

corrosion protection. As a guide in the absence of experience with the corrosive effects of soil in a specific location, soils producing severe corrosive effects are generally characterized by low resistivity of less than 2000 ohm-centimeter.

(E) Severe Physical Damage. IMC shall be permitted to be installed where subject to severe physical damage.

342.14 Dissimilar Metals. Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action.

Stainless steel and aluminum fittings and enclosures shall be permitted to be used with galvanized steel IMC where not subject to severe corrosive influences.

Stainless steel IMC shall only be used with the following:

- (1) Stainless steel fittings
- (2) Stainless steel boxes and enclosures
- (3) Steel (galvanized, painted, powder or PVC coated, and so forth) boxes and enclosures when not subject to severe corrosive influences
- (4) Stainless steel, nonmetallic, or approved accessories

342.20 Size.

(A) Minimum. IMC smaller than metric designator 16 (trade size ½) shall not be used.

(B) Maximum. IMC larger than metric designator 155 (trade size 6) shall not be used.

Informational Note: See 300.1(C) for the metric designators and trade sizes. These are for identification purposes only and do not relate to actual dimensions.

342.22 Number of Conductors. The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9.

Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed the allowable percentage fill specified in Table 1, Chapter 9.

Table 4 of Chapter 9 provides the usable area within the selected conduit or tubing, and Table 5 provides the required area for each conductor. Examples using these tables to calculate a conduit or tubing size are provided in the commentary following Chapter 9, Notes to Tables, Note 6.

To select the proper trade size of IMC, see the appropriate sub-table for Article 342, Intermediate Metal Conduit (IMC), in Table 4 of Chapter 9. If the conductors are of the same wire size and insulation type, Tables C.4 and C.4(A) for IMC in Informative Annex C can be used instead of performing the calculations.

Δ 342.24 Bends.

(A) How Made. Bends of IMC shall be so made that the conduit will not be damaged and the internal diameter of the conduit will not be effectively reduced. The radius of the curve of any

field bend to the centerline of the conduit shall not be less than indicated in Table 2, Chapter 9.

(B) Number in One Run. The total degrees of bends in a conduit run shall not exceed 360 degrees between pull points.

The number of bends in one run is limited, to reduce pulling tension on conductors. It also helps ensure easy insertion or removal of conductors during later phases of construction, when the conduit may be permanently enclosed by the building's finish.

342.28 Reaming and Threading. All cut ends shall be reamed or otherwise finished to remove rough edges. Where conduit is threaded in the field, a standard cutting die with a taper of 1 in 16 (¾ in. taper per foot) shall be used.

Informational Note: See ANSI/ASME B1.20.1-2013, *Standard for Pipe Threads, General Purpose (Inch)*.

Conduit is cut using a saw or a roll cutter (pipe cutter). Care should be taken to ensure a straight cut, given that crooked threads result from a die not started on the pipe squarely. After the cut is made, the conduit must be reamed. Proper reaming removes burrs from the interior of the cut conduit so that as wires and cables are pulled through the conduit, no chafing of the insulation or cable jacket occurs. Finally, the conduit is threaded. The number of threads is important, because cutting too many (or not enough) threads could result in improper assembly of the conduit system. If a threaded ring gauge is not available, the same number of threads should be cut on the conduit as are present on the factory (threaded) end of the conduit.

342.30 Securing and Supporting. IMC shall be installed as a complete system in accordance with 300.18 and shall be securely fastened in place and supported in accordance with 342.30(A) and (B).

(A) Securely Fastened. IMC shall be secured in accordance with one of the following:

- (1) IMC shall be securely fastened within 900 mm (3 ft) of each outlet box, junction box, device box, cabinet, conduit body, or other conduit termination.
- (2) Where structural members do not readily permit fastening within 900 mm (3 ft), fastening shall be permitted to be increased to a distance of 1.5 m (5 ft).
- (3) Where approved, conduit shall not be required to be securely fastened within 900 mm (3 ft) of the service head for above-the-roof termination of a mast.

Exception: For concealed work in finished buildings or pre-finished wall panels where such securing is impracticable, unbroken lengths (without coupling) of IMC shall be permitted to be fished.

As illustrated in Exhibit 342.1, IMC is required to be securely fastened within 3 feet of outlet boxes, junction boxes, cabinets, conduit bodies, or other conduit terminations. Couplings are not considered conduit terminations. However, where structural