



Earth Reference Bar

Overview

Equipotential bonding is necessary to prevent significant touch voltages within the patient environment. An earth reference bar (ERB) shall be provided for all group 1 and group 2 locations.

1. The mains supply protective conductor entering the location shall be terminated at the ERB.
2. The ERB shall be close to the main supply isolator except with MR units.
3. The ERB shall be installed in an accessible position, to facilitate easy visual inspection and testing, not higher than 1.8m and not lower than 1.0m measured from the floor. The ERB shall not be fitted where other equipment, such as medical device cabinets or furniture, restricts visual inspection.
4. The ERB shall be installed in a dedicated enclosure, with a cover that requires a tool to open it and is marked 'Earth Reference Bar' or 'ERB'
5. Each equipotential bonding conductor shall be separately terminated and connected to the relevant connection bar.
6. Circuit protection and potential equalisation conductors shall have crimped connections.
7. All circuit protective conductors shall be identified, and a list of connections made, a copy of which shall be available in the ERB cabinet. Equipotential conductors from the socket-outlets shall be identified as either 'Medical Location of Group 1' or 'Medical Location of Group 2' – as appropriate.
8. All installed equipment shall be earthed to the ERB if there are any conductive surfaces that are accessible to either patients or staff. This includes, but is not limited to:
 - Warning lights
 - Injectors
 - Water Baths
 - Contrast Media Warning Equipment
 - Viewing Boxes
 - Powered Drug Cabinets etc.

All such items shall be returned to the ERB by means of a cable having a cross sectional area sufficient to ensure that the bonding resistance between any conductive surface is less than 0.2 ohm.



9. All non-powered equipment with metal surfaces shall be similarly bonded to the ERB. This includes, but is not limited to:
 - Protective screens (including wings), metal sinks and work surfaces
 - Heating pipes and radiators
 - Water pipes
 - Drug Cupboards
 - Ceiling mounted hardware
 - Conduits
 - Trunking and Cable Trays
 - Steelwork above the Ceiling line (Cross-Bonded)
 - Unistrut or Marstrut (Cross-Bonded)
 - Steel or Wire Basket Cable Trays
 - Steel Floor Ducts (lids to be fly-lead tagged)
 - Steel Floor Plates (in or below floor line)
 - Metal Support Plates
 - Metal Cable Outlet Plates
 - Metal Suspended Ceiling Tiles (Cross-Bonded)
 - 'Computer' Flooring (Cross-Bonded)

All such items shall be returned to the ERB by means of cable. Earthing by means of trunking conduits, or screening is not sufficient.

Dimensions – The unit is designed to be flush mounted into a wall and has the following dimensions: 520mm wide x 340mm tall x 100mm deep (The unit has a 10mm overlap flange for flush fitting)