

UNDERGROUND DISTRIBUTION (URD) SECTION 9

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1. GENERAL

1. When working on underground distribution assets, employees shall:
 - Be appropriately trained and authorised for the purpose of the work.
 - Regard any URD equipment and conductors that have been in service as energised until approved testing methods confirm that they are de-energised, and where possible earthed in accordance with Network Owners procedures.
 - Thoroughly inspect energised cables/equipment prior to working on them whilst they are energised.
 - Prior to working on a transformer, check for backfeed once it has been disconnected from the power source.

Only expose one conductor at a time (except when testing for voltage) when undertaking any live work.
 - Adequately protect trenches required to be left open, to protect the public and employees. Warning lights and warning tape shall be used where such trenches are left open overnight.
2. Underground cables that have been in service shall be:
 - Considered energised at all times unless properly disconnected from all sources of supply, tested and earthed.
 - Proven discharged, and earthed before work is performed other than when performing live low voltage jointing.
 - Spiked prior to cutting. Whilst the cable is being spiked, all non-essential personnel shall remain outside of the manhole, vault, trench or ditch.
3. When work is to be performed on one phase of a multiphase underground distribution circuit, all phases of that circuit shall be de-energised and earthed. **NOTE:** where possible, the phases shall be bonded together.
4. When installing or removing equipment, the first conductor to be connected and the last conductor to be removed shall be the case earth/neutral.

5. Treat all cables which are energised in excess of 415 volts, and which do not have earthed conducting sheaths or screening, as bare conductors. They must be considered energised unless approved methods have been used to determine that they are de-energised.
6. Barricade or cover with protective equipment, all unscreened conductors and energised equipment that will be within reach of a person's working position.

2. LIVE JOINTING

Safety precautions

- All Personal Protective Apparel shall be worn and Personal Protective Equipment is to be set up prior to entering the hole.
- The second Live LV U/G cable jointer shall act as an assistant and as a safety observer as required.
- Approved insulating mats shall be used in the trench covering both walls and base to provide the jointer with an insulated environment.
- Approved insulating mats and covers shall be used to cover all exposed conductors/components that are within reach of the jointer, with the exception being the conductor that is being worked on. This includes other conductive assets/objects in the joint hole.
 - Tools and equipment and jointing materials shall be placed on an insulating mat adjacent to the hole within easy reach of the jointer.
 - Approved tools for live LV jointing shall be used.
 - The appropriate procedures for Live LV jointing shall be used.
 - While undertaking live work the other jointer or assistant shall not pass tools or equipment directly to the jointer in the hole. The equipment must be placed on the insulating mat where it can then be picked up from.

- Where work is required to be done in wet weather a suitable waterproof canopy shall be used. If the frame of the canopy is metal it shall be insulated. A sump shall also be dug to gather the accumulation of water seepage and be emptied out as required.
- Where the ground conditions are extremely harsh and damage of the mats may occur or the ground is wet, the insulating matting must be raised by some means to ensure they are dry and free from damage.
- The workparty shall ensure that protective equipment and apparel is in good condition.
- A rescue / entry chute shall be available at the end or on one side of the joint hole. *This chute must also be clear of the jointing position.*

NOTE: At any time where aspects of these guidelines are not met or the work crew assesses the worksite is not safe for Live LV U/G jointing, no live work shall proceed.

3. EXCAVATION

When carrying out any excavations, employees shall:

- Prior to opening an excavation, determine the location of utility assets, such as sewer, telephone, gas, electric and water lines, or any other underground assets that may reasonably be expected to be encountered during excavation work.
- When mechanical excavation operations approach the estimated location of underground assets, manual excavation shall be used to positively locate the expected assets.
- Remain outside trench/jointing hole while excavations are taking place.
- Position a ladder or other safe means of egress in trench excavations that are 1.2 metres or more in depth so as to require no more than 8 metres of lateral travel for employees.
- NOT work in an excavation in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by the water accumulation.
- Trenches shall be a max of 1.5m without shoring.
- Trenches shall be a maximum of 1.5 metres with out battering. See Fig. 1.

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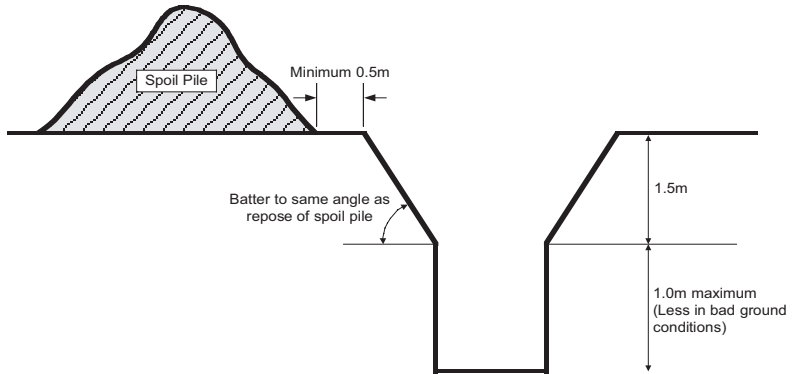


Figure 1. Battering the sides of trenches. Eg. 2.5m deep in stiff clay

When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilised such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

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