

(B) Maximum. FMC larger than metric designator 103 (trade size 4) 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.

348.22 Number of Conductors. The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9, or as permitted in Table 348.22, or for metric designator 12 (trade size $\frac{3}{8}$).

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 FMC, see the appropriate sub-table for Article 348, Flexible Metal Conduit (FMC), in Table 4 of Chapter 9. If the conductors are of the same wire size and insulation type, Tables C.3 and C.3(A) for FMC in Informative Annex C can be used instead of performing the calculations.

Δ 348.24 Bends.

(A) How Made. Bends in conduit shall be made so that the conduit is not damaged and the internal diameter of the conduit is not effectively reduced. Bends shall be permitted to be made manually without auxiliary equipment. The radius of the curve to the centerline of any bend shall not be less than shown in Table 2, Chapter 9 using the column "Other Bends."

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

348.28 Trimming. All cut ends shall be trimmed or otherwise finished to remove rough edges, except where fittings that thread into the convolutions are used.

348.30 Securing and Supporting. FMC shall be securely fastened in place and supported in accordance with 348.30(A) and (B).

(A) Securely Fastened. FMC shall be securely fastened in place by an approved means within 300 mm (12 in.) of each box, cabinet, conduit body, or other conduit termination and shall be supported and secured at intervals not to exceed 1.4 m (4½ ft). Where used, cable ties shall be listed and be identified for securement and support.

Listing of cable ties for securement and support of FMC is necessary because the standard requires markings that identify critical performance characteristics. These characteristics can affect their suitability for the conditions of use, including minimum and maximum operating temperatures and resistance to ultraviolet light for outdoor installations.

Exception No. 1: Where FMC is fished between access points through concealed spaces in finished buildings or structures and supporting is impracticable.

Exception No. 2: Where flexibility is necessary after installation, lengths from the last point where the raceway is securely fastened shall not exceed the following:

- (1) 900 mm (3 ft) for metric designators 16 through 35 (trade sizes $\frac{1}{2}$ through $1\frac{1}{4}$)
- (2) 1200 mm (4 ft) for metric designators 41 through 53 (trade sizes $1\frac{1}{2}$ through 2)
- (3) 1500 mm (5 ft) for metric designators 63 (trade size $2\frac{1}{2}$) and larger

An example of the phrase "where flexibility is necessary after installation" is an installation of FMC to a motor mounted on an adjustable or sliding frame, where the frame is required to be movable for drive belt maintenance. The length that the exception addresses is the length from the last point where the FMC is securely fastened.

Exception No. 3: Lengths not exceeding 1.8 m (6 ft) from a luminaire terminal connection for tap connections to luminaires as permitted in 410.117(C).

TABLE 348.22 Maximum Number of Insulated Conductors in Metric Designator 12 (Trade Size $\frac{3}{8}$) Flexible Metal Conduit (FMC)*

Size (AWG)	Types RFH-2, SF-2		Types TF, XHHW, TW		Types TFN, THHN, THWN		Types FEP, FEBP, PF, PGF	
	Fittings Inside Conduit	Fittings Outside Conduit	Fittings Inside Conduit	Fittings Outside Conduit	Fittings Inside Conduit	Fittings Outside Conduit	Fittings Inside Conduit	Fittings Outside Conduit
18	2	3	3	5	5	8	5	8
16	1	2	3	4	4	6	4	6
14	1	2	2	3	3	4	3	4
12	—	—	1	2	2	3	2	3
10	—	—	1	1	1	1	1	2

*In addition, one insulated, covered, or bare equipment grounding conductor of the same size shall be permitted.