

Commercial and Industrial

Product and Range guide



The better way to build

Hebel® Designed for Future Living

Hebel is designing for the long term future of Australian commercial and industrial construction with a commitment to products that are practical, versatile, environmentally responsible and durable enough to stand the test of time.

Driven by the commitment to meet customer needs Hebel listens and responds by designing systems and products that are better to build with and better to live in.

Supported by CSR, Hebel offers the knowledge and technical expertise to help customers and reduce risk.

Hebel is Australia's leading manufacturer of autoclaved aerated concrete (AAC), a non-toxic, lightweight masonry which has remarkable properties:

- Non-combustible
- Excellent acoustic insulation
- High thermal resistance
- Easily worked with standard tools
- Solid masonry feel

Environmentally friendly, Hebel products and systems are the sustainable choice. Independent testing shows that overall, Hebel has a 30% lower environmental impact than concrete or brick veneer

Using over 60% less embodied energy, and producing at least 55% less greenhouse emissions than concrete or brick veneer, Hebel is the cleaner, greener choice.

Designed



Shopping Centres

- External Walls
- Floors
- Internal Walls
- Fire Tunnels
- Cinema Walls
- SoundBarrier



Clubs

- External Walls
- Floors
- Internal Walls
- Fire Tunnels
- Spandrel Walls
- SoundBarrier

for Commercial and Industrial



Offices/High Rise

- External Walls
- Floors
- Internal Walls
- Intertenancy Walls
- Spandrel Walls



Hotels

- External Walls
- Floors
- Intertenancy Walls
- Spandrel Walls
- SoundBarrier



Commercial/Industrial

- External Walls
- Floors
- Internal Walls
- Fire Tunnels
- Spandrel Walls
- SoundBarrier



Hospital

- External Walls
- Floors
- Internal Walls
- Fire Tunnels
- SoundBarrier

External Walls

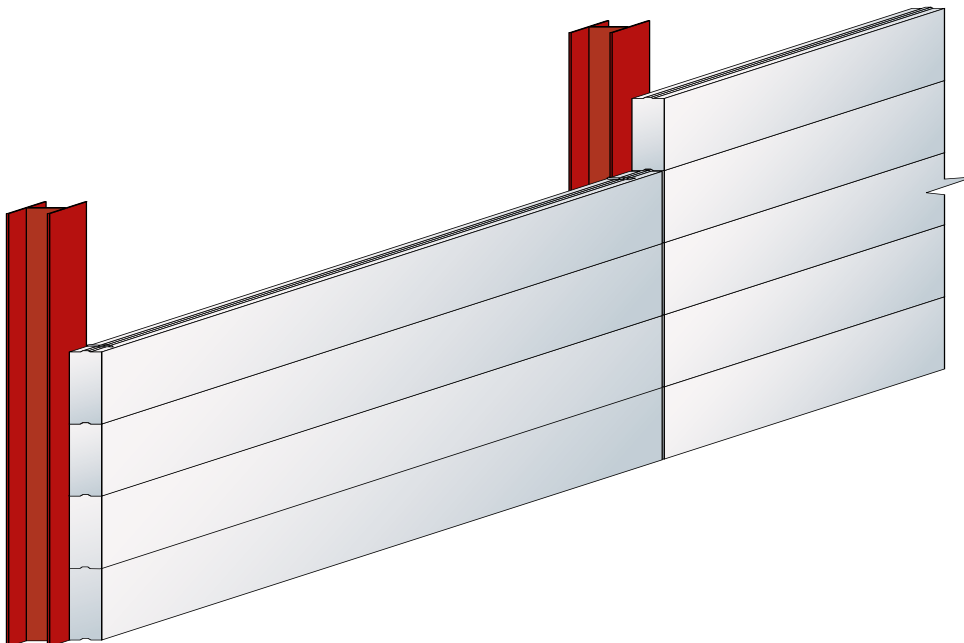
Hebel has developed external wall systems for commercial applications ranging from low rise industrial/commercial developments to high rise offices or medium density residential buildings. Hebel PowerPanel+ panels are installed vertically or horizontally to steel or concrete structural framing as a non-loadbearing cladding.

- **Cost effective:** Light weight panels allow for reduced structural components and smaller lifting equipment.
- **Thermal resistance:** Excellent thermal resistance performance.
- **Acoustic performance:** Effective sound transmission barrier between external and internal environments of the building.
- **Fire protection:** Excellent fire rating properties.
- **No wet trades:** Less mess and a cleaner, safer work area.
- **Less wastage:** Greatly reduced waste as panels can be custom made to length requirements. Fewer waste bins and less crane movements.
- **Design flexibility:** Hebel PowerPanel+ panels can be easily cut and routed to suit design requirements. Panel length up to 6 metres.

- **Strength and security:** Corrosion protected steel-reinforced AAC panels provide a high degree of strength, durability and security.
- **Cost effective:** Speed of installation and reduced structural sizes mean cost savings compared to traditional masonry construction.
- **A sustainable choice:** Environmentally produced and less site wastage.

Fire	-/240/240
Acoustic	$R_w + C_{tr}$ 37 to 45 (125mm to 300mm panels)
Thermal	R0.96 to R2.06 (125mm to 300mm panels)
Wall Thickness	125mm to 300mm (single skin panel only)

Acoustic values are for panel only.
Thermal values are for panel + inside & outside air films + coating.



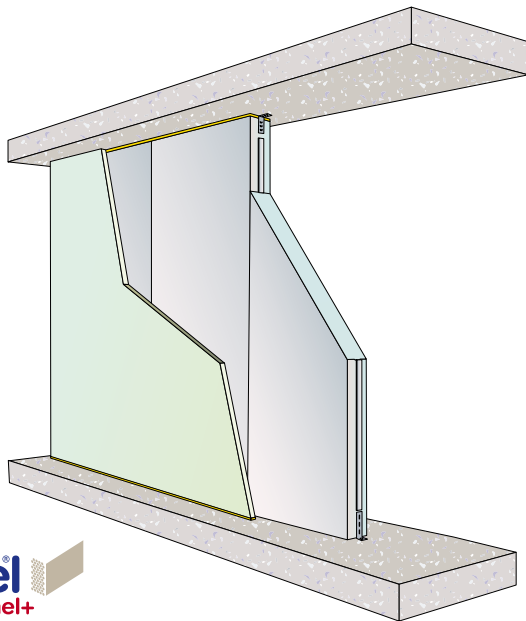
Internal Wall

Hebel internal wall systems provide a solid, slender, non-loadbearing wall for use in commercial applications such as around toilets and offices or between industrial units as a fire wall. The systems consist of 75mm, 100mm or 125mm PowerPanels connected to slabs or steel frames. Hebel internal wall systems are installed very quickly and can provide a fire rating of up to 4 hours.

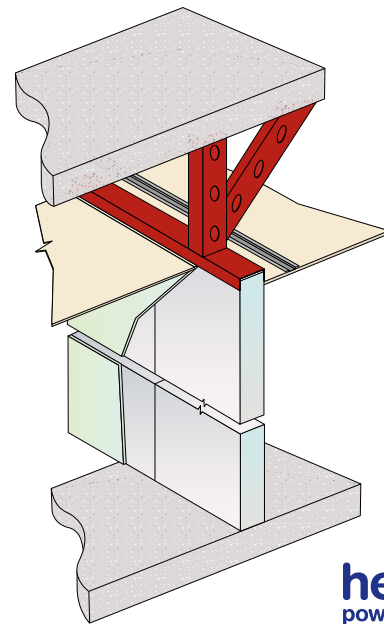
- **Lightweight:** Lighter loads on the structure compared to traditional masonry products reduces the size of structural components.
- **Cost effective:** Speed of installation and reduced structural sizes mean cost savings compared to traditional masonry construction.
- **Less wastage:** Greatly reduced waste as panels can be custom made to height requirements. Fewer waste bins and less crane movements.
- **Speed of construction:** Fast installation and assembly speeds with smaller construction crew requirements.
- **No wet trades:** Less mess and a cleaner, safer work area.
- **Slender walls:** Slimmer walls than other systems resulting in more lettable space.
- **Strength and security:** Corrosion protected steel-reinforced AAC panels provide a high degree of strength, durability and security.
- **Solid masonry walls:** Suitable for food areas in retail areas and hospitals as it will not attract vermin.
- **Thermal resistance:** Excellent thermal resistance performance.
- **Acoustic performance:** Effective sound transmission barrier.
- **A sustainable choice:** Environmentally produced and less site wastage.

Fire	-/90/90 to -/240/240 (100mm to 200mm panels)
Acoustic	$R_w + C_{tr}$ 33 to 40 (75mm to 200mm panels)
Thermal	R0.52 to R1.28 (75mm to 200mm panels)
Wall Thickness	75mm to 200mm (single skin panel only)

Acoustic values are for panel only.
Thermal values are for panel + adjacent still air films + coating.



hebel
powerpanel+



hebel
powerpanel



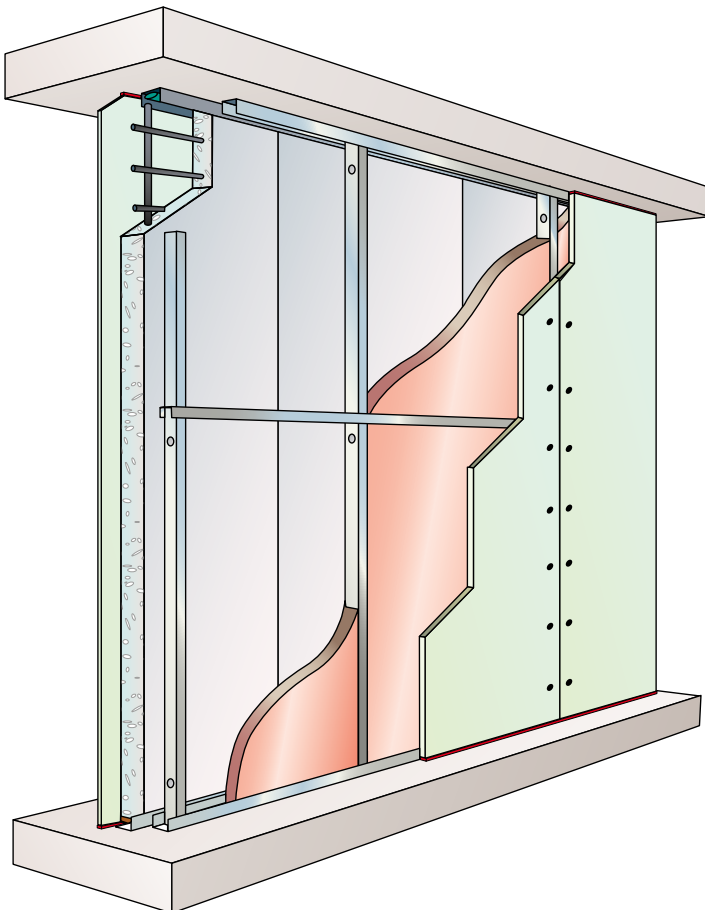
Intertenancy Wall

Hebel intertenancy wall systems provide cost-effective, slender walls which are quick to install. These walls with a solid masonry element provide acoustic performance that meets or exceeds BCA requirements. Hebel intertenancy walls are primarily used for party walls as well as corridor, shaft and general internal walls in commercial construction.

- **Lightweight:** Lighter loads on the structure which will reduce slabs, columns and footings.
- **Cost effective:** Speed of installation and reduced structural sizes means cost savings compared to traditional masonry construction.
- **Less wastage:** Greatly reduced waste as panels can be custom made to height requirements. Fewer waste bins and less crane movements.
- **Fire protection:** Excellent fire rating properties.
- **Slender walls:** Wall thicknesses can be reduced, resulting in more lettable space.
- **Speed of construction:** Fast installation and assembly speeds with smaller construction crew requirements.
- **Strength and security:** Corrosion protected steel-reinforced AAC panels provide a high degree of strength, durability and security.
- **Acoustic performance:** Effective sound transmission barrier to meet or exceed BCA requirements – **Nata laboratory certified acoustic tests and expert opinions.**
- **No wet trades:** Less mess and a cleaner, safer work area.
- **A sustainable choice:** Environmentally produced and less site wastage.

Fire	-/60/60 to -/240/240
Acoustic	$R_w + C_{tr}$ 50 to 59
Wall Thickness	185mm to 276mm

Values are for complete wall systems.



Photography Eric Sierins, courtesy of Fraser Property and Sekisui House.

Cinema Wall

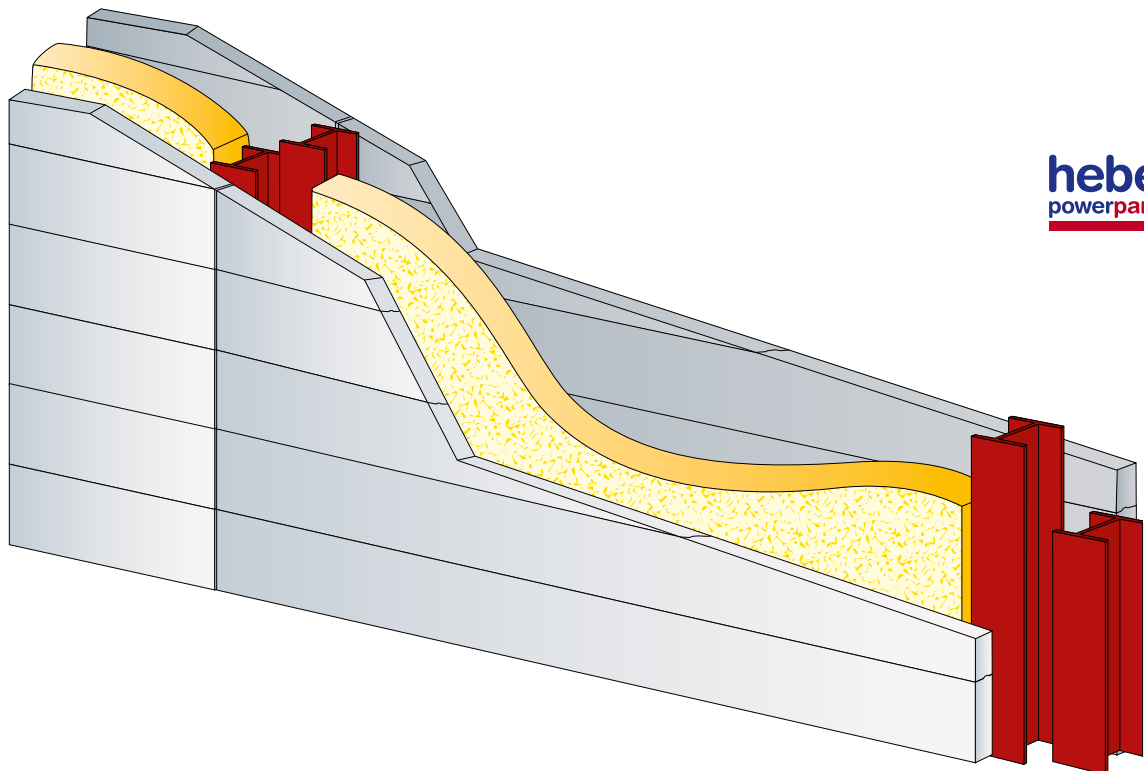
The Hebel Cinema Wall system consists of two panels supported by a structural steel frame with insulation placed between the panels. The system meets the current requirement for acoustics for cinema operators and can be constructed quickly when compared to plasterboard and masonry wall systems currently available. The system is also able to be constructed before the roof is installed.

- **Acoustic performance:** Excellent acoustic rating that meets high cinema requirements.
- **Cost effective:** Lower installed cost than plasterboard and masonry wall systems.
- **Less wastage:** Custom panel lengths greatly reduce waste allowing fewer waste bins.
- **Fire protection:** Excellent fire ratings.
- **Flexible finishing options:** Can be either painted, rendered or plasterboard lined.
- **Strength and security:** Corrosion protected steel-reinforced AAC panels provide a high degree of strength, durability and security.

- **No wet trades:** Less mess and a cleaner, safer work area.
- **A sustainable choice:** Environmentally produced and less site wastage.

Fire	-/240/240
Acoustic	$R_w = 65$
Wall Thickness	475mm

Values are for complete wall systems.



Spandrel Wall and Fire Tunnel

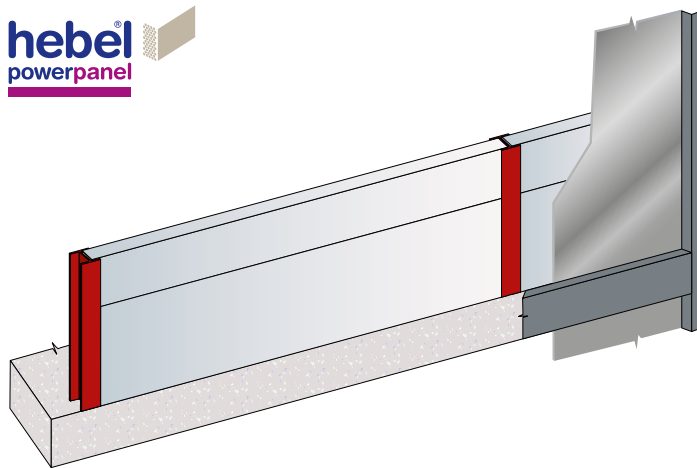
Spandrel Wall

Hebel Spandrel Wall can be used where there needs to be a fire separation from one floor to the one above/below. The wall consists of 75mm Hebel PowerPanel and steel columns at a maximum of 3m centres. The 3 metre long PowerPanel is equivalent in area to 15 concrete blocks making installation quick & easy. Significant savings in labour and construction time can be achieved for your project.

- **Lightweight:** Lighter loads on structure can assist in reducing slabs, columns and footings.
- **Cost effective:** Speed of installation and reduced structural sizes means cost savings compared to traditional masonry structures.
- **Less wastage:** Greatly reduced waste as panels can be custom made to suit requirements. Fewer waste bins and less crane movements.

Fire	-/60/60
Wall Thickness	75

The above fire system needs to be engineered and certified by others based on technical information supplied by CSR Panel Systems.



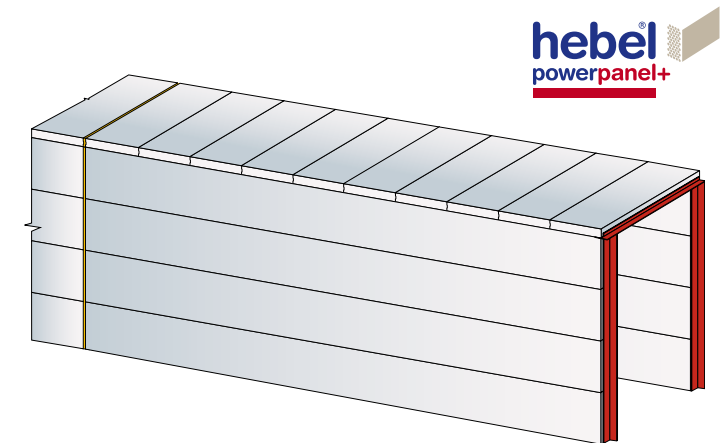
Fire Tunnel

The Hebel Fire Tunnel system utilises the great fire characteristics of Hebel by having the walls made of 125mm Hebel PowerPanel+ panels supported by a steel frame and a Hebel ceiling panel which encloses the fire tunnel. By utilising the same product to construct the walls and the ceiling and having the same contractor constructing both elements, the process is simpler and quicker than conventional methods.

- **Speed of construction:** Fast installation compared to small masonry units with no wet trades required.
- **Strength and security:** Corrosion protected, steel-reinforced AAC panels provide a high degree of strength, durability and security.
- **Slender walls:** Wall thickness can be reduced by up to 40mm compared to other wall systems providing more lettable area.
- **Fire protection:** Excellent fire properties.

Fire	-/120/120
Wall Thickness	125

The above fire system needs to be engineered and certified by others based on technical information supplied by CSR Panel Systems.



PowerFloor and PowerFloor+

Hebel has developed flooring systems for a wide range of commercial applications. Hebel Powerfloor consists of 75mm steel-reinforced panels installed over steel or timber joists to give an excellent, solid base for just about any floor covering. Hebel FloorPanel is made up of steel-reinforced panels (150mm – 250mm thick) supported by a steel or concrete support frame with a ring anchor around the floor perimeter and at panel joints to form a monolithic floor panel system.

- **Lightweight:** lighter loads on structure can assist in reducing slabs, columns and footings.
- **Cost effective:** Speed of installation and reduced structural sizes means cost savings compared to masonry flooring.

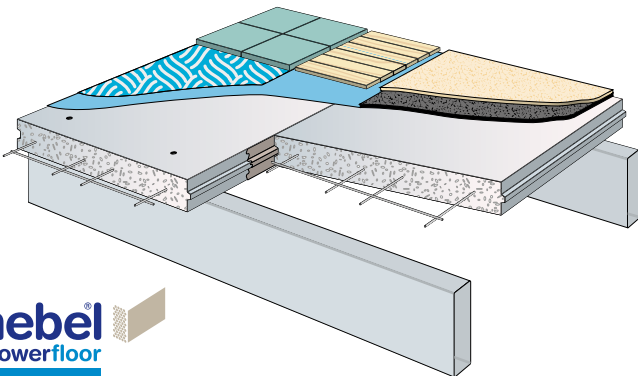
- **Less wastage:** Greatly reduced waste as panels can be custom made to suit requirements. Fewer waste bins and less crane movements.
- **Strength and security:** Corrosion protected, steel-reinforced AAC panels provide a high degree of strength, durability and security.

PowerFloor

- **Solid feel:** Eliminates the bounce, flex and noise of timber sheet flooring.
- **Superior acoustic insulation:** R_w of up to 62 can be achieved.
- **Excellent thermal performance:** Unique combination of thermal performance and thermal mass delivers a total system R-Value of R0.76 to R2.4 – ideal for floors over carparks.

Fire	Up to 240 mins from above, 90 mins from below
Acoustic – no ceiling system	$R_w + C_{tr}$ 29 to 33, $L_{nw} + C_i$ 83 to 45 $R_w + C_{tr}$ 48 to 54, $L_{nw} + C_i$ 70 to 32
Wall Thickness	R0.59 to R3.49

Values are for complete systems.

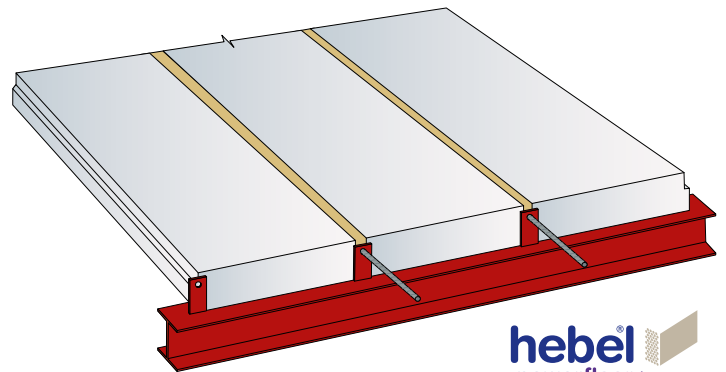


PowerFloor+

- **Long spans:** Up to 5.85 metres.
- **Safer installation:** Minimal props or scaffold under floor and less people in dangerous positions (up high) which reduces safety risk and reduces costs.
- **Quick installation:** The floor is usable three days after mortar is poured (no curing/setting time) which reduces critical path.

Fire	180/180/180
Acoustic	$R_w + C_{tr}$ 40 to 42, (150mm to 250mm panels)
Wall Thickness	R0.93 to R1.55 (150mm to 250mm panels)

Values are for panels only.



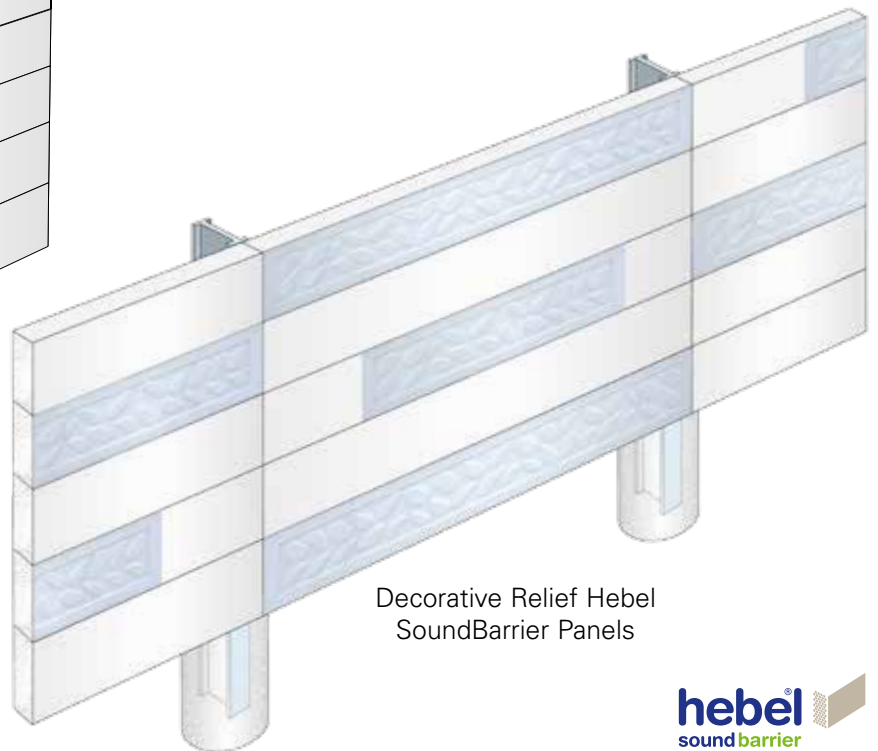
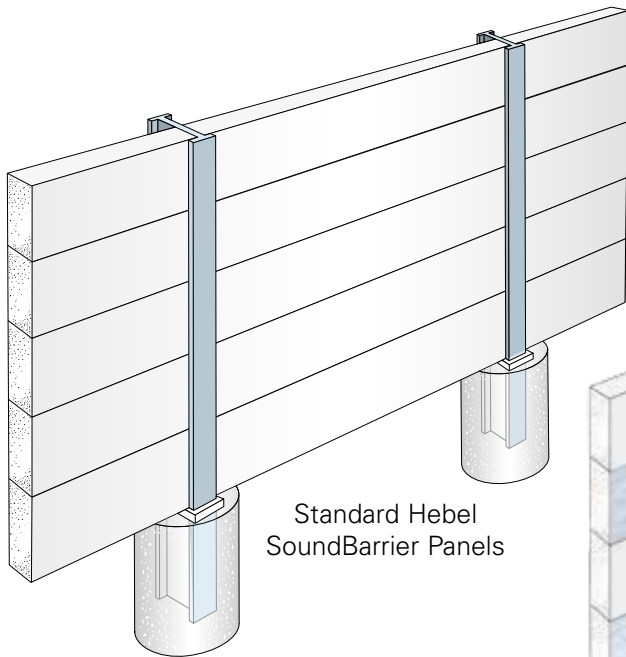
SoundBarrier

Hebel SoundBarrier is a highly effective acoustic barrier that produces significant reductions in noise levels such as those emanating from roads, freeways and rail corridors. Hebel SoundBarrier panels are available in 4 standard thicknesses that provide sound reductions of up to 45db. Other panel sizes can be made to order if greater noise reduction is required. SoundBarrier walls can be further enhanced by the addition of decorative post treatments, capping, routed patterns or by affixing featurework to the face to create an attractive design.

- **Cost Effective:** Speed of installation means mean cost savings compared to traditional masonry construction.
- **Speed of Construction:** Fast installation and assembly speeds with smaller construction crew requirements.
- **Fire Protection:** Panels are non-combustible and won't burn. Can provide bush fire hazard reduction.
- **Design flexibility:** Patterns/designs can be routed into the panels.

- **Different wall configurations:** Allows for relief on large walls.
- **Footings:** Smaller and quicker footings to be installed than other masonry barriers.
- **Acoustic performance:** High acoustic rating, effective sound transmission barrier.

Acoustic	R _w 38 to 43
Wall Thickness	100mm to 200mm



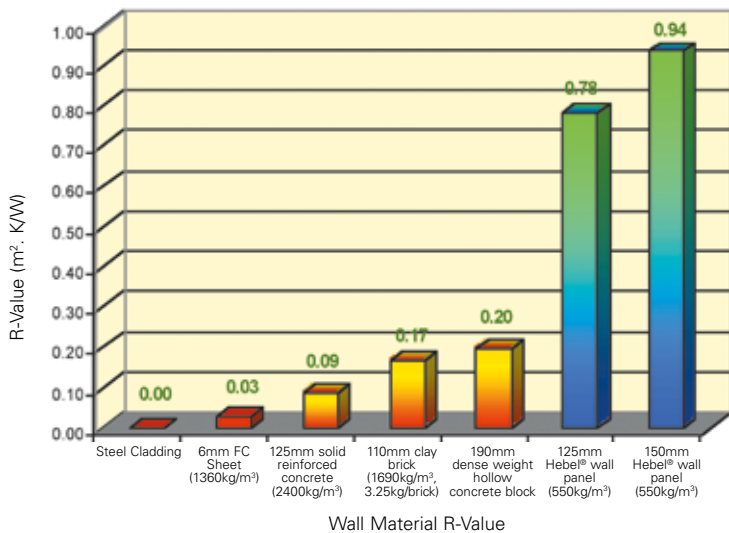
Hebel – Meeting Building Regulations

The unique combination of thermal resistance, thermal mass, acoustic and fire properties make building with Hebel a smart choice for meeting Australia’s building regulations. For commercial and industrial construction, the Building Code of Australia (BCA) details regulations covering energy efficiency, fire resistance and acoustics, across a broad range of building classes.

Energy Efficiency

BCA Vol. 1 Section J covers energy efficient construction requirements. The goal of Section J is to reduce greenhouse gas emissions through the efficient use of energy in buildings. Hebel has exceptional thermal insulation properties when compared to alternative building materials. Hebel Panels have significantly greater R-Value than pre-cast concrete, concrete masonry, brickwork and claddings such as fibre cement and sheet steel as shown in Figure 1.

Figure 1



Source: BCA2007 Vol.1: Specification J1.5, Figure 2 Except steel and Hebel

Fire Resistance

The BCA details comprehensive fire safety building requirements. Hebel panels are non-combustible and Hebel External Walls, Spandrel and Fire Tunnel Systems achieve FRLs up to 120 minutes.

Refer to the system design and installation guides for detailed fire performance ratings and certificates.

External Wall	
Panel Thickness	Fire Rating
100mm	- /120/120
125mm to 300mm	- /240/240
PowerFloor	
75mm	Up to 240 mins from above, 90 mins from below
FloorPanel	
150mm to 250mm	Up to 180/180/180

Acoustics

The BCA generally classifies commercial/industrial buildings into class 5, 6d, 7b, 8, 9a and 9b and with the exception of intertenancy walls, acoustic performance requirements for these are not currently stated in the BCA. Local councils and client specific requirements generally drive construction materials and systems to meet specific levels of acoustic performance. Hebel has worked closely with acoustic experts and testing authorities to engineer, inherently superior acoustics from its systems. Below are the acoustic ratings for Hebel panels. Refer to the system design and installation guides for system performance details.

Panel Thickness	R _w	R _w + C _{tr}
75mm	36	33
100mm	38	35
125mm	40	37
150mm	43	40
175mm	42	39
200mm	43	40
250mm	45	42
300mm	51	45

Refer to Table 1 to obtain system R-Values for the range of wall panels and different internal cavity treatments. The table is shaded to indicate compliance with the BCA performance requirements.

Table 1

Wall panel thickness	System R-Value (m²K/W)						
	1. Wall panel only*	2. Wall panel + 25mm cavity	3. Wall panel + 25mm cavity + sarking	4. Wall panel + 25mm cavity + 75mm PowerPanel*	5. Wall panel + 40mm cavity + R1.0 insulation	6. Wall panel + 25mm cavity + double sided RFL = 25mm cavity	7. Wall panel + 90mm cavity + R2.0 insulation
100	0.81	1.03	1.36	1.50	1.87	2.07	2.87
125	0.96	1.18	1.51	1.65	2.02	2.23	3.02
150	1.12	1.34	1.67	1.81	2.18	2.38	3.18
175	1.28	1.50	1.83	1.97	2.34	2.54	3.34
200	1.43	1.65	1.98	2.12	2.49	2.70	3.49
225	1.59	1.81	2.14	2.28	2.65	2.85	3.65
250	1.75	1.97	2.30	2.44	2.81	3.01	3.81
300	2.06	2.26	2.61	2.75	3.12	3.32	4.12

Light blue background: Meets BCA requirements for building fabric (walls) for Class 5-9b buildings in Climate Zones 1 to 7. Green background: Meets BCA requirements for building fabric (walls) for Class 5-9b buildings in Climate Zone 8.

*Wall panel only includes outside air film, coating, Hebel panel, inside air film.

Notes: 1. Cavities are unventilated. 2. Sarking = Bradford EnviroSeal (polymer weave) with e₁ = 0.9, e₂ = 0.05. 3. Double sided RFL = EnviroSeal metal roof/wall (paper weave) with e₁=0.2, e₂=0.03. 4. R1.0 insulation = Bradford R1.0 Specitel: thickness – 40mm, density-12kg/m³. 5. R2.0 insulation = Bradford R2.0 Gold Wall Batts; thickness – 90mm, density -10kg/m³.

Finishing Systems

You can choose from a range of visual effects from high build acrylic renders and textures to simple acrylic coatings to achieve the visual appeal you want to complete your design. If you choose a rendered finish which includes painting, you always have the freedom to give the building a totally new look and refresh when you want.

Coatings are available to help you deliver the perfect finish to any Hebel project and engineered to accommodate the unique physical characteristics of Hebel.

Please ensure you choose an appropriate external coating system that is compatible with the Hebel substrate and provides the performance requirements as recommended and specified by CSR Hebel. Application and maintenance of such a coating system is to be as directed by the coating suppliers specification and conditions of warranty.

Health & safety

Information on any known health risks of our products and how to handle them safely is on product packaging and / or the accompanying documentation. Additional information is listed in the Material Safety Data Sheet (MSDS). To obtain a copy of a MSDS, download from www.hebel.com.au. Contractors are required by law to perform their own risk assessments before undertaking work.

Performance & certification

Hebel® products and systems are developed in Australia by CSR Building Products. ABN. 55 008 631 356. It is a manufacturer and supplier of Hebel Autoclaved Aerated Concrete (AAC) products. Because it is a manufacturer and supplier only, CSR does not employ people qualified as Accredited or Principal Certifiers. CSR is therefore unable to provide Construction Compliance Certificates or Statements of Compliance. CSR conducts appropriate testing of its products and systems to determine performance levels. These include structural, fire and acoustic tests. Testing is conducted and certified by appropriate specialists in these fields. When using Hebel products and systems in specific projects, such specialists should be consulted to ensure compliance with the Building Code of Australia and relevant Australian Standards.

Disclaimer

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Other

The design of a wall, floor or fence system requires the services of professional consultants. This document 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. No liability can therefore be accepted by CSR or other parties for the use of this document. Hebel products and systems undergo constant research and development to integrate new technology and reflect ongoing performance enhancement.

Hebel systems are constantly reviewed so as to reflect any changes in legislative building requirements and or general developments in common building practice, due to our commitment to continual development and improving our building systems.

We advise that all users of this document should regularly check that this document is current, and they are applying our latest design information.

The latest editions of our documents are available on our website:

www.hebel.com.au

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The better way to build

Hebel is a quality building product, and is backed by CSR Building Products Limited.

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www.hebel.com.au

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