



5 Star Fact Sheet for Mud Brick Homes

5 Star homes are mud brick homes

Since 1 July 2004, the introduction of the 5 Star Standard has seen all new homes in Victoria become more energy and water efficient, reducing greenhouse gas pollution and saving our precious water resources.

5 Star homes include mud brick homes, which not only save their home occupants money on energy bills but are more comfortable year-round, compared to the average 2.2 Star house built before the 5 Star Standard.

Clearing up a muddy issue

Accredited House Energy Raters assess the performance of new homes, including mud brick homes, to a 5 Star Standard. Some misperceptions about whether mud brick homes can achieve the 5 Star Standard have arisen.

The fact is that well designed mud brick homes can meet the 5 Star Standard. There are examples of 5 and even 6 Star mud brick homes throughout Australia

How you can achieve 5 Star compliance for mud brick homes

To achieve 5 Star compliance all new mud brick homes must:

- Meet a 5 Star House Energy Rating for the building fabric
- Include either a rainwater tank for sanitary flushing or solar hot water system

Because 5 Star is a performance-based Standard, a wide range of options are available to homeowners, builders and designers in achieving the required energy rating irrespective of the type of construction. A well-designed mud brick home will meet its energy rating without problems.

Rating to a 5 Star Standard - it's clear with mud

New generation rating tools provide additional design options to achieve the 5 Star Standard. Throughout Victoria energy raters are equipped to rate new homes to a 5 Star Standard using either AccuRate or the new FirstRate 5 software. Training for AccuRate has been available to energy-raters since mid 2006.



With good design, any mud brick home in any location in Australia should be able to achieve a 5 Star Standard for a reasonable cost and with minimal change to construction techniques. However, like any home, a poorly designed mud brick dwelling will struggle with both old and new rating techniques.

Energy raters can give you a range of options to consider without compromising the design or having to change from a home with mud brick construction.

Before you know it you will find that a 5 Star mud brick home provides you with much more than just reaching a regulatory Standard.

5 Star mud brick homes – there are a range of options

5 Star is a great performance-based standard, meaning that there are a wide range of options available to achieve the required energy rating for a mud brick home while at the same time reducing greenhouse gas emissions.

There is no single formula for obtaining a specific energy rating; a range of features can be used. These include: building orientation, wall/ceiling insulation/window types, size, positioning, shading and thermal performance; as well as floor products and insulation.

Good building practice suggests that draughts should be minimised where possible. Typically, adding R3.5 in the ceiling and adding R2 in the wall insulation levels produce sustainable outcomes. To minimise heat loss through the floor consider a slab construction or insulation under a timber floor. A range of insulation products are available. Insulating under the floor may be unnecessary if other aspects of the design, such as building on a concrete slab or the design of windows, are addressed.

Good window design is important for 5 Star mud brick homes.

- To minimise heat uptake in summer, east or west facing windows need to be shaded from the summer sun with eaves or external blinds.
- For winter, a number of energy efficient options are available, including:
 - Thermally improved windows for some or all windows. This includes the choice of window frames used and/or the type of glass. Double glazing can dramatically reduce winter heat loss. It can also overcome the need to reduce window sizes, particularly for south facing windows.
 - Maximising north facing glass to help heat the home in winter. In summer it is useful to shade northern facing glass using design elements, such as pergolas or including external awnings.



Adapting your design to take advantage of your building site and orient the mud brick home to make use of winter sun will help you to reach a 5 Star Standard with the benefit of increased comfort and lower energy outcomes.

5 Star Mud brick homes – don't cost the earth but save it

Building a 5 Star mud brick home will not cost the earth, but will help save the planet.

Independent quantitative research shows that 5 Star energy and water measures add just two per cent to the average upfront cost of building a house in Victoria. However, these upfront costs are offset in a short period of time. Research also shows that the average household will have budget savings with energy bills cut by about \$200 and water bills by \$50 each year. 5 Star homes are expected to use around 20 per cent less potable water. These are just average savings, if you use your 5 Star mud brick home wisely, you can save even more, while importantly, saving the environment.

Within five years, Victoria's 5 Star homes will reduce annual greenhouse gas emissions by more than 600,000 tonnes of carbon dioxide, the equivalent to taking 150,000 cars off the road – and these savings will grow by almost 40,000 tonnes of carbon dioxide each year.

The benefits of a 5 Star mud brick home

There are economic, social and environmental benefits of a living in a 5 Star mud brick home, such as:

- saving money on energy bills, reducing greenhouse gas emissions and water consumption and being more comfortable year-round
- requiring less energy for heating and cooling, which means installing smaller heating and cooling systems that cost less to buy and operate
- 5 degrees warmer in winter and up to 10 degrees cooler in summer compared with the average new Victorian home before 5 Star, which was rated around 2 Stars
- Improved resale value.

Mud bricks - a natural choice

Mud bricks are a natural building material and recognised widely as very sustainable. Homeowners can be assured by those in the building industry that specialise in building earth homes that mud brick homes will comply with the full 5 Star Standard.



Mud brick homes can reach the 5 Star Standard and, if designed wisely, can deliver sustainability benefits well beyond minimum building regulatory requirements.

For further information

5 Star building regulations, visit the Building Commission website at www.buildingcommission.com.au or phone: 1300 360 380

Energy raters or design of a 5 Star house, visit the Sustainability Victoria website www.sustainability.vic.gov.au or phone: 1300 363 744

Plumbing regulations or water fixtures, visit the Plumbing Industry Commission website at www.pic.vic.gov.au or phone: 1800 015 129

For information on building your home with mud bricks, visit www.mudbrick.org.au or contact the Nillumbik Mud Brick Association P.O. Box 385, Eltham, Victoria 3095 or phone: 0417 599 677

Or visit the Earth Builders Association of Australia visit www.ebaa.asn.au

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