ARTICLE 500—HAZARDOUS LOCATIONS

(From *National Electrical Code*)

500-1. Scope. The provisions of Articles 500–503 apply to locations in which the authority having jurisdiction judges the apparatus and wiring to be subject to the conditions indicated by the following classifications It is intended that each room, section or area (including motor and generator rooms, and rooms for the enclosure of control equipment) shall be considered individually in determining its classification Except as modified in Articles 500-503, all other applicable rules contained in this Code shall apply to electrical apparatus and wiring installed in hazardous locations For definitions of "approved" and "explosion-proof" as used in these Articles, refer to Article 100, "dust-ignition-proof" is defined in Section 502-1

Equipment and associated wiring approved as intrinsically safe may be installed in any hazardous location for which it is approved, and the provisions of Articles 500-517 need not apply to such installation Intrinsically safe equipment and wiring are incapable of releasing sufficient electrical energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture Abnormal conditions will include accidental damage to any part of the equipment or wiring, insulation or other failure of electrical components, application of over-voltage, adjustment and maintenance operations, and other similar conditions

Through the exercise of ingenuity in the layout of electrical installations for hazardous locations, it is frequently possible to locate much of the equipment in less hazardous or in nonhazardous areas and thus to reduce the amount of special equipment required In some cases, hazards may be reduced or hazardous areas limited or eliminated by adequate positive-pressure ventilation from a source of clean air in conjunction with effective safeguards against ventilation failure It is recommended that the authority having jurisdiction be consulted before such layouts are prepared It is recommended also that the authority having jurisdiction be familiar with such recorded industrial experience as well as with such standards of the National Fire Protection Association as may be of use in the classification of various areas with respect to hazard For further information see NFPA No 30, Flammable and Combustible Liquids Code, No 32, Standard for Dry Cleaning Plants, No 35M, Organic Coatings Manufacture, and No 36, Standard for Solvent Extraction Plants

For recommendations for protection against static electricity hazards, refer to the standards of the National Fire Protection Association on this subject

Where rigid conduit is used in hazardous locations, it is necessary to have all threaded joints made up wrench tight to minimize sparking when fault current flows through the conduit system Where it is impractical to make a threaded joint tight, a bonding jumper should be utilized

All conduit referred to herein shall be threaded with standard conduit cutting die which provides ¾ inch taper per foot Such conduit shall be made up wrench tight to minimize sparking when fault current flows through the conduit system Where it is impractical to make a threaded joint tight, a bonding jumper shall be utilized

500-2 Special Precaution The intent of Articles 500–503 is to require a form of construction of equipment, and of installation that will ensure safe performance under conditions of proper use and maintenance It, therefore, is assumed that inspection

FIG 33-7 —Article 500, *National Electrical Code*, describes locations where various types of explosion-proof electrical equipment can be used

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