# 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) air-conditioners installed in class 1-10 buildings are energy efficient; and
(c) 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 September 2010; and
(b) replaces the version of MP 4.1 published on 1 May 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

<table>
<thead>
<tr>
<th>Application</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tr>
<td>Construction of new class 1 buildings.</td>
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<tr>
<td>Renovation of a class 1 building.</td>
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<tr>
<td>Other renovation of a class 1 building.</td>
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<tr>
<td>Other renovation of a sole-occupancy unit in a class 2 building.</td>
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<tr>
<td>Installation of an air-conditioner in a class 1-10 building.</td>
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<td>✓</td>
</tr>
</tbody>
</table>

* 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

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>AS 62053.21: 2005</td>
<td>Electricity metering equipment (AC)– Particular requirements Part 21: Static meters for active energy (classes 1 and 2)</td>
</tr>
<tr>
<td>AS 1284.1:2004</td>
<td>Electricity metering – General purpose induction watthour meters</td>
</tr>
</tbody>
</table>

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 P6 and A6, 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.

Class 1 to 10 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.
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).

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
### 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:

- for JV1(a)(i) each sole occupancy unit has an software rating of not less than 4 stars; and
- for JV1(a)(ii) the average software rating of all sole occupancy units is not less than 5 star; and
- 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:

- 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
- 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.
### Energy Efficient Domestic Services and air-conditioners

<table>
<thead>
<tr>
<th>PERFORMANCE REQUIREMENTS</th>
<th>ACCEPTABLE SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P3</strong></td>
<td><strong>A3</strong></td>
</tr>
<tr>
<td>For <strong>class 1</strong> buildings and an enclosed <strong>class 10a</strong> building attached to a <strong>class 1</strong> building, artificial lighting complies with performance requirement P2.6.2(a) of BCA 2010 (Volume 2)</td>
<td>Class 1 buildings, including a verandah, balcony or an enclosed <strong>class 10a</strong> building attached to a <strong>class 1</strong> building, have:</td>
</tr>
<tr>
<td></td>
<td>(a) artificial lighting that complies with Part 3.12.5.5 of BCA 2010 (Volume 2); or</td>
</tr>
<tr>
<td></td>
<td>(b) energy efficient lighting for a minimum of 80 per cent of total fixed artificial lighting.</td>
</tr>
</tbody>
</table>

| **P4**                   | **A4**               |
| In sole occupancy units of **class 2** buildings fixed artificial lighting must be energy efficient. | 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. |

| **P5**                   | **A5**               |
| For **class 1** buildings hot water systems comply with the Queensland Plumbing and Wastewater Code. | For hot water systems for a **class 1** building: |
|                          | (a) disregard BCA 2010 (Volume 2) 3.12.5.6; and instead |
|                          | (b) comply with the Queensland Plumbing and Wastewater Code. |

| **P6**                   | **A6**               |
| Replacement and new air-conditioners in **class 1-10** buildings must be energy efficient. | In **class 1-10** buildings, new and replacement air-conditioners have an **EER** of at least 2.9. |

### Water Conservation

| **P7**                   | **A7**               |
| In **class 1** and **class 2** buildings, in areas serviced by a water service provider, shower roses must facilitate the efficient use of water. | 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.
### PERFORMANCE 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. |

| 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. |

| 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. |

| 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. |

### ACCEPTABLE SOLUTIONS

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

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

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

| 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. |

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

| 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. |

### Electricity Sub-metering