

**ICEA STANDARD FOR
COAXIAL AND COAXIAL/TWISTED PAIR
COMPOSITE BURIED SERVICE WIRES
TECHNICAL REQUIREMENTS**

Published By

INSULATED CABLE ENGINEERS ASSOCIATION, INC.

Post Office Box 1568

Carrollton, Georgia 30112, U.S.A.

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Approved July 20, 2011 by
Insulated Cable Engineers Association, Inc.

Approved January 17, 2012 by
American National Standards Institute, Inc.

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ACRONYMS, ABBREVIATIONS AND SYMBOLS

| | |
|-----------------|--|
| A | ampere |
| ac | alternating current |
| AISI | American Iron and Steel Institute |
| ANSI | American National Standards Institute |
| ASTM | American Society for Testing and Materials |
| AWG | American Wire Gauge |
| °C | degrees of temperature, Celsius scale |
| CAS | Chemical Abstract Services |
| cc | cubic centimeter |
| Cg | capacitance-to-ground |
| cm | centimeter |
| Cu | chemical symbol for copper |
| dB | decibels |
| dc | direct current |
| ECCS | electrolytic chrome coated steel |
| EIA | Electronics Industry Alliance |
| °F | degrees of temperature, Fahrenheit scale |
| ft | foot or feet |
| ft ² | square foot or feet |
| g | gram |
| Hz | Hertz |
| IACS | International Annealed Copper Standard |
| ICEA | Insulated Cable Engineers Association |
| in | inch |
| in ² | square inch |
| ISDN | intergrated services digital network |
| ISO | International Organization for Standardization |
| kft | kilofoot or kilofeet |
| kg | kilogram |
| kHz | kilohertz |
| km | kilometer |
| kPa | kilopascal |
| kV | kilovolt |
| LAN | local area network |
| lb | pound |
| lbf | pound of force |
| m | meter |
| m ² | square meter |
| Mb | megabit |
| mg | milligram |
| MHz | megahertz |
| min. | minute |
| ml | milliliter |
| mm | millimeter |

ACRONYMS, ABBREVIATIONS AND SYMBOLS – (continued)

| | |
|-----------------|---|
| mm ² | square millimeter |
| MPa | megapascal |
| N | Newton |
| NEC | National Electrical Code |
| NESC | National Electrical Safety Code |
| nF | nanofarad |
| NID | network interface device |
| NIU | network interface unit |
| oz | ounce |
| % | percent |
| pF | picofarad |
| POTS | plain old telephone service |
| psi | pounds per square inch |
| PVC | polyvinyl chloride |
| RF | radio frequency |
| rms | root-mean-square |
| SCTE | Society of Cable Telecommunication Engineers |
| sec | second |
| T1 | North American digital hierarchy line code – equivalent to 1.544 Mb/sec |
| UL | Underwriters Laboratories |
| WAN | wide area network |
| ° | degrees symbol, temperature or angle |

COAXIAL AND COAXIAL/TWISTED PAIR COMPOSITE BURIED SERVICE WIRES 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 wire specifications covering products intended for buried outside plant use. The parameters covered provide material, construction, and performance requirements.

Because this Standard does not cover all details of individual wire designs, it cannot be used as a single document for procurement of product. This Standard is intended to be used in conjunction with an individual product specification that provides complete design details for the specific wire type and designates the applicable performance requirements. Such individual wire 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 of service wires containing at least one coaxial core and optionally up to six twisted pairs, used for service applications to extend the telephone/multimedia circuit from the distribution terminal to the subscriber's station protected \neq NID (Network Interface Device) or protected NIU (Network Interface Unit).

Furthermore, a distinction between **Type I** and **Type II** is made with regard to transmission characteristics and shielding materials of the coaxial unit.

Buried Service Wire is used to extend buried telephone plant from the distribution cable to the subscriber.

The coaxial unit is intended to be used for either RF or compressed digital video and radio transmissions. This unit shall also allow bi-directional traffic. The coaxial unit should also be capable of carrying high speed digital signals for LAN/WAN applications (such as T1, ISDN, etc.) as well as POTS (Plain Old Telephone Services). The network supporting these protocols will be based upon physical lines having a characteristic impedance of 75 Ohms. The coaxial units are specified in three and four common sizes for **Type I** and **Type II** respectively, to accommodate different drop lengths.

The twisted pair wires are intended for voice and data transmission and their characteristics are based upon existing system requirements and projected application needs.

- 1.3 **OPTIONS AND INFORMATION:**

This Standard is arranged in Sections covering specific areas of wire requirements and may be referenced as complete Sections or as individual paragraphs.