Exception No. 4: Lengths not exceeding 1.8 m (6 ft) from the last point where the raceway is securely fastened for connections within an accessible ceiling to a luminaire(s) or other equipment. For the purposes of the exceptions, listed FMC fittings shall be permitted as a means of securement and support.

Securing a raceway can be different from supporting the raceway. Specifying that the listed FMC fitting provides the securement also required by this section clarifies that the listed fitting provides both securement and support of the FMC.

(B) Supports. Horizontal runs of FMC supported by openings through framing members at intervals not greater than 1.4 m (4½ ft) and securely fastened within 300 mm (12 in.) of termination points shall be permitted.

348.42 Couplings and Connectors. Angle connectors shall not be concealed.

348.56 Splices and Taps. Splices and taps shall be made in accordance with 300.15.

Δ **348.60 Grounding and Bonding.**

N **(A) Fixed Installation.** FMC shall be permitted to be used as an equipment grounding conductor when installed in accordance with 250.118(A)(5) where flexibility is not required after installation.

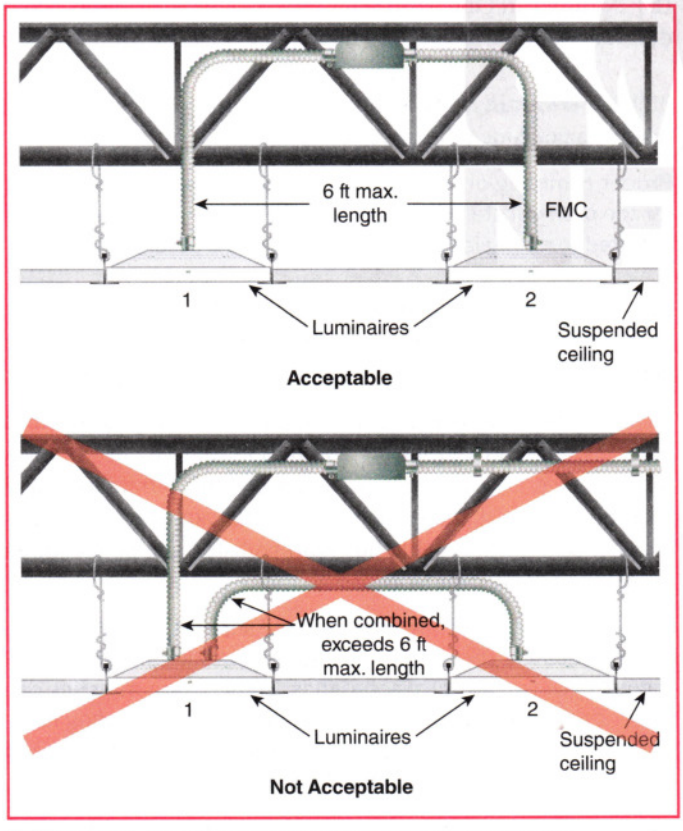

EXHIBIT 348.1 An example of acceptable and unacceptable applications of FMC without separate EGCs used as a luminaire whip, in accordance with 250.118(5)(d).

N **(B) Flexible Installation.** An equipment grounding conductor shall be installed where flexibility is necessary to minimize the transmission of vibration from equipment or to provide flexibility for equipment that requires movement after installation.

An additional EGC is always required where FMC is used for flexibility. Examples of such installations include using FMC to minimize the transmission of equipment vibration such as motors or to provide flexibility for floodlights, spotlights, or other equipment that require adjustment after installation.

According to ANSI/UL 1, *Standard for Flexible Metal Conduit*, FMC longer than 6 feet has not been judged to be suitable for grounding purposes. If the length of the total ground-fault return path exceeds 6 feet or the circuit overcurrent protection exceeds 20 amperes, a separate EGC must be installed with the circuit conductors according to 250.118(5). The top figure in Exhibit 348.1 shows an acceptable application of FMC, where the total length of any ground return path is limited to 6 feet. The bottom figure shows an application that is unacceptable because the grounding return path for Luminaire 2 exceeds the permitted maximum of 6 feet to the box.

Where FMC is used in hazardous (classified) locations, a bonding jumper is required. Section 250.102(E) permits the routing of equipment bonding jumpers on the outside of the raceway in lengths that are no longer than 6 feet and bonded at each end.

N **(C) Equipment Grounding Conductors.** Where required or installed, equipment grounding conductors shall be installed in accordance with 250.134.

N **(D) Equipment Bonding Jumpers.** Where required or installed, equipment bonding jumpers shall be installed in accordance with 250.102.

ARTICLE 350

Liquidtight Flexible Metal Conduit (LFMC)

Part I. General

350.1 Scope. This article covers the use, installation, and construction specifications for liquidtight flexible metal conduit (LFMC) and associated fittings.

LFMC is intended for use in wet locations or where exposed to oil or coolants, at a maximum temperature of 140°F. LFMC is not intended for use where exposed to gasoline or similar light petroleum solvents unless so marked on the product. If properly marked for the application, LFMC is permitted for direct burial in the earth. LFMC is on the permitted list of wiring methods for services (see 230.43), provided the length does not exceed 6 feet and an equipment bonding jumper is installed in accordance with 250.102. LFMC may be installed in unlimited lengths, provided it