STANDARD FOR

BROADBAND TWISTED PAIR CABLE
AIRCORE, POLYOLEFIN INSULATED, COPPER CONDUCTOR

TECHNICAL REQUIREMENTS

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This Standard was developed by the ICEA Communications Cable Division, Working Group 688. It was approved by ICEA on July 8, 2011. It and its companion standard S-99-689, were patterned after existing ICEA Standards, i.e. S-85-625 and S-84-608, respectively.

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ANNEX

ICEA STANDARD FOR BROADBAND TWISTED PAIR CABLE AIRCORE, POLYOLEFIN INSULATED, COPPER CONDUCTOR TECHNICAL REQUIREMENTS

SECTION 1 GENERAL

1.1 PURPOSE: The purpose of this Standard is to establish generic technical requirements that may be referenced by individual telecommunications cable specifications covering products intended for broadband outside plant use. The parameters covered provide material, construction, and performance requirements that are applicable to aircore, polyolefin insulated and jacketed cables of limited pair counts, including a variety of shield and jacket combinations.

Because this Standard does not cover all details of individual cable design, it cannot be used as a single document for procurement of product. It is intended to be used in conjunction with an individual product specification that provides complete design details for the specific cable type and designates the applicable performance requirements. Such individual cable specifications may be prepared either by the user or the manufacturer. The specification designated for procurement is at the option of the user.

1.2 SCOPE: This Standard covers mechanical and electrical requirements for aircore broadband twisted pair telecommunications cable with polyolefin insulated copper conductors.

Broadband cables as described in this Standard are primarily intended to supply broadband services from the remote switch to the customer premises. The remote switch in turn is normally supplied by fiber link from the central office. The reach of these systems is a function of the signal to noise ratio, deployed protocol and bit-rate, and may exceed 1000 m (3280 ft). These systems will allow the simultaneous transmission of regular telephone services, computer, fax and several TV channels. The TV services may be interactive or may

be High Definition TV.

1.3 OPTIONS AND INFORMATION: This Standard provides alternative choices for type of insulation, core assembly, color code, sheath design (shielding materials, single or double jackets, and jacket thicknesses and materials).

One of the objectives of this Standard is to ensure compatibility with the Category 5e system requirements as specified in the TIA/EIA Standard 568-C.2 for commercial building telecommunications cabling, so that the standardized cables can be used as "Customer Owned Outside Plant Cables" or "Campus Cables".

These cables are intended to be installed aerially. When properly pressurized, they may also be installed in ducts or directly buried.

This Standard is arranged in Sections. Each Section covers one specific area of cable requirement and may be referenced as complete Sections or as individual paragraphs.

Paragraphs in this Standard where the user may specify a particular option are listed below:

2.1	Conductor Size
3.2	Insulation Type
4.6	Self-Support (Figure 8) Cable
6.1	Shielding Systems
6.3	Shield Application
7.1	Inner Jacket
7.2.1	Outer Jacket (Material Type)
10.1.5	Length Marking
10.4	Pressurization
10.5.1	Physical Reel Protection
10.5.2	Pulling Eyes

To assist the user in selection of options and to avoid possible misunderstandings between the manufacturer and user, it is suggested that a check-off sheet similar to that shown in Informative Annex A be utilized.

1.4 UNITS AND TOLERANCES: SI units (see NIST-SP 811) are specified throughout this Standard except for conductor size. Approximate US equivalents and Fahrenheit temperatures are included for information only. The rounding-off method of ASTM E 29 shall be used for determining measurement tolerances.

1.5 REFERENCES: All documents referenced herein shall be as listed in Table I with issues or dates as indicated.

1.6 QUALITY ASSURANCE: It is the responsibility of the manufacturer to establish a quality assurance system consistent with ISO Q9001, or an alternate system acceptable to the user. When the user wishes to require a specific quality assurance program or special testing procedures, agreement between the user and the manufacturer should be reached before the

order is placed.

Requirements provided in this Standard are of two types, qualification and product performance. Qualification requirements are intended to be proof of adequate design and processing and shall be repeated as needed for verification. Product performance requirements are those which shall be met by every length of delivered cable as assured by quality control methods. The following tests shall be performed on all completed cables. The term "completed cable" refers to a continuous length of finished cable resulting from the last jacketing operation.

Properties that shall be tested on 100 percent of the cable lengths produced are listed below by paragraph number:

1. Jacket Thickness per Paragraph 4.6.2, 4.6.3, 7.1.2 and 7.2.2
2. Conductor-to-Conductor DC Proof Test per Paragraph 8.12
3. Core-to-Shield DC Proof Test per Paragraph 8.13
4. Core-to-Screen DC Proof Test per Paragraph 8.14
5. Continuity of Metallic Cable Elements per Paragraph 8.16

1.7 SAFETY CONSIDERATIONS: Materials in the cable shall present no dermal or environmental hazards as defined by current industry standards or applicable federal or state laws and regulations.

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 manufacture, testing, installation, and maintenance of cables defined by this Standard will be performed only by properly trained personnel using suitable equipment and employing appropriate safety precautions.