Exception: Voltage markings shall be permitted where the cable has multiple listings and voltage marking is required for one or more of the listings.

N **(D) Cable Jacket Compound.** The cable jacket compound shall have a high degree of abrasion resistance.

•

ARTICLE
770 Optical Fiber Cables

Part I. General

770.1 Scope. This article covers the installation of optical fiber cables. This article does not cover the construction of optical fiber cables.

Article 770 permits the use of optical fiber technology in conjunction with electrical conductors for communications, signaling, and control circuits in lieu of metallic conductors. Optical fiber cables may be nonconductive, or they may be composite, containing electrical conductors. See Exhibits 770.1 and 770.2. The most common optical fiber cable used in buildings is nonconductive. Because they are not affected by electrical noise, optical fiber cables to transmit data or other communications can be desirable in circumstances where electrical noise is a problem.

•

770.3 Other Articles. Installations of optical fiber cables shall comply with 770.3(A) through (D). Only those sections of Chapter 2 and Article 300 referenced in this article shall apply to optical fiber cables.

Δ **(A) Hazardous (Classified) Locations.** Listed optical fiber cables shall be permitted to be installed in hazardous (classified) locations. The cables shall be sealed in accordance with 501.15, 502.15, 505.16, or 506.16, as applicable.

(B) Cables in Ducts for Dust, Loose Stock, or Vapor Removal. The requirements of 300.22(A) for wiring systems shall apply to conductive optical fiber cables.

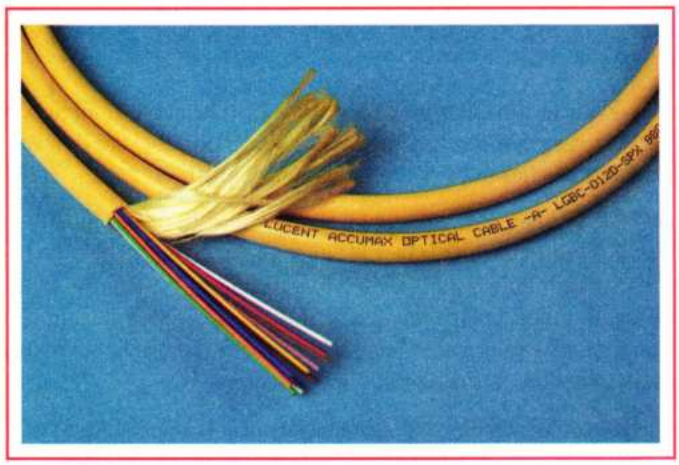

EXHIBIT 770.1 An example of a nonconductive optical fiber cable.

EXHIBIT 770.2 An example of a composite optical fiber cable that also meets the requirements of Article 330 and is referred to as Type MC cable. *(Courtesy of AFC Cable Systems, a Part of Atkore International)*

(C) Hybrid Cables. Hybrid optical fiber cables shall be classified as electrical cables in accordance with the type of electrical conductors. They shall be constructed, listed, and marked in accordance with the appropriate article for each type of electrical cable.

N **(D) Vertical Support for Fire-Resistive Cables.** Vertical installations of circuit integrity (CI) cables installed in a raceway or cables of fire-resistive cable systems shall be installed in accordance with their listing.

770.21 Access to Electrical Equipment Behind Panels Designed to Allow Access. Access to electrical equipment shall not be denied by an accumulation of optical fiber cables that prevents removal of panels, including suspended ceiling panels.

An excess accumulation of wires and cables can limit access to equipment by preventing the removal of access panels. Exhibit 770.3 shows both incorrect and correct installation methods for the installation of communication cables. The correct installation method has the cables supported well above the acoustical ceiling panels, allowing for proper access when needed.

Δ **770.24 Mechanical Execution of Work.**

N **(A) General.** Optical fiber cables shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be secured by hardware, including straps; staples; cable ties listed and identified for securement and support; and hangers, or similar fittings, designed and installed so as not to damage the cable.