barrier. Indication of the single process seal failure shall be provided by visible leakage, an audible whistle, or other means of monitoring.

(2) A listed Type MI cable assembly, rated at not less than 125 percent of the process pressure and not less than 125 percent of the maximum process temperature (in degrees Celsius), installed between the cable or conduit and the single process seal.

(3) A drain or vent located between the single process seal and a conduit or cable seal. The drain or vent shall be sufficiently sized to prevent overpressuring the conduit or cable seal above 6 in. water column (1493 Pa). Indication of the single process seal failure shall be provided by visible leakage, an audible whistle, or other means of monitoring.

(4) An add-on secondary seal marked "secondary seal" and rated for the pressure and temperature conditions to which it will be subjected upon failure of the single process seal.

Process-connected electrical equipment that does not rely on a single process seal or is listed and marked "single seal", "dual seal", or "dual seal without annunciation" shall not be required to be provided with an additional means of sealing.

Process-connected electrical equipment marked "single seal — install conduit or cable seal" shall be sealed in accordance with 505.16.

Informational Note: See ANSI/UL 122701, *Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids*, for construction and testing requirements for process sealing of listed and marked single seal, dual seal, or secondary seal equipment.

The requirements for process sealing clarify the sealing, venting, and primary seal failure indication methods for the additional process seal.

See also

501.17 commentary for further information on process sealing

Δ **505.30 Grounding and Bonding.** Regardless of the voltage of the electrical system, wiring systems and equipment shall comply with 505.30(A) and (B).

N **(A) Grounding.** Wiring systems and equipment shall be grounded in accordance with Part I and Part VI of Article 250, as applicable.

Δ **(B) Bonding.** Wiring systems and equipment shall be bonded in accordance with Part I and Part V of Article 250, as applicable, and 505.30(B)(1) and (B)(2).

N **(1) Specific Bonding Means.** Bonding shall comply with 505.30(B)(1)(a) and (B)(1)(b).

(a) The locknut-bushing and double-locknut types of contacts shall not be depended on for bonding purposes, but bonding jumpers with identified fittings or other approved means of bonding shall be used. These bonding means shall apply to all metal raceways, fittings, boxes, cable trays, and enclosures, and other parts of raceway systems between hazardous (classified) locations and the point of grounding for service equipment or point of grounding for a separately derived system. Metal struts, angles, or channels provided for support and mechanical or physical protection as permitted in 335.4(5), 336.10(7)(c), or 722.135(C) shall be bonded in accordance with 250.102.

(b) Where the branch-circuit overcurrent protection is located on the load side of the disconnecting means, the specific bonding means shall be permitted to end at the nearest point where the grounded circuit conductor and the grounding electrode conductor are connected together on the line side of the building or structure disconnecting means as specified in 250.32(B).

The grounding and bonding requirements for the zone classification system are identical to those for the division classification system.

See also

501.30 and its commentary for information on grounding and bonding requirements in Class I locations

N **(2) Flexible Metal Conduit and Liquidtight Flexible Metal Conduit.** Flexible metal conduit and liquidtight flexible metal conduit shall comply with 505.30(B)(2)(a) and (B)(2)(b).

(a) Flexible metal conduit and liquidtight flexible metal conduit shall include an equipment bonding jumper of the wire type in accordance with 250.102.

(b) In Zone 2 locations, the bonding jumper shall not be required where all of the following conditions are met:

(1) Listed liquidtight flexible metal conduit 1.8 m (6 ft) or less in length, with fittings listed for grounding, is used.

(2) Overcurrent protection in the circuit is limited to 10 amperes or less.

(3) The load is part of a meter, instrument, or relay circuit.

ARTICLE 506

Zone 20, 21, and 22 Locations for Combustible Dusts or Ignitible Fibers/Flyings

Δ **506.1 Scope.**

Zones 20, 21, and 22 are analogous to both Class II and III, Division 1 and 2 hazardous locations in Articles 502 and 503 in order to address combustible dusts and ignitible fibers/flyings. Hazardous locations containing combustible dusts or ignitible fibers/flyings are not subdivided into classes of material under the zone method. However, similar to the division classification scheme, combustible dusts and ignitible fibers are placed into groups (IIIC, IIIB, and IIIA).