

Industrial lift Truck Classifications

Electric Powered Industrial Equipment, used in areas containing explosive or flammable concentrations of fumes or dust, must be designed to prevent any operation of the equipment from igniting the atmosphere.

UL and ANSI/ASME jointly publish a pamphlet, No. 583, establishing the requirements for various types of Industrial Trucks. Forklifts Labeled and Classified by UL as EX must also be tested to meet or exceed the requirements in UL Standard 1203 and UL Standard 1604. Electric forklifts that pass testing to above standards are the only electric forklifts (EX) permitted in atmospheres designated as explosive or hazardous.

Types of Industrial Trucks

Type E covers electric trucks having minimum acceptable safeguards against inherent fire and electrical shock hazards. Generally this says that wiring shall be of adequate size for the current carried, shall be placed where it is not subject to external damage and kept clear of grease or other flammable materials. This rating covers only normal design and construction.

Type EE covers electric trucks that have, in addition to all the requirements for the Type E and ES units, the electric motors and all other electrical equipment completely enclosed. It does not protect against temperature activated auto-ignition of explosive mixtures of gases or dusts in the atmosphere.

Warning: While some insurance carriers may permit Type EE trucks, so called "Spark Proof" trucks in areas where flammable materials are stored in sealed containers, the likelihood of a leak or a ruptured container, from being dropped or being pierced by a fork, is probable. The result is an instantaneous hazardous EX area. Since EE electric trucks are only spark proof an explosion or fire can occur. It is imperative that this fact be fully understood by safety and corporate officials.

Type EX covers electric trucks that differ from Type E or EE units in that the electrical fittings and equipment are so designed, constructed, and assembled that the units may be used in atmospheres containing specifically named flammable vapors, dusts, and, under certain conditions, fibers. Type EX units are specifically tested and classified for use in explosive hazardous locations as listed below.

This is the only rating approved for use in explosive hazardous locations. [Class I](#), Div. I, II, Group D and [Class II](#), Div. I, II, Group G- as defined in the National Electrical Code, Article 500, sets forth rigid requirements for each truck labeled as such. Only industrial trucks that meet or exceed all of these requirements and UL labeled for use in Class I, Division 1 Hazardous Environments can be rated as type EX and used in explosive hazardous applications.

Type G covers gasoline trucks having minimum acceptable standards against fire hazards. Basically the design should minimize the chance of fuel being spilled onto hot engine or exhaust

components, or onto the electrical system. This rating covers only normal design and construction.

Type GS covers gasoline trucks with additional safeguards covering such points as type of carburetor to be used, provisions against flames issuing from the muffler under backfire conditions, protection of wiring by non-metallic loom or tubing and the covering of openings in motor or generator housings to prevent the emission of sparks. This rating protects only against sparks being thrown off, into or onto combustible materials. It does not protect against explosive mixtures of gases or dusts.

Type LP, LPS, D, DS, AND DY are for LP and diesel, and are likewise as limited in application as in Type EE and E.