

# Electrical Equipment Definitions

## WHAT IS A HOSTILE OPERATING ENVIRONMENT?

A hostile operating environment means an operating environment at a place of work where the electrical equipment or flexible supply cord is, in its normal use, subject to operating conditions that are likely to result in damage to the equipment and for example, includes an operating environment that may cause mechanical damage to the item of equipment or expose the equipment to moisture, heat, vibration, corrosive substances or dust.

Electrical equipment that is being used in a hostile operating environment must be regularly inspected and tested in accordance with the provisions of Australian Standard AS/NZS 3760.

Note: You can vary the testing timeframes recommended in AS/NZS 3760 subject to a risk assessment being carried out in accordance with the risk management provisions of the OHS Regulation 2001.

Any variation of the testing timeframes that are recommended in AS/NZS 3760 must be supported by documentation that is retained by the employer in accordance with the record keeping provisions of clause 65 of the OHS Regulation 2001.

## WHAT IS A NON-HOSTILE OPERATING ENVIRONMENT?

A non-hostile operating environment refers to a workplace where electrical equipment is used in a working environment that is dry, clean, well organised and free of operating conditions that are likely to result in damage to the item of electrical equipment or flexible supply cord. For example, an office, retail shop, telecentre, classrooms, etc.

Electrical equipment commonly used in these types of low risk operating environments includes computers, photocopiers, power boards, stationary or fixed electrical equipment and similar electrical appliances.

## ELECTRICAL EQUIPMENT TYPES

Electrical equipment – Low voltage single phase & three phase electrical equipment connected by a flexible by a flexible cord or connecting device.

Portable equipment – hand-held equipment designed for connection to the low voltage supply by a supply cord, an appliance outlet or pins into a socket-outlet. Portable electrical equipment can be carried or moved while the electricity supply is connected, that is either designed to be portable (i.e. laptop computers, power tools, vacuum cleaners, industrial polishers, etc) or can be made portable (i.e. overhead projectors, power boards, extension leads, urns, heaters etc). Kitchen appliances such as toasters, kettles, jugs, fry pans, urns etc are also defined as portable equipment.

Portable power supplies (including power adaptor/plug pack, both of the safety isolating transformer and switch-mode type)

Battery Chargers including those for commercial or industrial use

Portable & transportable heavy tools such as high pressure washers & concrete grinders

Fixed or stationery equipment – Equipment that is connected by a flexible cord and plug and that cannot be carried or moved easily by hand that is secured in a position or otherwise, due to its size and mass, located in a specific location.

This includes equipment such as freezers, refrigerators, large photocopiers, vending machines, hand-dryers, fixed air conditioning units, lathes, drill presses, fixed grinders, welding equipment etc

Residual current device – a device intended to isolate supply to protected circuits, socket-outlets or electrical equipment in the event of a current flow to earth that exceeds a predetermined value.

Fixed RCD – a RCD hard wired into the installation and is usually located in the switchboard or within socket outlets

Portable RCD – A RCD incorporated in a lead, EPOD or adaptor

Supply Flexible Cord – A flexible cable or cord, for supply purposes, which has one end connected to a plug with pins designed to engage with a socket outlet, and the other end either.

Power board – non fixed portable outlet device.

### Appliances with Removable Cord sets

AS/NZS 3760:2010 notes specifically that for equipment supplied by a cord set, the intention of the Standard is for the cord set and the equipment to be tested and tagged separately.

For example, a Kettle with a removable IEC lead would consist of 2 tests. One test for the Kettle, with a tag applied to the kettle. And one test for the IEC lead, with the tag applied to the plug end of the IEC lead.

Computer monitor & PCs

For example a Computer monitor & PCs that are PC combinations of two IEC cords, a monitor and a PC tower require a minimum of four tests, and four test tags.

## Different Classes of Equipment

Cord sets, cord extension sets and outlet devices (also known as electrical portable outlet devices (EPODS), or power boards


**Class I equipment** – (basic insulated, protectively earthed equipment)

Equipment in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in that accessible conductive parts are connected to the protective earthing conductor in the fixed wiring of the installation in such a way that accessible parts cannot become live in the event of a failure of the basic insulation.

**Class II equipment** – (double insulated equipment)

Equipment in which protection against electric shock does not rely on basic insulation only, but in which an additional layer of insulation (called 'supplementary insulation') is provided to give double insulation, there being no provision for protective earthing or reliance upon installation conditions.

This equipment is generally manufactured with a non-conductive (insulated) enclosure, and is marked either with the words 'double insulated' or with the

symbol  to allow easy identification.