



Type 1 Enclosure (General Purpose)

Type 1 enclosures are intended for indoor use primarily to provide a degree of protection against contact with the enclosed equipment where atmosphere conditions are normal.

Type 2 Enclosure (Drip-tight)

Type 2 enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.

Type 3 Enclosure (Dust-tight, Rain-tight)

Type 3 enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, sleet and external ice formation.

Type 3R Enclosure (Rain-tight)

Type 3R enclosures are intended for outdoor use primarily to provide a degree of protection against falling rain, sleet and external ice formation.

Type 3S Enclosure (Dust-tight, Rain-tight)

Type 3S enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, sleet and provide operation of external mechanisms when ice laden.

Type 4 Enclosure (Water-tight, Dust-tight)

Type 4 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, and hose-directed water.

Type 4X Enclosure (Water-tight, Dust-tight & Corrosion-resistant)

Type 4X enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water and hose-directed water (must pass a 200 hour salt-spray test).

Type 5 Enclosure (Dust-tight)

Type 5 enclosures are intended for indoor use primarily to provide a degree of protection against settling airborne dust, falling dirt and dripping non-corrosive liquids.

Type 6 Enclosure (Submersible)

Type 6 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during occasional temporary submersion at a limited depth (must pass a submersion test at a depth of 6 feet for 30 minutes).

Type 7 Enclosure (Hazardous Locations, Explosion-proof)

Type 7 enclosures are for use indoors in locations classified as Class I, Groups A,B,C or D, as defined in the National Electrical Code.

Type 8 Enclosure (Hazardous Locations, Oil-immersed)

Type 8 enclosures are for indoor or outdoor use in locations classified as Class I, Groups A,B,C or D, as defined in the National Electrical Code.

Type 9 Enclosure (Hazardous Locations, Dust-ignition-proof)

Type 9 enclosures are for use in indoor locations classified as Class II, Groups E,F or G, as defined in the National Electrical Code.

Type 10 Enclosure (hazardous Locations, Explosion-proof)

Type 10 enclosures are constructed to meet the applicable requirements of the Mine Safety and Health Administration.

Type 11 Enclosure (Corrosion-resistant, Drip-tight, Oil-immersed)

Type 11 enclosures are intended for indoor use primarily to provide, by oil immersion, a degree of protection to enclosed equipment against the corrosive effects of liquids and gases.

Type 12 Enclosure (Industrial Use, Dust-tight, Drip-tight)

Type 12 enclosures are intended for indoor use primarily to provide a degree of protection against dust, falling dirt and dripping non-corrosive liquids.

Type 13 Enclosure (Oil-tight, Dust-tight)

Type 13 enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil and non-corrosive coolant.

Area Classifications

Class I

Combustible material in the form of a gas vapor.

Class II

Combustible material in the form of a dust.

Class III

Combustible material in the form of a fiber, such as textile flyings.

Classes are sub-divided by Groups

Group A

Atmosphere containing acetylene.

Group B

Atmospheres containing hydrogen, gases or vapors of equivalent hazards, such as manufactured gas.

Group C

Atmospheres containing ethyl ether vapors, ethylene or cyclopropane.

Group D

Atmospheres containing gasoline, hexane, naphtha, benzene, butane, propane, alcohol, acetone, benzol, lacquer, solvent vapors, or natural gas.

**Group E**

Atmospheres containing metal dust, including magnesium and their commercial alloys, and other metals of similarly hazardous characteristics.

Group F

Atmospheres containing carbon black coal or coke dust.

Group G

Atmospheres containing flour, starch or grain dust.

Division 1

Locations are those places where ignitable concentrations of flammable gases or vapors exist under normal conditions, or may frequently exist because of leakage or maintenance operations or where malfunctions may release ignitable vapors and simultaneously cause failure of electrical equipment.

Division 2

Locations are those where flammable liquids or gases are present but are normally confined and can escape only through accident or abnormal operation. Also included are areas made safe by mechanical ventilation, but might become hazardous because of failure or abnormal operation of the equipment. A third division 2 situation is an area adjacent to a Division 1 location where ignitable concentrations of gas or vapor might be occasionally communicated.

Note: The Division defines the probability of an explosive mixture being present (e.g. A hazardous mixture is normally present in a Division 1 area, but will only be accidentally present in a Division 2 area).