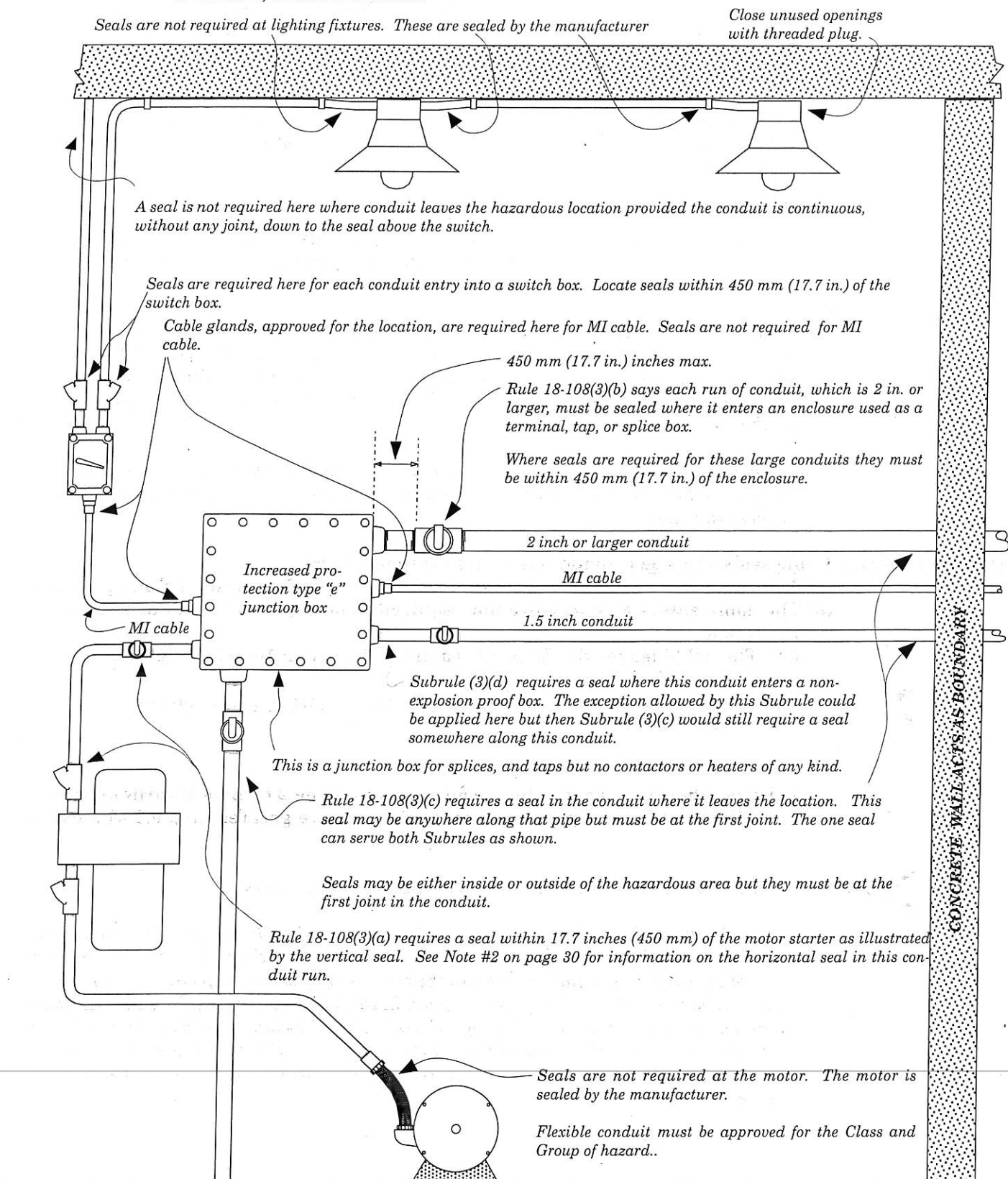


A Class 1, Zone 1 Location



Subrule 18-108(4) Only explosion proof or flameproof unions, couplings, reducers and elbows that are not larger than the trade size of the conduit shall be permitted between the sealing fitting and an explosion-proof or flameproof enclosure.



*This new Subrule was needed because that under this present Code we can now locate conduit fittings between a conduit seal and an explosion-proof enclosure. Please note that Rule 18-108(1)(a)(i) in the previous Code, became Rule 18-108(3)(a) in this present Code. Part of that old rule which said “with no junction box or similar enclosure in the conduit run between the sealing fitting and the apparatus enclosure” **was deleted**. That deletion permits the installation of conduit fittings in that location now. The new Subrule was needed to control the size and kind of fittings which may now be installed in that location.*

It is interesting to note that while the old Rule did not permit these conduit fittings in that location they were routinely installed there in the case of Gasolene dispensing units at service stations because Rule 20-006 specifically required a union in the connection of a gasolene dispenser as shown on page 9, Section 20.

***Note 1** - This relaxation which permits conduit fittings between a seal and an explosion-proof enclosure does not mean that such conduit fittings may also be located between a seal and the point where the conduit run leaves the location. This distinction must be carefully observed as indicated in Subrule 18-108(3)(c) These are two very different applications*

***Note 2** - The rules now permit fittings between the seal and an explosion-proof enclosure but the total distance between the seal and the enclosure may not be greater than 17.7 inches (450 mm).*

Subrule 18-108(5) Cable seals shall be provided in a cable system where:

- (a) The cable enters an enclosure required to be explosion-proof or flameproof; or**
- (b) The cable enters an enclosure not required to be explosion-proof or flameproof, and:**
 - (i) The cable leaves the Zone 1 area and is less than 10 m in length; or**



Old Subrule 18-108(1)(b)(ii)(B) regarding hazardous gas or vapour pressure in excess of 1.5 kPa was deleted.

- (ii) The other end of the cable terminates in a Zone 2 or non-hazardous location in which a negative atmospheric pressure greater than 0.2 kPa exists.**



CABLE SYSTEMS - SEALS - CLASS 1, ZONE 1 LOCATIONS

Rule 18-108(5) - The rules refer to MI cable, unsheathed cable and sheathed cable. The Appendix to Rule 18-108 confirms that seals are not required for MI cable. The construction of MI cable is a natural barrier to the passage of gasses or vapours. Armoured cable without a PVC jacket, when used in a hazardous location, requires an additional seal where it crosses the boundary of a Class 1, Zone 1 location, see Rule 18-108(8). This seal must be located at the boundary not at the first termination in the Zone 1 location. Armoured cable with a sheath or jacket requires seals as shown in the illustrations below.

measured boundaries must be considered just as real as a visible wall or ceiling and seals must be installed at measured locations as if there was a real physical wall located there.

- 3 **The seal for the lighting circuit shown in the upper left hand corner need not be located as shown. This seal can be located within 17.7 in. (450 mm) of the switch provided the stub-down conduit is long enough. Rule 18-158(3)(b) does not specify any distance between the seal and the point at which the conduit leaves the location. This could be any length but the stub-down must be a continuous unbroken conduit without any fittings or devices between the seal and the point where the conduit leaves the location.**
- 4 **Seals may be either inside of the hazardous areas or outside of it - it does not matter.**
- 5 **Splices and taps may not be made in conduit seals.**
- 6 **The rules now permit fittings between the seal and an explosion-proof enclosure but the total distance between the seal and the enclosure may not be greater than 17.7 inches (450 mm).**

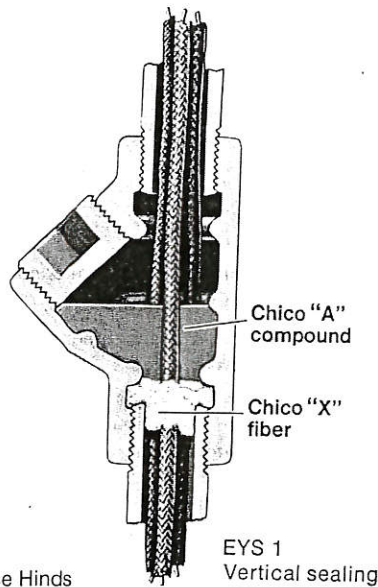
Compound For Seals

Use an approved compound such as CHICO A. This compound hardens quickly. It expands slightly on setting, thus making a good seal around the wires.

Depth

Depth of seal should be about equal to the trade size of the conduit, i.e. $\frac{3}{4}$ in. thick for $\frac{3}{4}$ in. conduit.

Separate the wires in the seal so that the compound can surround it and seal properly.



Chico X Crouse Hinds

Damming

Use only approved damming fibre. This is usually long fibre asbestos rope. **DO NOT USE DUX SEAL** for damming purposes.

Use a wooden stick to force the conductors forward then pack the damming fibre into the seal behind the conductors. The conductors may now be pushed back and separated and the dam completed. Be sure to separate the conductors and pack fibre all around each so that the sealing compound will surround each conductor for an effective seal.