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### Internal Lighting \_



#### Overview

All lighting in this section \*complies with the Code for Sustainable Homes November 2010 criteria. For lighting that complies with the Code for Sustainable Homes November 2009 criteria, [Click Here](#)

To comply with CfSH 2010 criteria internal lighting is now included in the SAP calculation. To achieve a SAP rating internal lighting must meet Part L1A 2010 specification. In summary, this comprises of:

- a bulb providing light in excess of 400 lumens
- to provide light at an efficiency of more than 45 lumens per watt
- light fittings using less than 5W (typically LED lights) are excluded from the count to encourage their use

#### Part L1A 2010 Compliance Requirements

Part L1A was revised in 2010 increasing the efficiency requirements for fixed internal lighting to a minimum of 45 lumens per watt with bulbs producing a minimum light of 400 lumens:

**Table 40: Recommended minimum standards for fixed internal and external lighting**

Lighting	New and replacement systems	Supplementary information
Fixed internal lighting	<p>a. In the areas affected by the building work, provide low energy <b>light fittings</b> (fixed lights or lighting units) that number not less than three per four of all the <b>light fittings</b> in the main dwelling spaces of those areas (excluding infrequently accessed spaces used for storage, such as cupboards and wardrobes).</p> <p>b. Low energy <b>light fittings</b> should</p>	<p><b>Light fittings</b> may be either:</p> <ul style="list-style-type: none"> <li>• dedicated fittings which will have separate control gear and will take only low energy lamps (e.g. pin based fluorescent or compact fluorescent lamps); or</li> <li>• standard fittings supplied with low energy lamps with integrated control gear (e.g. bayonet or Edison screw base</li> </ul>

## Light Fittings and Codes Explained

When you are looking for a light bulb, it is generally broken down into a code. This code comprises of several different parts, explained as follows:

### Candle BC 10w

**Candle** is the shape of the bulb, in this case a candle shape

**BC** is the type of fitting or connection, in this case a BC or Bayonet Cap

**10w** is the wattage

### Light Fittings/Connections





**L1/G10** - L1 is a dedicated low energy fitting. Whilst very similar to GU10, the noticeable difference is the recess hole in the middle bottom of the cap. The L1 lamp holder has a pin which fits into this hole, preventing the use of non L1 compliant bulbs (G10 bulbs). The L1 cap is normally used with CFL (compact fluorescent light) bulbs.



**BC** - stands for bayonet cap. This is the traditional fitting that has been around for many years and is widely used throughout the world.



**SBC** - stands for small bayonet cap. Exactly the same as the normal bayonet cap but smaller.



**ES** - stands for Edison screw. Also known as screw fittings and is also a very common fitting for older lights.



**SES** - stands for small Edison screw. Exactly the same as the normal Edison screw fitting only smaller.



GU5.3 - 2 pins 5.3mm apart. Usually used on 12 volt downlighter systems.

## Types of light bulb

Whilst there are many different shapes of light bulb available (including golf ball, candle, tube, downlight etc), there are 3 main ways in which light is generated:

**CFL** - stands for compact fluorescent light. These lights currently provide the best balance of efficiency and light (lumens).

**LED** - stands for light emitting diode. LEDs are the most energy efficient bulbs available however at the moment there are only limited choices

**Halogen** - The cheapest and most widely available lights today. Whilst slightly more efficient than incandescent bulbs, they still use approximately 70% of the energy of old incandescent bulbs and generate a lot of heat. Halogen bulbs

**Incandescent** - Traditional lights that emit bright light but use a lot of energy and generally have a shorter life span than the other types of bulb. These types of light have now been banned across Europe due to their low energy efficiency.

## Bulb Brightness

Light is measured in lumens. The higher the number the brighter the light. Here is a table showing the different levels from different bulbs:

Bulb Type	Lumens	Efficiency (lumens per watt)
Incandescent (60 watt)		
Halogen (50 watt)		
CFL (15 watt)		
LED (7 watt)		

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