

jackets shall consist of conductors not smaller than No. 14 (AWG) regardless of the number of conductors.

**§ 18.37 Lead entrances.**

(a) Insulated cable(s), which must extend through an outside wall of an explosion-proof enclosure, shall pass through a stuffing-box lead entrance. All sharp edges that might damage insulation shall be removed from stuffing boxes and packing nuts.

(b) Stuffing boxes shall be so designed, and the amount of packing used shall be such, that with the packing properly compressed, the gland nut still has a clearance distance of  $\frac{1}{8}$  inch or more to travel without meeting interference by parts other than packing. In addition, the gland nut shall have a minimum of three effective threads engaged. (See figures 8, 9 and 10 in appendix II.)

(c) Packing nuts and stuffing boxes shall be secured against loosening.

(d) Compressed packing material shall be in contact with the cable jacket for a length of not less than  $\frac{1}{2}$  inch.

(e) Special requirements for glands in which asbestos-packing material is specified are:

(1) Asbestos-packing material shall be untreated, not less than  $\frac{3}{16}$ -inch diameter if round, or not less than  $\frac{3}{16}$  by  $\frac{3}{16}$  inch if square. The width of the space for packing material shall not exceed by more than 50 percent the diameter or width of the uncompressed packing material.

(2) The allowable diametrical clearance between the cable and the holes in the stuffing box and packing nut shall not exceed 75 percent of the nominal diameter or width of the packing material.

(f) Special requirements for glands in which a compressible material (example—synthetic elastomers) other than asbestos is specified, are:

(1) The packing material shall be flame resistant.

(2) The radial clearance between the cable jacket and the nominal inside diameter of the packing material shall not exceed  $\frac{1}{32}$ -inch, based on the nominal specified diameter of the cable.

(3) The radial clearance between the nominal outside diameter of the packing material and the inside wall of the

stuffing box (that portion into which the packing material fits) shall not exceed  $\frac{1}{32}$ -inch.

[33 FR 4660, Mar. 19, 1968, as amended at 57 FR 61210, Dec. 23, 1992]

**§ 18.38 Leads through common walls.**

(a) Insulated studs will be acceptable for use in a common wall between two explosion-proof enclosures.

(b) When insulated wires or cables are extended through a common wall between two explosion-proof enclosures in insulating bushings, such bushings shall be not less than 1-inch long and the diametrical clearance between the wire or cable insulation and the holes in the bushings shall not exceed  $\frac{1}{16}$ -inch (based on the nominal specified diameter of the cable). The insulating bushings shall be secured in the metal wall.

(c) Insulated wires or cables conducted from one explosion-proof enclosure to another through conduit, tubing, piping, or other solid-wall passageways will be acceptable provided one end of the passageway is plugged, thus isolating one enclosure from the other. Glands of secured bushings with close-fitting holes through which the wires or cables are conducted will be acceptable for plugging. The tubing or duct specified for the passageway shall be brazed or welded into the walls of both explosion-proof enclosures with continuous gas-tight welds.

(d) If wires and cables are taken through openings closed with sealing compounds, the design of the opening and characteristics of the compounds shall be such as to hold the sealing material in place without tendency of the material to crack or flow out of its place. The material also must withstand explosion tests without cracking or loosening.

(e) Openings through common walls between explosion-proof enclosures not provided with bushings or sealing compound, shall be large enough to prevent pressure piling.

**§ 18.39 Hose conduit.**

Hose conduit shall be provided for mechanical protection of all machine cables that are exposed to damage. Hose conduit shall be flame resistant and have a minimum wall thickness of