

**ICEA STANDARD FOR  
CATEGORY 6 INDIVIDUALLY UNSHIELDED TWISTED PAIR INDOOR CABLES (WITH OR  
WITHOUT AN OVERALL SHIELD) FOR USE IN LAN COMMUNICATION WIRING SYSTEMS  
TECHNICAL REQUIREMENTS**

Published By

**INSULATED CABLE ENGINEERS ASSOCIATION, INC.**

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## FOREWORD

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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.

Questions of interpretation of ICEA Standards can only be accepted in writing, and the reply shall be provided in writing. Suggestions for improvements in this Standard are welcome. Questions and suggestions shall be sent to:

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## ACRONYMS, ABBREVIATIONS AND SYMBOLS

ACR	Attenuation-to-Crosstalk Ratio
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ASQC	American Society for Quality Control
AWG	American Wire Gauge
Centigrade	Degrees of Temperature, Celsius scale
cm	centimeter(s)
CM	UL Listing designation for General Purpose Communication Cable
CMG	UL Listing designation for General Purpose Communication Cable
CMR	UL Listing designation for Riser Communication Cable
CMP	UL Listing designation for Plenum Communication Cable
CMX	UL Listing designation for Limited Use Communication Cable
DC	Direct Current
dB	decibel(s)
ELFEXT	Equal Level Far End Crosstalk
FEXT	Far End Crosstalk

## ACRONYMS, ABBREVIATIONS AND SYMBOLS (continued)

f	Frequency in Megahertz
Fahrenheit	Degrees of Temperature, Fahrenheit scale
ft	foot or feet
FTP	Overall shielded Twisted Pair Cable
gm(s)	gram(s)
ICEA	Insulated Cable Engineers Association
in	inch(es)
IO FEXT	Input/Output Far End Crosstalk
kHz	kilohertz
kg	kilogram
lbf	pound(s) of force
LS	limited smoke
MHz	Megahertz
m	meter(s)
mA	milliamp(s)
mm	millimeter(s)
MPa	Megapascal
N	Newton
nF	nanofarad
NEC	National Electrical Code
NEXT	Near End Crosstalk
ns	nanoseconds
oz	ounce(s)
PSACR	Power Sum Attenuation-to-Crosstalk Ratio
PSELFEXT	Power Sum Equal Level Far End Crosstalk
PSNEXT	Power Sum Near End Crosstalk
pF	picofarad
psi	pounds per square inch
RL	Return Loss
Sec	Second(s)
SI	International System of Units
T	Temperature
UL	Underwriters Laboratories
UTP	Unshielded Twisted Pair Cable
°	degrees symbol, temperature or angle
$\alpha$	Attenuation
$\mu\text{S}$	microSiemen

**CATEGORY 6, INDIVIDUALLY UNSHIELDED TWISTED PAIR INDOOR CABLES (WITH OR WITHOUT AN OVERALL SHIELD) FOR USE IN LAN COMMUNICATION WIRING SYSTEMS,**  
**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 normal indoor premises use in the wiring systems of communications users. The parameters covered provide material, construction, and performance requirements.

Because this Standard does not cover all details of individual cable design, it cannot be used as a single document for procurement of product. This Standard is intended for use 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, electrical and flammability requirements for thermoplastic insulated and jacketed, copper conductor, individually unshielded twisted pair indoor cables, with or without an overall shield, intended for use as horizontal cables, backbone cables, or in the manufacture of patch cords. Depending upon the application and system requirements, this Standard provides choices for materials and flammability ratings.

Category cables are intended for voice, text, data, video and image transmission and are categorized by electrical transmission characteristics based on existing system requirements and projected application needs.

This Standard covers the minimum performance requirements for Category 6 cables up to four pairs, with enhanced transmission characteristics specified up to 250 MHz.

For additional Categories, see companion ICEA Standards S-80-576 for Categories 1 and 2 and S-90-661 for Categories 3, 5, and 5e. Additional associated Standards and other ICEA standards are listed in Annex C.

- 1.3 DEFINITION OF CABLE TYPES:**

Horizontal cables are normally used in that portion of the telecommunications cabling system between the telecommunications closet and the work area telecommunications outlet. The conductors are solid.

Backbone cables are normally used in that portion of the telecommunications cabling system between telecommunications closets, equipment rooms, and entrance facilities within a building. The conductors are solid.

Patch cordage is a length of cable used in the manufacture of patch cords where it is combined with connectors on one or both ends to join telecommunication circuits/links at the cross-connect and to connect workstations to the wall outlet. The conductors may be solid or stranded.