

Designed for compliance in all Bushfire Attack Levels



HEB - 2006
Environmentally Innovative Products

HBLA336 DBAL 0409



Hebel® and the new residential building standard

The devastating Victorian bushfires of February 2009 provided a solemn reminder of our vulnerability, even in lower fire risk areas.

The introduction of Australian Standard AS 3959 - 2009 - Construction of buildings in bushfire-prone areas presents new challenges to building designers with differing design requirements across 6 Bushfire Attack Level (BAL) categories.

While design, building methods and bushfire action plans will remain the major solution to the problem, the choice of building materials, particularly external cladding, is clearly an important decision.

Hebel® blocks and panels are non-combustible and have been tested at CSIRO and provide excellent fire performance. Also known as Autoclaved Aerated Concrete (AAC) this unique material delivers the right balance between thermal insulation and mass and even under extreme heat, it will not explode.

Hebel® block homes provide frameless loadbearing walls and when constructed in accordance with the masonry

code and Hebel's Block Design and Installation guides, comply with all 6 BAL requirements with a Fire Resistance Level (FRL) of 240/240/240 - far higher than the standards require.

Hebel® PowerWall™ - which uses 75mm Hebel® steel-reinforced panels on a framed construction achieves an FRL of 240/180/180 - still exceeding the requirements even of BAL-FZ.

Soon after the Victorian fires, it was reported that a home in Steel Creek was saved due to some smart building decisions that bucked the trend of pre-fabricated roof trusses and traditional brick-veneer skin or lightweight cladding. The home was built using Hebel® in the walls, double-glazed glass windows and fire rated doors with a sophisticated sprinkler system.

There have been other similar situations where Hebel® homes and backyard structures have been spared while neighbours' homes have been completely destroyed.

With its excellent fire properties, combined with excellent thermal and acoustic performance, Hebel® is seen by a growing number of builders and designers as a superior construction method to traditional alternatives.



Bushfire Relief Efforts

Like all Australians, CSR was deeply touched by the tragedy in Victoria and has teamed with Habitat for Humanity Australia (HFHA), a not-for-profit home ownership organisation project to help rebuild homes for affected families.

Leading brands from CSR such as Bradford Insulation, Gyprock plasterboard, Cemintel fibre cement and Hebel, have all donated product for the reconstruction of 12 homes.

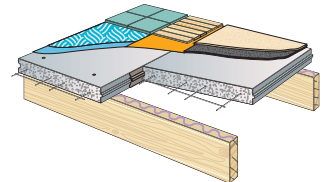
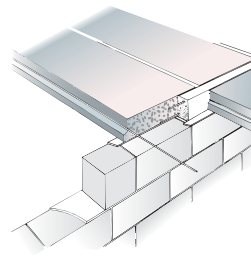
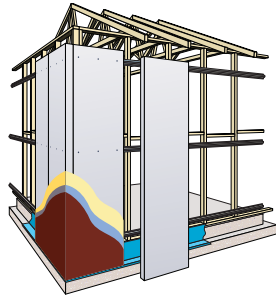
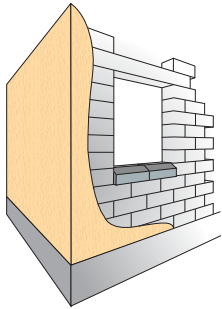
Hebel's suppliers have also come to the party by providing accessories, transport and storage for the 12 homes. The suppliers include Faststud, Bremick Fasteners, Christensen Engineering, Ardex, Wettenhalls Transport, Dulux, Walkers Haulage and Toll Transport.

The Ideal Choice for all BAL Categories

Hebel® has developed building systems for all aspects of detached housing and low rise multi-residential construction. The exceptional fire properties of Hebel® systems make it an ideal choice for construction in all BAL categories.

External Walls, Enclosed Subfloors

Floors, Verandahs, Decks



Hebel® Block Walls

- Exceeds requirements in all BALs
- Over three times the thermal resistance of double brick
- Large blocks are quick to lay and much lighter to handle
- Up to 4 hours fire rating

PowerWall™ - External walls

- Exceeds requirements in all BALs
- Solid and strong with steel reinforcement
- Excellent thermal and acoustic insulation
- Ideal base for acrylic render finishes

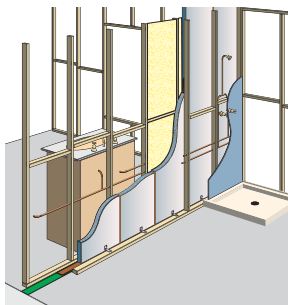
Hebel® Floor Panels

- Exceeds requirements in all BALs
- Span up to 6 metres
- Exceptional acoustic performance for both airborne and footfall noise
- When used with Hebel® Blocks, eliminates the need for framing

PowerFloor™ - Flooring

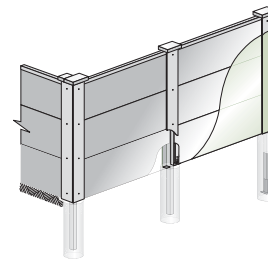
- Exceeds requirements in all BALs*
- Solid feel
- Eliminates the bounce and flex of timber sheet flooring
- High thermal and acoustic insulation properties

** when subfloor protected from fire.*



Party walls

- Excellent fire ratings
- High acoustic performance
- Fast and easy construction



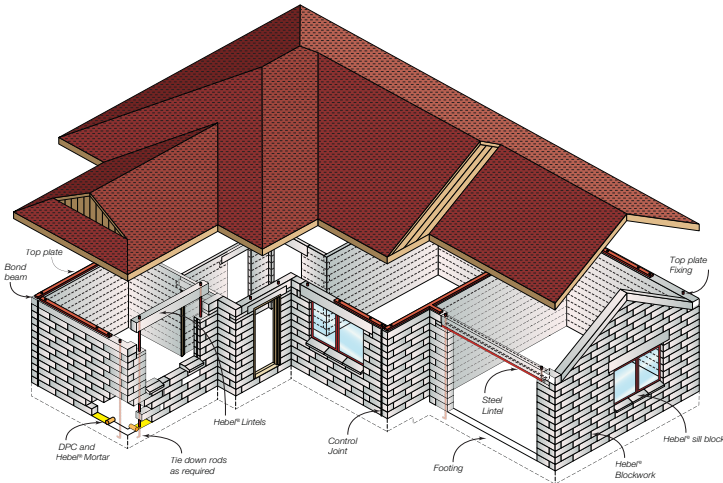
PowerFence™ - Fencing

- Non-combustible fencing system
- Cost effective acoustic barrier system
- High level of design versatility

External Walls

Solid Construction

Block Wall

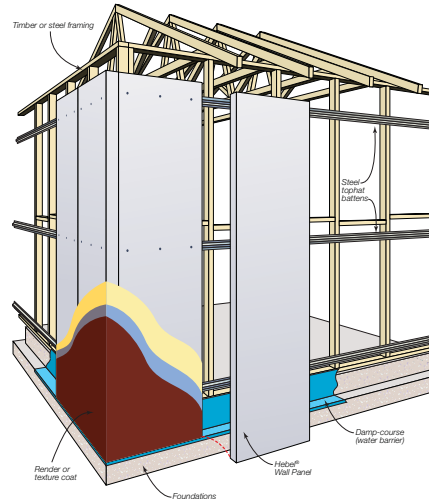


Hebel® Blocks are manufactured from lightweight AAC and joined with Hebel® Adhesive to form a monolithic structure. A range of blocks and floor panel sizes are available to suit a variety of applications including internal and external walls, flooring, lintels, step treads and bath hobs.

Hebel® block homes provide frameless loadbearing walls and when constructed in accordance with the masonry code and Hebel's Block Design and Installation guides, comply with all 6 BAL requirements with a Fire Resistance Level (FRL) of 240/240/240 – far higher than the standards require.

Lightweight Framed Construction

PowerWall™



The Hebel® PowerWall™ external wall system consists of Hebel® PowerPanels fixed vertically to horizontal battens attached to a timber or steel loadbearing frame.

Hebel® PowerWall™ achieves an FRL of 240/180/180 which far exceeds the requirements even of BAL-FZ.

A 3000mm x 600mm PowerPanel™ is equivalent in area to 90 bricks making installation quick and easy. Significant savings in labour can be achieved and your project can reach completion sooner.

Building with Hebel® provides substantial benefits over traditional solid masonry construction materials:

- Excellent thermal and acoustic insulation properties
- Non-combustible blocks with frameless construction delivers superior fire resistance
- 73% less embodied energy and 61% less greenhouse gas emissions than comparative masonry products (source LCA report GECA 2006)
- Faster installation than double brick and concrete
- Not a food source for termites or vermin and no cavity construction eliminates the chance of harbouring pests

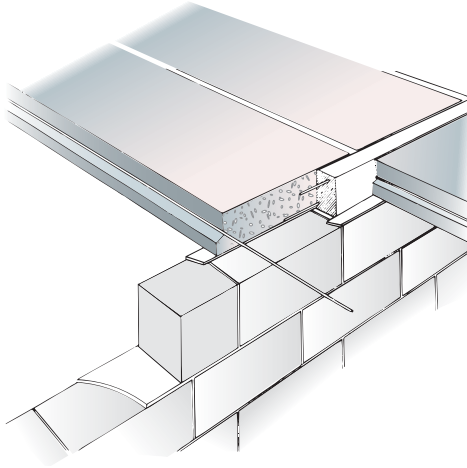
PowerWall™ Benefits:

- Speedy installation - 2400mm panels weigh around 72kg and two people can install up to 100m2 in about three days
- Greater living area - thinner external wall allows for greater internal living space within the same building envelope
- Smooth flat finish - ideal for a beautiful and increasingly popular rendered finish
- Solid and strong with steel reinforced AAC panels
- Excellent thermal and acoustic insulation - increases the level of comfort for occupants and saves on heating and cooling energy costs

Floors

Solid Construction

Floor Panel



Hebel® Floor Panels are steel-reinforced AAC panels that are 150mm - 250mm thick. The floor system uses a ring anchor to create a flat, solid surface ready for just about any floor covering from carpet to direct fix tiles and timber.

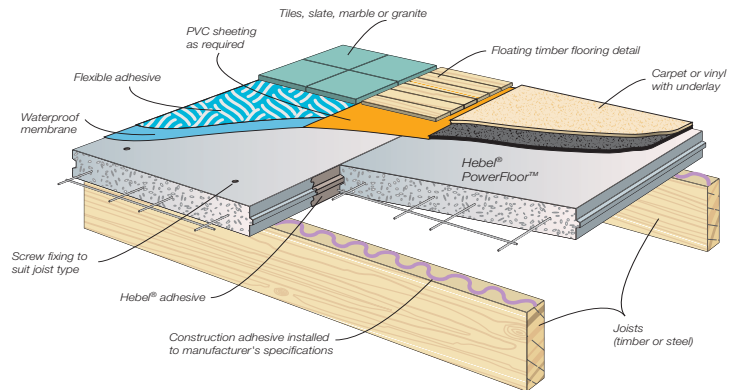
This building system complies with all BAL requirements and is ideal in solid home construction for second storey flooring or ground floors on sloping sites. It eliminates the need for timber or steel floor framing or pouring of concrete.

Hebel Floor Panel benefits:

- Non-combustible frameless construction
- Span up to 6 metres
- Exceptional acoustic insulation for second storey flooring
- Excellent thermal performance, particularly for exposed ground floors
- Not affected by weather during installation

Framed Flooring

PowerFloor™



The PowerFloor™ system consists of 75mm steel-reinforced AAC panels screwed and glued to a timber or steel frame.

The system complies with all BAL requirements when the subframe is protected from an ignition source and with the unique benefits of acoustic and thermal insulation along with thermal mass, it is the ideal solution in bushfire prone areas

- Non-combustible panels
- Quick to install
- Good load carrying capacity
- Solid feel - eliminates the bounce and flex of timber sheet flooring
- Superior airborne noise insulation
- Excellent thermal performance - particularly for suspended floors on sloping sites
- Not affected by weather during installation

Verandahs, Decks, etc

Both Hebel® Floor Panels and PowerFloor™ provide a solid alternative for external decks and verandahs.

If stairs are required, Hebel® Blocks are an ideal choice.

While both materials satisfy all BAL requirements, careful consideration should be given to the complete construction design.

Subfloor supports

Hebel® Blocks and PowerWall™ also satisfy the requirements for the enclosure of subfloor areas for all BAL levels. This will protect raised flooring from a bushfire threat below.

Hebel® Finishing Systems

Hebel® has worked closely with leading coatings manufacturers such as Dulux® and Mitex to develop a range of finishing options for all Hebel® systems. From simple acrylic coatings to high build renders and textures, Hebel® has a system that will meet the aesthetic requirements for your project.

The following table shows the variety of finishes for both PowerPanel™ and Hebel® Block construction. For full details on Hebel® Finishing Systems, the comprehensive Hebel® High Performance Coatings brochure which includes surface preparation and application is available from our website: hebelaustralia.com.au



Hebel® Product	Finish Style	Surface Alignment	Base Render or Levelling Coat	Primer		Acrylic Texture Body Coat		Finish Coats		Comment
				Product Description & Performance Guide	Dulux® AcraTex® Specification	Product Description & Performance Guide	Dulux® AcraTex® & Mitex Specification	Product Description & Performance Guide	Dulux® AcraTex® Specification	
PowerPanel™	Uniform Sand Texture profile	True & Flush	Hebel® PowerBase™	Self priming Sand and spot prime excessive adhesive extending across joints with AcraPrime 501/1		Engineered for CSR™ Hebel®. No AS STD type or equivalent	PowerFinish™		Optional	Elastomeric Membrane recommended for improved resistance to dirt pick up and coastal environments.
PowerPanel™	Uniform Sand Texture profile	≤1mm	Hebel® SkimCoat (Render)	Relevant to Coating supplier recommendations	Self priming	1-2mm Acrylic Texture Trowel applied Type: AS4548.4 Polymer content (dry): 9% min.	Tuscany or Coventry Coarse or Kalahari Mitex	Elastomeric Membrane Type: AS4548.1 Min. DFT: 150 micron	AcraShield Matt or Elastomeric 201	2nd coat Elastomeric Membrane recommended dependant on project complexity eg. unbroken broadwall, scaffolding or cutting in detail and coastal areas.
PowerPanel™	Uniform Sand Texture profile	≤3mm	Hebel® HighBuild™ (Render)	Relevant to Coating supplier recommendations	AcraPrime 501/1	OPTION 1: 1-2mm Acrylic Texture Trowel applied Type: AS4548.4 Polymer content (dry): 9% min.	Tuscany or Coventry Coarse or Kalahari Mitex	Elastomeric Membrane Type: AS4548.1 Min. DFT: 150 micron	AcraShield Matt or Elastomeric 201	2nd coat Elastomeric Membrane recommended dependant on project complexity eg. unbroken broadwall, scaffolding or cutting in detail and coastal areas.
						OPTION 2: Dependant on specifier approval: Sponge finishing of Hebel® HighBuild™ to a project approved standard; plus Elastomeric Membrane finishing system.		Elastomeric Membrane Type: AS4548.1 Min. DFT: 250 micron	Elastomeric 201	Hebel® recommends the installation of 1-2mm Acrylic Texture Coat over the render base coat providing improved consistency of finish, system flexibility and durability.
Block	Uniform Sand Texture profile	≤3mm	Hebel® HighBuild™ (Render)	Relevant to coatings supplier recommendations	AcraPrime 501/1	OPTION 1: 1-2mm Acrylic Texture Trowel applied Type: AS4548.4 Polymer content (dry): 9% min.	Tuscany or Coventry Coarse or Kalahari Mitex	Elastomeric Membrane Type: AS4548.1 Min DFT: 150 micron	AcraShield Matt or Elastomeric 201	2nd coat Elastomeric Membrane recommended dependant on project complexity eg. unbroken broadwall, scaffolding or cutting in detail and coastal areas.
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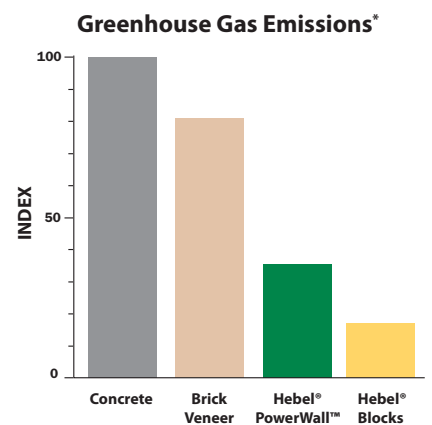
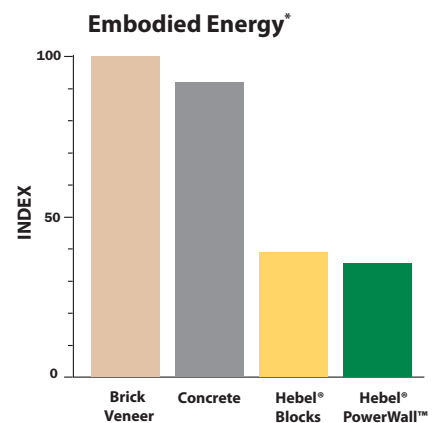
Designed For A Better Environment

Production

The Hebel® production process is ecologically responsible with very little waste produced and we have a passion to reduce waste further through extensive recycling. Production waste, slurry and even the steam generated are recycled back into the manufacturing process while waste steel and oil are recycled off site. Even the non-toxic citrus-based solvents used for cleaning are recycled.

Embodied energy

Hebel® PowerWall™ uses over 60%* less embodied energy than comparative concrete and brick veneer wall systems. The combination of modular panel sizes which are designed to suit standard building practices and the ease of working with standard power tools means there is very little waste on site during construction. This means less mess and less landfill due to leftover building materials. We are also investigating the use of crushing machines to recycle the finished AAC back into the manufacturing process. Hebel® products are non-toxic and don't emit any gases, another reason why they are an increasingly popular choice for people concerned with building a healthy, environmentally responsible home or building.



* Source: LCA Report GECA 2006

A Good Environmental Choice



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Environmentally Innovative Products

Hebel® has been independently assessed by Good Environmental Choice Australia (GECA) in comparison to other building products with the same application. As a result, Hebel® is proud to have been awarded the GECA Label for each of its products and systems.

To qualify for the GECA endorsement, Hebel® products and systems needed to show significantly reduced environment loads of at least 30% over their life-cycle. In some cases, Hebel's benefits were even stronger. (up to 60%)

By choosing Hebel® you can feel good in the knowledge that you have chosen a building material that has a lower impact on our environment compared to standard masonry.

Carbon Footprint

CSR™ has undertaken a major exercise to measure the company's carbon footprint and to help develop additional comprehensive plans to minimise its environmental impact. While this process is underway, at Hebel® we have introduced more flexible working hours and encouraged staff to work from home to reduce days traveled to and from work from 5 to 1 or 2 a week, a practical measure to further reduce our carbon footprint.



CSIRO Tested

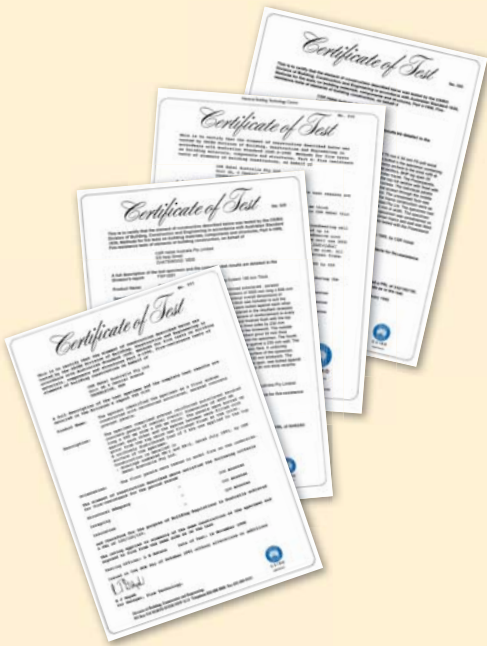
The fire properties of Hebel's external wall and floor systems have been tested and certified by the CSIRO.

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Like to Know More?

For more information on how Hebel® can assist you in designing and building better homes for all BAL categories, call us or visit our website.



Designing for future living

Hebel® is a quality building product, and is backed by CSR Building Products Limited. Further details on engineering and building with Hebel® systems are available in the Hebel® Design Guides and Technical Manual. To obtain a copy, or for further sales or technical assistance, please visit our website.

Hebel® Website:
hebelaustralia.com.au

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

1300 369 448

Guarantee

Hebel® guarantees the products manufactured by itself and the systems described in Hebel® literature for 7 years, subject to the terms and conditions of the Hebel® Guarantee which can be inspected on the Hebel® website at hebelaustralia.com.au. Hebel® does not however guarantee the components, products or services, such as installation, supplied by others.

Hebel® recommends that only products, components and systems recommended by it be used.

Health & Safety


Information on any known health risks of our products and how to handle them safely is on their packaging and/or the documentation accompanying them.

Additional information is listed in the Material Safety Data Sheet (MSDS).

To obtain a copy of a MSDS, telephone 1800 807 668 or download from hebelaustralia.com.au. Contractors are required by law to perform their own risk assessments before undertaking work. Hebel® has sample Safe Work Method Statements (SWMS) to assist in this. To obtain a sample SWMS, refer also to the above sources.

Hebel®
designed for future living

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CSR