



6-star energy rating for houses and townhouses

From 1 May 2010, a 6-star energy equivalence rating for houses and townhouses (class 1 buildings) will become the minimum requirement in Queensland.

A 6-star energy equivalence rating

A house's energy equivalence rating is determined by the design of its envelope or 'shell' i.e. roof, walls, windows and floors. The rating is out of 10 stars—more stars indicate a more energy efficient and comfortable house. An energy equivalence rating does not take into consideration a house's fixtures and appliances, such as hot water systems, air conditioners, lighting and fridges.

In Queensland, credits are available for homes that have outdoor living areas.

Buildings the 6-star requirement applies to

The 6-star requirement will apply to all new houses and townhouses (class 1 buildings) and enclosed garages (class 10a buildings) attached to class 1 buildings. The requirement also applies to new work done on existing buildings, such as additions, alterations or re-locations.

Development applications submitted before a new or amended building code begins do not need to comply with the new or amended code (i.e. in this case applications submitted prior to 1 May 2010).

Building certifiers have discretion to not apply new or amended codes in cases where planning of a building was well advanced before the new or amended code began and it would take more than minor changes to make the application comply.

The 6-star requirement will not apply to new or existing units (class 2 buildings). Since 1 March 2010, units have been required to achieve a minimum 5-star energy equivalence rating. This will remain unchanged when the Building Code of Australia 2010 commences on 1 May 2010.

Benefit for Queensland

The increase from 5-star to 6-star will help reduce greenhouse gas emissions in all new houses and townhouses built in Queensland. This will help contribute to the Queensland Government's Towards Q2 target to reduce greenhouse gas emissions by one third by 2020.

How does the energy equivalence requirement benefit me?

A 6-star house or townhouse is not only more comfortable to live in, it will also provide you with lower energy bills because it uses less energy for artificial cooling and heating. Reduced energy use from air conditioning means a lower household carbon footprint.

What was the previous requirement in Queensland?

Since 1 March 2009, new houses, townhouses and additions or alterations to existing houses were required to achieve a minimum energy equivalence rating of 5 stars under the Building Code of Australia.

How will this affect renovations and existing parts of the building?

The requirement will apply to new work done on existing houses and townhouses, such as additions, alterations or re-locations. At the time of building approval, a building certifier will need to consider whether some of the requirements apply to the existing parts of the building.

How does my building certifier decide how the 6-star requirements apply to the existing parts of my house for additions or alterations?

Under the *Building Act 1975*, a building certifier has the discretion to determine how the 6-star requirement applies to existing parts of houses with proposed extensions, alterations or re-locations. For example, if the alteration represents more than 50 per cent of the existing building the certifier can determine whether the existing building, along with the alteration, would also need to comply with the new 6-star requirement. It is recommended that you discuss these new requirements with your building certifier during the design stage.

What design options can achieve a 6-star house or townhouse?

As the 6-star housing requirement is performance-based, designers and architects are able to use a range of styles and energy efficient features to comply with the new requirements. These include:

- northern orientation of living rooms
- minimising east and west facing walls and windows
- wider eaves and awnings for shading
- increased insulation
- treated glazing, particularly for windows facing west and north-west
- light coloured roof and walls
- natural ventilation through windows and doorways
- covered outdoor living areas, such as a deck or verandah connected to the building in sub-tropical and tropical areas
- ceiling fans in living areas and bedrooms.

What changes need to be made to a 5-star house to meet the 6-star requirement?

Moving from a 5-star house to a 6-star rating could be as simple as adding an outdoor living area with a ceiling fan or additional insulation inside the roof and more energy efficient windows.

Improved ventilation through louvers, increased roof void ventilation or a light coloured roof are just a few of the other cost-effective options which can also help boost the star rating of a home.

Will the 6-star requirement increase the cost of the building?

It is anticipated that the increase to 6-star will result in building costs increasing by around 1.25 per cent on average depending on its design, size and location. This cost will be offset by ongoing savings for the life of the home on household energy bills by reducing the need for artificial heating and cooling.

How is a 6-star home assessed?

The methods used to assess new houses and townhouses have been improved over time to better reflect Queensland's climatic conditions, including

better consideration of shading and natural ventilation.

The following assessment methods can be used to determine compliance:

- i. Deemed-to-satisfy (DTS)—as per the Building Code of Australia (Part 3.12—Energy efficiency in volume two), with Queensland specific variations outlined in QDC 4.1. This is performed by a building certifier.
- ii. Software—using the latest design software (2nd generation—i.e. BERS Pro, AccuRate or FirstRates) and undertaken by a house energy assessor.
- iii. Verification—using a reference building that allows the intended design to be compared with a design that is known to comply
- iv. Peer review —having an expert confirm if an innovative building design meets the 6-star energy equivalence requirement. The Department of Infrastructure and Planning has a panel of experts to perform this review. For more information, the *Peer review guideline* is available on the Department of Infrastructure and Planning's website.

What is the government doing to make sure the 6-star requirement works in Queensland's unique climate?

A tropical design forum was held in Cairns on 2 March 2010 to discuss implementation options for the 6-star requirement in Queensland's unique climate. Key themes and outcomes of the forum are available on the Department of Infrastructure and Planning's website. A follow-up forum will be held in Toowoomba to discuss a proposed code that will implement the 6-star provisions.

For more information

The draft Queensland Development Code 4.1—Sustainable buildings and an updated version of the associated guideline will be available on the department's website in the coming weeks.

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