
MP 4.1 – SUSTAINABLE BUILDINGS

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Purpose

To ensure:

- (a) *class 1* and *class 2* buildings are energy and water efficient; and
- (b) the *electricity* supplied to each *meterable premises* is able to be measured appropriately.

Commencement

This version of Mandatory Part (MP) 4.1:

- (a) commences on 1 May 2010; and
- (b) replaces the version of MP 4.1 published on 4 February 2010.

Application

This part applies to the lawful carrying out of building work as indicated by ticks (✓) in the relevant columns in Table 1 below.

Note: Reference should also be made to sections 36, 37 and 61 of the *Building Act 1975*, which may affect the application of MP 4.1.

Table 1 – Application of MP 4.1

Application	Performance Requirements											
	1	2	3	4	5	6	7	8	9	10	11	12
Construction of <i>new class 1</i> buildings.	✓		✓		✓		✓	✓	✓			
<i>Renovation</i> of a <i>class 1</i> building.	✓		✓		✓							
<i>Other renovation</i> of a <i>class 1</i> building.	✓		✓		✓		✓	✓	✓*			
Construction of <i>new class 2</i> buildings.		✓		✓			✓	✓	✓	✓	✓	✓
<i>Renovation</i> of a <i>sole-occupancy unit</i> in a <i>class 2</i> building.		✓		✓								
<i>Other renovation</i> of a <i>sole-occupancy unit</i> in a <i>class 2</i> building.		✓		✓			✓	✓	✓*			
<i>Installation</i> of an <i>air-conditioner</i> in a <i>class 1</i> or <i>class 2</i> building.						✓						
Construction of a <i>new class 5</i> building.										✓	✓	✓

* **Note:** This applies to only the new work included in the plumbing approval. This is an applied provision under the *Standard Plumbing and Drainage Regulation 2003*

Referral Agency

There is no referral agency for this part.

Associated Requirements

- *Body Corporate and Community Management Act 1997*
- *Building Act 1975*
- Building Code of Australia (BCA)
- *Building Regulation 2006*
- *Electricity Act 1994*
- *Electricity Regulation 2006*
- *Electrical Safety Act 2002*
- *Electrical Safety Regulation 2002*
- *Sustainable Planning Act 2009*
- *Plumbing and Drainage Act 2002*
- Plumbing Code of Australia
- Queensland Plumbing and Wastewater Code
- *Standard Plumbing and Drainage Regulation 2003*
- *Water Efficiency Labelling and Standards Act 2005*
- *Water Supply (Safety and Reliability) Act 2008*

Referenced Standards

AS/NZS 3823.2	Performance of electrical appliances – air-conditioners and heat pumps – Energy labelling and minimum energy performance standard (MEPS) requirements
AS 62053.21: 2005	Electricity metering equipment (AC)– Particular requirements Part 21: Static meters for active energy (classes 1 and 2)
AS 1284.1:2004	Electricity metering – General purpose induction watt-hour meters

Definitions

Note: Italicised words in the text of the part are as defined below.

Acceptable solution means a relevant building solution which is deemed to satisfy the relevant *performance requirement* for the purposes of section 14 (4) (a) (ii) of the *Building Act 1975*.

Air-conditioner, for the purposes of P4 and A4, means a single-phase or 3-phase *air-conditioner* of the vapour compression type for which a minimum energy performance standard is stated under AS/NZS 3823.2.

Alteration has the meaning given in the *Building Act 1975*.

BCA has the meaning given in the *Building Act 1975*.

BCA 2009 means the edition of the *BCA* published by the Australian Building Codes Board for 2009 and includes any amendments published by the board.

Classes 1, 2, 5 and 10a has the meaning given in the *BCA*.

Climate zone has the meaning given in the *BCA*.

Common area means an area of *common property*.

Common property means the lot allocated to the body corporate for the *community titles scheme*.

Community titles scheme has the meaning given in section 10 of the *Body Corporate and Community Management Act 1997*.

Domestic services has the meaning given in the *BCA*.

Customer has the meaning given in the *Electricity Act 1994*.

Electricity includes electric current, electrical energy and like, and any related physical qualities.

Electricity meter means a device that measures and records the production or consumption of *electricity*.

Electricity sub-meter means a device that measures and records the production or consumption of *electricity* that either:

- a) is a minimum accuracy class 1 under AS62053.21:2005; or
- b) complies with AS1284.1:2004.

Energy Efficiency Ratio (EER) means its tested average energy efficiency ratio for cooling worked out under a standard for testing and rating for performance stated in AS/NZS 3823.2.

Energy efficient lighting is lighting with a minimum output of 27 lumens per Watt and excludes a heat lamp used in a bathroom for the purposes of radiating heat.

Installation means, for an *air-conditioner*, placing in position for use in the building and includes connecting to the building's electrical wiring either directly by a permanently fixed connection or by using a plug to access a general purpose outlet.

Meter label means a label of white heat-resistant material with black lettering fixed by means of screws, rivets or glue that clearly identifies each *meterable premise*.

Meterable premises means:

- a) the *sole occupancy unit* of a *class 2* or *class 5* building that is or will be connected to a supply of *electricity*, except where a *sole occupancy unit* of a *class 2* or *class 5* building has or will have an *electricity meter* as a *customer* of a *retail entity* or *special approval holder*; or
- b) each *storey* of a *class 5* building that is or will be connected to a supply of *electricity* where more than one *sole occupancy unit* for that *storey* has not been

identified at the time of the building's development approval for building work, except where a *storey* of a *class 5* building has or will have an *electricity meter* as a *customer* of a *retail entity* or *special approval holder*.

New means new building work and does not include *renovations* to existing buildings.

Other renovation means any *alteration* or addition to an existing *class 1* building or the *sole occupancy unit* of a *class 2* building which requires a building development approval and a *plumbing approval*.

Outdoor living area means a space that:

- (a) is directly accessible from, and attached to, a living area of the building such as a lounge, kitchen, dining and family rooms; and
- (b) has a floor with a minimum area of 12.0 square metres and a minimum dimension in all directions of 2.5 metres; and
- (c) is fully covered by a impervious roof; and
- (d) has:
 - (i) for *class 1* buildings - two or more sides open or capable of being readily opened, not including the connection between the internal living area and the *outdoor living area*; or
 - (ii) for *class 2* buildings - at least one side open or capable of being readily opened, not including the connection between the internal living area and the *outdoor living area*.

Performance requirement has the meaning given in the *Building Act 1975*.

Plumbing approval means the compliance assessment processes, compliance permit or compliance certificate, under sections 78 and 79 of the *Plumbing and Drainage Act 2002* for ensuring that plumbing, drainage and on-site sewerage systems complies with the *Plumbing and Drainage Act 2002* and *Standard Plumbing and Drainage Regulation 2003*.

Renovation means any *alteration* or addition to an existing *class 1* building or the *sole occupancy unit* of a *class 2* building requiring building development approval.

Retail entity has the meaning given in the *Electricity Act 1994*.

Special approval holder has the meaning given in the *Electricity Act 1994*.

Software rating means an energy rating under the Nationwide House Energy Rating Scheme using a calculation method that complies with the Australian Building Codes Board Protocol for House Energy Rating Software.

Sole occupancy unit has the meaning given in the *BCA*.

Storey has the meaning given in the *BCA*.

Total R-Value has the meaning given in the *BCA*.

Water service is defined by the *Water Supply (Safety and Reliability) Act 2008*.

Water service provider for premises, means the person registered under the *Water Supply (Safety and Reliability) Act 2008*, chapter 2, part 3, as the *water service provider* for retail *water services* for the premises.

**PERFORMANCE
REQUIREMENTS**
**Energy Efficiency – class 1
buildings**

P1 The thermal performance of a *class 1* building and an enclosed *class 10a* building attached to a *class 1* building must comply with *performance requirement P2.6.1* of the *BCA 2010* (Volume 2).

ACCEPTABLE SOLUTIONS

- A1** (1) A *class 1* building, including an enclosed *class 10a* building attached to a *class 1* building, complies with:
- (a) parts 3.12.1, 3.12.2, 3.12.3, and 3.12.4 of the *BCA 2010* (Volume 2) except, for buildings in *climate zones 1* and *2*, disregard 3.12.1.5(a)(i) and (iii); or
 - (b) verification using a reference building in accordance with V2.6.2.2 of the *BCA 2010* (Volume 2); or
 - (c) a *software rating* of not less than 6 stars; or
 - (d) in *climate zones 1, 2* and *5*, a combination of a *software rating* of not less than 4.5 stars and a nominal credit obtained under (2) to reach a total of 6 stars; or
 - (e) in *climate zone 3*, a combination of a *software rating* of not less than 5 stars and a nominal credit obtained under (2) to reach a total of 6 stars; or
 - (f) part 3.12 of the *BCA 2009* (Volume 2), where a nominal credit of not less than 1 star is obtained under (2).
- (2) For the purposes of (1)(d)-(f) the following nominal credits apply:
- (a) 0.5 star where a building includes an *outdoor living area*, the roof covering of which achieves a *Total R-Value* of at least 1.5 for downward heat flow;
 - (b) 1 star where a building includes an *outdoor living area* the roof covering of which achieves a *Total R-Value* of at least 1.5 for downward heat flow and the *outdoor living area* includes a permanently installed ceiling fan with a speed controller and a

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blade rotation diameter of not less than 900 mm;

- (c) 1 star where a building has a solar photovoltaic system of at least 1kW in capacity (maximum power output) installed.

Energy Efficiency – class 2 buildings

- P2** The thermal performance of *sole occupancy units* in class 2 buildings complies with *performance requirement JP1* of the *BCA 2009* (Volume 1).
- A2** (1) The thermal performance of *sole occupancy units* in class 2 buildings complies with *JV1* of the *BCA 2009* (Volume 1) except that:
- (a) for *JV1(a)(i)* each *sole occupancy unit* has an *software rating* of not less than 4 stars; and
- (b) for *JV1(a)(ii)* the average *software rating* of all *sole occupancy units* is not less than 5 star; and
- (c) the deemed to satisfy provisions of Section J of the *BCA 2009* (Volume 1) have no effect for *sole occupancy units*.
- (2) For the purposes of calculating the average *software rating* under *A2(1)(b)* of all *sole occupancy units* of a class 2 building in *climate zones* 1 or 2 the following credits apply towards the *software rating* for each *sole occupancy unit*:
- (a) 0.5 star where a *sole occupancy unit* includes an *outdoor living area*, the roof covering of which achieves a *Total R-Value* of 1.5 for downward heat flow; or
- (b) 1 star where a *sole occupancy unit* includes an *outdoor living area* that has at least one permanently fixed ceiling fan with a speed controller and a blade rotation diameter of not less than 900 mm and the roof covering achieves a *Total R-Value* of 1.5 for downward heat flow.
- (3) To achieve a credit under **A2** (2)(b) an air-conditioner that services any room directly adjacent to an *outdoor living area* must automatically shut down

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REQUIREMENTS**
Energy Efficient *Domestic Services*

- P3** For *class 1* buildings and an enclosed *class 10a* building attached to a *class 1* building, artificial lighting complies with *performance requirement P2.6.2(a)* of *BCA 2010* (Volume 2)
- P4** In *sole occupancy units* of *class 2* buildings fixed artificial lighting must be energy efficient.
- P5** For *class 1* buildings hot water systems comply with the Queensland Plumbing and Wastewater Code.
- P6** In *class 1* and *class 2* buildings new and replacement *air-conditioners* must be energy efficient.

Water Conservation

- P7** In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, shower roses must facilitate the efficient use of water.

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when an external door that provides access to the *outdoor living area* is open for more than 1 minute.

- A3** *Class 1* buildings, including a verandah, balcony or an enclosed *class 10a* building attached to a *class 1* building, have:
- artificial lighting that complies with Part 3.12.5.5 of *BCA 2010* (Volume 2); or
 - energy efficient lighting* for a minimum of 80 per cent of total fixed artificial lighting.
- A4** *Sole occupancy units* of *class 2* buildings, including a verandah, balcony or an enclosed *class 10a* building attached to a *class 2* building, have *energy efficient lighting* for a minimum of 80 per cent of total fixed artificial lighting.
- A5** For hot water systems for a *class 1* building:
- disregard *BCA 2010* (Volume 2) 3.12.5.6; and instead
 - comply with the Queensland Plumbing and Wastewater Code.
- A6** In *class 1* and *class 2* buildings, new and replacement *air-conditioners* have an *EER* of at least 2.9.

- A7** In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, all shower roses have a minimum 3-star Water Efficiency Labelling and Standards rating.

Note: Water Efficiency Labelling and Standards (WELS) – references the Australian Government’s labelling and standards scheme for water efficient products.

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REQUIREMENTS**

P8 In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, toilet cisterns and bowls must facilitate the efficient use of water.

P9 In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, tap ware must facilitate the efficient use of water.

ACCEPTABLE SOLUTIONS

A8 In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, all toilets cisterns:

- (a) have a dual flush function and have a minimum 4-star Water Efficiency Labelling and Standards rating; and
- (b) are compatible with the size of the toilet bowl to allow for proper functioning of the toilet.

A9 In *class 1* and *class 2* buildings, in areas serviced by a *water service provider*, tap ware with a minimum 3-star Water Efficiency Labelling and Standards rating serves:

- (a) laundry tubs; and
- (b) kitchen sinks; and
- (c) basins.

Electricity Sub-metering

P10 The *electricity* supplied to each *meterable premises* is able to be measured.

P11 An *electricity meter* must be located so it is easy and safe to read and maintain at any reasonable time.

P12 The *electricity meter* for each *meterable premises* must be labelled to indicate which *meterable premises* it is associated with.

A10 Each *meterable premises* has an *electricity sub-meter* installed which measures only the *electricity* supplied to that *meterable premises*.

A11 The *electricity sub-meter* is:

- (a) installed in a *common area*; and
- (b) free of hindrance or obstruction to a person authorised to read and/or maintain the *electricity sub-meter*.

A12 A *meter label* identifying which *meterable premises* it is associated with is affixed or located adjacent to the *electricity sub-meter* for each *meterable premises*.