

# Using electrical equipment in the bathroom

## 17th edition of the IEE Wiring Regulations

for pre 30th June 2008 version, see [this page](#).

See [Electrical Building Regs 2005](#)

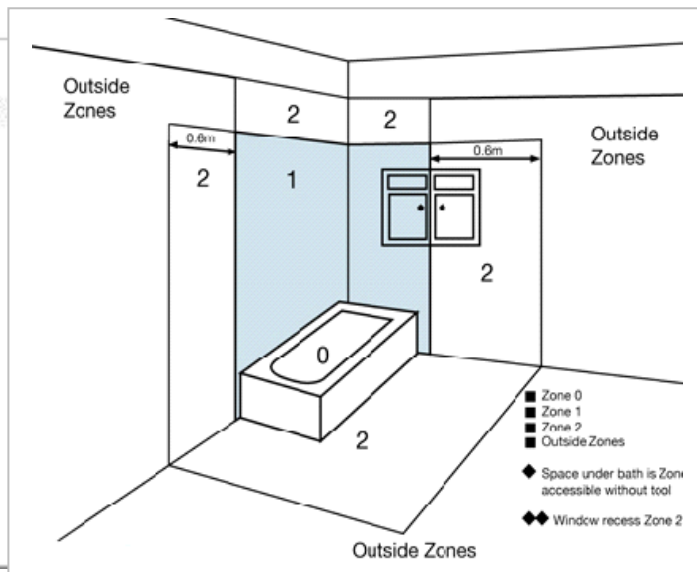
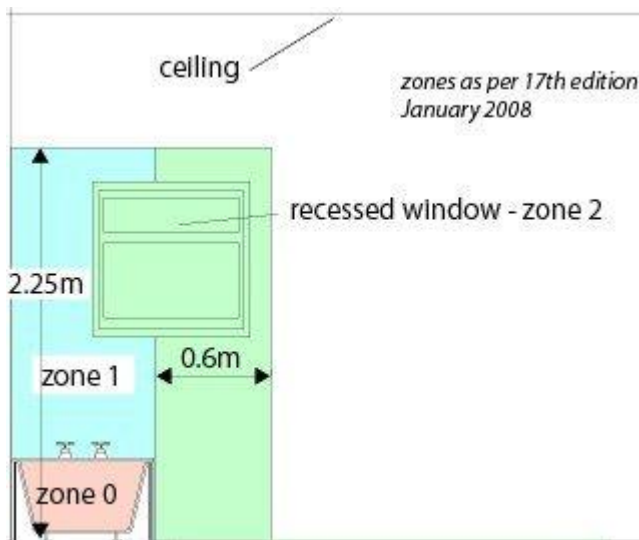
*the zones - protection - equipment for bathrooms - use of equipment*

Using electrical equipment in bath or shower rooms has always needed care to ensure safety. The IEE Wiring Regulations (16th Edition) identified particular zones within the bathroom to indicate what type of electrical equipment that can be installed, these zones have now been updated by the 17th Edition of the IEE Wiring Regulations.

**This page is given for guidance only, always refer to the current IEE Wiring Regulations or a qualified electrician to ensure that you are guided by the latest regulations/code of practice.**

### The zones

The 17th Edition of the IEE Wiring Regulations redefined the zones for electrical equipment in bathrooms and must be used for installations designed after 30th June 2008. They are now identified from 0 to 2, with 0 being the wettest - the previous zone 3 is no longer defined.



#### Zone 0

The interior of the bath or shower which can hold water.

#### Zone 1

The area directly above zone 0 limited vertically to 2.25m above the bottom of the bath or shower. Also 1.2m horizontally from the centre of a shower outlet to the height of the outlet or 2.25m whichever is the higher.

#### Zone 2

The area beyond zones 0 and 1, 0.6m horizontally and up to 2.25m vertically. Zone 2 also included any recessed window with a sill next to the bath.

#### Note:

- Providing that the space under the bath cannot be accessed without using tools (i.e. screwdriver etc), that space is considered to be 'out of scope'.

## Protection

All electrical circuits within bathrooms must be protected by Residual Current Devices (RCD) not exceeding 30mA. This applies all electrical equipment whether it is controlled a switch in the bathroom or remotely switched.

## Equipment for bathrooms

Electrical equipment may be identified as having a certain level of mechanical and moisture protection, these are quoted as 'Ingress Protection' (or IP) numbers - such as 'IPXY', where X and Y are numbers, the X showing the level of mechanical protection and Y showing the level of moisture protection - in both cases, the higher the number, the better the protection. If a piece of equipment does not have an IP number, it must not be used in zones 0, 1 or 2 (or elsewhere having a wet/damp environment).

Typical electrical items which are marked with IP numbers include:

- Extractor fans
- Lighting
- Heaters
- Electrical shower units
- Shower pumps

Shaver power points are not IP rated, however, if they comply with BS EN 60742 Chapter 2, Section 1, they can be located in zone 2 (or beyond) providing they are unlikely be be the subject of direct spray from any shower.

As well as IP numbers, items may be classed as PELV or SELV.

- Protective Extra-Low Voltage (PELV) - As the name suggests, the item uses low voltage but it is connected to earth.
- Separated Extra-Low Voltage (SELV) - Again a low voltage system but the output is isolated from the input.

Standard electrical wall fittings (such as wall sockets, flexible cord outlets and fused switches etc) are not IP rated so cannot be installed within zones 0, 1 or 2. No standard socket outlets are allowed within 3m of the outer limit of zone 1, and any socket fitted would be on a RCD protected circuit (as per Protection above).

## Use of Equipment

Any electrical item approved for use in a zone may be used in another zone with a higher number, but not in a lower number zone.

### Zone 0

Requires electrical products to low voltage (max. 12 volts) and be IPX7 (the mechanical protection is unimportant).

### Zone 1

Requires electrical products to be IPX4 or better, or SELV with the transformer located beyond zone 2.

### Zone 2

Requires electrical products to be IPX4 or better, or SELV with the transformer located beyond zone 2.

### Beyond zone 2

When the size of bathroom extends beyond zone 2, portable equipment is allowed, however they should be positioned such that that their flex length does not enable them to be used in zone 2.



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