve FRL (Refer to Fig. 3.15 & 3.18 on page 44).



Deflection Head Track

For positioning and restraining the top of the panels. The following deflection head tracks and angles are recommended for use in Hebel Intertency wall systems:

- Rondo N°498 galvanised deflection head track
76 x 50 x 0.75mm BMT;
- Rondo J-Track Deflection Head
76 x 100 x 50 x 0.75mm BMT; or
- Galvanised steel angle
50 x 50 x 1.2mm BMT.

Slotted Angle Connection

For positioning and restraining (with added screw fixings) the top and bottom of the panels. The following angles are recommended for use in Hebel Intertency Wall Systems.

- Slotted galvanised steel angle for head connection
75 x 50 x 1.2mm BMT;
- Slotted galvanised steel angle for base connection
50 x 50 x 0.8mm BMT;

All angles with BMT greater than 0.8mm will have to be slotted to allow penetration of fixings. Head connections require slotted angle to allow for deflection of slab above.

Hebel Mortar

Hebel Mortar is used to provide a level base for panel installation as well as providing acoustic and fire protection at the base of the panels.

Hebel Mortar (supplied in 20kg bag) is used as a mortar base.

Hebel Adhesive

Hebel Adhesive (supplied in 20kg bag) is used for bonding the panels together at vertical and horizontal joints.

Hebel Patch

Minor Chips or damage to panels are repaired using Hebel Patch (supplied in 10kg bag).

Fire & Acoustic Sealant

To attain the specified FRL and/or R_w requirements, all perimeter gaps and penetrations must be carefully tooled and completely filled with an appropriate flexible polyurethane fire sealant installed to the manufacturer's specifications.



Promaseal® IBS™ Rod

Promaseal® IBS™ Rod (22mmØ) is a fire rated fire compression seal appropriate for 15mm maximum gaps. It is an alternative to liquid fillet sealant and is positioned inside the deflection head track at the top of Hebel panels.

Hebel Anti-corrosion Protection Paint

Reinforcement exposed when panels are cut must be coated with a liberal application of Hebel Anti-corrosion Protection Paint.



Furring Channel Mounting Clips

Clips are proprietary components; they enable the mounting of furring channel and plasterboard onto Hebel PowerPanel. This provides a cavity space, which can change the acoustic insulation performance of the wall system. Clips used on Hebel Intertency walls are:

- BetaFix clip; and
- RONDO furring channel clip.

Steel Stud Framework

Zinc coated steel studs, noggings, head and base tracks are used to create separated stud framework, which in conjunction with the Hebel PowerPanel, provides an asymmetric cavity wall assembly.

There are a number of different steel stud framework component manufacturers. All steel stud framework components are to be designed in accordance with manufacturer's specifications, and AS/NZS 4600.

Furring Channel

Two types of RONDO galvanised steel furring channels are used to clip into the mounting clips are:

- RONDO N°129, 28 x 38 x 0.50mm, BMT channels; or
- RONDO N°308, 16 x 38 x 0.50mm, BMT channels.

Bradford Insulation

Hebel Intertency walls incorporate Bradford Insulation materials. Table 1.6 presents basic information on the glasswool insulation material supplied by Bradford Insulation.

Hebel Intertency wall systems that use Bradford Glasswool insulation generally have a better acoustic performance than systems using Polyester insulation.

Table 1.6 Bradford Glasswool insulation

Glasswool Grade	Mass g/m ²
50mm	540
75mm	810
110mm	1188

Figure 1.7 Bradford Glasswool insulation



Gyprock® Plasterboard

Hebel Intertenancy walls incorporate Gyprock® Plasterboard on both sides. The type, thickness and densities of plasterboard will be as per the specified wall requirements. Additional information is available from Gyprock®.

Fasteners & Fixings

Most screw fixings are timber type, which is sufficient for penetrating the metal thicknesses outlined in this Design Guide. Connections that have larger metal thicknesses may require a metal type screw and will need to be designed and approved by the project engineer.

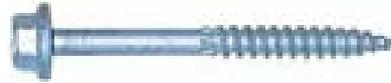
Fixings for deflection head track, or top and base angle to concrete

The fixing to secure the tracks to the concrete slab and soffits shall be capable of withstanding a shear load of 0.75kN. For high wind pressures the designer shall determine if mechanical fasteners are required. The following minimum fixings shall be provided:

- Drive pins and concrete nails (check size and suitability for fire rated situations with the manufacturer).
- 6mm diameter mechanical fasteners.

PowerPanel to base angle fixings or slotted angle head bracket

- Use 14-10 x 65mm hex head Type 17 screw or equivalent, when fixing through the track into the panel. (See Figure 3.19). Angles with BMT greater than 0.8mm will have to be slotted.



- Use 14-10 x 100mm MP Bugle Head screw or equivalent, when fixing through the panel and into the track. For angles with BMT greater than 0.8mm, the screw will require the appropriate tip.



Gyprock® plasterboard to PowerPanel fixings

- N°10 x 50mm bugle head coarse thread screw or equivalent.



Furring channel mounting clip to PowerPanel fixings

- 12-11 x 65mm hex head screw Type 17.



Gyprock® plasterboard to furring channel/metal stud fixings

- N°6 x 25mm Type 'S' needlepoint screw or equivalent.

Door frames to PowerPanel fixings

- N°8 x 50mm coarse thread screw or equivalent. Check screw requirements with door manufacturer's specifications.
- Screws for panel returns
- Use 14-10 x 150mm (100mm thread hex head Type 17 screw or equivalent).

2.1 Performance and structure of Hebel Intertenancy walls

BCA Compliant Hebel Intertenancy walls

The wall systems outlined have been assessed to comply with the BCA requirement for inter tenancy and common area walls. This table must be read in conjunction with all the information provided in this Design and Installation Guide, HEB1354 March 2012, and acoustic opinion 2010861.1/0505A/R2/VF provided by the Acoustic Logic Consultancy Pty Ltd. Selection of Hebel Intertenancy walls shown in the table should be taken with specialist consultant's advice. For walls requiring discontinuous construction, the gap/cavity must be 20mm minimum.

Impact Sound Performance

All Hebel Intertenancy walls are cavity wall systems without connections between the separate wall leaves. Therefore, no mechanical path exists for the transmission of impact sound. Provided a 20mm gap is maintained between the separated wall leaves, all Intertenancy walls can meet the "discontinuous construction" requirement of the BCA.

Intertenancy Performance Design Recommendations

1) Hebel recommends engaging a specialist acoustic consultant on a project-by-project basis to provide design advice, confirmation of anticipated field performance, detailing and installation inspections.

2) When selecting the appropriate Hebel Intertenancy wall, the designer or specifier must be aware that the laboratory R_w values are almost always higher than the field measured values. Therefore, allowances should be made for the lower expected field values during the selection of the system.

3) Separate advice from a specialist acoustic consultant should be sought to determine the effect on acoustic performance due to any changes to the Hebel Intertenancy systems, and any required modification of the installation details pertaining to the systems.

4) Increasing of cavity widths, using higher density or thicker insulation or plasterboard, will generally maintain or increase the acoustic performance of the Hebel wall.

5) The acoustic performance values of the Hebel walls shown in the systems pages (8 - 24) are a guide only as to expected lab test performance. They do not constitute a field performance guarantee as factors such as the presence of flanking paths, quality of installation of the system, on-site detailing of junctions, room shapes and size, etc can significantly affect field performance. Maximising the field performance depends on the following factors:

- The systems are installed in accordance with the manufacturer's standard installation details.
- Good quality installation practices including the sealing of all junctions and joints and maintaining specified clearances.
- The systems are installed with all junctions acoustically sealed so that negligible sound transmission occurs at these points.
- All services penetrations, etc are acoustically sealed and treated so that negligible sound transmission occurs through these points.
- Flanking paths are eliminated and the structures into which the systems are installed are capable of allowing the nominated rating to be achieved.
- Site testing conditions.

2.2 Fire Rating Performance

Fire Resistance Level (FRL) Rating of Hebel Walls

The maximum wall heights in the Systems as described on pages (8 - 24) are taken from CSIRO Fire Opinions FCO-2073 issued on the 6th August 2010 and FCO-2327 issued on the 20th January 2009. These values are only applicable to the Hebel Intertency walls outlined in this Design Guide. Fire performance of other wall configurations have been taken from fire opinions FCO-2073, FCO-2327, FCO-0825, FAR-2586.2 and 24648-01.

The FRL rating of the wall can be affected by the penetrations and the method adopted to protect these penetrations. A fire collar with a -/120/120 FRL rating will govern the FRL of the wall, even if the wall configuration has a FRL rating of -/180/180.

System Variations

Variations to the Hebel walls will not affect the fire-resistance levels. However these variations need to be approved by the project fire consultant or project certifier. The possible variations to the systems include:

- 1) Changing the type of insulation between S4, S3, S2, Glasswool and Rockwool;
- 2) Substituting the furring channel with steel studs;
- 3) Using the furring channel or steel stud on both faces;
- 4) Insulation on both sides of the Hebel PowerPanel;
- 5) The incorporation of gaps between the steel stud (51mm, 64mm, 76mm or 92mm deep steel studs) and the CSR Hebel panel of up to 100mm maximum; or;
- 6) Cavity widths of up to 250mm between panels in double panel walls.

Fire Protection of Penetrations

Penetrations through a Hebel wall to accommodate pipework, electrical cabling or ductwork will have to be protected (fire stop), to prevent the spread of fire through the penetration. The penetration can be protected with proprietary products, such as:

- fire rated sealants;
- fire collars and intumescent wraps;
- fire rated mortars;
- fire rated pillows;
- fire rated switch boxes.

Hebel recommends contacting a reputable manufacturer of fire protection systems to obtain the appropriate solution.

2.3 Structural Performance

Structural Performance

Hebel Internal walls are non-loadbearing walls used in internal applications. The walls are designed to resist a maximum ultimate lateral pressure of 0.375kPa, and a deflection limit of H/240 (Height ÷ 240) or 20mm maximum.

Table 2.1 Recommended minimum gap between the Stud Frame and PowerPanel

Wall Height (mm)	H/240 (mm)	Minimum Gap (mm)
2400	10	12
2550	11	13
2700	12	14
2850	12	14
3000	13	15
3200	14	16
3550	15	17
3900	17	19
4200	18	20

PowerPanel+ 125 Boundary Wall

For pressures greater than 0.375kPa (ultimate) the standard Hebel PowerPanel (including the 100mm General Purpose Panel) and associated components may not have sufficient capacity. PowerPanel+ 125 provides an alternative to sustain greater lateral pressures. Figure 2.2 provides a selection chart for Hebel PowerPanel+ 125 and Table 2.3 provides fixing capacities. Installation details can be sourced by contacting Hebel Technical Services.

Figure 2.2 Panel height and width selection for PowerPanel+ 125 Selection

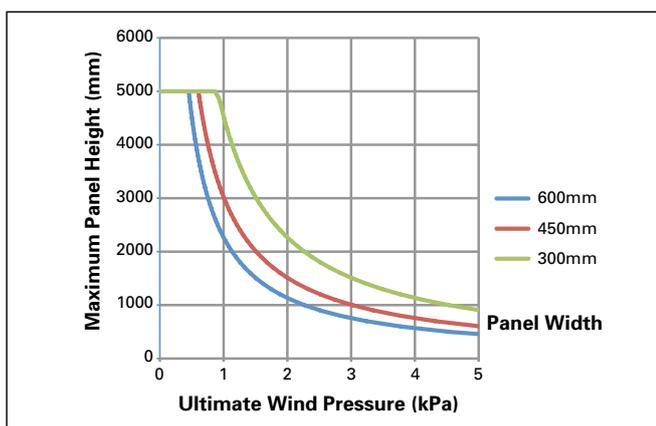


Table 2.3

Bracket Type	V-Nails per bracket	Design Shear Capacity (kN)
200 x 55 x 3 PowerPanel+ 125	3	0.68

Cutting of Hebel PowerPanel

For the load parameters outlined above (UDL ≤ 0.375kPa/ultimate), the standard Hebel PowerPanels can be reduced in length by cutting 150mm maximum from each end, and to a minimum width of 270mm. For UDL loads greater than 0.375kPa (ultimate), custom Hebel PowerPanel will have to be designed to ensure structural adequacy when cut.

Steel Stud Frame

The steel framing presented in this Design and Installation Guide for various wall systems have not been approved for the design parameters in this Design and Installation Guide. It is the designer's responsibility to determine an appropriate steel framing system. Several items the designer must allow for are; lateral loadings, wall height, deflection limits, offset distance (gap) from the panel, building movement and control joint locations.

As a minimum the wall will have a deflection limit of H/240. As a guide, Hebel recommends providing a minimum gap distance of Height/240 + installation tolerance. For example, H = 2400mm and installation tolerance = 2mm, then minimum gap = 2400/240+2 = 12mm. This is to ensure that the two leaves of the cavity wall do not touch during service loading. Table 2.1 outlines the recommended minimum gap to suit a range of wall heights for the H/240 deflection limit. For walls requiring discontinuous construction a minimum gap of 20mm must be specified to meet the BCA requirements.

Custom Hebel PowerPanel

For walls heights exceeding 3300mm or design parameters outside the scope of this guide, the panels will be custom Hebel PowerPanels. These panels are designed to satisfy the project's individual design parameters, such as internal lateral (wind) pressure and on-site cutting requirements. Custom panels are subject to manufacturing lead times.

Earthquake Loading

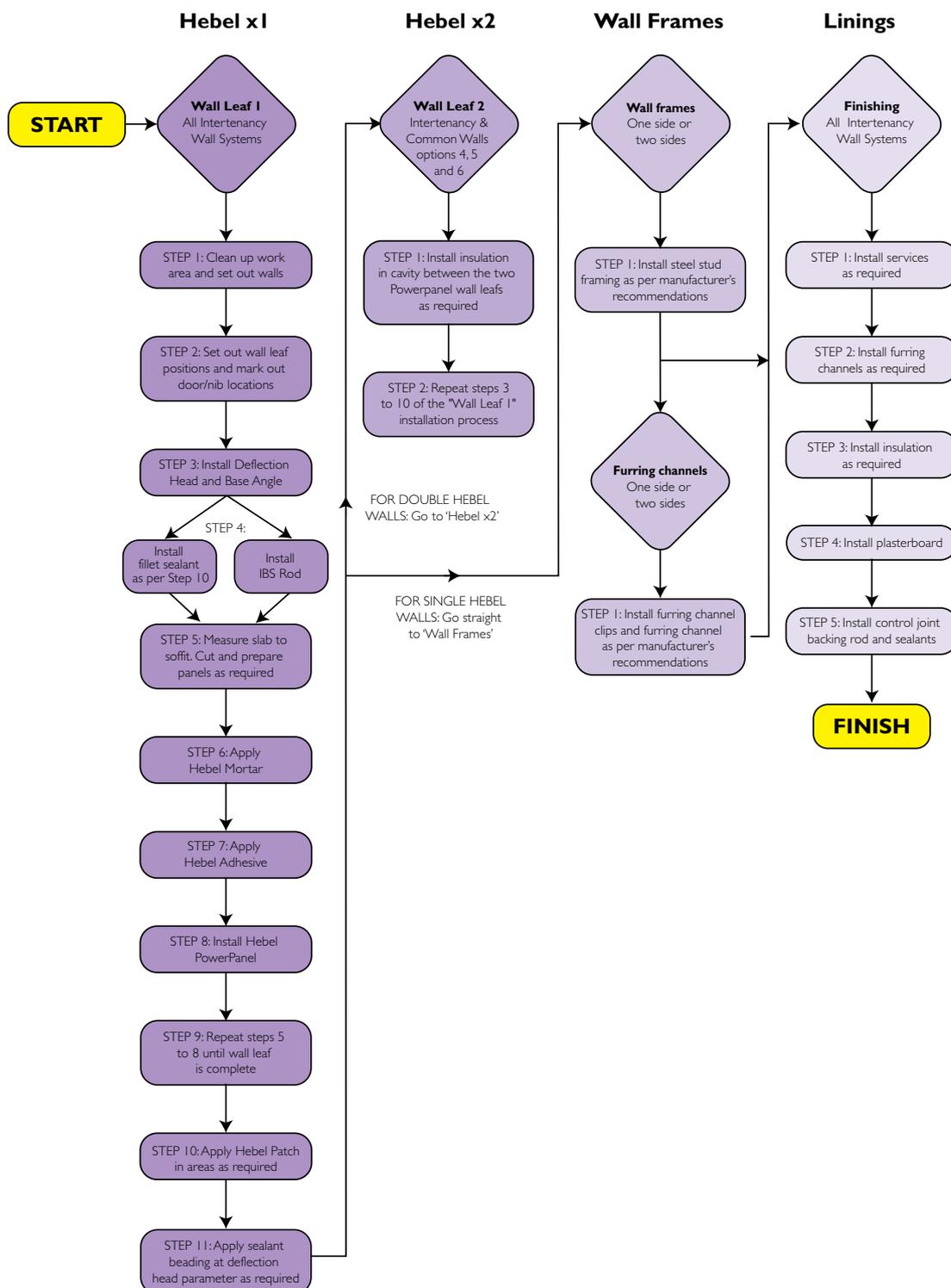
Earthquake loading has not been considered in this Design and Installation Guide.

Wall Heights

Consideration shall be made for wall heights greater than 3200mm for panel design. Panels greater than 3200mm in height should have the deflection head track replaced with 1.2mm galvanised steel deflection track (see page 44) and a 50 x 50 x 1.2mm galvanised steel angle at the base.

3.1 Installation Flowchart for Hebel Internal Walls

Figure 3.1 Installation flowchart sequence for construction of Hebel walls



3.2 Installation of Hebel Internal Walls

Setting out and positioning of walls

Before commencing any installation work, clean and tidy up the work area. Mark out the location of the walls and door nibs, etc.

Hebel Deflection Head Track, Hebel Slotted Angle and Hebel Base Angle installation

When the wall locations have been set out, fix the deflection head tracks, or slotted angles and base angles, to the concrete support structures. This is done using suitable fixings (see Section 1.3) at 600mm maximum centres and maximum 100mm from ends. At changes in wall directions, ensure deflection head track is mitred with no gaps at the corners. Seal all butt joints with fire rated polyurethane sealant.

Gaps between the deflection head track and irregular soffit surfaces should be sealed with a 5mm minimum diameter bead of sealant as per project specifications. For more information refer to page 44.

Alternatively, a continuous solid fillet of fire rated and acoustic sealant is applied to the junction between both sides of the deflection head track and concrete soffit as per figure 3.17 on page 44.

Promaseal® IBS™ Rod Installation or Fire Sealant

Promaseal® IBS™ Rod or equivalent is positioned inside the deflection head track. Tape or contact adhesive may be used to temporarily secure the rod in place prior to installation of the panel. Select the appropriate diameter rod to suit the deflection gap at the top of the wall.

For a 15mm gap adopt a 22mm diameter Promaseal® IBS™ Rod. The rod should be continuous, but where connections are unavoidable, the rod shall be spliced by overlapping a minimum of 200mm.

Hebel Mortar Installation

Mortar is placed after the base angle is installed. It should only be run out roughly 3 panels (1800mm) ahead of panel installation. The mortar bed fills the gap at the base of all panels. Generally, the mortar bed is 10mm thick and extends the full 75mm thickness of the panel.

Mixing of the mortar must be done in accordance with the instructions on the bag.

Hebel PowerPanel Installation

The panels can be cut on-site using a circular saw equipped with diamond tipped turbo cutting blade (for panel cutting limitations refer to Section 2.3). All the loose AAC particles should be brushed off the panel with a stiff broom. Steel reinforcement that is exposed during cutting must be coated with a liberal application of Anti-corrosion Protection Paint (see Section 1.3). Any minor damage and chips to the panels must be repaired using Hebel patching mortar.

If Promaseal IBS rod is used, then as the panel is positioned into place the rod must be compressed the specified minimum distance. A 22mm diameter Promaseal®. IBS™ Rod shall be used in a 15mm gap and shall be compressed 7mm minimum. No fixings should be used to compress the rod. Use packers at the base to maintain the gap at the top and ensure gap is full of mortar.

Fix the panel to the base angle with a minimum of 2 screws (see Section 1.3), 50mm minimum from each end of the panel.

For following panels, apply thin bed adhesive to the entire vertical edge and install the next panel. Repeat the installation process until the wall is complete.

Hebel Adhesive Application

Hebel Thin Bed Adhesive is applied to the panel with a 75mm 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.

Furring Channel Clip Installation

The installation of the clips and mounts is typically at a maximum 600mm horizontal spacing and 1200mm vertical spacings. Refer to Section 1.3 for appropriate fixings.

Furring Channel Installation

Furring channels are fitted in floor/soffit tracks and clips on the wall. For further information refer to manufacturers' literature.

Steel Stud Framework Installation

All steel stud frameworks is to be installed to the manufacturers' specifications.

Installation of Bradford Insulation

Installation of Bradford insulation should be completed in accordance with manufacturer's handling and installation guidelines. The thickness of insulation provided should be such as to fully fill the cavity.

If there is any gap in the insulation the acoustic performance of the system may be adversely affected.

Gyprock® Plasterboard

Plasterboard sheets must be cut to fit neatly and should not be forced into position. The plasterboard is to extend the full height of the Hebel PowerPanel, with gaps at top and bottom for the specified sealant.

In Hebel Intertency walls plasterboard is fixed directly to Hebel PowerPanel, steel furring channel or stud framework.

- Direct fix to Hebel: Plasterboard is to be installed in accordance with the Gyprock® plasterboard installation guidelines. Secured in position with the appropriate screws (see Section 1.3).
- Fit to Furring Channel or Stud Frame: Plasterboard is to be installed in accordance with the Gyprock® Steel Frame Wall Systems Installation Guide, N°GYP544.

Handling and installation guidelines and additional information is available through Gyprock.

Installation of Final Sealants

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

Installation of Penetrations, Electrical, Plumbing & Other Services

Installation of services and penetrations into Hebel Intertency walls should be carried out at an appropriate construction sequence. This will allow easy access to cavities, steel framed elements and Hebel panels, where services can be easily installed and neatly hidden. Hebel suggests installing the plumbing and cabling after the panels have been installed. The builder or project manager should confirm appropriate construction sequence for services and penetrations on a project by project basis.

Neat finishes for all chasings and penetrations are necessary to maintain the acoustic and fire integrity of the wall. For more information regarding installation of services and penetrations refer to page 50 in this Design Guide.

Installation of Fasteners & Fixings

All fixings and fasteners should be installed in accordance with the manufacturer's specifications.

3.3 Design & Installation Considerations

Control Joints

Control joints must be provided at a maximum of 6m spacing. Recommended control joint widths should be 10mm minimum between PowerPanel and another building components. Control joints must also be provided to coincide with any control joint in the main structure. The deflection head and base angle must be discontinuous at a structural control joint. Refer to page 48 for control joint details.

Wet Area Wall Construction

Wet area wall construction requires a system that enables services to be installed in a cavity. Where back-to-back wet areas are to be installed, a system that incorporates a cavity on both sides of the wall is required. All plumbing should be acoustically treated as required by the BCA. All wet area walls shall be lined and waterproofed in accordance with Australian standards and to BCA requirements. Gyprock Aquachek™ or Cemintel™ Wallboard are suitable lining materials for wet area applications.

Penetrations

Hebel Intertency walls can accommodate 300 x 300mm penetrations at 1200mm horizontal centres, without a reduction in structural performance. The edge of the penetration shall be 15mm maximum from the service passing through the wall. Contact your fire and acoustic consultants for detailing of penetrations to ensure the nominated fire and/or acoustic performance is achieved.

Wall Chasing

Wall chasing is not permitted in accordance with the BCA (Volume 1 Specification F5.2) in any acoustic rated wall system. For non-acoustic rated service walls chasing depth should not exceed 15mm for vertical chasing and 15mm for horizontal chasing. Width of chasings shall not be greater than 25mm. Cutting of panel reinforcement is not permitted when chasing. See page 51 for further details.

Acoustic & Fire Integrity

Penetrations in walls for electrical fittings, telecommunications, large ductwork, or plumbing systems can be a substantial source of sound leakage, which can affect the acoustic and fire performance of the wall.

When electrical, telecommunication or plumbing services are required, the contractor shall install these services neatly and, when passing through the wall, shall provide a close fitting hole, sealed with an approved fire and acoustic rated sealant. Detail of stopping material is to be provided by an appropriate consultant and installed in accordance with the manufacturer's recommendations.

To prevent water noise degrading the acoustic amenity of the wall system, water-bearing pipes should be acoustically wrapped and resiliently fastened. Hebel does not recommend locating water-bearing pipes within wall chases.

Hebel recommends the use of fire rated switch boxes and collars (such as those manufactured by PROMAT, CLIPSAL or HPM) as these assist in maintaining the acoustic integrity of wall systems. When installing these devices please consult with the manufacturer for design and installation recommendations. Refer to pages 50 and 51.

Where acoustic integrity is important, electrical switches must not be installed back to back as this could be a source of sound leakage. Refer Figure 3.2 (below) for switch box layout guidance.

Fire Dampers

Hebel Intertency walls can accommodate a 300x300mm penetration for a fire damper. The gap between the fire damper and the wall is to be treated in accordance with fire damper manufacturer's recommendations. Refer to Figure 3.50 page 50 for a typical fire damper detail.

Door Frames

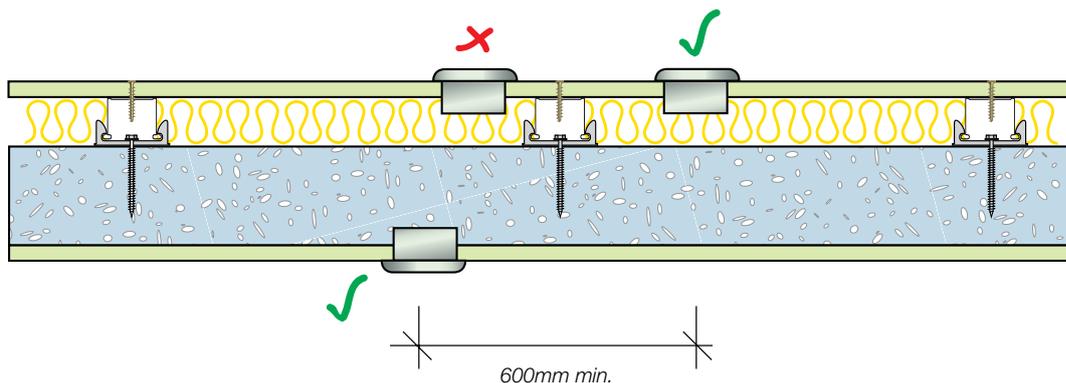
Door frames can either be built-in as the wall is being constructed or fitted after the Hebel PowerPanel has been installed.

A sample of door frame details have been included on page 49. For further information and installation requirements, please contact your chosen door frame manufacturer.

Fasteners

The correct sized fasteners for the construction of the wall system must always be used. Refer to page 29 for these fasteners. When fitting large or heavy fixtures, guidance on the correct fasteners can be found in section 8 of the Hebel Technical Manual and/or fastener manufacturer's recommendations.

Figure 3.2 Switch Box Layout



3.4 Construction Details

Hebel Intertency walls / Common walls

Figure 3.3 Intertency Wall / Common Wall Option 1 - Vertical cross section detail

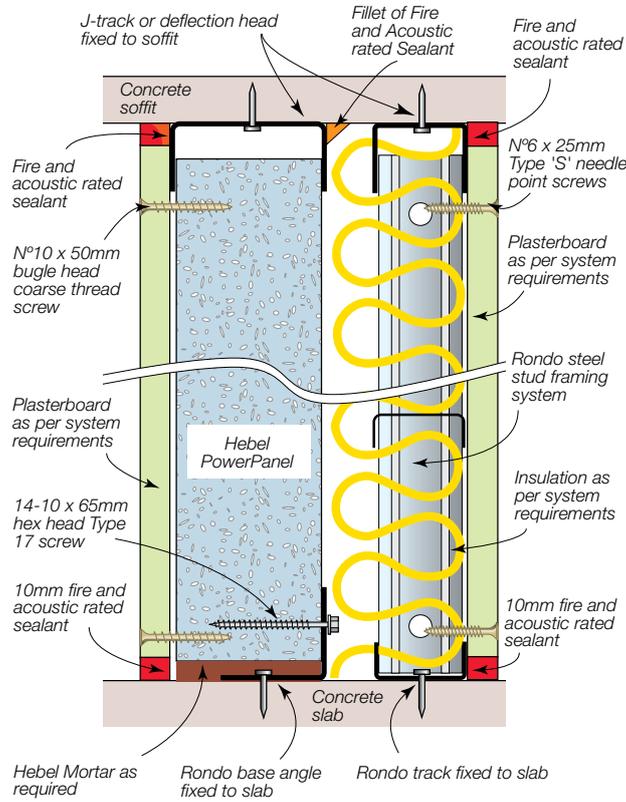


Figure 3.4 Intertency Wall / Common Wall Option 2 - Vertical cross section detail

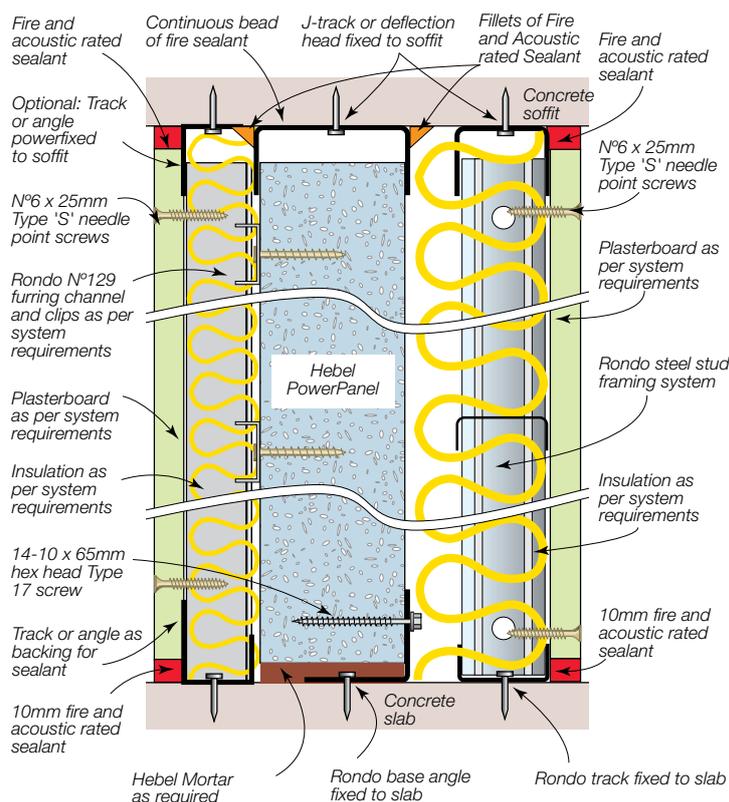
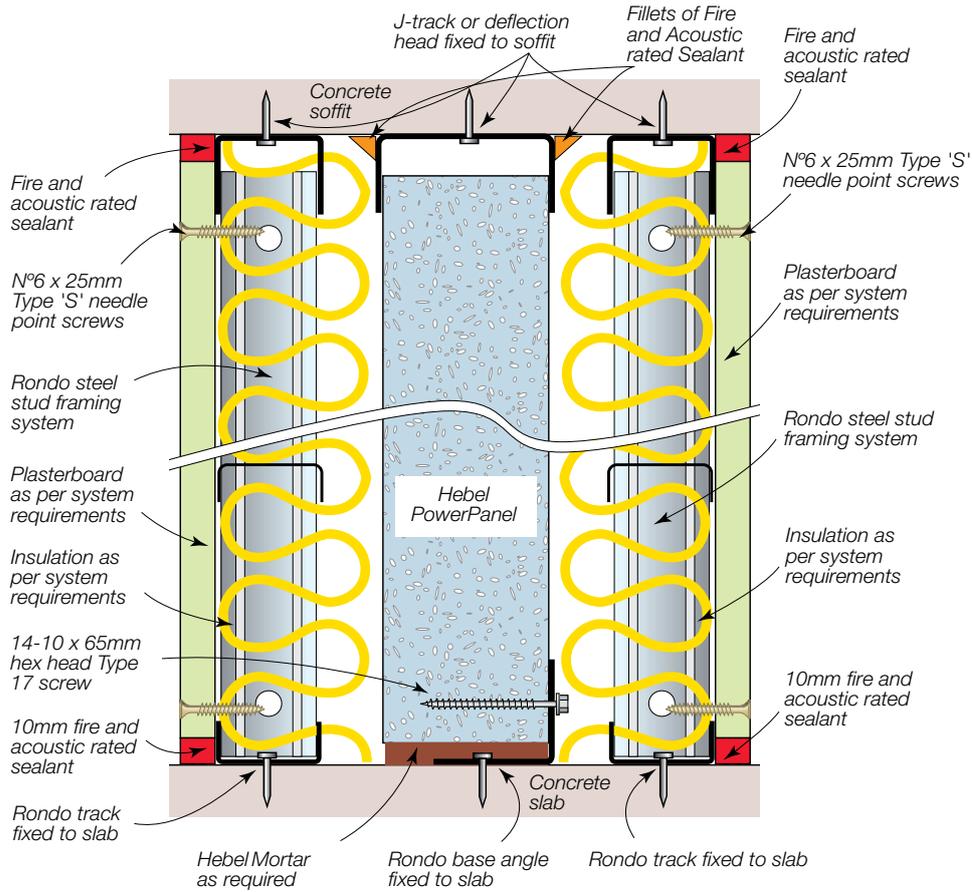
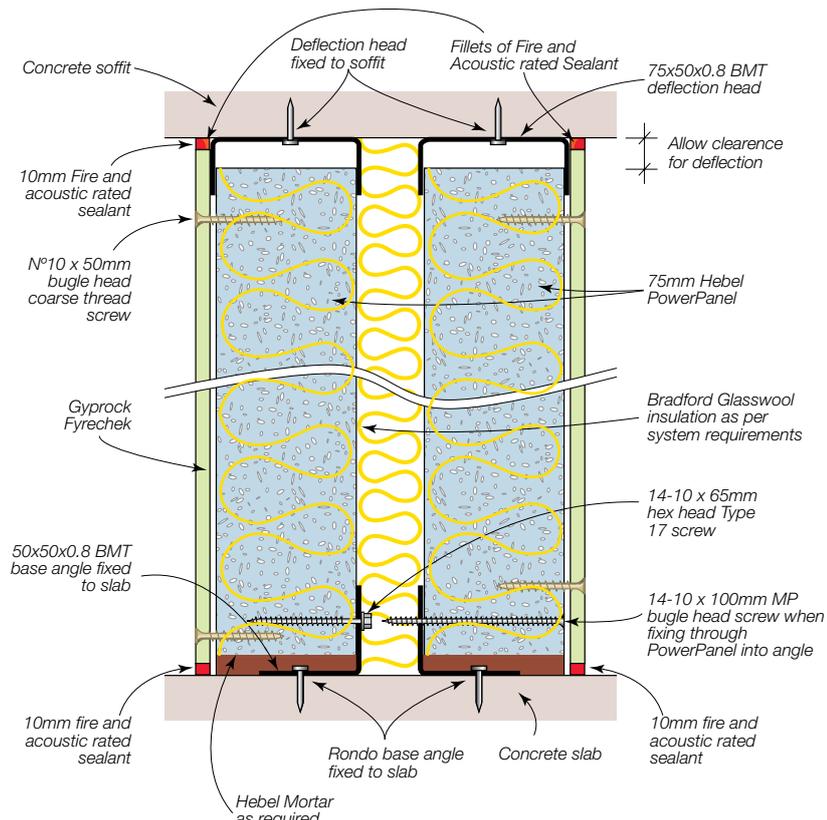


Figure 3.5 Intertency Wall / Common Wall Option 3 - Vertical cross section detail



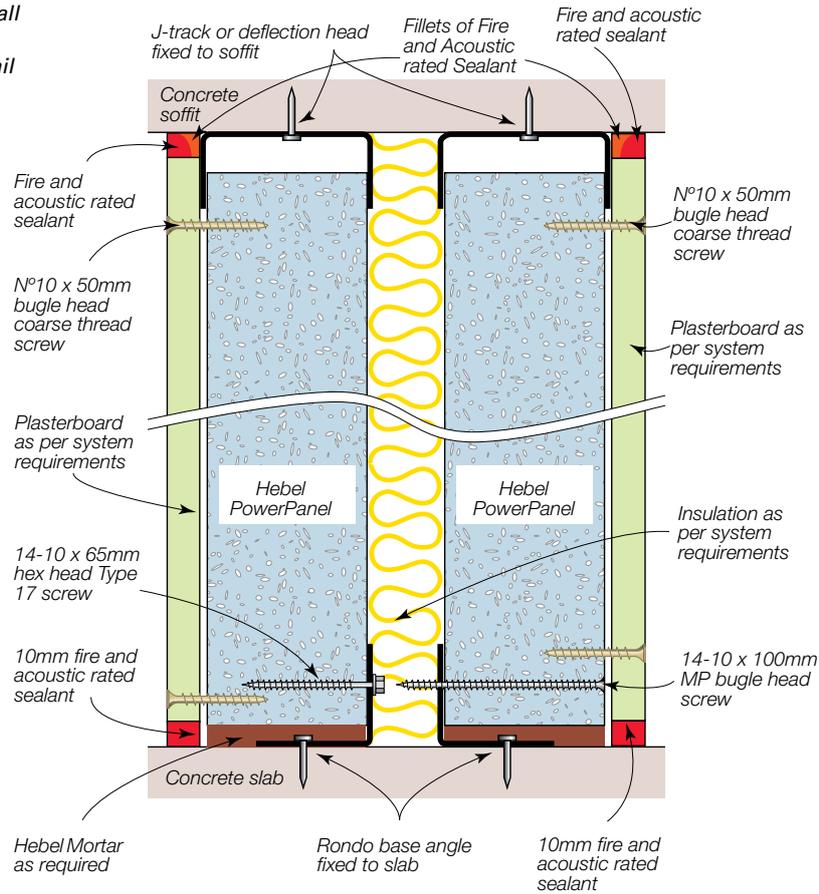
Hebel Intertency walls / Common walls

Figure 3.6 Intertency Wall / Common Wall Option 4 - Vertical cross section detail



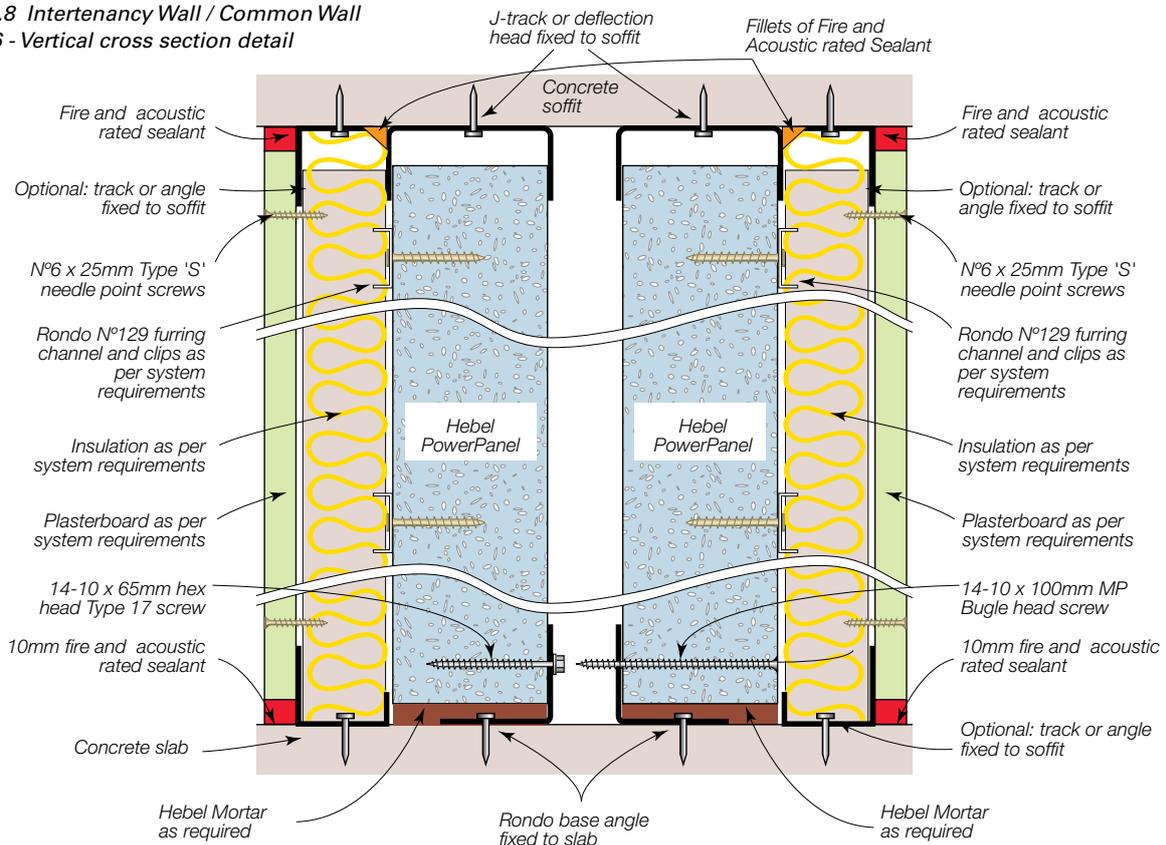
Hebel Intertency walls / Common walls

Figure 3.7 Intertency Wall / Common Wall Option 5 - Vertical cross section detail



Hebel Intertency walls / Common walls

Figure 3.8 Intertency Wall / Common Wall Option 6 - Vertical cross section detail



Hebel Service Shaft Walls

Figure 3.9 Service Shaft Wall Option 1 - Vertical cross section detail

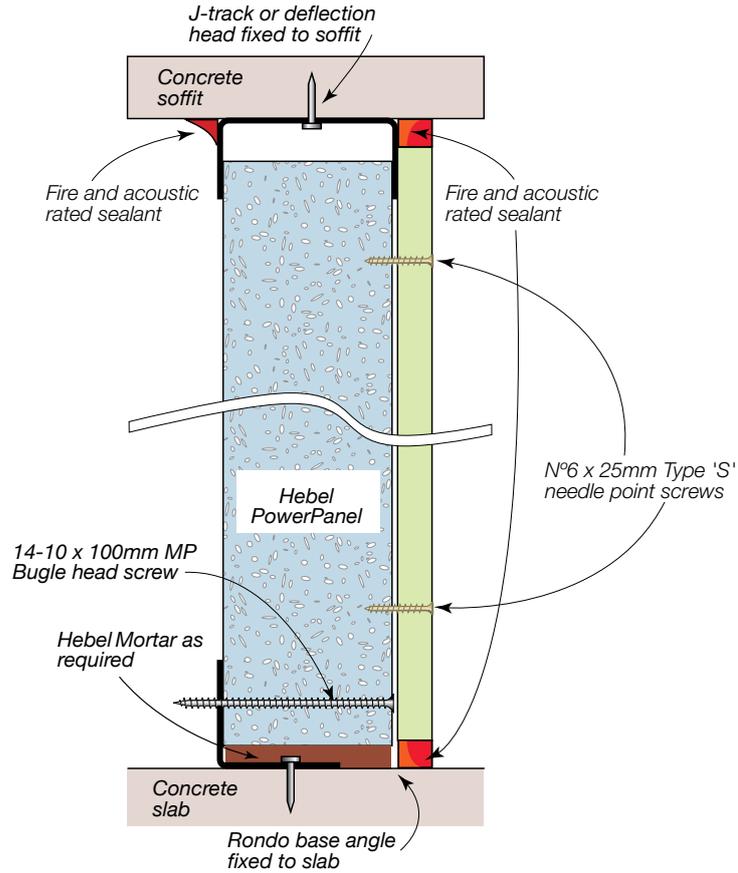
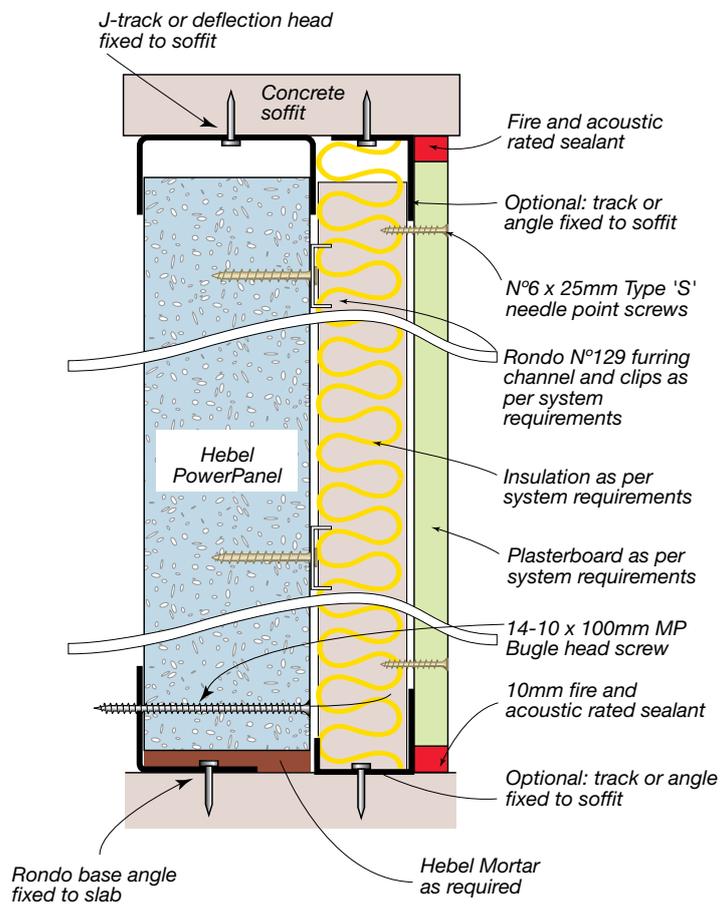


Figure 3.10 Service Shaft Wall Option 2 - Vertical cross section detail



Hebel Plenum Wall

Figure 3.11 Plenum Wall Option 1 - Vertical cross section detail

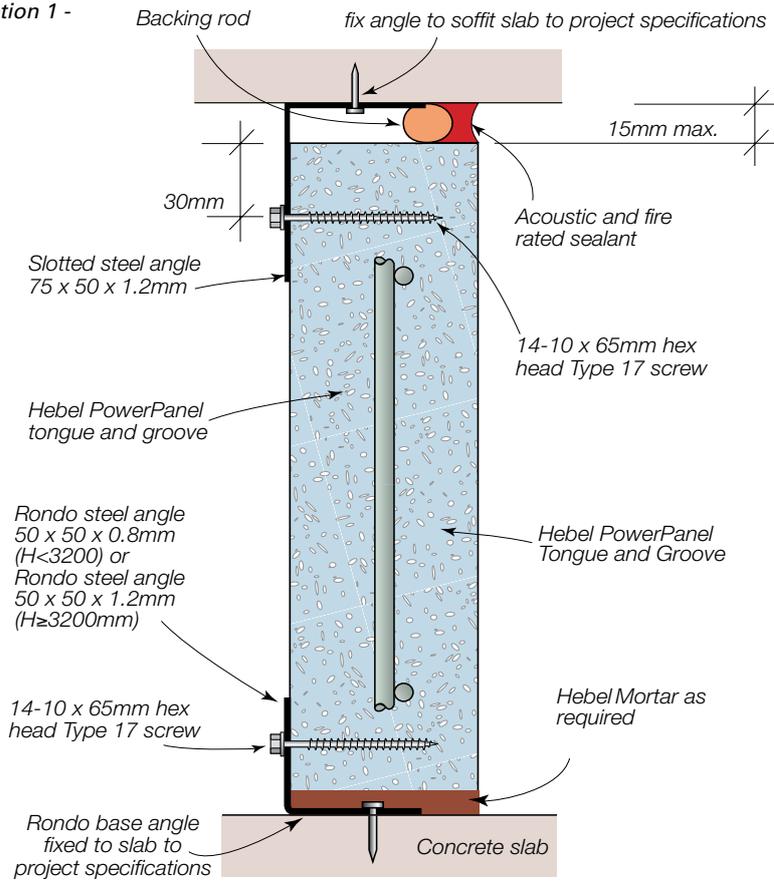
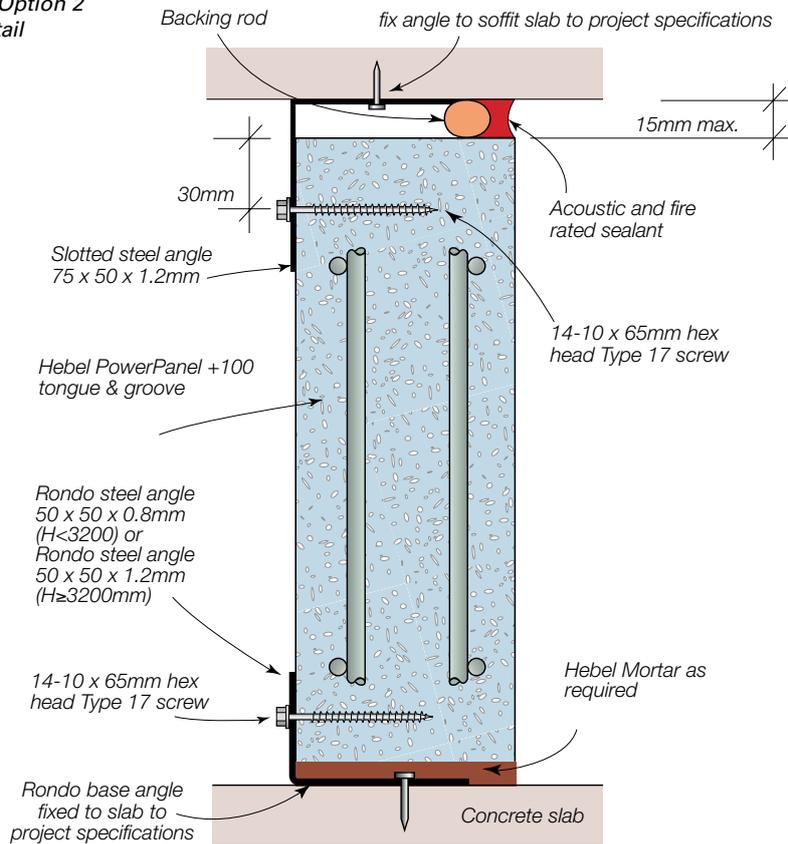
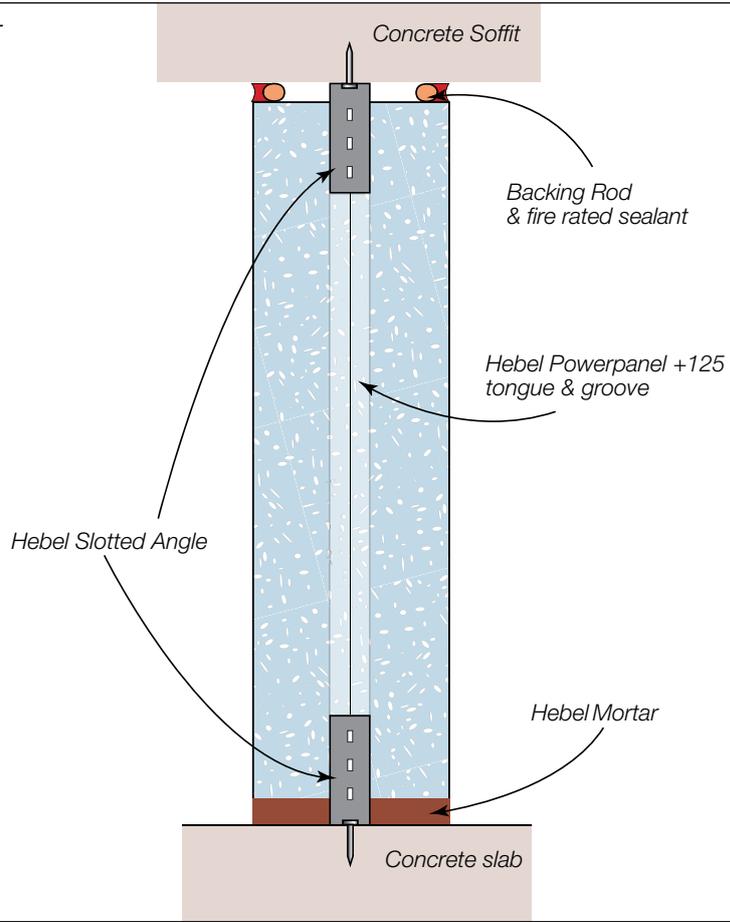


Figure 3.12 Plenum Wall Option 2 - Vertical Cross section detail



Hebel Boundary Wall

Figure 3.13 Boundary Wall - Vertical cross section detail



Head and base details

Figure 3.14 deflection head - top track.

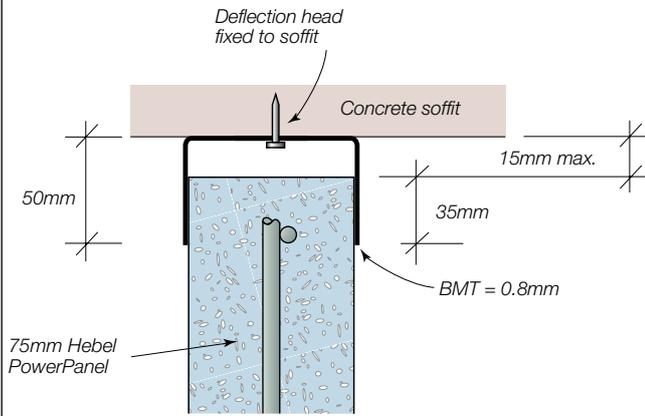


Figure 3.15 Slotted angle - top track. Use where $H < 3200\text{mm}$

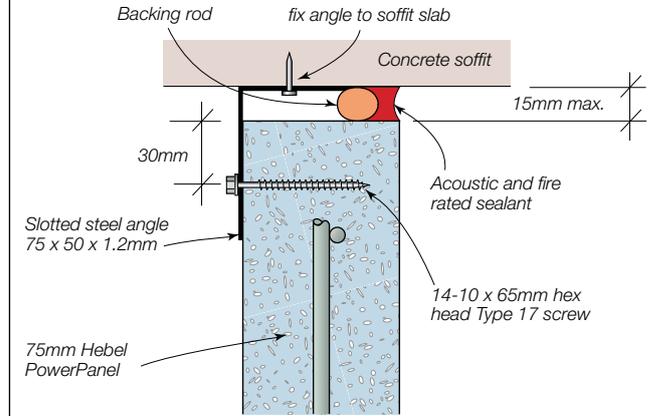


Figure 3.16 deflection head - top track. Use where $3200\text{mm} \leq H \leq 4200\text{mm}$

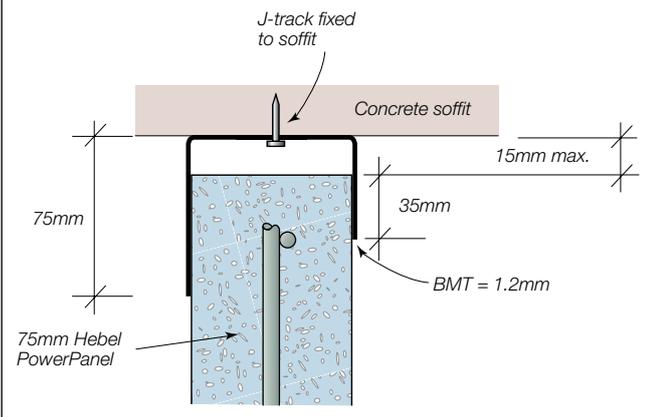


Figure 3.17 Sealing of gaps between top track and slab soffits

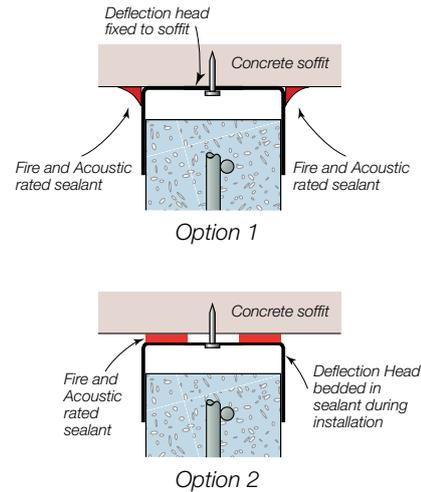


Figure 3.18 Alternate heavy duty top track. Use where $H \geq 3200\text{mm}$

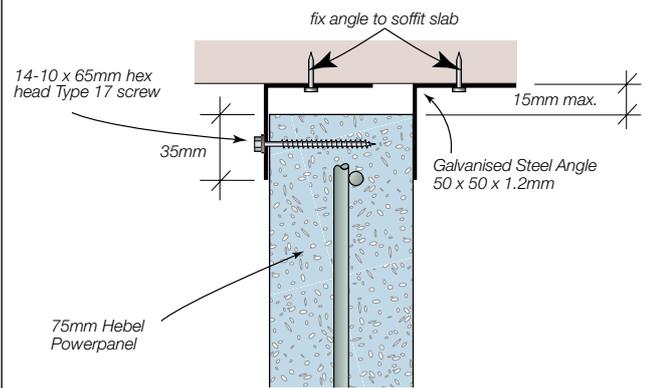
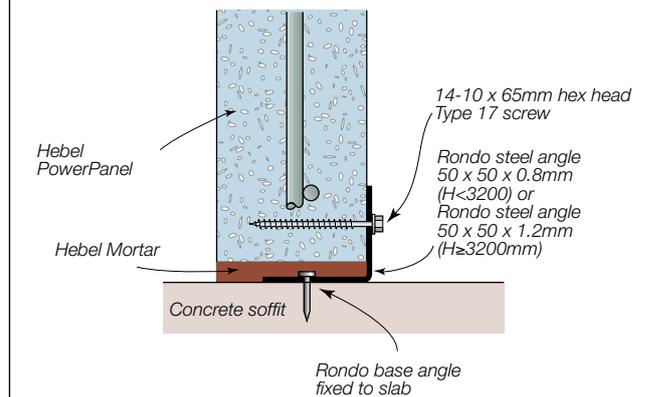


Figure 3.19 Base angle



Vertical Wall Joints Details

Figure 3.20 Vertical edge - square edge panels

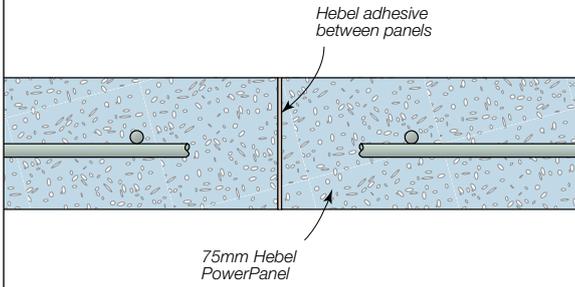


Figure 3.21 Panel to column high wall junction. Use where $H > 3100\text{mm}$ and/or panel width $< 300\text{mm}$

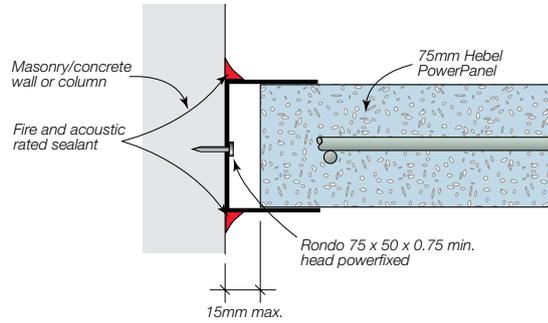


Figure 3.22 Panel to column junction detail.

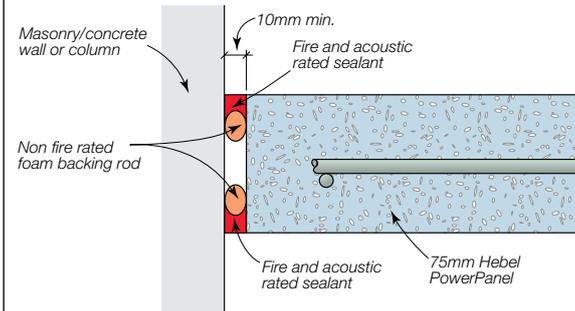


Figure 3.23 Panel to Panel junction detail.

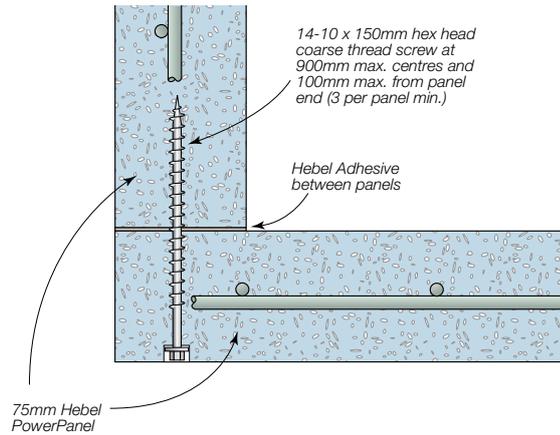


Figure 3.24 Vertical edge - T&G profile panels

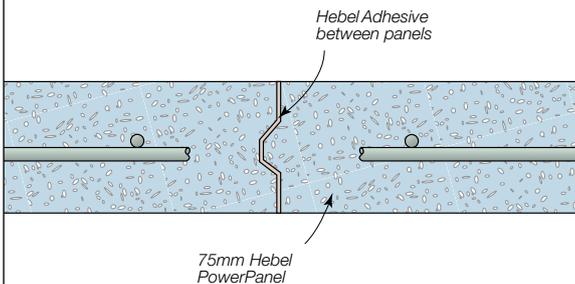
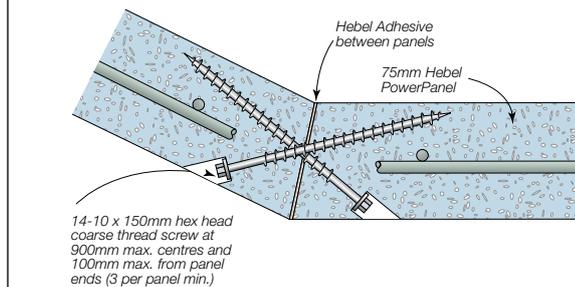


Figure 3.25 Splay corner junction



Junction Details

Figure 3.26 Corner junction - Intertency Walls or Common Walls Option 1

14-10 x 150mm hex head coarse thread screw at 900mm max. centres and 100mm max. from panel ends (3 per panel min.)

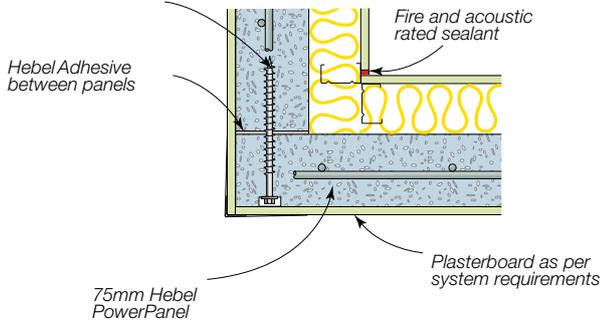


Figure 3.27 Walls to column junction - Intertency Walls or Common Walls Option 1 for H > 3100mm

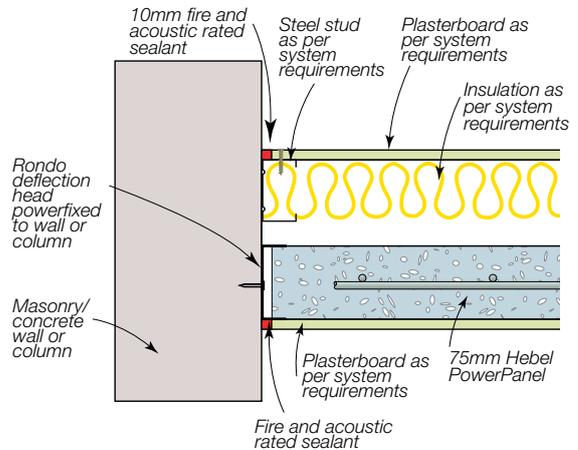


Figure 3.28 Wall to column junction - Intertency Walls or Common Walls Option 1 for H < 3100mm

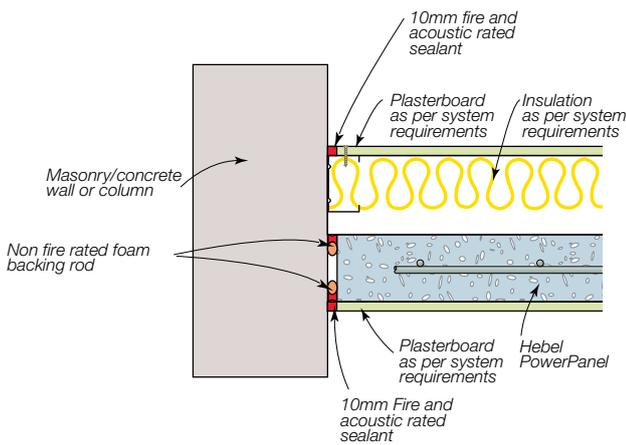


Fig 3.29 Wall to column junction - Intertency Walls or Common Walls Option 6

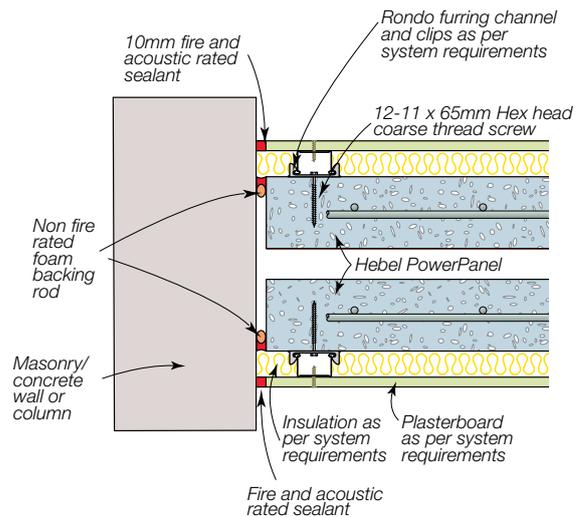


Figure 3.30 Corner junction - Intertency Walls or Common Walls Option 2

14-10 x 150mm hex head coarse thread screw at 900mm max. centres and 100mm max. from panel ends (3 per panel min.)

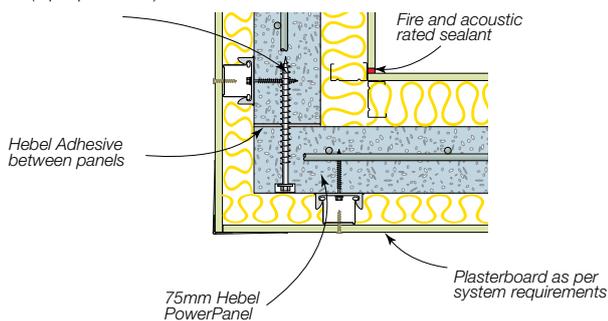
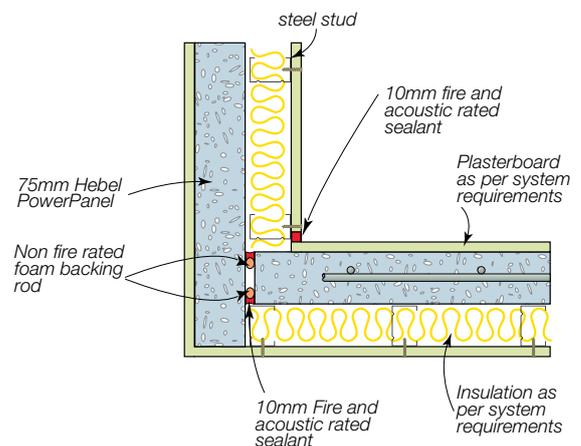
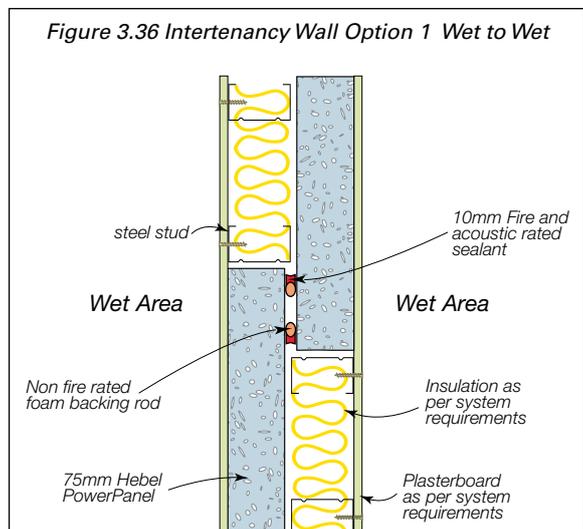
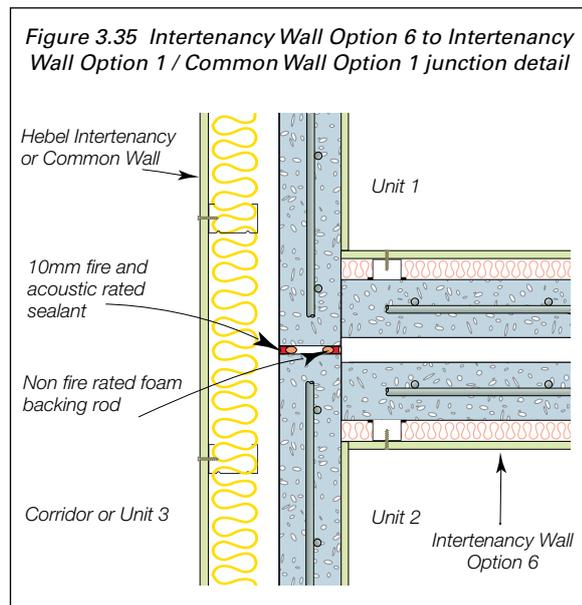
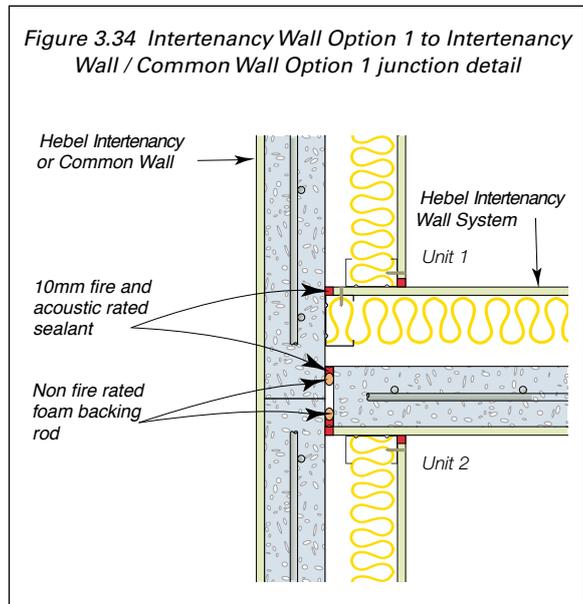
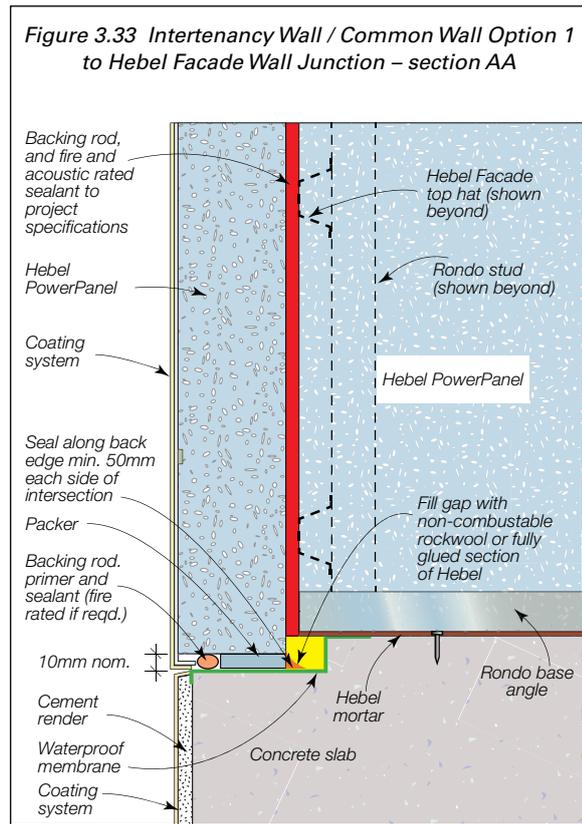
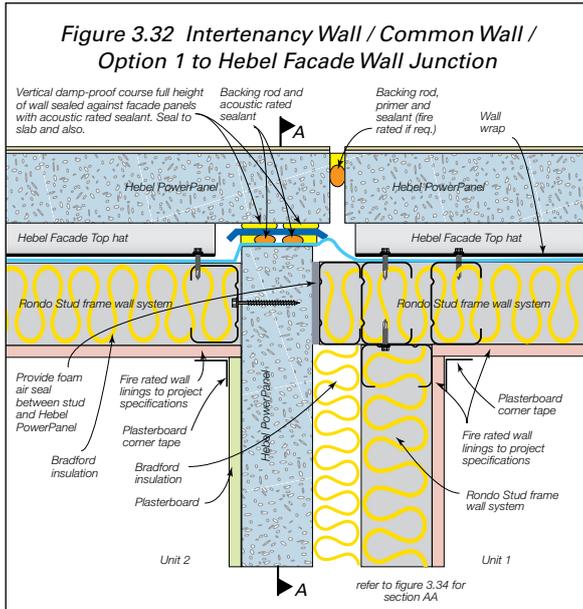


Figure 3.31 Corner junction - Intertency Walls or Common Walls Option 1 (with Hebel switching sides)

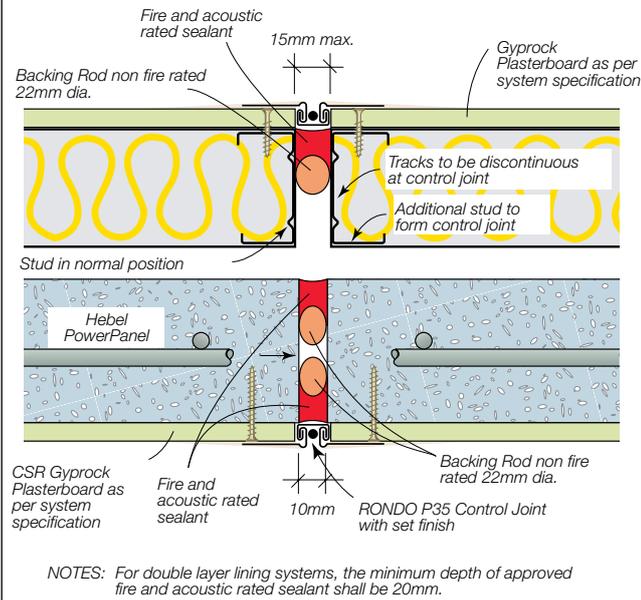


Vertical Wall Junctions



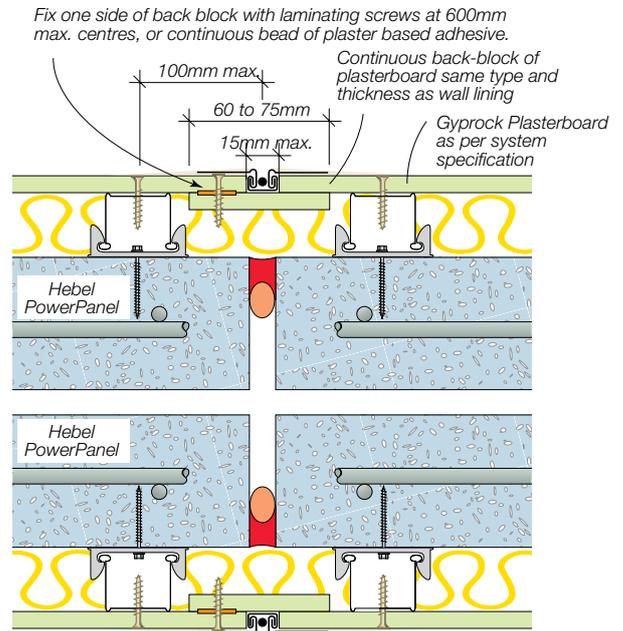
Control Joint (C.J.) Details

Figure 3.37 Intertency Wall Option 1 / Common Wall Option 1 Fire Rated Control Joint



Note: For double layer lining systems, the minimum depth of approved fire and acoustic rated sealant shall be 20mm.

Figure 3.38 Intertency Wall Option 6 / Common Wall Option 6 Fire rated C.J.



Note: For wet area installations, substitute 22mm dia. Backing Rod and an approved wet area sealant. For double layer lining systems, the minimum depth of approved fire and acoustic rated sealant shall be 20mm.

Wet Area Wall Details

Figure 3.39 Shower area

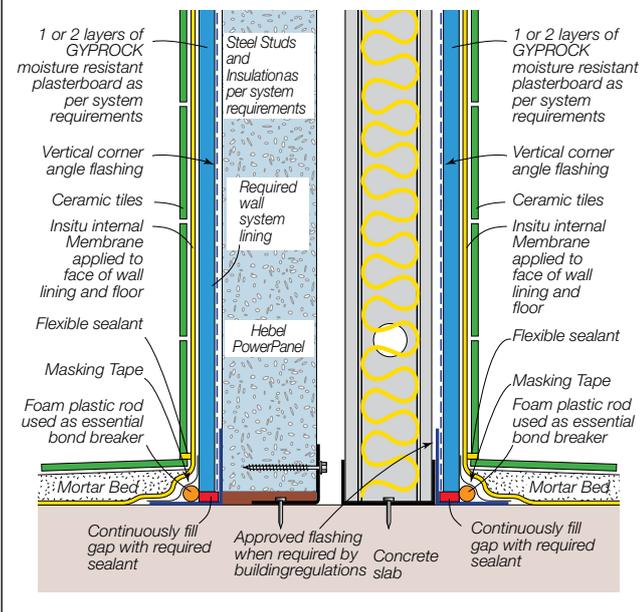
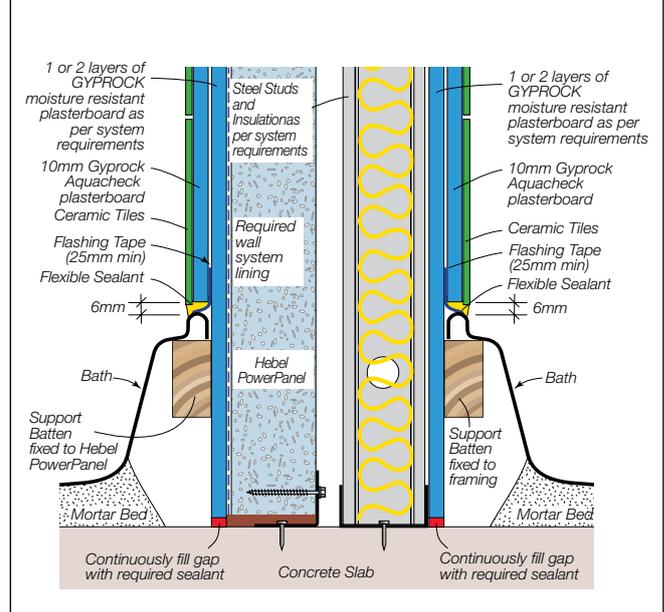


Figure 3.40 Bath area



Door Details

Figure 3.41 Door opening - type 1

NOTE: Prop panel 3 to allow installation of panels 4 and 5.

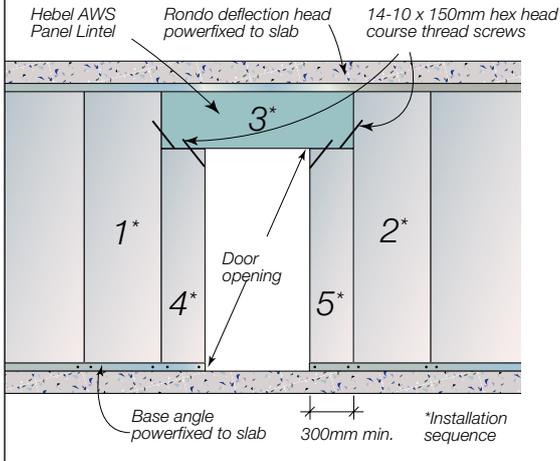


Figure 3.43 Door opening - type 2

NOTE: Lintel must be fully glued to adjacent panels.

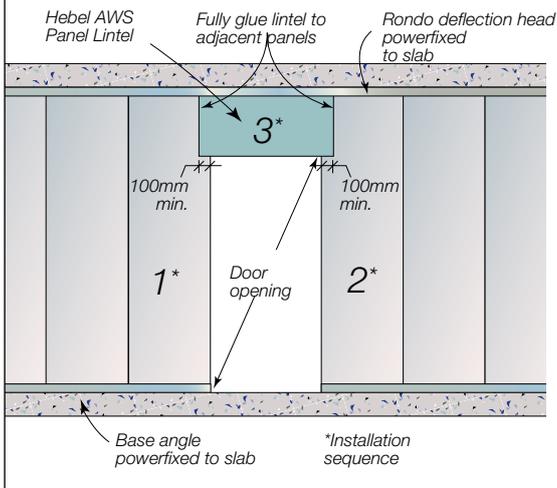
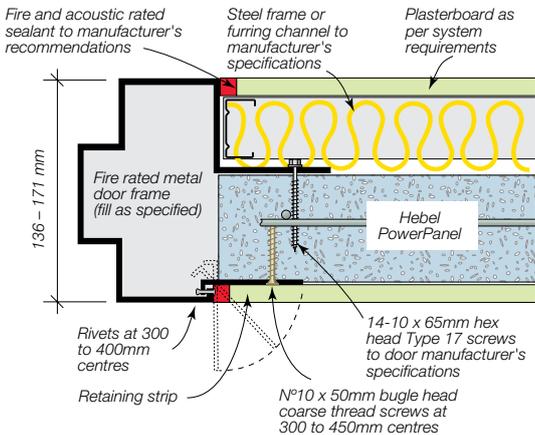
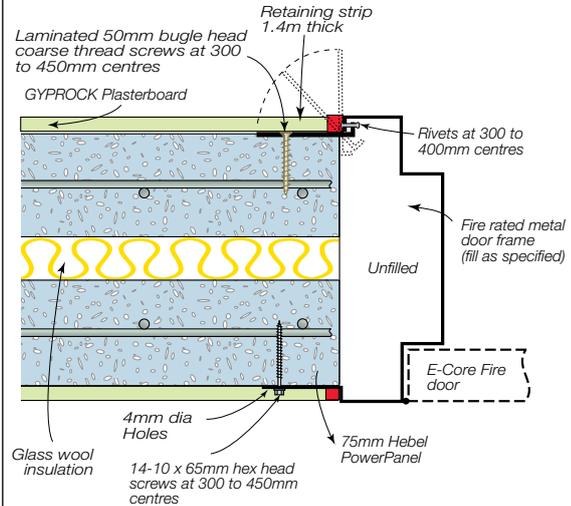


Figure 3.45 E-Core fire door for Intertency Option 1 / Common Wall Option 1



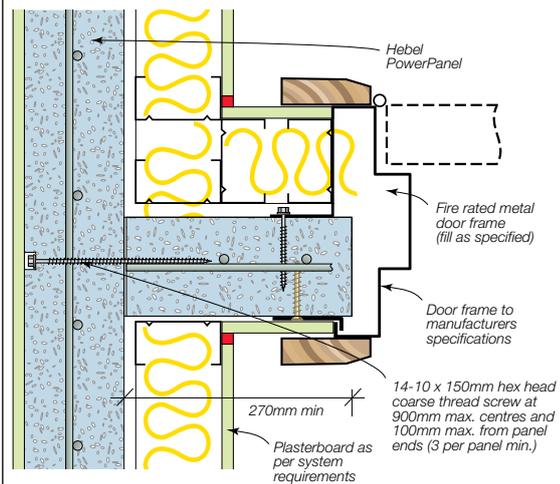
NOTE: All gaps between wall and frame to be filled with TYCO FYREFLEX.

Figure 3.42 E-core fire door for Intertency Option 5 / Common Wall Option 5



Note; All gaps between wall and frame to be filled with TYCO FYREFLEX

Figure 3.44 Door nib



Important:

1. All door frame installations and detailing to be approved by door frame manufacturer.
2. Continuously screw fix door frame to PowerPanel around perimeter of door opening.
3. CSR Hebel recommends core filling of the door frame for additional robustness.
4. Fix door frame at the base.

Penetration and Services Details

Figure 3.46 Large penetration in wall

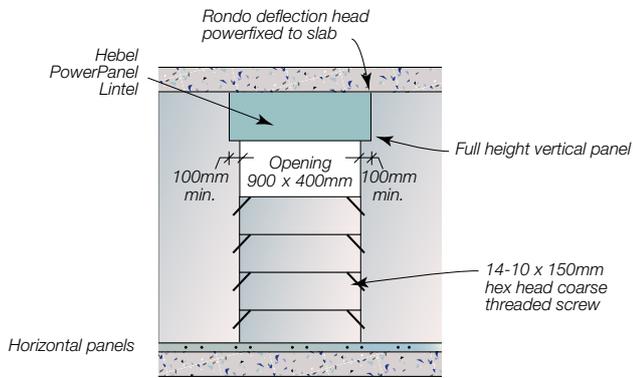


Figure 3.47 Metal pipe penetration

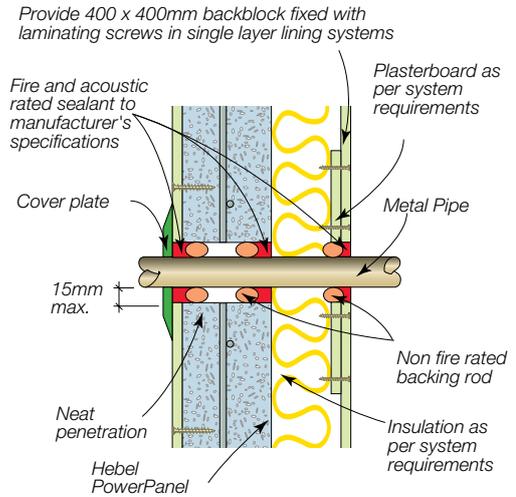


Figure 3.48 Power switch installation into PowerPanel

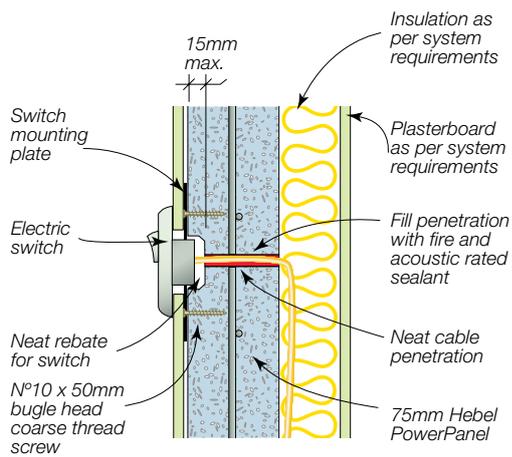


Figure 3.49 Power Switch Installation into Cavity

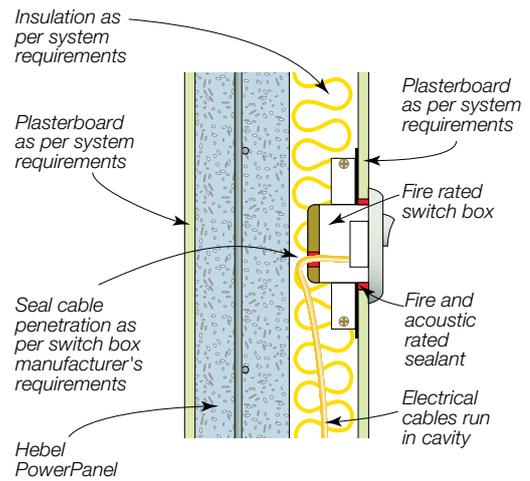
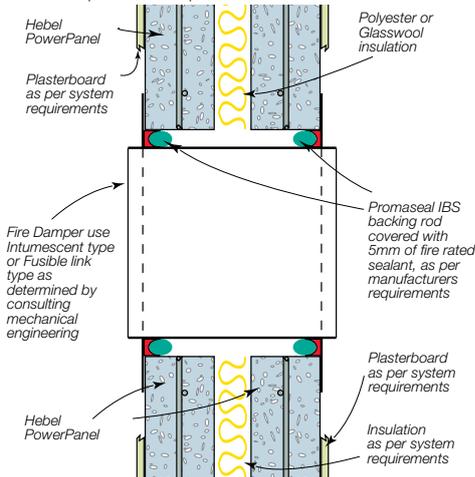


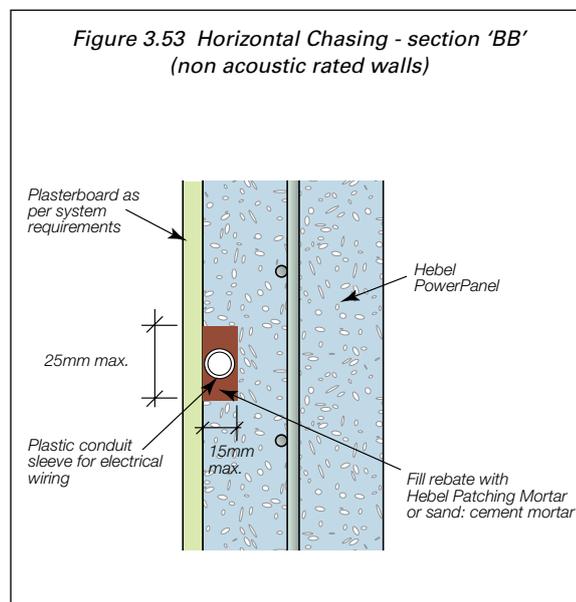
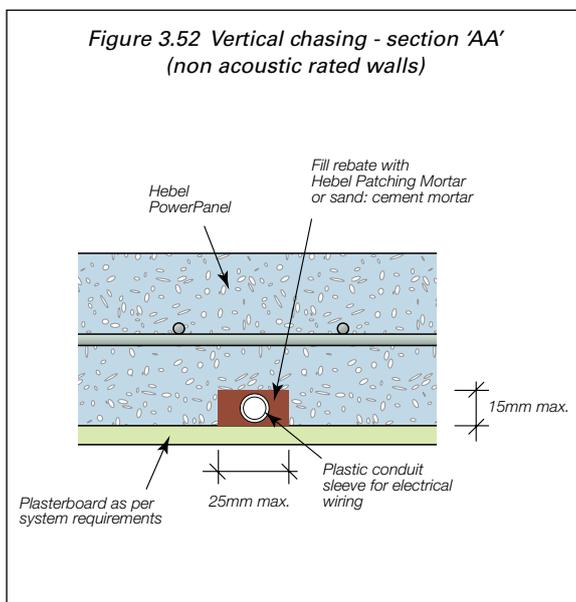
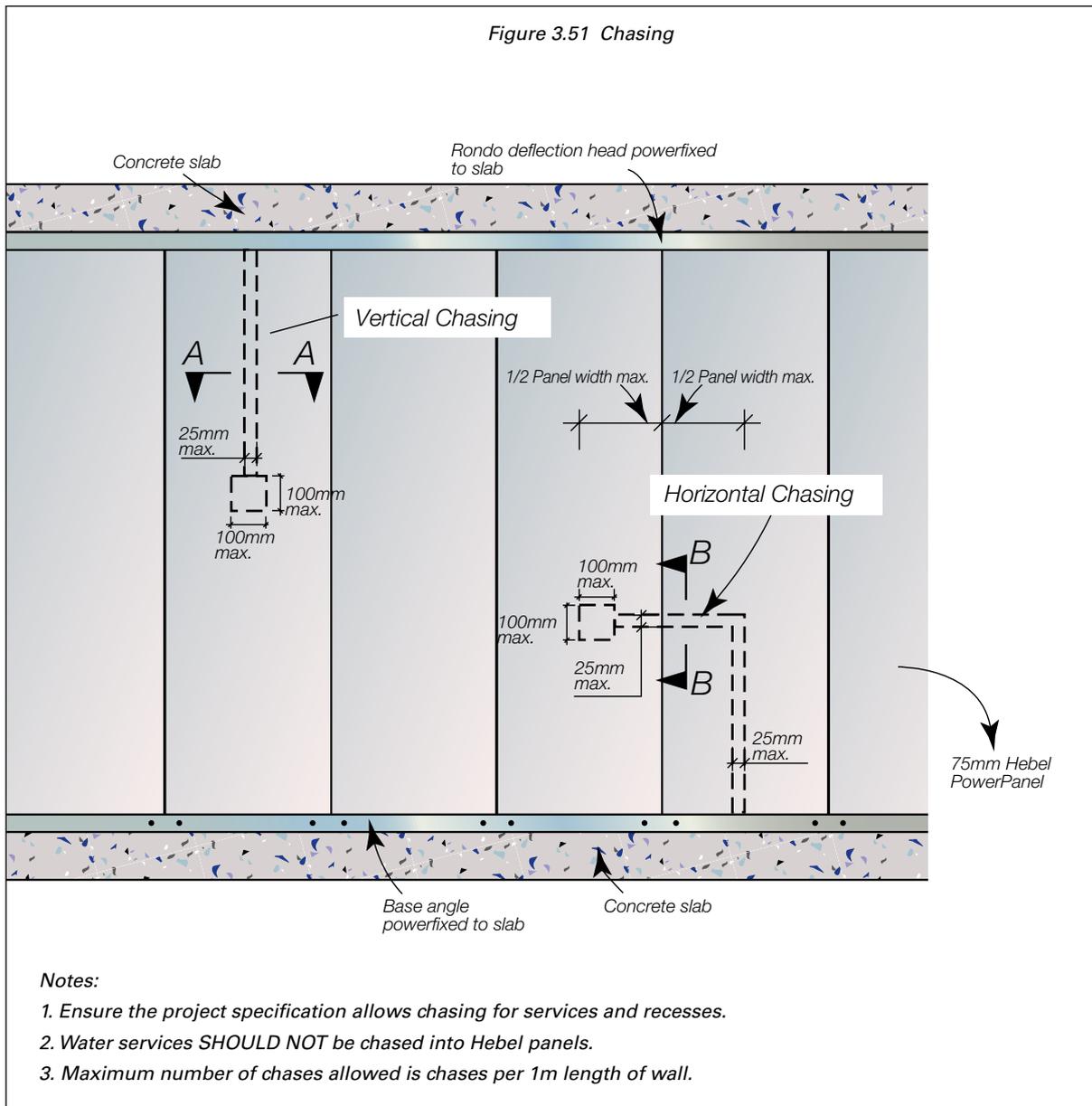
Figure 3.50 Fire Damper Penetration

NOTE: Appropriate project consultant to approve installation detail to satisfy project's acoustic & fire performance requirements.



Chasing Details - non-acoustic service walls only

(note: no chasing is permitted on acoustic rated walls as per BCA Volume 1, specification F5.2)



4.1 Delivery and storage

Unloading Panels

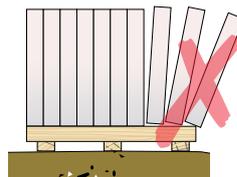
Panels shall be unloaded and moved with only approved lifting devices. Before use, the lifting devices should be checked for the required lifting tags. Panels should be unloaded as close as possible to the intended installation area. This will increase work efficiency and minimise the need for secondary lifting.

Storage

All materials must be kept dry and preferably stored undercover. Care should be taken to avoid sagging or damage to ends, edges and surfaces.

All Hebel products must be stacked on edge and properly supported off the ground, on a level platform. Panel bundles can be stacked two high.

Note: Secondary handling increases the risk of panel damage. The repair of damage sustained during lifting and moving is the responsibility of the lifter. Where damage is excessive, panels must be replaced.



Unstrapping bundles without appropriate bracing.

The project engineer should be consulted as to the adequacy of the structure to support the stacked bundles. Each bundle contains 10 PowerPanels. Where bundles are stacked two high, the supporting cleats must be vertically aligned, to ensure minimal bending of the lower panels. Refer to Figure 4.1. If Hebel PowerPanels are stored outside, they must be stored off the ground and protected from the weather.

Only single bundles positioned on the ground can be opened. To provide a level surface, we recommend placing temporary joists beneath the supporting cleats.

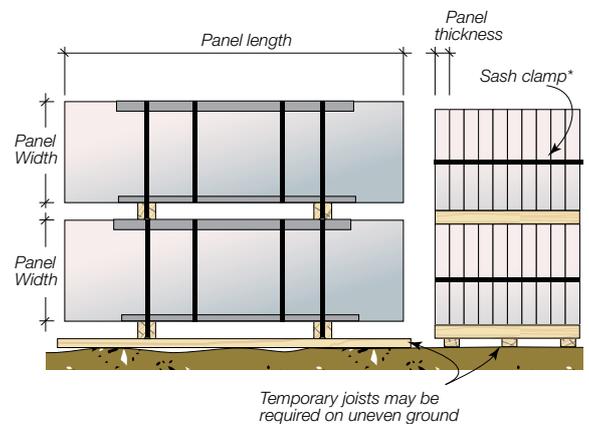


Fig. 4.1 Stacking bundles of Hebel PowerPanel

4.2 Panel handling

Manual Handling

Hebel recommends using a trolley or other mechanical apparatus to move the panels around the work site. Manual handling where people physically move a panel, should be kept to a minimum, with the weight being supported by an individual kept as small as possible. Any concerns regarding the weight to be handled should be discussed with the panel installation contractor.

To minimise the possibility of manual handling injuries, Hebel suggests the following:

- Use mechanical aids, such as trolleys, forklifts, cranes and levers, or team lifting to move panels.
- Keep the work place clean to reduce the risk of slips, trips and falls, which can cause injury.
- Plan the sequence of installation to minimise panel movements and avoid awkward lifts.
- Train employees in good lifting techniques to minimise the risk of injury.

Trolley Assisted Handling

Hebel has developed a trolley to allow easier and safer handling of Hebel PowerPanel on-site. There is a range of trolleys to suit panels from 1.2m to 4.2m in length.

Health and Safety

Hebel products are cement-based, which may irritate the skin, resulting in itching and occasionally a red rash.

The wearing of gloves and suitable clothing to reduce abrasion and irritation of the skin is recommended when handling Hebel products.

Approved respirators (AS/NZS1715 and AS/NZ1716) and eye protection (AS1336) should be worn at all times when cutting and chasing. Refer to the Hebel Material Safety Data Sheets.

Refer to the back page of this Design and Installation Guide for further information regarding health and safety.



Fig. 4.2 Manual panel lifter



Fig. 4.3 Standard personal protection equipment.



Fig. 4.4 Mechanical panel lifter

4.3 Design, detailing and performance responsibilities

Hebel engages independent acoustic testing laboratories to test and report on the acoustic performance of a wall in accordance with the relevant Australian Standards. Acoustic consultants use these reports as the basis for opinions (estimates of laboratory performance) they issue for variations or different arrangements to the tested system, and also to design and specify walls that meet appropriate criteria for a particular project. Using their experience, the acoustic consultant will make judgements about on-site installed performance of various walls. The performance levels of walls documented in this Design Guide are either what is reported in a test or the documented opinion of an acoustic consultant.

Responsibility for acoustic performance in projects is typically:

Project Acoustic Consultant:

- Opinions on expected laboratory performance of wall configurations that vary from actual test configuration, such as substitution products and components.
- Judgements about expected field performance using laboratory test reports and practical experience.
- Design, specification and certification of acoustic performance for individual projects. This involves the design and selection of building elements, such as walls and floors and their integration in the building considering the following:
 - Interface of different building elements and to the structure/substrate
 - Wall junctions

- Penetrations
- Flanking issues
- Room/building geometry
- Acoustic field testing

Project Certifier &/or Builder:

- Identifying the acoustic performance requirements for the project in accordance with the Building Code of Australia and clearly communicating this to relevant parties.
- Applicability of any acoustic information supplied by Hebel including tests and opinions for the project.
- The project acoustic consultant's responsibilities detailed above if one is not engaged in the project.

Hebel does not provide acoustic consulting services and does not offer acoustic advice. Hebel only provides information that has been prepared by others and Hebel therefore shall not be considered experts in the field. Any party using the information contained in this Design and Installation Guide or supplied by Hebel in the course of a project must satisfy themselves that it is true, accurate and appropriate for the application, consequently accepting responsibility for its use. Hebel is not responsible for the acoustic performance of constructed walls, including field performance, and does not interpret or make judgements about acoustic performance requirements in the Building Code of Australia.

The above is applicable to other design criteria such as fire and structure.

Appendix A1

Hebel PowerPanel Material Properties

PowerPanel Physical Properties

- 1) Nominal dimensions and profiles of standard and custom Hebel PowerPanel are shown in Section 1.3.
- 2) Standard Hebel PowerPanel has a single layer of steel reinforcement consisting of 4 longitudinal bars of 5mm diameter.
- 3) Custom Hebel PowerPanel has a single or double layer of steel reinforcement consisting of 4 or 5 longitudinal bars of 5mm diameter.
- 4) Nominal dry density = 510kg/m³.
- 5) Average working density = 663kg/m³ at 30% moisture content.
- 6) Average service life density = 561kg/m³ at 10% moisture content.
- 7) For custom PowerPanel average working density = 707kg/m³ at 30% moisture content.

PowerPanel Strength Properties

- 1) Characteristic compressive strength, $f'_m = 2.8$ MPa.
- 2) Average compressive strength = 3.2 MPa.
- 3) Characteristic Modulus of Rupture, $f' = 0.60$ MPa.

PowerPanel Fire Rating Properties

- 1) For FRL ratings of Hebel PowerPanel internal walls refer to fire opinions: FCO-2073, FCO-2327, FCO-0825, FAR-2586.2 and 24648-01.

PowerPanel Acoustic Properties

- 1) Hebel PowerPanel with no plasterboard or other lining $R_w = 36$ dB (refer to ATF-676 test and PKA-201006C02 opinion).

PowerPanel Thermal Properties

- 1) R-Value of Hebel PowerPanel with no plasterboard or other lining = 0.43 m²K/W at 10% moisture content.

A2 Terminology & Assessment Methods

Weighted Sound Reduction Index (R_w)

Australian building regulations have recently adopted the European acoustic rating system, the 'Weighted Sound Reduction Index' (R_w), which is the International Standard. The R_w value replaces the former 'Sound Transmission Class' (STC) as a measure of the acoustic performance of a wall.

C_{tr} Adaptation Term

The R_w provides a convenient single number performance rating for 'normal' sounds such as speech. Where low frequency sound insulation performance is important, as may be the case with traffic noise or music and DVD

systems, a correction factor is added to the R_w number. This factor de-rates the wall system's performance according to its ability to insulate low frequency sound. The factor is called C_{tr} and it is a negative value. Therefore, a wall having an R_w of 55dB with a C_{tr} of -5dB has an $R_w + C_{tr}$ rating of 50dB.

Impact Sound Transfer

Impact sound is caused by vibrations, which are transferred directly through the wall and re-radiated as sound in the adjacent room. These sound vibrations can be generated by actions such as closing of a cupboard door.

The transfer of impact sound can be minimised by ensuring no mechanical connection exists between the two sides of the wall. For impact rated walls the new BCA requires walls to be of "discontinuous construction". This refers to a wall maintaining a minimum 20mm cavity between two separate leaves except at the periphery.

Test Reports

All acoustic test reports have been issued by the National Acoustic Laboratory or other NATA Registered Laboratories. All fire test reports have been issued by CSIRO. Test reports quoted in this Design and Installation Guide are available on request from Hebel.

Sound Insulation Estimates

Acoustic consultants often use computer models to determine sound transmission estimates for specific wall system configurations. These are known as 'Acoustic Assessments' or 'Acoustic Opinions'. The computer model predicts the R_w performance expected from a laboratory test on the system. All acoustic opinions quoted in this Design Guide are available on request from Hebel.

Fire Resistance Level (FRL) Index

The Fire Resistance Level (FRL) of the systems detailed in this Design Guide have been determined from CSIRO, Exova and BRANZ fire opinions based on testing conducted at the CSIRO laboratories in North Ryde.

The FRL rating consists of three performance criteria, structural adequacy/integrity/ insulation. For non-load bearing walls, there is no requirement for 'structural adequacy' rating. For example, the FRL of a non-load bearing wall may be expressed as -/120/90. Where the 'dash' indicates no rating for a 'structural adequacy' rating, followed by 'integrity' for 120 minutes, and 'insulation' for 90 minutes.

These tests and opinions refer to a range of wall heights. Please refer to FRL values for the selected systems (pages 8-24).

Acoustic and Fire Tests

All tests performed on Hebel walls have been done in accordance with relevant Australian Standards at the time of testing.

Appendix A2

Architectural Specification

This specification should be adopted as a guide only, and shall be superseded by the contract specifications of the project. * Insert or select appropriate specifications.

Scope

The contractor shall furnish all material and equipment required to satisfactorily complete the installation and jointing of the CSR Hebel Acoustic Wall System non-load bearing wall where indicated in the contract specification and/or on the layout drawings.

Materials

All AAC material shall be Hebel PowerPanel panels as manufactured by Hebel.

All accompanying fixings shall be as per the current Hebel Design and Installation Guide Acoustic Walls, N° HBL710- Intertenancy and/or the appropriate project consultant's specifications.

All lining materials shall be Gyprock® plasterboard as manufactured and supplied by Gyprock® (or products of equivalent or better performance). Gyprock® Plasterboard shall be manufactured to meet the dimensional requirements of AS/NZS2588 'Gypsum Plasterboard'.

Steel frame components shall be those manufactured by Rondo Building Services Pty Ltd (or products of equivalent or better performance).

All infill material shall be Bradford™ infill as manufactured and supplied by Bradford™ (or products of equivalent or better performance).

Levels of Finish

All framing, plasterboard lining, jointing and finishing shall be carried out to *LevelLevel of Finish, in accordance with CSR Gyprock® Plasterboard Installation Manual, N° GYP547 and/or AS/NZS2589.1 'Gypsum Linings in Residential and Light Commercial Construction – Application and Finishing'.

Wall System

The contractor shall supply and install the Hebel PowerPanel Wall System non-loadbearing wall in accordance with the current High Rise Multi-Residential Intertenancy and Service Walls Design and Installation Guide No HEB1354, and shall satisfy the following performance criteria.

The wall shall have a Fire Resistance Level *...../...../..... in accordance with the requirements of AS1530.4.

Installation shall be carried out to the level specified for a field acoustic performance of * D_{ntw} / R'_w using cavity infill of *Bradford.....(or products of equivalent or better performance).

Framing/Furring Channel

Wall framing shall consist of lipped steel studs *.....x.....x.....mm BMT installed at *.....mm maximum centres into steel floor and ceiling track *.....x.....x.....mm BMT.

The gap between the Hebel PowerPanel and the framing shall be *.....mm (12mm minimum or 20mm minimum for discontinuous construction and a minimum function of steel height). NOTE: It is important that the project engineer approve the type, size and maximum spacing of the fasteners to meet the design load requirements.

Metal furring system shall consist of *RONDO Steel Furring Channel N°129 (at 600mm maximum horizontal centres) and *N°..... Resilient Mounts/Anchor Clips installed at 1200mm maximum centres along the furring channel.

The framing/furring channel system is to be installed as detailed in the current Hebel High Rise Multi-Residential Intertenancy and Service Walls Design & Installation Guide HEB1354, and other relevant Hebel Technical Literature.

Plasterboard

Caution:

- Fire rated installations must be fastener fixed. Adhesive is not permitted.
- Adhesive does not constitute a fixing system by itself.
- Adhesive daubs must never coincide with fastening points.
- Stud adhesive MUST NOT be used on FIRE RATED or TILED WET AREA systems.

The *Hebel PowerPanel wall/steel framing /steel furring channel/resiliently mounted steel furring channel shall be lined on the first side with one layer of *.....mm Gyprock® *...

Plasterboard Fixing

All layers shall be fixed to the Hebel PowerPanel as specified for the relevant system in this guide and CSR Gyprock Fire and Acoustic Design Guide, N°GYP500.

All layers shall be fixed to the steel framing (ie., studs and/or steel furring channels) as specified for the relevant system in the CSR Gyprock Steel Frame Wall System Installation Guide, N GYP544, other relevant CSR Gyprock Technical Literature, and Rondo Building Services Pty Ltd literature or steel frame manufacturer's literature.

Caulking

*.....fire rated polyurethane sealant / Promaseal® IBST™ Rod + *.....acoustic rated polyurethane sealant must be used in fire rated systems where caulking is indicated, and installed in accordance with the manufacturer's recommendations.

*.....polyurethane sealant must be used when caulking * non-fire rated/fire rated wet areas, as indicated, and installed in accordance with the manufacturer's recommendations.

Important

Any variation or substitution of materials or assembly requirements, or compromise in assembly may result in failure under critical conditions.

NOTE: This information can be downloaded from the Hebel Website www.hebelaustralia.com.au

Appendix A3

Installation Checklist

This checklist is to be read in conjunction with ALL Hebel documentation including the Hebel Technical Manual, Safe Work Method Statements (SWMS) and technical advice from CSR Hebel. Coordination and compliance with specifications by the project engineers (acoustic, fire, thermal and structural), and architect is also compulsory. These project consultants are also responsible for incorporating this system into the subject project. If you are not in receipt of any of these documents, please ask your Hebel representative or project consultant to provide them prior to commencement of any Hebel.

System installation:

Project:			
Builder:			
Hebel Installer:			
Building:			
Floor Level:			
Grids or Area:			
CONSTRUCTION STEP		SATISFACTORY	ACTION REQUIRED
Before commencing Hebel Internal Wall Installation:			
1.1	Has all the documentation and specification sheets been supplied for the construction of the project?	<input type="checkbox"/>	<input type="checkbox"/>
1.2	Have all the specified wall panels been supplied (length, width and thickness)?	<input type="checkbox"/>	<input type="checkbox"/>
1.3	Have all the required fixing components been supplied (deflection head, angles, fixings etc)?	<input type="checkbox"/>	<input type="checkbox"/>
1.4	Is all of the panel handling equipment on site?	<input type="checkbox"/>	<input type="checkbox"/>
1.5	Have all the panels been supplied in good condition without major panel damage?	<input type="checkbox"/>	<input type="checkbox"/>
1.6	Has all the support structure been completed?	<input type="checkbox"/>	<input type="checkbox"/>
1.7	Is all support structure position within tolerances?	<input type="checkbox"/>	<input type="checkbox"/>
During the Installation of Hebel Internal Wall Panels			
2.1a	Has the specified head track or slotted angle been installed in accordance with project specifications?	<input type="checkbox"/>	<input type="checkbox"/>
2.1b	Has the continuous fillets of fire and acoustic rated sealant been applied correctly, or alternatively, has the correct diameter IBS rod been used for the specific deflection gap?	<input type="checkbox"/>	<input type="checkbox"/>
2.1c	Have the panels been secured with 14-10x65 Hex head Type 17 screws if slotted head angle used?	<input type="checkbox"/>	<input type="checkbox"/>
2.2a	Has the specified base angle been installed in accordance with project specifications?	<input type="checkbox"/>	<input type="checkbox"/>
2.2b	Has CSR Hebel Mortar been installed at the base of the panel?	<input type="checkbox"/>	<input type="checkbox"/>

2.2c	Has the panel been secured to the base track with a minimum of 14 – 10 x 65mm Hex Head Type 17 screws?	<input type="checkbox"/>	<input type="checkbox"/>
2.3	Are the vertical panel joints continuously glued with Hebel Adhesive - is the glue joint width 2-3mm?	<input type="checkbox"/>	<input type="checkbox"/>
2.4	Rigid Corner Joints - has Class 3, 14 – 10 x 150mm Hex Head Type 17 screws and Hebel Adhesive been used as specified?	<input type="checkbox"/>	<input type="checkbox"/>
2.5	Control Joints - Are Control Joints located at a maximum of 6m spacing to internal walls and has a 10mm minimum allowance been made for a foam backer rod and fire rated sealant or Promaseal IBS rod and acoustic sealant where applicable? Has a control joint been installed where the CSR Hebel panels abut concrete columns or walls?	<input type="checkbox"/>	<input type="checkbox"/>
2.6	Damaged Panels - Were Damaged panels checked for suitability and repaired where required?	<input type="checkbox"/>	<input type="checkbox"/>
2.7	Cut Reinforcement - Has the cut reinforcement been coated with the Hebel anti-corrosion protection paint as specified?	<input type="checkbox"/>	<input type="checkbox"/>
Finishing the Hebel Internal Wall Panel Installation			
3.1	Have door jambs been installed (supplied by others) in accordance with the door manufacturer's recommendations and CSR Hebel Acoustic Wall Design Guide?	<input type="checkbox"/>	<input type="checkbox"/>
3.2	Has the specified plasterboard been fixed to the CSR Hebel panel with screws as specified?	<input type="checkbox"/>	<input type="checkbox"/>
3.3	Has specified steel stud frame been erected at the nominated offset from the CSR Hebel PowerPanel wall? Has the frame been secured to the concrete in accordance with the project specifications?	<input type="checkbox"/>	<input type="checkbox"/>
3.4	Has the correct insulation been installed in accordance with the manufacturer's recommendations?	<input type="checkbox"/>	<input type="checkbox"/>
3.5	Has the specified plasterboard lining been installed and finished in accordance with manufacturer's recommendations? Have the specified sealants been installed at the gaps between the plasterboard and concrete surfaces in accordance with manufacturer's recommendations?	<input type="checkbox"/>	<input type="checkbox"/>
3.6	Are all GPO's offset by 600mm minimum with all services placed within the thickness of the furring channel or stud? All GPO's on the plasterboard and steel stud side of the wall shall be fully sealed.	<input type="checkbox"/>	<input type="checkbox"/>
3.7	Have all Penetrations been installed correctly?	<input type="checkbox"/>	<input type="checkbox"/>
ALL ITEMS LISTED ABOVE HAVE BEEN COMPLETED SATISFACTORILY AND TO AN ACCEPTABLE LEVEL FOR THE FOLLOWING CONTRACTOR.			
	Hebel INSTALLER Name Date	Signature	

Appendix A4

Hebel System Summary

CODE	DESCRIPTION	RECOMMENDED FOR	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _v +C _v ^(C)
HEB1000	Intertenancy Wall – Option 1	Narrowest wall width to provide maximum floor space with concealed services on one side	Dry to Dry	185mm	3000 <H≤4200	-/120/120	53dB
HEB1001	Intertenancy Wall – Option 1		Dry to Dry	200mm	3000 <H≤4200	-/120/120	52dB
HEB1002	Intertenancy Wall – Option 1		Dry to Wet*	185mm	3000 <H≤4200	-/120/120	53dB
HEB1003	Intertenancy Wall – Option 1		Dry to Wet*	200mm	3000 <H≤4200	-/120/120	52dB
HEB1008	Intertenancy Wall – Option 2	Narrowest wall width to provide maximum floor space with concealed water services both sides	Dry to Dry	228mm	3000 <H≤4200	-/120/120	51dB
HEB1009	Intertenancy Wall – Option 2		Dry to Dry	261mm	3000 <H≤4200	-/120/120	50dB
HEB1010	Intertenancy Wall – Option 2		Dry to Wet*	228mm	3000 <H≤4200	-/120/120	51dB
HEB1011	Intertenancy Wall – Option 2		Dry to Wet*	261mm	3000 <H≤4200	-/120/120	50dB
HEB1012	Intertenancy Wall – Option 2		Wet to Wet	228mm	3000 <H≤4200	-/120/120	51dB
HEB1013	Intertenancy Wall – Option 2		Wet to Wet	261mm	3000 <H≤4200	-/120/120	50dB
HEB1020	Intertenancy Wall – Option 3	Used where large water services are required in cavity and provides better acoustic sound rating	Dry to Dry	269mm	3000 <H≤4200	-/120/120	52dB
HEB1021	Intertenancy Wall – Option 3		Dry to Dry	269mm	3000 <H≤4200	-/120/120	55dB
HEB1022	Intertenancy Wall – Option 3		Dry to Wet*	266mm	3000 <H≤4200	-/120/120	52dB
HEB1023	Intertenancy Wall – Option 3		Dry to Wet*	266mm	3000 <H≤4200	-/120/120	55dB
HEB1024	Intertenancy Wall – Option 3		Wet to Wet	263mm	3000 <H≤4200	-/120/120	52dB
HEB1025	Intertenancy Wall – Option 3		Wet to Wet	263mm	3000 <H≤4200	-/120/120	55dB
HEB1032	Intertenancy Wall – Option 4	Eliminating metal wall framing, providing for easy service access on both sides of the wall	Dry to Dry	232mm	H≤4000	-/120/120	51dB
HEB1033	Intertenancy Wall – Option 4		Dry to Dry	262mm	H≤4000	-/120/120	50dB
HEB1034	Intertenancy Wall – Option 4		Dry to Wet*	232mm	H≤4000	-/120/120	51dB
HEB1035	Intertenancy Wall – Option 4		Dry to Wet*	262mm	H≤4000	-/120/120	50dB
HEB1036	Intertenancy Wall – Option 4		Wet to Wet	232mm	H≤4000	-/120/120	51dB
HEB1037	Intertenancy Wall – Option 4		Wet to Wet	262mm	H≤4000	-/120/120	50dB
HEB1044	Intertenancy Wall – Option 5	Walls between units where a solid wall is required on both sides	Dry to Dry	200mm	3600 <H≤4200	-/120/120	59dB
HEB1045	Intertenancy Wall – Option 5		Dry to Dry	200mm	3600 <H≤4200	-/120/120	52dB
HEB1050	Intertenancy Wall – Option 6	Used to compliment Option 5 where water services are concealed on both sides	Dry to Dry	256mm	3600 <H≤4200	-/120/120	59dB
HEB1051	Intertenancy Wall – Option 6		Dry to Dry	276mm	3600 <H≤4200	-/120/120	50dB
HEB1052	Intertenancy Wall – Option 6		Wet* to Dry	256mm	3600 <H≤4200	-/120/120	59dB
HEB1053	Intertenancy Wall – Option 6		Wet* to Dry	276mm	3600 <H≤4200	-/120/120	50dB
HEB1054	Intertenancy Wall – Option 6		Wet to Wet	256mm	3600 <H≤4200	-/120/120	59dB
HEB1055	Intertenancy Wall – Option 6		Wet to Wet	276mm	3600 <H≤4200	-/120/120	50dB
HEB1100	Common Wall – Option 1	Narrowest wall width to provide maximum floor space with concealed services on one side	Dry to Dry	185mm	3000 <H≤4200	-/120/120	58dB
HEB1101	Common Wall – Option 1		Dry to Dry	179mm	3000 <H≤4200	-/120/120	53dB
HEB1102	Common Wall – Option 1		Dry to Wet*	182mm	3000 <H≤4200	-/120/120	58dB
HEB1103	Common Wall – Option 1		Dry to Wet*	179mm	3000 <H≤4200	-/120/120	53dB
HEB1108	Common Wall – Option 2	Narrowest wall width to provide maximum floor space with concealed water services both sides	Dry to Dry	197mm	3000 <H≤4200	-/120/120	53dB
HEB1109	Common Wall – Option 2		Dry to Dry	199mm	3000 <H≤4200	-/120/120	53dB
HEB1110	Common Wall – Option 2		Dry to Wet*	197mm	3000 <H≤4200	-/120/120	53dB
HEB1111	Common Wall – Option 2		Dry to Wet*	199mm	3000 <H≤4200	-/120/120	53dB
HEB1112	Common Wall – Option 2		Wet to Wet	197mm	3000 <H≤4200	-/120/120	53dB
HEB1113	Common Wall – Option 2		Wet to Wet	199mm	3000 <H≤4200	-/120/120	53dB

CODE	DESCRIPTION	RECOMMENDED FOR	APPLICATION	WALL THICKNESS	WALL HEIGHT 'H'	FRL ^(B)	R _w +C _{tr} ^(C)
HEB1120	Common Wall – Option 3	Used where large water services are required in cavity and provides better acoustic sound rating	Dry to Dry	245mm	3000 <H≤4200	-/120/120	50dB
HEB1121	Common Wall – Option 3		Dry to Dry	245mm	3000 <H≤4200	-/120/120	50dB
HEB1122	Common Wall – Option 3		Dry to Wet*	245mm	3000 <H≤4200	-/120/120	50dB
HEB1123	Common Wall – Option 3		Dry to Wet*	245mm	3000 <H≤4200	-/120/120	50dB
HEB1124	Common Wall – Option 3		Wet to Wet	245mm	3000 <H≤4200	-/120/120	50dB
HEB1125	Common Wall – Option 3		Wet to Wet	245mm	3000 <H≤4200	-/120/120	50dB
HEB1132	Common Wall – Option 4	Eliminating metal wall framing, providing for easy service access on both sides of the wall	Dry to Dry	232mm	H≤4000	-/120/120	60dB
HEB1133	Common Wall – Option 4		Dry to Dry	232mm	H≤4000	-/120/120	59dB
HEB1134	Common Wall – Option 4		Dry to Wet*	232mm	H≤4000	-/120/120	60dB
HEB1135	Common Wall – Option 4		Dry to Wet*	232mm	H≤4000	-/120/120	59dB
HEB1136	Common Wall – Option 4		Wet to Wet	232mm	H≤4000	-/120/120	60dB
HEB1137	Common Wall – Option 4		Wet to Wet	232mm	H≤4000	-/120/120	59dB
HEB1144	Common Wall – Option 5	Walls between units where a solid wall is required on both sides	Dry to Dry	200mm	3600 <H≤4200	-/120/120	64dB
HEB1145	Common Wall – Option 5		Dry to Dry	200mm	3600 <H≤4200	-/120/120	50dB
HEB1150	Common Wall – Option 6	Used to compliment Option 5 where water services are concealed on both sides	Dry to Dry	256mm	3600 <H≤4200	-/120/120	63dB
HEB1151	Common Wall – Option 6		Dry to Dry	256mm	3600 <H≤4200	-/120/120	56dB
HEB1152	Common Wall – Option 6		Wet* to Dry	256mm	3600 <H≤4200	-/120/120	63dB
HEB1153	Common Wall – Option 6		Wet* to Dry	256mm	3600 <H≤4200	-/120/120	56dB
HEB1154	Common Wall – Option 6		Wet to Wet	256mm	3600 <H≤4200	-/120/120	63dB
HEB1155	Common Wall – Option 6		Wet to Wet	256mm	3600 <H≤4200	-/120/120	56dB
HEB1200	Service Shaft Wall – Option 1	Use in Service Shaft Area to Wet Non-Habitable Rooms	Wet to Shaft	88mm	3000<H≤4200	-/90/90	36dB
HEB1201	Service Shaft Wall – Option 1		Wet to Shaft	88mm	H≤3000	-/120/120	36dB
HEB1202	Service Shaft Wall – Option 2	General partitions on Service Shaft area to Dry Habitable Rooms	Dry to Shaft	131mm	3000<H≤4200	-/90/90	40dB
HEB1203	Service Shaft Wall – Option 2		Dry to Shaft	131mm	3000<H≤4200	-/90/90	40dB
HEB1204	Service Shaft Wall – Option 2		Dry to Shaft	131mm	H≤3000	-/120/120	40dB
HEB1205	Service Shaft Wall – Option 2		Dry to Shaft	131mm	H≤3000	-/120/120	40dB
HEB1400	Plenum Wall – Option 1	Excellent fire separation and minimal cost due to the use of tongue and groove panels. Highly suited to plenum walls	Plenum Wall	75mm	H≤3000	-/90/90	30dB
HEB1401	Plenum Wall – Option 2	Excellent fire separation at higher wall heights, suited to plenum walls	Plenum Wall	100mm	4200<H≤4800	-/60/60	32dB
HEB1402	Plenum Wall – Option 2		Plenum Wall	113mm	4200<H≤4800	-/60/60	37db
HEB1403	Plenum Wall – Option 2		Plenum Wall	100mm	3600<H≤4200	-/90/90	32dB
HEB1404	Plenum Wall – Option 2		Plenum Wall	113mm	3600<H≤4200	-/90/90	37db
HEB1405	Plenum Wall – Option 2		Plenum Wall	100mm	H≤3600	-/120/120	32dB
HEB1406	Plenum Wall – Option 2		Plenum Wall	113mm	H≤3600	-/120/120	37db
HEB1500	Boundary Wall	Internal and external use. Uses a concealed angle fitting system. Fast and cost effective	Boundary Wall	125mm	H≤5000	-/240/240	33dB
HEB1501	Boundary Wall		Boundary Wall	166mm	H≤5000	-/240/240	44dB
HEB1502	Boundary Wall		Boundary Wall	166mm	H≤5000	-/240/240	44dB



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Other

The design of a wall, floor or fence system requires the services of professional consultants. This Design Guide has been prepared as a source of information to provide general guidance to those consultants – and in no way replaces the services of the professional consultant and relevant engineers designing the project.

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Hebel website:
www.hebelaustralia.com.au

For sales enquiries or further information, please telephone us from anywhere in Australia:

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