6.2.5 Electrical separation

Electrical separation shall be in accordance with 413 of IEC 60364-4-41 for the supply of only one item of equipment.

6.2.6 Above hazardous areas

Equipment that may produce hot particles or hot surfaces located less than 3,5 m above a hazardous area shall be either totally enclosed or provided with suitable guards or screens, to prevent any ignition sources falling into the hazardous area.

NOTE Such items may include:

- fuses that may produce arcs, sparks or hot particles;
- switches that may produce arcs, sparks or hot particles;
- motors or generators that have sliding contacts or brushes;
- heaters, heating elements or other equipment that may produce arcs, sparks or hot particles;
- auxiliary equipment such as ballasts, capacitors and starting switches for all types of discharge luminaires.
- all lamps.

Low pressure sodium vapour discharge lamps shall not be installed above a hazardous area.

6.3 Potential equalization

6.3.1 General

Potential equalization is required for installations in hazardous areas. For TN, TT and IT systems, all exposed and extraneous conductive parts shall be connected to the equipotential bonding system. The bonding system may include protective conductors, metal conduits, metal cable sheaths, steel wire armouring and metallic parts of structures, but shall not include neutral conductors. Connections shall be secure against self loosening and shall minimise the risk of corrosion which may reduce the effectiveness of connection.

If the armour or screens of cables are only earthed outside the hazardous area (e.g. in the control room) then this point of earthing shall be included in the potential equalization system of the hazardous area.

NOTE If the armour is earthed only outside of the hazardous area in TN system there is a possibility, that dangerous sparks may be created at the ending of the amour in hazardous area, therefore this armour or screen should be treated like unused cores (see 9.6.3).

Exposed conductive parts need not be separately connected to the equipotential bonding system if they are firmly secured to and are in conductive contact with structural parts or piping which are connected to the equipotential bonding system. Extraneous conductive parts which are not part of the structure or of the electrical installation, for example frames of doors or windows, need not be connected to the equipotential bonding system, if there is no danger of voltage displacement.

Cable glands which incorporate clamping devices which clamp the braiding or armour of the cable can be used to provide equipotential bonding.

For additional information see 411.3 of IEC 60364-4-41.

Metallic enclosures of intrinsically safe or energy-limited apparatus need not be connected to the equipotential bonding system, unless required by the apparatus documentation or to prevent accumulation of static charge.

Installations with cathodic protection shall not be connected to the equipotential bonding system unless the system is specifically designed for this purpose.

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