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**Definitions and Information  
Pertaining to Electrical Equipment in  
Hazardous (Classified) Locations**

Approved 27 March 2009

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## 1 Purpose

This document provides definitions and information pertaining to protection techniques, terminology, and the installation of electrical equipment in hazardous (classified) locations and provides an introduction and basic background to the ISA12, Electrical Safety, series of publications and committee activities. It replaces ANSI/ISA-12.01.01, *Definitions and Information Pertaining to Electrical Instruments in Hazardous (Classified) Locations*, published in 1999.

This document provides a general review of applicable codes and standards, and it should not be used in lieu of those codes and standards for equipment design, manufacture, installation, maintenance and test criteria.

## 2 Scope

**2.1** This document provides general guidance for safe design, installation, and maintenance of electrical equipment in hazardous (classified) locations using appropriate means to prevent ignition of flammable gases and vapors, flammable liquids, combustible dusts, or ignitable fibers or flyings.

**2.2** This document covers only locations made hazardous, or potentially hazardous, due to the presence of flammable gases or vapors, flammable liquids, combustible dusts, or ignitable fibers or flyings. The document is not necessarily relevant to the hazards posed by pyrophoric materials such as explosives or propellants containing their own oxidizers.

**2.3** This document is concerned only with design, manufacture, installation, maintenance, and test criteria related to arcs, sparks, or hot surfaces produced by electrical and non-electrical\* equipment that may cause ignition of flammable gas or vapor-in-air mixtures, clouds or blankets of combustible dust, or easily ignitable fibers or flyings. Equipment should also comply with the applicable ordinary location requirements (e.g., ANSI/ISA-61010-1).

\* Under development (Mechanical and ESD, for example). Some equipment may produce static electricity or cause high temperatures or sparks due to mechanical failure. The materials of construction of parts in such equipment will be an important consideration for application in hazardous locations.

**2.4** This document does not cover mechanisms of ignition from external sources, such as static electricity or lightning. Some equipment may produce static electricity. The materials of construction of parts in such equipment will be an important consideration for application in hazardous locations. The extra precautions necessary for this are beyond the scope of this document.

**2.5** This document does not consider the effects of installation in corrosive atmospheres and the resulting deleterious conditions to the original design integrity of the equipment. The additional precautions necessary for these conditions are outside the scope of this document.

**2.6** This document is not an instruction manual for untrained persons. However, it is intended to provide introductory guidance to those involved with the design, manufacture, installation, and maintenance of equipment used in hazardous (classified) locations. It is also intended to promote uniformity of practice among those skilled in the art. Nothing contained in this document is to be construed as a fixed rule without regard to sound engineering judgment.

**2.7** For hazardous location equipment, atmospheric conditions are generally considered to be

- a) an ambient temperature range of -20 °C (-4 °F) to 60 °C (140 °F) for zones and to -25 °C (-13 °F) to +40 °C (104 °F) for divisions;