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Working safely around
electricity for the

Plumbing Industry



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Government



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Under normal conditions, electricity that enters an electrical installation to power equipment will return to the local substation transformer via the neutral conductor. However, under certain fault conditions, metal water pipes may provide the return electrical path instead of the neutral conductor. Plumbers working on metal water pipes under these conditions are at risk of serious, even fatal, electric shock.

Working on metal water services

Before installing water meters or repairing or replacing metal water services, plumbers and their assistants should plan and use a safe system of work to prevent or minimise the risk of electric shock.

The safe system of work you use should suit the particular situation and should include the following procedures (refer to AS/NZS 3500.1 Plumbing and drainage Part 1: Water services).

Plan

- Plan the job by assessing electrical and other risks and taking suitable steps to stay safe.

Do

- Where possible, switch off the electrical main switch, or switches, at the premises and attach a tag reading 'DANGER DO NOT SWITCH ON'.
- Take additional steps to reduce electrical risk. Your work methods should avoid skin contact with metallic water pipes being worked on e.g. gloves and long trousers.
- Thoroughly clean a section of metal pipe on each side of the length being repaired.
- Attach an insulated bridging conductor—stranded copper cable capable of carrying 70 amperes that has appropriate end clamps with insulated handgrips—to span the length of pipe to be cut.

Check

- Check to ensure the clamps make good electrical contact with the metal pipe.
- Check to ensure the bridging conductor remains undisturbed until the work is finished.
- Where any existing metallic service pipe is to be replaced by non-metallic pipe or fittings, have the electrical installation checked by a licensed electrical contractor and modified if necessary to ensure the electrical earthing system for the premises remains effective.

Act

- Notify the local electricity distributor and the householder immediately if you see anything abnormal such as electric sparks or you feel an electric shock.

