



ANSI/ICEA S-119-741-2021

Standard for Fiber to the Antenna
(FTTA) Optical Fiber Cable

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***Standard for Fiber to the Antenna (FTTA)
Optical Fiber Cable***

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FOREWORD

ICEA Standards are adopted in the public interest and are designed to eliminate misunderstanding between the manufacturer and user and to assist the user in selecting and obtaining proper products for his particular need. Existence of an ICEA Standard does not in any respect preclude the manufacture or use of products not conforming to the Standard.

The user of this Standard is cautioned to observe any applicable health or safety regulations and rules relative to the manufacture and use of cable made in conformity with this Standard. This Standard hereafter assumes that only properly trained personnel using suitable equipment will perform manufacture, testing, installation and maintenance of cables defined by this Standard.

Requests for interpretation of this ICEA Standard must be submitted in writing (hard copy or email) to the Secretary of the Insulated Cable Engineers Association. The mailing address of ICEA Headquarters and a *Contact* link are shown on the ICEA web site - www.icea.net. An official written interpretation will be provided.

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This issue replaces the previous issue of ANSI/ICEA S-119-741-2015 *Standard for Fiber to the Antenna (FTTA) Optical Fiber Cable*. Major changes in this revision include the following:

- Updated text on hazardous substances requirements.
- Updated dated Part 2 with the addition of all fiber types.
- Updated text in 7.5 for general length marking accuracy requirements.
- Annex B the listing of ICEA Standards was deleted and replaced with 1625 nm single-mode cabled fiber performance requirements.
- Addition of Annex C regarding maximum tension on conductors.

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PART 1

INTRODUCTION

1.1 SCOPE

1.1.1 Products

Fiber to the Antenna (FTTA) cables covered by this standard include cable used for distribution and delivery of optical fiber from the baseband unit (BBU) of a cell site to the remote radio unit (RRU)/active antenna unit (AAU) on the associated structure. These cables may be a hybrid design, incorporating electrical conductors for power delivery and control, or standalone optical cables. This standard primarily references ANSI/ICEA S-87-640 (ICEA 640) and ANSI/ICEA S-104-696 (ICEA 696) for optical performance requirements. Standalone optical cables complying with ICEA 640 or ICEA 696 shall also be considered compliant with this standard.

1.1.2 Application Space

All designs covered by this Standard are intended for operation under normal conditions found in the communications user's locations. These locations can be macro cells (typically towers 75-400 ft. tall and servicing an area of up to 20 miles) or small cells (typically light poles or other structures 30-60 ft. tall servicing an area of 250-1200 ft). These products normally convey digital communications signals (voice, video, and data) from point-to-point or point-to-multipoint. Products covered by this Standard may be factory terminated with connectors or splicing modules.

1.1.3 Temperature Ranges

The normal temperature ranges for cables covered by this Standard are listed in Table 1-1:

For the purposes of this standard, very-low temperature applications are defined as -50 °C (-58 °F) per 1.4.1.6 and are addressed in Annex C of ICEA 640 (Normative), which contains requirements for lower operating and storage temperatures than listed in Table 1-1.

**Table 1-1
Temperature Ranges**

	Cables with No Fire Resistance Rating		Cables with Plenum Fire Resistance Rating		Cables with Other Fire Resistance Rating	
	°C	°F	°C	°F	°C	°F
Operation	-40 to +70	-40 to +158	-40 to +70	-40 to +158	-40 to +70	-40 to +158
Storage and Shipping	-40 to +70	-40 to +158	-40 to +70	-40 to +158	-40 to +70	-40 to +158
Installation	-30 to +60	-22 to +140	0 to +60	+32 to +140	-10 to +60	+14 to +140

1.1.4 Tensile Rating

The standard installation tensile rating for FTFA cables is specified in Table 7-2.

1.1.5 Minimum Bend Diameter

The standard minimum bend diameters for cables covered by this Standard are:

Residual (Installed or Static): 20 x Cable OD

Loaded Condition (During Installation or Self-Support): 40 x Cable OD