

**AMERICAN NATIONAL STANDARD**

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**Nonincendive Electrical Equipment for  
Use in Class I and II, Division 2 and  
Class III, Divisions 1 and 2 Hazardous  
(Classified) Locations**

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Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations

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## 1 Purpose

The purpose of this standard is to provide minimum requirements for the design, construction, and marking of electrical equipment or parts of such equipment for use in Class I and Class II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations. This equipment, in normal operation, is not capable of causing ignition of the surrounding atmosphere under the conditions prescribed in this standard, although the equipment may contain electronic components that operate at incandive levels and may also have field wiring that is incandive. In addition, it is the intent of this document to establish uniformity in test methods for determining the suitability of the equipment and associated circuits and components as they relate to potential ignition of a specific flammable gas or vapour-in-air mixture, combustible dust, easily ignitable fibers, or flyings.

## 2 Scope

- 2.1** This standard applies only to equipment, circuits, and components designed specifically for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations as defined in the National Electrical Code® (NEC®) ANSI/NFPA 70.

NOTE Some equipment designed for use in unclassified locations is permitted by the NEC® for installing in Division 2 locations. The judgment of acceptability for the installation would be determined by the authority having jurisdiction. Such equipment would not have the hazardous location marking or documentation described in this standard. It is anticipated that such equipment would comply with the other requirements in this standard and that the determination of compliance is elementary (e.g., a nonarcing instrument inside a NEMA Type 4 or 12 enclosure used in a Class II, Division 2 location).

- 2.2** This standard also applies to certain unclassified location equipment specifically designed to directly connect to nonincandive field wiring in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations as defined in the NEC®.
- 2.3** This standard is primarily intended to provide requirements for electrical and electronic test, measuring, and controlling equipment.
- 2.4** This standard is concerned only with equipment construction and test criteria related to electrical or thermal ignition of specified flammable gases, vapors, combustible dusts, fibers, and flyings in air.
- 2.5** This standard is not intended to cover equipment for use in Class I and Class II, Division 1 locations, such as equipment constructed to be intrinsically safe, dust ignition-proof, or explosion-proof. Such equipment is, however, suitable for use in Class I and Class II, Division 2 locations in the same group and temperature class for which it is suitable in Division 1.
- 2.6** This standard does not cover mechanisms of ignition from external sources, such as static electricity or lightning, that are not related to the electrical characteristics of the equipment.
- 2.7** This standard is not intended as an instructional manual for untrained persons. It is intended to promote uniformity of practice among those skilled in the area of design, construction, and application of equipment suitable for Class I and Class II, Division 2 and Class III, Divisions 1 and 2 locations.
- 2.8** The requirements of this standard are based on consideration of ignition in locations made hazardous by the presence of flammable gases, vapors, combustible dusts, fibers, and flyings under the following ambient conditions:
- a) an ambient temperature of -25°C to 40°C
  - b) an oxygen concentration of not greater than 21 percent by volume