

Energy efficient lighting in houses, townhouses and units in Queensland

The Queensland Government recently approved a range of energy efficiency requirements, including new requirements for lighting. The QDC MP4.1 Sustainable Buildings requirements came into effect on 1 March 2009 and apply only in Queensland.

What buildings are affected?

All new buildings, together with renovation of dwellings or homes that are single, attached, apartment, boarding or guesthouse, including garages. Existing homes, townhouses or units undergoing major renovation or extension will only require energy efficient lighting (EEL) in the area covered by the new work.

Change from QDC MP4.1 2006

The basis on which EEL is provided has changed. The previous requirement was to install EEL, defined as fluorescent lighting, in 40% of the home floor area.

The new provisions require EEL to be:

- ⇒ installed at a minimum of 80% of total fixed lighting positions - ie based on number of lights installed internally in the home. (This applies to all areas inside the walls under the roof, including garages, but not necessarily sheds, carports, porches or verandas.)
- ⇒ 'lighting with a minimum efficacy (output) of 27 lumens per Watt (excluding lamps used in bathrooms for the purposes of radiating heat).'

How are lumens per Watt determined?

Use the lamp packaging or manufacturer's data sheet. Divide the lamp's luminous flux (that is, light output indicated as 'lm') by the wattage (the lamp power indicated as 'W'). For example, a 60W household incandescent lamp with 720 lm has an efficacy of 12 lumens per Watt. This would not be acceptable under QDC MP4.1, while an 11W com-

compact fluorescent lamp with 630 lm and 57 lm/W is acceptable.

How do I comply? What products comply?

From 1 March 2009 all lamp types*¹ will still be available for use in new and renovated buildings in Queensland. However, the types that can be used in 80% of the internal floor area are restricted to those lamps with a minimum efficacy (output) of 27 lumens per Watt.

The most common household lamps used internally are the pear shape General Lighting Service (GLS) light bulbs and low voltage tungsten halogen lamps. GLS lamps have ratings of only 7-10 lm/W. Low voltage tungsten halogen lamps are approximately 15 lm/W. Therefore, because of their poor energy performance, these types of lamps are restricted to a maximum of 20% of the dwelling.

All forms of fluorescent lamps - linear (straight tube), circular and compact fluorescent lamps have lm/W ratings that qualify for use in the 80% area of the dwelling.

LED luminaires may also be used provided they achieve greater than 27lm/W.

For more information






Refer to the *Sustainable housing guidelines* and QDC MP 4.1- Sustainable buildings. Both are available at www.dip.qld.gov.au


See following pages for attributes of commonly available lamps

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Lamp type/ technology	Common descriptions and wattages	Lumens/Watt (lm/W)	Image/comments
Incandescent/ filament	<ul style="list-style-type: none"> • Globe • Lamp • GLS • 'A' shape • Pear shape <p>25, 40, 60, 75, 100W</p>	7 - 12	<p style="text-align: center;">Fine wire</p> 
Incandescent/ filament	<ul style="list-style-type: none"> • Reflector • Candle • Fancy round 	7-11	
Tungsten halogen/ filament & halogen gas	<p>Mains voltage. These lamps have an approximate wattage of 18, 28, 42, 52 and 70 Watts.</p> <p>GU10 base lamps</p> <p>Linear lamps 100-1500W</p>	12-20	<p style="text-align: center;">halogen</p>  <p>The halogen capsule is clearly visible at the centre of the bulb (clear finish bulbs)</p>
Tungsten halogen/ filament & halogen gas	<p>Low voltage halo- gen</p> <ul style="list-style-type: none"> • MR16 • Dichroic <p>20, 35, 50W</p>	15	 <p>Note: Low voltage does not mean low energy consumption</p>
Compact fluo- rescent ¹	<ul style="list-style-type: none"> • Energy saving lamps • CFLs <p>5, 7, 9, 11, 15, 21W</p>	45-70	

Fluorescent ² Linear Circular	Linear 18, 36W 14, 28W Circular 22, 32, 40W	70-100	
Neon/ fluorescent		50	Check before installing.
light emitting diode/solid state lighting	LED SSL	20-100	Some product may not achieve the required lm/W values. Check before installing.
Mercury va- pour/gas dis- charge	MV	60	Not recommended for domestic applications. May be suitable for some garage applications. Slow to start.
Metal halide/ gas discharge	MH	90-135	Used for high performance lighting. Consult a lighting specialist.

1. From November 2009 GLS lamps will be banned at retail sale. From 1 February 2009 they could not be imported. GLS lamps are a subset of a much larger range of incandescent type of lamp. The lamps that are banned at import and will be banned at retail sale from November 2009 are described as *filament, gas filled or vacuum, non reflector, GLS lamps, with power ≤ 200 Watts, voltage > 100 Volts. Excluded are: coloured, ultra-violet, infra-red, sealed beam and tungsten halogen lamps in both mains and low voltage.*

2. All fluorescent lamps are available in a range of colours. It is important that a colour suitable for purpose is selected.

Colour and suggested purposes are:

Warm white – provides a soft, warm, yellowish tone similar to that provided by an incandescent lamp. Use in living and bedroom areas.

Cool white – provides cool neutral light similar to office lighting. Use in laundries and garages. May be used in kitchens.

Daylight – blue, cold appearance, similar to outdoor light at midday.