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Fixing to Hebel Guide

CSR

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

When preparing this document the most up-to-date standards and codes were used. However CSR Hebel cannot guarantee that these standards and codes are currently used or applicable in your state or territory.

It is the responsibility of the architectural designer and engineering parties to ensure that the details in this document 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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How to secure fixtures and fittings to your Hebel walls

We are often asked about how to secure fittings to Hebel walls – items such as light fittings, taps, downpipes, clotheslines, hot water services and hose reels.

It's important to seek advice on your individual home from your builder or designer before drilling holes or securing any loads onto Hebel walls. Using the right fitting for the relevant fixture will help avoid damage occurring to the wall.

Common fixings for use with Hebel

Some of the most common fixings are covered in the following tables.

Fixings in Hebel for general use

	Screw and plug fixing	Hole Size	Min Screw Embedment	Max load per Fixing	Design Pullout Capacity	Design Shear Capacity	Suitable Hebel Material
	Hex head 14-10 Type 17 screw only	Do not pre drill	50mm	10kg	0.20 kN	0.20 kN	PP50 PPXL PB
	Hex Head 12-11 Type 17 screw and Ramset Ramplug 8x40	8mm	40mm	10kg	0.20 kN	0.20 kN	PP50 PPXL PB
	Hex Head 14-10 Type 17 screw and Ramset Ramplug 8x40	8mm	40mm	10kg	0.20 kN	0.20 kN	PP50 PPXL PB
	Hex head 14-10 Type 17 screw only	Do not pre drill	60mm	15kg	0.38 kN	0.30 kN	PP PB PP+ PF+

Notes:
1. Fixing to be minimum 100mm from edge of panel
2. Shear load to be along edge or towards inside of panel not towards edge.
3. Do not over tightness fixings
4. If screw embedment is more than hole depth then hole depth to be increased to match screw depth
5. In cases where panel thickness is less than plug length, hole depth to match panel thickness
6. Max load per fixing is the lower of pullout/shear capacity with a factor of safety of 2
7. PP PowerPanel (75mm), PPXL PowerPanel^{XL} (75mm), PP50 PowerPanel^{50} (50mm), PB PowerBlock (75mm+), PP+ PowerPanel+ (125mm+), PF+ PowerFloor+ (150mm+)

	Screw and plug fixing	Hole Size	Min Screw Embedment	Max load per Fixing	Design Pullout Capacity	Design Shear Capacity	Suitable Hebel Material
	Hex Head 14-10 Type 17 screw and Ramset Ramplug 8x80	8mm	75mm	18kg	0.42 kN	0.37 kN	PPXL PP PB PP+ PF+
	Hex Head 14-10 Type 17 screw and Ramset Wallplug 7x50	6.5mm	50mm	19kg	0.44 kN	0.38 kN	PPP50 PP PB PP+ PF+
	Zenith M8 stainless steel coach screw and Ramset Ramplug 12x60	12mm	50mm	22kg	0.70 kN	0.43 kN	PPP50 PP PB PP+ PF+
	Zenith M8 stainless steel coach screw and Ramset Ramplug 12x60	11.5mm	70mm	27kg	0.78 kN	0.55 kN	PPXL PP PB PP+ PF+
	Ramset M8 stainless steel coach screw and Ramset Ramplug 10 x100	10mm	95mm	40kg	1.50 kN	0.80 kN	PP+ PF+

Notes:
1. Fixing to be minimum 100mm from edge of panel
2. Shear load to be along edge or towards inside of panel not towards edge.
3. Do not over tightness fixings
4. If screw embedment is more than hole depth then hole depth to be increased to match screw depth
5. In cases where panel thickness is less than plug length, hole depth to match panel thickness
6. Max load per fixing is the lower of pullout/shear capacity with a factor of safety of 2
7. PP PowerPanel (75mm), PPXL PowerPanel^{XL} (75mm), PP50 PowerPanel^{50} (50mm), PB PowerBlock (75mm+), PP+ PowerPanel+ (125mm+), PF+ PowerFloor+ (150mm+)

Clothesline - Fixing to Hebel

When you are fixing a clothesline to Hebel it's important to plan and use the correct fixings and installation method.

Step 1 - Select a clothesline from the list of options below or check an alternative brand that aligns to the limits provided.

Consider:

- Weight of item you are fixing to the wall plus weight of load (washing)
- Extension from the wall
- Minimum vertical centre (so you can space your fixings correctly)
- Minimum fixings required.

Step 2 - Determine which Hebel panel you are fixing onto, to ensure the correct fixing method is used.

Is it PowerPanel^{XL} or PowerPanel^{50}?

Step 3 – Select the appropriate fixing from the options on this page.

Step 4 – Drill Hebel panel, install plugs, fit bracket into position and then install screws.

Note: When drilling the panel, if the drill bit comes into contact with panel reinforcement, it may take longer to drill through. Avoid excessive pressure and keep drill straight and steady so you do not to not oversize the hole.

Set drill depth to panel thickness to avoid any services behind the panel.

Clothesline Option 1

Example: Daytek 24m Single Fold Down MK2 Lift and Lock 2.24m x 1.0m (2 fixings required each side)

- Maximum weight including clothesline and clothes evenly distributed 30kg
- Maximum extension of clothesline from wall 1000mm
- Minimum vertical centre to centre spacing of fixings in wall of 170mm
- Minimum of 2 fixings for each bracket each side

Clothesline Option 2

Example: Hills 23.5m Folding Frame Long 3.4m x 0.68m 80152962 (2 fixings required each side)

- Maximum weight including clothesline and clothes evenly distributed 40kg
- Maximum extension of clothesline from wall 700mm
- Minimum vertical centre to centre spacing of fixings in wall of 175mm
- Minimum of 2 fixings for each bracket each side

Clothesline Option 3

Example: Hills 26m Folding Frame Double 2.2m x 1.3m 101061 (4 fixings required each side)

- Maximum weight including clothesline and clothes evenly distributed 50kg
- Maximum extension of clothesline from wall 1300mm
- Minimum vertical centre to centre spacing of fixings in wall of 175mm
- Minimum of 4 fixings for each bracket each side

Fixing Option for Hebel PowerPanel^{50} (50mm)

- Ramset 12 x 60mm RamPlug
- Zenith 50mm M8 Coach Screw Stainless Steel only
- Fixings to be 150mm from corner of wall and 100mm from sealant joints
- Drill 11.5mm hole through full panel thickness. Do not use hammer drill setting. HSS drill bit recommended
- Install Ramset plug then clothesline bracket and any included washers before screw fixing
- Install screw fixing and do not over tighten screws on bracket

Note: A 40mm screw embedment into the panel is required.

Fixing Option for Hebel PowerPanel^{XL} (75mm)

- Ramset 12 x 60mm RamPlug
- Zenith 75mm M8 Coach Screw Stainless Steel Only
- Fixings to be 150mm from corner of wall and 100mm from sealant joints
- Drill 11.5mm hole through full panel thickness. Do not use hammer drill setting. HSS drill bit recommended
- Install Ramset plug then clothesline bracket and any included washers before screw fixing
- Install screw fixing and do not over tighten screws on bracket

Note: A 65mm screw embedment into the panel is required.

Suitable fixings to use

12 x 60mm RamPlug

Zenith M8 Coach Screw Stainless Steel

Suitable clothesline options which meet the requirements

- Daytek 24m Single Fold Down MK2 Lift and Lock 2.24m x 1.0m (2 fixings required each side)
- Hills 23.5m Folding Frame Long 3.4m x 0.68m 80152962 (2 fixings required each side)
- Hills 26m Folding Frame Double 2.2m x 1.3m 101061 (4 fixings required each side)

Hose Reel Fixing Options

When you are fixing a hose reel to Hebel it's important to plan and use the correct fixings and installation method.

Step 1 - Select a hose reel from the list of options below or check an alternative brand that align to the limits provided.

Consider:

- Weight of item you are fixing to the wall plus weight of load (water in hose)
- Extension from the wall
- Minimum vertical centre (so you can space your fixings correctly)

Minimum fixings required.

Step 2 - Determine which Hebel panel you are fixing onto, to ensure the correct fixing method is used.

Is it PowerPanel^{XL} or PowerPanel^{50}?

Step 3 – Select the appropriate fixing from the options on this page.

Step 4 – Drill Hebel panel, install plugs, fit bracket into position and then install screws.

Note: When drilling the panel, if the drill bit comes into contact with panel reinforcement, it may take longer to drill through. Avoid excessive pressure and keep drill straight and steady so you do not to not oversize the hole.

Set drill depth to panel thickness to avoid any services behind the panel.

Hose Reel Option 1

- Maximum unit weight 10kg
- Maximum 600mm extension of unit from wall
- Minimum vertical centre to centre spacing of fixings in wall of 130mm
- Minimum of 4 fixings (2 row of 2 fixings)

Hose Reel Option 2

- Maximum unit weight 15kg
- Maximum 600mm extension of unit from wall
- Minimum vertical centre to centre spacing of fixings in wall of 150mm
- Minimum of 4 fixings (2 row of 2 fixings)

Fixing Option for Hebel PowerPanel^{50} (50mm)

- Ramset 7 x 50mm Green Wall Plug
- 65mm 14G-10 Hex Head Galvanised screws
- Fixings to be 150mm from corner of wall and 100mm from sealant joints.
- Drill 6.5mm hole through full panel thickness. Do not use hammer drill setting. HSS drill bit recommended.
- Install Ramset plug then hose reel bracket and any included washers before screw fixing.
- Install screw fixing and do not over tighten screws on bracket.

Note: A 40mm screw embedment into the panel is required.

Fixing Option for Hebel PowerPanel^{XL} (75mm)

- Ramset 8 x 80mm Long Anchor RamPlug
- 90mm 14G-10 Hex Head Galvanised screws
- Fixings to be 150mm from corner of wall and 100mm from sealant joints.
- Drill 8mm hole through full panel thickness. Do not use hammer drill setting. HSS drill bit recommended.
- Install Ramset plug then hose reel bracket and any included washers before screw fixing.
- Install screw fixing and do not over tighten screws on bracket.

Note: A 65mm screw embedment into the panel is required.

Suitable fixings to use

Ramset 8 x 80mm Long Anchor RamPlug

90mm 14G-10 Hex Head Galvanised screws

Suitable hose reel options which meet the above requirements

- Gardena Roll up 8055 25 30m & 8045 25 20m
- Pope Auto Wind Hose Reel 1010575 30m
- Holman 12mm 30m 1130H & 20m 1120H

Fixings used in Hebel wall and floor systems

Screw fixings

Screw type		Screw length	PowerPanel^{XL} External Wall	PowerPanel^{XL} Boundary Wall	PowerProfile External Wall	PowerPattern Track External Wall	Powerpanel^{50} External Wall	PowerPanel^{50} Dual Zero Boundary Wall	PowerPanel^{XL} Intertenancy Wall	PowerPanel^{50} Intertenancy Wall	PowerPanel Façade Wall	PowerPattern Façade Wall	PowerPanel Balcony Blade Wall	PowerPanel Intertenancy Wall	PowerPanel Corridor Wall	PowerPanel Shaft Wall	PowerPanel Service Wall	PowerFloor	PowerFence	Application
	10-16 Hex Head Teks	16	x	x	x	x	x	x			x	x								Fix tophat to steel frame
				x				x												Fix top hat to direct fix clip
									x	x										Fix aluminium bracket to steel frame
	12-11 Hex Head Type 17	35	x	x	x	x	x	x												Fix top hat to timber frame
				x				x												Fix top hat to direct fix clip
								x												Internal fix PowerPanel^{50} to top hat
									x	x										Fix aluminium bracket to timber frame
	14-10 Hex Head Type 17	65		x		x							x	x	x	x				Internal fix PowerPanel^{XL}/ PowerPattern/ PowerPanel to top hat
									x	x										Internal fix aluminium bracket to Powerpanel^{XL}
	14-10 Hex Head Type 17	90	x		x	x					x	x								External fix of Powerpanel to top hat
	14-10 Hex Head Type 17	150	x	x	x	x	x				x	x	x	x	x	x				Screw panels together at corners
	6G Stainless Steel	44			x															Fix universal base clip to Hebel substrate
	14-10 Hex Head Self tapping	95															x			Fix PowerFloor to steel joist
																	x			Fix PowerFloor to timber joist
	14-10 Bugle Head Type 17	100									x	x								External fix PowerPanel to top hat
																		x		Fence capping to Hebel panel connection
	10-24 Self drilling	40																x		For connecting bracket to post and post cover to post

Tie fixings

	Tie fixing type	PowerPanel Intertenancy Wall	PowerPanel Corridor Wall	PowerPanel Shaft Wall	PowerPanel Service Wall	PowerBlock	PowerPanel + External Wall	PowerPanel + Internal Wall	Sound Barrier Wall	PowerFloor +	Application
	Tension Tie						x	x	x		Suitable for fixing horizontal panels to concrete or steel columns
	V nails						x	x			Suitable for fixing horizontal panels to concrete or steel columns
	Slotted angle	x	x	x	x			x			Suitable for fixing panels to angle and angle to concrete structure
	Z clips						x	x	x		Suitable for fixing panels to concrete or steel structure
	Control joint tie					x					Used at every third course in control joints
	Sliding joint tie					x					Fixed to RHS/SHS column every second course
	Ring anchor steel cleat									x	Welded to the steel support beams

Handy notes

All metal type fixings should be minimum Class 3 as they generally remain exposed.

Electrical Cable

- Electrical cable can penetrate the panel and should pass through the Hebel panel on a downward angle towards the outside, through electrical conduit (so water can't track back up the conduit if water gets into the light fitting).
- That conduit should then be sealed with a suitable liquid/foam urethane type sealant into the gap between the conduit and the drill hole.
- The use of conduit allows for the free movement of the cable – i.e. the cable itself should not be sealed and therefore fixed into the drill hole.

Fixing heavy and/or vibrating loads

Heavy or items such as gates, decks, pergolas, carports and basketball hoops can cause vibrations or excessive loads on Hebel walls.

The solution is fixing them to posts that are independent of the wall will ensure the load isn't directly transferred to the Hebel panels or blocks.

Drilling and sealing

Holes can be drilled in Hebel walls using a standard drill bit fitted to a standard (not rotary hammer) drill. Once the penetration has been filled with the required fixing, cables or the like, the gap around the fixing/cable should be filled with a reputable flexible sealant such as Sikaflex polyurethane sealant. Note that any hole is a potential source for water ingress, so must be properly sealed.

Where to find fasteners

These fixings are available through Bunnings and selected hardware outlets and building suppliers around Australia.

- Bunnings
www.bunnings.com.au
- Ramset
www.ramset.com.au
- Hilti and Iccons also make suitable fixings.

For more information

www.hilti.com.au

www.iccons.com.au

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