



## **Bathrooms & Supplementary Bonding to 17<sup>th</sup> Edition (BS 7671-2008)**

### Supplementary Bonding

Supplementary bonding has been a significant feature of the 16<sup>th</sup> edition of BS 7671 but this has now changed with the introduction of the 17<sup>th</sup> edition.

For new installations or alterations / additions in a location containing a bath or shower, supplementary bonding will not be required if:

- The disconnection times required by Section 411 of BS 7671 are met, *and*
- All circuits are protected by RCD's having the characteristics required by 415.1.1, *and*
- The building has protective equipotential bonding in accordance with 411.3.1.2, *and*
- All extraneous-conductive parts of the location are effectively connected to the protective bonding. (See note below)

Note: Regulation 415.2.2 states that where doubt exists regarding the effectiveness of supplementary equipotential bonding, it shall be confirmed that the resistance R between simultaneously accessible conductive parts and extraneous conductive parts fulfils the following condition:

$$R \leq 50V / I_a \text{ for a.c. systems}$$

By example, using a 30mA RCD (Required by 415.1.1)

$$R \leq 50V / 30mA = 1667 \text{ ohms}$$

Where supplementary bonding is required, Regulation 701.415.2 requires that the protective conductor (cpc) of each circuit entering the room containing a bath or shower, be connected to the extraneous-conductive parts by local supplementary equipotential bonding conductors complying with Regulation group 544.2.

This is carried out to prevent the occurrence of voltages between any such parts being of such magnitude as could cause danger of electric shock.

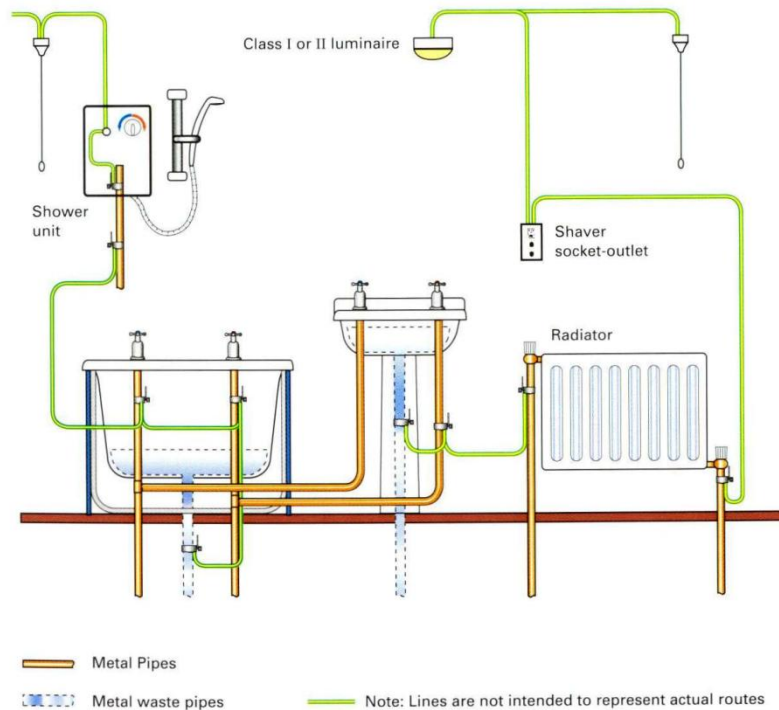


Fig 7.4 Supplementary equipotential bonding, typical example within a bathroom

### Automatic disconnection of supply

Where the protective measure 'automatic disconnection of supply' is used, additional protection by a residual current device, with a rated residual operating current not exceeding 30mA is required for all circuits in locations containing a bath or shower.

Practically this means that every circuit entering a bathroom should be protected by an RCD with a rated residual operating current not exceeding 30mA. Careful consideration should be given to how circuits are divided, to eliminate the problems with unwanted tripping of RCD's.

### SUMMARY

With a Continuity tester on the Ohms setting, test between each metal pipe that enters the bathroom (Extraneous conductive parts) and the circuit protective conductor (cpc) of each electrical circuit in the bathroom.

If the reading obtained is less than 1667ohms **and** all circuits are protected by 30mA RCD's **then** no Supplementary Bonding is required.

If **any** of the above requirements cannot be met, Supplementary Bonding **must** be installed.

*Passionate* about connections

north east  
england