



Guidance note to electrical workers carrying out electrical installing work

This guidance note provides advice on the importance of the Multiple Earthed Neutral (MEN) connection and Earth Fault Loop Impedance verification

An MEN is an essential part of an electrical installation's safety system. Carrying out an earth fault loop impedance check can assist in verifying if the electrical installation is safe.

The omission of the MEN connection renders the installation particularly dangerous. This is because under normal circumstances, when an active to earth fault occurs, the circuit protection (fuse/circuit breaker) operates (turns the power off). However, when there is no direct connection between the earth and neutral conductors (MEN connection) the return electrical circuit is usually not adequate (high resistance) and this typically prevents the circuit protection from operating due to insufficient current flow.

Without an MEN, an electrical fault to earth could result in the electrical installation's earthed components becoming live and dangerous. In this instance, a person who comes into contact with any part of the installation that is earthed (for example appliances, water pipes, taps and the like) could receive a fatal electric shock.

Prior to placing an electrical installation, or part thereof, into service following construction, alteration or repair, testing of the installation is required to ensure it is safe and complies with the requirements of AS/NZS 3000:2018 Wiring Rules (Wiring Rules) clauses 8.1.3 and 8.2, and is tested in accordance with clause 8.3 of the Wiring Rules.

The Wiring Rules clause 8.3.3.1(a) requires testing to be carried out to ensure that the earthing system has been installed in a manner that will cause circuit protective devices to operate if a fault occurs.

This provides an opportune time to verify that an MEN connection has been installed at the main switchboard.

The Wiring Rules clause 8.2.1 requires a visual inspection be undertaken to verify that any electrical

installing work completed is compliant. Clause 8.2.2(f) requires that the MEN connection be checked as part of the visual inspection.

Separate to conducting visual inspection, electrical workers should also complete an Earth Fault Loop Impedance (EFLI) test. An acceptable reading from a fault loop impedance test provides a good indication that the MEN connection is intact (Refer to Table 8.1 of the Wiring Rules AS/NZS 3000:2018)

AS/NZS 3017 sets out the common test methods used by electrical workers to verify that the installation complies with the Wiring Rules

The Electricity (Licensing) Regulations 1991, requires Electrical Contractors who undertake any notifiable electrical installing work to make a record of each test, inspection and verification carried out on the electrical installation. A record of those tests must be maintained for a period of no less than five years.

Failure to make an MEN connection is a very serious breach of the Electricity (Licensing) Regulations 1991.

Disclaimer – The information contained in this fact sheet is provided as general information and a guide only. It should not be relied upon as legal advice or as an accurate statement of the relevant legislation provisions. If you are uncertain as to your legal obligations, you should obtain independent legal advice.

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