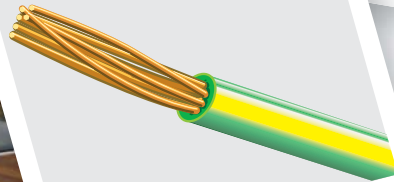
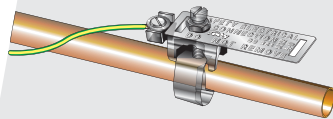


Why do earthing and bonding need to be checked?



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Definitions

Bonding – A way of reducing the risk of getting an electrical shock.

Conductors – Wires that carry electricity.

Consumer unit – A fusebox that is used to control and give out electricity around the home. It usually contains a main switch, fuses or circuit-breakers and one or more residual current devices (see RCD).

Current – Flowing electricity.

Earth – A connection to the ground.

Earthing – A way of preventing electric shocks.

Electrical installation – A fixed wiring system.

Live – Active (there is electricity).

Main bonding – Green and yellow conductors that connect metal pipes (gas, water or oil) from inside a building to the main earthing terminal of the electrical installation. Main bonding connections may also be made outside the building, for example where a semi-enclosed gas meter box is installed outside and it is not possible to install a bond to the gas installation pipework indoors.

Main earthing terminal – Where earthing and bonding conductors are connected together.

Residual current devices (RCD) – A sensitive switching device that trips a circuit when it finds an earth fault.

Supplementary bonding – Green and yellow conductors that connect accessible metal parts of electrical equipment (such as a heated towel rail) to accessible metal parts of items of electrical equipment and/or accessible metal parts of items that are not electrical (such as pipes). These connections are made to prevent a dangerous voltage between two accessible metal parts, in case there is a fault. You may need supplementary bonding in bath or shower rooms, except where all circuits in the bath or shower room are RCD protected and the main bonding is good enough.

Voltage – The force of electricity.

Why do earthing and bonding need to be checked?

If you are having an alteration or addition made to your electrical installation, your electrician must check (as well as other things) that the earthing and bonding arrangements you have are up to the required standard. This is because the safety of any new work you have done (however small) will depend on the earthing and bonding arrangements.



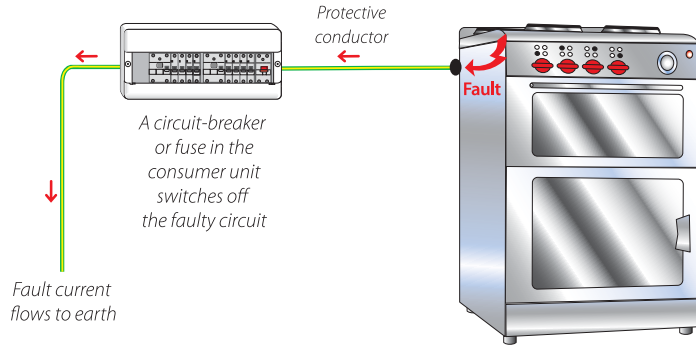
What is earthing?

If there is a fault in your electrical installation you could get an electric shock if you touch a live metal part. This is because the electricity may use your body as a path from the live part to the earth part.

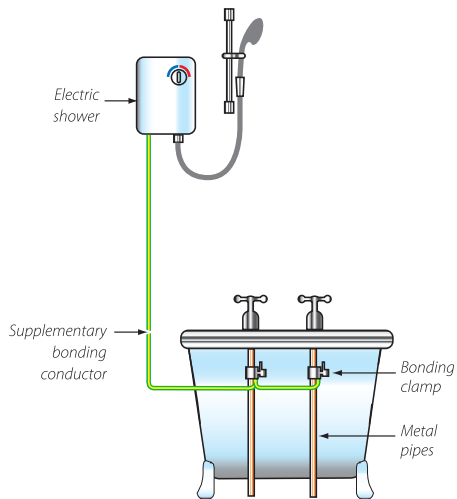
Earthing is used to protect you from an electric shock. It does this by providing a path (a protective conductor) for a fault current to flow to earth. It also causes the protective device (either a circuit-breaker or fuse) to switch off the electric current to the circuit that has the fault.

For example, if a cooker has a fault, the fault current flows to earth through the protective (earthing) conductors. A protective device (fuse or circuit-breaker) in the consumer unit

switches off the electrical supply to the cooker. The cooker is now safe from causing an electric shock to anyone who touches it.



What is bonding?



Bonding is used to reduce the risk of electric shocks to anyone who may touch two separate metal parts when there is a fault somewhere in the supply or electrical installation. By connecting bonding conductors between particular parts, it reduces the voltage there might have been.

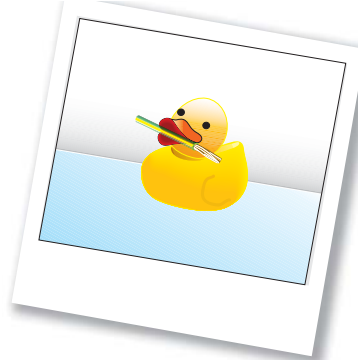
The types of bonding generally used are main bonding and supplementary bonding.

More advice

An electrician will give you advice if your earthing or bonding needs to be improved for safety reasons.

We strongly recommend that you use an electrician registered with a government-approved scheme to carry out any electrical installation work you need doing.

For details on how to find a registered electrician visit our website at www.esc.org.uk.



The Electrical Safety Council

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