

## Article Overview

Fiber optic cables labeled as AWM (Appliance Wiring Material) comply with UL 758 standards for safe internal or interconnecting wiring in appliances and electronic equipment.

## Overview of AWM Fiber Optic Cables

AWM, or Appliance Wiring Material, is a classification defined by Underwriters Laboratories (UL) for wiring used in appliances and electronic equipment. UL 758 specifies requirements for single insulated conductors, multi-conductor cables, and optical fiber members, including cables composed entirely of optical fibers or in combination with electrical conductors. These cables are intended for factory-installed internal wiring or as external interconnecting cables in appliances and equipment.

## Key Specifications

- o Temperature Ratings: Typically from 60°C (140°F) and above, with some fiber optic AWM cables rated for -40°C to 85°C.
- o Voltage Ratings: Minimum of 30 volts, suitable for low-voltage appliance and electronic applications.
- o Conductor and Fiber Types: Can include stranded copper or aluminum conductors alongside optical fibers, or purely optical fiber cores such as POF (Plastic Optical Fiber).
- o Cable Construction: Durable jackets made from PVC, nylon, or other abrasion- and chemical-resistant materials protect the fibers and conductors.
- o Optical Performance: While UL 758 covers mechanical and electrical safety, it does not specify optical performance; this is determined by the fiber type (singlemode or multimode) and core diameter.

## Applications

- o Internal Wiring: Connecting components within electronic devices, such as motherboards, sensors, or control systems.
- o External Interconnections: Linking appliances or modules where safe, flexible, and flame-retardant cabling is required.
- o Patch and Splice Panels: Fiber optic AWM cables are used in wallmount enclosures and fiber management systems, supporting patching, splicing, and network connectivity.
- o Industrial and Networking: Multimode or singlemode fiber AWM cables support high-speed data transmission, including 10 Gb/s networks, with options for LSZH (Low Smoke Zero Halogen) jackets for indoor safety.

## Advantages



# Fiber Optic Cable AWM

- o Safety Compliance: Flame-retardant and heat-resistant, meeting UL 758 standards.
- o Durability: Resistant to moisture, chemicals, and mechanical stress.
- o Flexibility: Suitable for confined spaces and complex routing in appliances or enclosures.
- o Versatility: Can be used in both electrical and optical applications, including hybrid cables combining conductors and fibers. In summary, fiber optic AWM cables are specialized wiring solutions designed to meet UL 758 safety standards while providing reliable optical or hybrid connectivity for appliances, electronic equipment, and network systems. They are widely used in industrial, commercial, and high-performance electronic applications where safety, durability, and compliance are critical.

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Appliance wiring material (AWM) is a large category of wire and cable that spans over different constructions. Underwriters

Imported AWM fibers are typically made with high-purity silica glass, which minimizes signal loss over time. The steel wire mesh is

1.1 These requirements cover Appliance Wiring Material (AWM) in the form of single insulated conductors, multi-conductor cables,

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Identified by ISO 11801 standard, multimode fiber optic cables can be classified into OM1 fiber, OM2 fiber, OM3 fiber,

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From building, machine, and appliance wires to fiber optic cables, quality and reliability are crucial in every wire and cable



# Fiber Optic Cable AWM

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