

ICEA STANDARD FOR
CATEGORY 3, 5, & 5e INDIVIDUALLY UNSHIELDED TWISTED PAIR
INDOOR CABLES (WITH OR WITHOUT AN OVERALL SHIELD) FOR USE IN
GENERAL PURPOSE AND LAN COMMUNICATION WIRING SYSTEMS
TECHNICAL REQUIREMENTS

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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
°C	Degrees of Temperature, Celsius scale, Centigrade
cm	centimeter
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 Communication Cable, Limited Use
dB	decibel
DC	Direct Current
DOD	Diameter Over the Dielectric, overall diameter of the insulated conductor
ELFEXT	Equal Level Far-End Crosstalk
FEXT	Far-End Crosstalk
FTP	Overall Shielded Twisted Pairs
F	Constant representing a specific frequency
f	Variable representing any frequency in the applicable range
°F	Degrees of Temperature, Fahrenheit scale
ft	foot or feet
g	gram
ICEA	Insulated Cable Engineers Association
in	inch
IO FEXT	Input/Output Far-End Crosstalk
kHz	kilohertz
kg	kilogram
lbf	pounds of force
LAN	Local Area Network
LS	Limited Smoke
MHz	Megahertz
m	meter
mA	milliAmpere
mm	millimeter
MPa	megapascal
N	Newton
nF	nanofarad
NEC	National Electrical Code
NEXT	Near-End Crosstalk
NFPA	National Fire Protection Association
ns	nanoseconds
oz	ounce(s)
pF	picofarad

ACRONYMS, ABBREVIATIONS AND SYMBOLS (continued)

P-P ACR	Pair-To-Pair Attenuation-To-Crosstalk Ratio
P-P ELFEXT	Pair-To-Pair Equal Level Far-End Crosstalk
P-P NEXT	Pair-To-Pair Near-End Crosstalk
PS ACR	Power Sum Attenuation-To-Crosstalk Ratio
PS ELFEXT	Power Sum Equal Level Far-End Crosstalk
PS NEXT	Power Sum Near-End Crosstalk
psi	pounds per square inch
RL	Return Loss
s	Second
S	Siemen
SI	International System of Units
SRL	Structural Return Loss
UL	Underwriters Laboratories
UTP	Unshielded Twisted Pairs
°	degrees symbol, temperature or angle
α	Attenuation

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CATEGORY 3, 5, & 5e INDIVIDUALLY UNSHIELDED TWISTED PAIR
INDOOR CABLES (WITH OR WITHOUT AN OVERALL SHIELD) FOR USE IN
GENERAL PURPOSE AND LAN COMMUNICATION WIRING SYSTEMS
TECHNICAL REQUIREMENTS

SECTION 1 GENERAL

- 1.1 PURPOSE: This Standard establishes 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 primarily for use as horizontal cables, backbone cables, or patch cordage. Depending upon the application and system requirements, this Standard provides choices for materials, transmission characteristics and flammability ratings.

This Standard covers the minimum transmission performance requirements for the following three Categories of cable based on existing system requirements and projected application needs. Multi-pair cables, conforming to the generic designation ARxM, are not covered by this specification. See instead, ICEA S-103-701.

Category 3: Intended for voice, text, data, video and image transmission with transmission characteristics specified for frequencies up to 16 MHz.

Category 5: Intended for voice, text, data, video and image transmission:

- i: Category 5: transmission characteristics specified for frequencies up to 100 MHz.
- ii: Category 5e: enhanced transmission characteristics specified for frequencies up to 125 MHz.