thermosetting insulation. Where conductors are rated 90°C, the 90°C ampacity can be used for derating (ampacity adjustment, correction, or both).

Thermal insulation and similar materials impede the dissipation of heat from the cables. No space between the cables further reduces the heat dissipation, and ampacity adjustment is required. This rule covering the bundles in contact with insulation, caulking, or foam offsets the permission in 310.15(C)(1)(d) to install bundled AC or MC cable without ampacity adjustment factors having to be applied.

(B) Cable Tray. The ampacity of Type AC cable installed in cable tray shall be determined in accordance with 392.80(A).

Part III. Construction Specifications

320.100 Construction. Type AC cable shall have an armor of flexible metal tape and shall have an internal bonding strip of copper or aluminum in intimate contact with the armor for its entire length.

The armor of Type AC cable is recognized as an equipment grounding conductor (EGC) by 250.118. This internal bonding strip is not required to be connected to an equipment grounding terminal and can be cut off at the termination of the armored cable or be bent back on the armor. Its purpose is to reduce the inductive reactance of the spiral armor and increase the armor's effectiveness as an equipment ground. Many installers use this strip to help prevent the insulating (anti-short) bushing required by 320.40 (also known as the "red head") from falling out during rough wiring.

320.104 Conductors. Insulated conductors shall be of a type listed in Table 310.4(1) or those identified for use in this cable. In addition, the conductors shall have an overall moisture-resistant and fire-retardant fibrous covering. For Type ACT, a moisture-resistant fibrous covering shall be required only on the individual conductors.

320.108 Equipment Grounding Conductor. Type AC cable shall provide an adequate path for fault current as required by 250.4(A)(5) or (B)(4) to act as an equipment grounding conductor.

320.120 Marking. The cable shall be marked in accordance with 310.8, except that Type AC shall have ready identification of the manufacturer by distinctive external markings on the cable armor throughout its entire length.

ARTICLE
322 Flat Cable Assemblies: Type FC

Part I. General

322.1 Scope. This article covers the use, installation, and construction specifications for flat cable assemblies, Type FC.

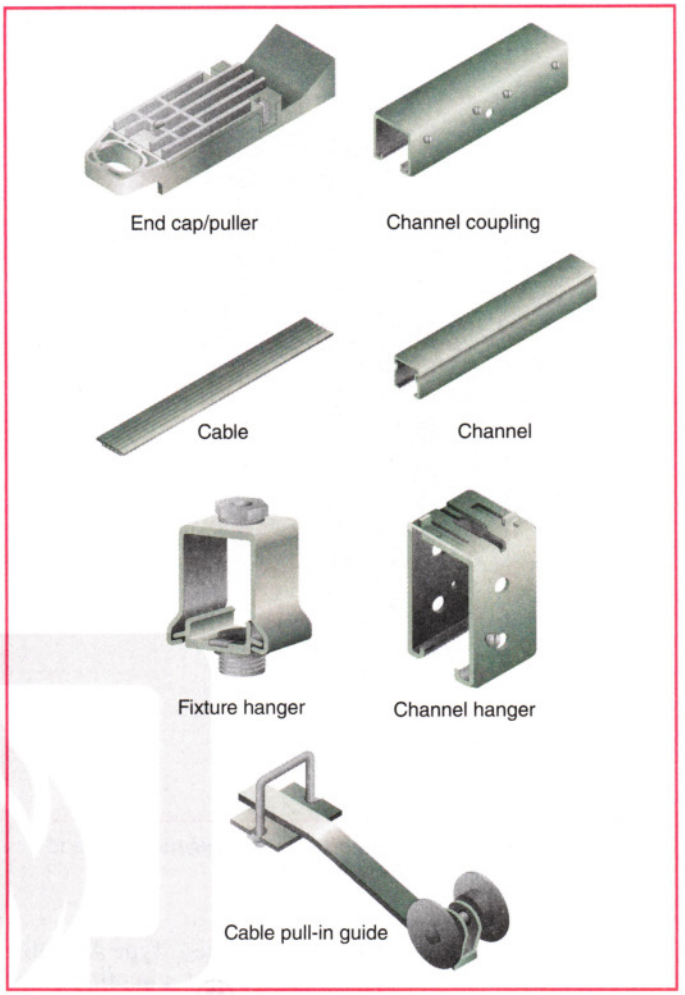

EXHIBIT 322.1 Basic components and accessories that may be used for an installation of Type FC cable. *(Courtesy of Legrand®)*

Type FC cable is an assembly of three or four parallel 10 AWG special stranded copper wires formed integrally with an insulating material web. The cable is marked with the size of the maximum branch circuit to which it can be connected, the cable type designation, the manufacturer's identification, the maximum working voltage, the conductor size, and the temperature rating. A marking accompanying the cable on a tag or reel indicates the special metal raceways and specific Type FC cable fittings with which the cable is intended to be used. Exhibits 322.1 and 322.2 show the basic components of this wiring method.

322.6 Listing Requirements. Type FC and associated fittings shall be listed.

Part II. Installation

322.10 Uses Permitted. Flat cable assemblies shall be permitted only as follows:

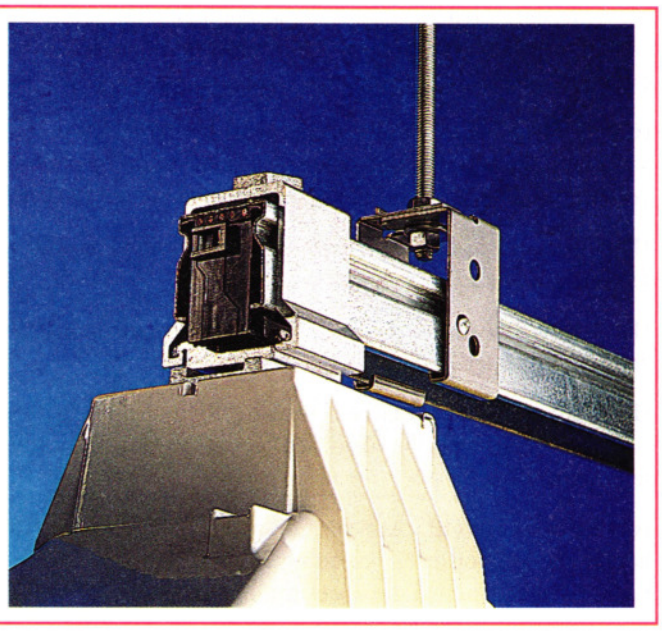

EXHIBIT 322.2 A luminaire hanger used with Type FC cable. *(Courtesy of Legrand®)*

(1) As branch circuits to supply suitable tap devices for lighting, small appliances, or small power loads. The rating of the branch circuit shall not exceed 30 amperes.
(2) Where installed for exposed work.
(3) In locations where they will not be subjected to physical damage. Where a flat cable assembly is installed less than 2.5 m (8 ft) above the floor or fixed working platform, it shall be protected by a cover identified for the use.
(4) In surface metal raceways identified for the use. The channel portion of the surface metal raceway systems shall be installed as complete systems before the flat cable assemblies are pulled into the raceways.

322.12 Uses Not Permitted. Flat cable assemblies shall not be used as follows:

(1) Where exposed to corrosive conditions, unless suitable for the application
(2) In hoistways or on elevators or escalators
(3) In any hazardous (classified) location, except as specifically permitted by other articles in this *Code*
(4) Outdoors or in wet or damp locations unless identified for the use

322.30 Securing and Supporting. The flat cable assemblies shall be supported by means of their special design features, within the surface metal raceways.

The surface metal raceways shall be supported as required for the specific raceway to be installed.

322.40 Boxes and Fittings.

(A) Dead Ends. Each flat cable assembly dead end shall be terminated in an end-cap device identified for the use.

The dead-end fitting for the enclosing surface metal raceway shall be identified for the use.

(B) Luminaire Hangers. Luminaire hangers installed with the flat cable assemblies shall be identified for the use.

(C) Fittings. Fittings to be installed with flat cable assemblies shall be designed and installed to prevent physical damage to the cable assemblies.

(D) Extensions. All extensions from flat cable assemblies shall be made by approved wiring methods, within the junction boxes, installed at either end of the flat cable assembly runs.

322.56 Splices and Taps.

(A) Splices. Splices shall be made in listed junction boxes.

Δ **(B) Taps.** Taps shall be made between any phase conductor and the grounded conductor or any other phase conductor by means of devices and fittings identified for the use. Tap devices shall be rated at not less than 15 amperes, or more than 300 volts to ground, and shall be marked in accordance with 322.120(C).

Part III. Construction Specifications

322.100 Construction. Flat cable assemblies shall consist of two, three, four, or five conductors.

322.104 Conductors. Flat cable assemblies shall have conductors of 10 AWG special stranded copper wires.

322.112 Insulation. The entire flat cable assembly shall be formed to provide a suitable insulation covering all the conductors and using one of the materials recognized in Table 310.4(1) for general branch-circuit wiring.

322.120 Marking.

(A) Temperature Rating. In addition to the provisions of 310.8, Type FC cable shall have the temperature rating durably marked on the surface at intervals not exceeding 600 mm (24 in.).

(B) Identification of Grounded Conductor. The grounded conductor shall be identified throughout its length by means of a distinctive and durable white or gray marking.

Informational Note: The color gray may have been used in the past as an ungrounded conductor. Care should be taken when working on existing systems.

(C) Terminal Block Identification. Terminal blocks identified for the use shall have distinctive and durable markings for color or word coding. The grounded conductor section shall have a white marking or other suitable designation. The next adjacent section of the terminal block shall have a black marking or other suitable designation. The next section shall have a red marking or other suitable designation. The final or outer section, opposite the grounded conductor section of the terminal block, shall have a blue marking or other suitable designation.