MASHWORTH SERVICES

Professional - Reliable - Electrical

Understanding Main Protective Bonding

What is Main Protective Bonding

Main protective bonding is an essential electrical safety feature found in every property.

It connects incoming metal services - such as gas and water pipes - to the electrical earthing system.

Although it's rarely seen, bonding plays a critical role in protecting against electric shock.

What Main Protective Bonding Is and Why It Matters

Metal pipework can become live under certain fault conditions.

Bonding keeps all major metal parts in your property at the same electrical potential.

This helps to:

- Reduce the risk of electric shock
- Allow protective devices to operate correctly
- Improve overall electrical safety

Bonding works alongside earthing and protective devices such as RCDs and RCBOs.

Learn more about protective devices in our RCD guide.

How Main Bonding Works

Bonding connects metal services to the main earthing terminal (MET), forming part of the earthing system.

In a fault situation:

- Electricity flows safely back through the earthing system
- Protective devices detect the fault
- The power is automatically disconnected

This process helps prevent dangerous situations from developing.

How It Works (Technical Overview)

Main protective bonding is required under BS 7671 (Regulation 411.3.1.2).

It connects extraneous-conductive-parts (metal items not part of the electrical system) to the MET.

Common examples include:

- Gas pipework
- Water pipework
- Structural steel
- Oil pipework (where present)

In most domestic properties, bonding conductors are:

- Typically 10 mm^2 copper
- Installed with labelled bonding clamps

Without adequate bonding, protective devices may not operate correctly during a fault - increasing the risk of electric shock.

Why Electricians Check Bonding

During an Electrical Installation Condition Report (EICR), bonding is always assessed.

This includes confirming:

- Correct conductor size
- Secure connections
- Proper labelling
- Connection to the correct services

If bonding is missing or incorrect, it must be corrected before any substantial electrical work can safely proceed.

Learn more about EICRs and what's checked during an inspection on our ***Electrical Safety Inspection page.***

What to Look For

Bonding is usually found:

- Near the **gas meter**

- Near the **water entry poin**t

You'll typically see:

- Green and yellow cables
- Clamps with labels such as:
  "Safety Electrical Connection – Do Not Remove"

These connections should never be removed or interfered with.

Important to Know

If work is carried out on:

- Gas pipework
- Water systems

The bonding should always be checked afterwards to ensure it remains effective.

Our Approach

At Mashworth Services, we always check that earthing and bonding are correct when carrying out:

- Electrical inspections
- Consumer unit upgrades
- General electrical work

This ensures your installation remains safe, compliant, and reliable

Summary

Main protective bonding is a simple but essential part of your electrical system. It:

- Prevents dangerous voltage differences
- Reduces the risk of electric shock
- Ensures protective devices work correctly

Although it often goes unnoticed, it plays a key role in keeping your property safe.

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