

# Electrolink N<sup>o</sup> 1

January 2011

## THE APPLICATION OF PROTECTIVE MULTIPLE EARTHING (PME) TO CUSTOMERS' ELECTRICAL INSTALLATIONS

### GENERAL

The provision of protection against indirect contact with live conductors is the responsibility of the customer. It is the policy of Electricity North West, however, to continue to offer an earthing terminal where possible to assist our customers in meeting current standards of electricity safety. Regulations permit the use of the neutral conductor of the Electricity North West electricity distribution network to act as a combined neutral earth conductor providing a continuous metallic path for load and earth fault currents to return to the supply transformer. This is offered as the standard method of earthing new connections. Existing overhead electricity distribution networks and certain types of underground electricity distribution networks are being progressively modified to this form of earthing to enable improved earthing facilities to be offered to customers connected to these electricity distribution networks. Special provisions on the electricity distribution network, which are Electricity North West's responsibility, and the requirement mentioned in this document, enable customers to make use of PME earthing terminals, which are provided by Electricity North West.

### PME REQUIREMENTS

Specific requirements, covering extraneous metalwork and circuit protective conductors to be connected to earth using the neutral conductor are given in BS 7671 - Requirements for Electrical Installations (IEE Wiring Regulations) and are as follows:-

"544.1.1 (part)

Where PME conditions apply, the main protective bonding conductor shall be selected in accordance with the neutral conductor of the supply and Table 54.8.

**Table 54.8**  
**Minimum cross-sectional area of the main protective bonding conductor**  
**in relation to the neutral of the supply**

Copper equivalent cross-sectional area of the supply neutral conductor	Minimum copper equivalent cross-sectional area of the main protective bonding conductor
35 mm <sup>2</sup> or less	10 mm <sup>2</sup>
Over 35 mm <sup>2</sup> up to 50 mm <sup>2</sup>	16 mm <sup>2</sup>
Over 50 mm <sup>2</sup> up to 95 mm <sup>2</sup>	25 mm <sup>2</sup>
Over 95 mm <sup>2</sup> up to 150 mm <sup>2</sup>	35 mm <sup>2</sup>
Over 150 mm <sup>2</sup>	50 mm <sup>2</sup>

All main protective bonding conductors and supplementary bonding conductors shall be sized in accordance with BS 7671 - Requirements for Electrical Installations - IEE Wiring Regulations.

### ELECTRICITY NORTH WEST'S RESPONSIBILITY

The advice contained within this Electrolink is given in good faith based on information available. No guarantee can be given, however, that the information will not change in the future. Electricity North West cannot be held responsible for costs incurred due to inaccuracies or subsequent changes.

### Other publications in the Electrolink series:

- Electrolink N<sup>o</sup> 2 - Estimation of Prospective Short Circuit Current.
- Electrolink N<sup>o</sup> 3 - Temporary Electricity Connections for Construction Sites - up to 20/60kVA.
- Electrolink N<sup>o</sup> 4 - Meter Board Arrangements for New Single-Phase Domestic Supply up to 20kVA.
- Electrolink N<sup>o</sup> 5 - Outdoor Meter Reading Facilities.
- Electrolink N<sup>o</sup> 6 - Interference with Supply to other Customers.
- Electrolink N<sup>o</sup> 7 - Computers and Mains Electricity Supply.
- Electrolink N<sup>o</sup> 8 - Temporary Electricity Connections for Construction Sites - 60kVA to 300kVA.

### For further information contact:

Electricity North West,  
Frederick Road,  
Salford,  
M6 6QH.

Telephone: 0871 687 0501

Email: [connections.enquiries@enwl.co.uk](mailto:connections.enquiries@enwl.co.uk)