

Guidance on Electrostatic Hazards in Potentially Explosive Atmospheres

The IEC has recently published a new Technical Specification (TS) that seeks to provide state of the art guidance about the equipment, product and process properties necessary to avoid ignition and electrostatic shock hazards arising from static electricity in explosive atmospheres.

IEC/TS 60079-32-1 (Edition 1.0, 2013-08) can be used in a risk assessment of electrostatic hazards and is likely to be used for the preparation of product family or dedicated product standards for electrical or non-electrical machines or equipment.

The hazards associated with static electricity in industrial processes and environments that most commonly give problems are considered in IEC/TS 60079-32-1. These processes include the handling of solids, liquids, powders, gases, sprays and explosives. In each case, the source and nature of the electrostatic hazard are identified and specific recommendations are given for dealing with them.

The purpose of the TS is to provide standard recommendations for the control of static electricity, such as earthing of conductors, reduction of charging and restriction of chargeable areas of insulators. In some cases static electricity plays an integral part of a process, e.g. electrostatic coating, but often it is an unwelcome side effect and it is with the latter that this guidance is concerned. If the standard recommendations given in the document are fulfilled, it can be expected that the risk of hazardous electrostatic discharges in an explosive atmosphere is at an acceptably low level.

If the requirements of the Technical Specification cannot be fulfilled, alternative approaches can be applied under the condition that at least the same level of safety is achieved.

Basic information about the generation of undesirable static electricity in solids, liquids, gases, explosives, and also on people, together with descriptions of how the charges generated cause ignitions or electrostatic shocks, is given in the annexes and in IEC/TR 61340-1.

The Technical Specification is not applicable to the hazards of static electricity relating to lightning or to damage to electronic components and it is not intended to supersede standards that cover specific products and industrial situations.

IEC/TS 60079-32-1 can be purchased via www.standards.ie. When searching the online catalogue, be sure to search "All Publishers" since IEC/TS 60079-32-1 is not available as an Irish Standard.

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