

HAZARDOUS AREAS

A hazardous area is defined as an area in which an explosive atmosphere is present or may be expected to be present, in quantities such as to require special precautions for the construction, installation and use of potential ignition sources.

GENERAL HAZARDS IN HAZARDOUS AREAS INCLUDE IGNITION SOURCES, FIRE AND EXPLOSION.

Ignition sources may be from electrical systems or apparatus including:

Electrical arcing/sparking when circuits are switched by devices such as motor contactors, auxiliary relays, switches and contacts; and

Hot surfaces produced by motors, cables light globes etc.

Possible ignition sources include:

- Mobile phones
- Hearing aids
- Key-ring torches
- Calculators
- Car keys with automatic door locking features
- Pagers
- Watches
- Transistor and communication radios
- Battery chargers
- Lasers
- Low pressure sodium vapour discharge lamps
- Synthetic clothing

THE INSTALLATION OF ELECTRICAL APPARATUS OUTSIDE OF THE HAZARDOUS AREA MUST BE CONSIDERED. IF THIS IS NOT PRACTICAL THE LEAST HAZARDOUS AREA SHOULD BE CHOSEN FOR THE PLACEMENT OF THE ELECTRICAL INSTALLATION.

All installation work in hazardous areas must be completed and certified by experienced personnel whose training has included instruction on the various types of protection and installation practices, relevant rules and regulations and on the general principals of area classification AS2381.1).

EQUIPMENT

- ✔ Testing equipment designed and clearly marked for use in hazardous areas.
- ✔ When working in explosive or flammable areas, use only equipment specifically designed for use in these areas, and ensure that they comply with the relevant AS
- ✔ Equipment used in hazardous areas must comply with AS/NZS 2381.1 certified 'AUS Ex' (to Dec 2003) or 'IEC EX' (Current) NOTE: ATEX Certification is not enough to discharge obligations.
- ✔ Non-sparking hand tools and equipment must be used when working in hazardous areas

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WORKING IN HAZARDOUS AREAS

- ✔ Live work is not permitted
- ✔ Provided the person has reason to believe that it is safe to do so (i.e. by performing risk assessment), installation work may be temporarily connected to the supply for the purpose of testing only.
- ✔ Before power can be connected or reconnected the installation must be inspected by an accredited auditor. The accredited auditor is required to confirm that it has been tested to ensure it is electrically safe

OTHER REQUIREMENTS

- ✔ All employees must be properly **trained and competent**. All persons who are expected to, or who may be likely to enter a hazardous area for any reason, must have first received appropriate training/instruction in relation to safety precautions. Safety precaution training could be part of a site induction and should include the need to ensure that no potential ignition sources are taken into the hazardous area.
- ✔ The area must be **signed** appropriately (AS 1319: 1994). Signage must:
 - Clearly identify the nature/ type of hazard i.e. the presence of a flammable liquid, gas or vapour; the presence of combustible dust in suspension or in layers; or a combination of explosive gas and dust atmospheres
 - Identify requirements/precautions to be adhered to by persons in the Hazardous Area i.e. equipment which is not permitted, required PPE.
- ✔ There must be a strictly enforced **no smoking policy** in hazardous areas.
- ✔ Ongoing and regular **inspection, testing and maintenance** of installations in hazardous areas must be implemented.

FOR MORE INFORMATION REFER TO:

Electrical Safety Regulation 2002, Part 8, Division 1 and Section 153

AS/NZS 2380 and 2381 (Series) Electrical equipment for explosive atmospheres

AS/NZS 2430 (Series) Classification of hazardous areas

AS/NZS 3000 Electrical Installations

AS/NZS 3100 Approval and test specifications- General requirements for electrical equipment

AS/NZS 4761 Competencies for Working with Electrical Equipment for Hazardous Areas