



Safety Alert

ELECTRICAL HAZARDS FOR PLUMBERS

issued by WorkCover NSW



18 March 2005

This Safety Alert has been prepared to highlight and reinforce recommended safe practices for plumbers and other related workers who carry out work on a customer's water service.

WorkCover reminds plumbers and associated workers that this work can result in serious or fatal electric shock when removing water meters, cutting through or disconnecting metallic water pipes or carrying out other work to the customer's water service on the premises i.e. the water service section including the meter, but not including the property service (main-to-meter) which is generally maintained by the local water utility.

Background

The recent death of a water utility maintenance worker has highlighted the hazards created by electricity. The worker was electrocuted while repairing a water service that involved cutting the pipe at a private residence.

The main contributing factor in these types of incidents is that a fault with the electrical supply in the area (on the premises or in the street) has occurred causing the metallic piping used to connect the water supply to become "live". When the pipe is cut or disconnected either side of the pipe could become "live" causing the worker or the worker trades assistant to receive a serious or fatal electric shock.

What should be done?

Prior to the removal of water meters, or the repair/replacement of metallic water piping at premises, workers and their assistants should incorporate the following items in their work procedures, which are consistent with Clause 5.2, Electrical safety precautions and earthing outlined in the Australian Standard AS/NZS 3500.1:2003 Plumbing and drainage Part 1: Water Services;

- Before commencing work discuss with the customer the operational condition of the electrical installation; if any electrical fault is suspected, e.g. minor electric shocks from pipes, taps, etc do not commence work on the water service. Immediately notify the customer and the local electricity network operator of any suspected electrical fault.
- With the customer, locate the main switches for the premises, and turn off, if practicable. Attach a "DANGER DO NOT SWITCH ON" tag or lock the switchboard to prevent operation of the main switches until the work is completed.

PRINT THIS LEAFLET AND PLACE IT ON YOUR NOTICE BOARD AT WORK



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- Caution: If an electricity supply fault occurs on the “street side” of the water meter and the water service is not plastic the water main and associated piping may still be “live” and isolation of electrical power at the premises will not eliminate the risk of electric shock to those working on the customer’s water service. Attachment of a bridging conductor is therefore the primary risk control measure;
- Thoroughly clean a section of pipe each side of the length to be cut or disconnected – including either side of the meter if this is to be removed;
- Attach a bridging conductor (current rating not less than 70 amperes) to span the work area where the metal pipe is to be cut or a meter is to be disconnected and keep it undisturbed until work is finished. Ensure the clamps make good physical contact with the cleaned parts of the metal pipe. Note: A car battery jumper lead or similar would be suitable in most cases but you must ensure strong clamps are fitted to each end of the lead;
- The electrical bridging conductor must not be broken or removed until all work on the water service is completed and continuity of the metallic service pipe is restored – removal during work may result in a serious or fatal electric shock;
- Where any existing metallic pipe is to be replaced in part or in its entirety by plastic pipe or other non-metallic fittings or couplings, the work must not commence until the earthing requirements have been checked by an electrical contractor and modified, if necessary;
- Plumbers must not disconnect any earth wires, which are sometimes attached to metal water pipes. If an earth wire needs to be moved, disconnected or shows signs of being damaged, plumbers should advise the customer that an electrical contractor is required to carry out the work;

Other electrical safety advice for plumbers

- Check the customer’s power points with a power point safety tester before connecting your equipment and use a portable safety switch also known as a Residual Current Device (RCD) to reduce the risk of electric shock from faults in your portable power tools or extension cords.
- Ensure your portable power tools and extension cords are regularly inspected and tested in accordance with WorkCover’s Code of Practice – Electrical practices for construction work.
- Before digging, find out if there are any underground electrical cables in the area you are digging.
- Take extra precautions when working on gutters and metal roofs or fascias near the point of attachment of electricity supply lines to the premises. For further advice when working near overhead power lines contact the local electricity network operator.

For further information contact your local WorkCover NSW office listed in the telephone directory, or ring the WorkCover Information Centre on 13 10 50 or visit WorkCover’s website at www.workcover.nsw.gov.au.

Produced by State Coordinator – Electrical Plant Team – Hazard Management Group

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