GLOSSARY

AAD
Aluminum Alloy Conductor. Bare aluminum supporting neutral normally for overhead service applications consisting of 1350 alloy and concentric-lay stranding per ASTM B231.

AAAC
All Aluminum Alloy Conductor. Bare aluminum supporting neutral with steel reinforced center wire(s) normally for overhead service applications. Consists of 1350 alloy conductors stranded around coated steel supporting center wire(s). Concentric-lay stranding per ASTM B232.

AL
The chemical symbol for aluminum

Ambient Temperature
Any all-encompassing temperature within a given area

American Wire Gauge
A standard used to describe the physical size of a conductor

Ampacity
The maximum current an insulated wire or cable can safely carry without exceeding either the insulation or jacket material limitations (Same as Current-Carrying Ampacity)

ANSI
The American National Standards Institute

Appliance Wire and Cable
Appliance wiring material is a classification of Underwriters Laboratories, Inc., covering insulated wire and cable intended for internal wiring of appliances and equipment

Area of Conductor
A conductor’s cross-sectional area, usually measured in circular mils

ARRA 2009
American Recovery and Reinvestment Act of 2009

ASA
The American Standards Association; formerly ANSI

ASTM
The American Society for Testing and Materials

ASTM B800

ASTM B801
Standard Specification for Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy for Subsequent Covering for Insulation

ASTM B836

ASTM B609
Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes

ASTM B230
Standard Specification for Aluminum 1350-H19 Wire for Electrical Purposes

ASTM B231
Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors

ASTM B232
Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Reinforced (ACSR)

ASTM B233
Standard Specification for Aluminum 1350 Drawing Stock for Electrical Purposes

ASTM B398
Standard Specification for Aluminum-Alloy 6201-T81 Wire for Electrical Purposes

ASTM B399
Standard Specification for Concentric-Lay-Stranded Aluminum 6201-T81 Conductors

AWG
Abbreviation for American Wire Gauge. A standard system used in the United States for designing the size of an electrical conductor based on geometric progression between two conductor sizes. Based on a circular mil system. 1 mil equals .001 inch.

AWM
Designation for appliance wiring material

Bare Conductor
A conductor having no covering. A conductor with no coating or cladding on the aluminum.

Bending Radius
A term used to denote the minimum radius that an insulated cable or cables may be safely bent during installation

Binder
A helically-applied tape or thread used for holding assembled cable components in place while awaiting subsequent manufacturing operations

Buried Cable
A cable installed directly into the earth without use of underground raceway. Also called “direct-burial cable”.

Cable Filler
The material used in multiple conductor cables to occupy the spaces formed by the assembly of components, thus forming a core of the desired shape (normally cylindrical).

Cabling
The twisting together of two or more insulated conductors to form a cable

Circuit
A path along which electrons from a voltage or current source flow

Circular Mil (cmil)
A unit of area equal to the area of a circle that is one mil (.001”) in diameter. The area of a circle (in circular mils) is equal to the square of the diameter (in mils).

Cold Bend Test
Method for determining the resistance of a cable’s insulation or jacket to cracking during bending at low temperatures

Color Code
A system for a circuit identification through use of solid colors and contrasting tracers

Combination Unilay
A stranding configuration that uses two strand sizes to achieve a 3% reduction in the conductor diameter without compression

Compact Stranded Conductor
A unidirectional, unilay, or conventional concentric conductor that is constructed with a central core surrounded by one or more layers of helically applied wires. Compact stranded conductors are approximately 8 to 10% below the nominal diameter of a conventional non-compact conductor of the same cross-sectional area.

Compressed Stranded Conductor
A unidirectional or unilay or conventional concentric conductor manufactured to a specified nominal diameter 3% less than the calculated diameter of non-compressed conductor of the same construction and cross-sectional area.

Compound
An insulating or jacketing material made by mixing two or more ingredients

Concentric-Lay Conductor
Conductor constructed with a central core surrounded by one or more layers of helically applied wires.

Conductor
An uninsulated wire suitable for carrying electrical current
Conduit
A channel for holding and protecting conductors and cables made of metal or an insulating material, usually circular in cross section, as in pipe.

Control Cable
A multi-conductor cable made for operation in control or signal circuits

CSA
Abbreviation for Canadian Standards Association. The Canadian counterpart of the Underwriters Laboratories.

Cu
The chemical symbol for copper

Damp Location
An outdoor location that is partially protected from weather or an indoor location, subject to a moderate degree of moisture

Direct-Burial Cable
A cable installed directly in the earth

Direct Current (DC)
An electric current that flows in only one direction

Direct Current Resistance (DCR)
The resistance offered by a circuit to the flow of direct current

Duct
An underground or overhead tube for carrying electrical conductors

Feeder
The circuit conductor between the service equipment and the final branch circuit over current device

Filler
A material used in multi-conductor cables to occupy large interstices formed by the assembled conductors.

Flame-Resistance
The ability of a material to restrict the spread of combustion to a low rate of travel, so that the flame will not be conveyed

FT1 Vertical Flame Test
Vertical flame test that determines the resistance of a wire, cable, or cord to the vertical propagation of a flame as proscribed in UL 2556 / CSA C22.2 No. 2556-07. Test is performed over 5 continuous cycles of 15 second on/off exposures to flame. Similar to WW-1 flame test.

FT2 Horizontal Flame Test
Horizontal flame test that determines the resistance of a wire, cable, or cord to the horizontal propagation of flame and the dropping of flame particles as proscribed in UL 2556 / CSA C22.2 No. 2556-07. Test is performed and values attained after a 30 second continuous exposure to flame.

FT4/IEEE 1202 Flame Test
Vertical tray flame test proscribed in UL 1685 that determines values of cable damage height and/or smoke release when cables are subjected to 70,000 btu/hr over a 20 minute period. Basic cable tray rating for single conductors 1/0 AWG and larger, and multi-conductor power and control cables.

Gauge
A term used to denote the physical size of a wire

Ground
A conducting connection between an electrical circuit and the earth or other large conducting body to serve as an earth, thus making a complete electrical circuit

HCF
Health Care Facility

Hi Pot
(See Dielectric Voltage Withstand)

ICEA
Insulated Cable Engineers Association (formerly PCEA)

ICEA T-29-520
Vertical tray flame test proscribed in ICEA Publication T-29-520 that determines values of cable damage height and/or smoke release when cables are subjected to 210,000 btu/hr over a 20 minute period

IEEE
Institute of Electrical and Electronics Engineers

IEEE 1202 Flame Test
(See FT4/IEEE 1202 Flame Test)

Insulation
A covering material having high resistance to the flow of electric current

Insulation-Resistance (IR)
The ability of a conductor’s insulation to resist or prevent current flow (leakage) through the insulation itself, normally expressed in megohms

Insulation Thickness
The wall thickness of the applied insulation

Jacket
An outer covering, usually non-metallic, mainly used for protection against the environment

KCMIL
One thousand circular mils

Lay
The axial distance required for one cabled conductor or conductor strand to complete one revolution about the axis around which it is cabled

Lay Direction
The direction of the twist in a cable as indicated by the top strands while looking along the axis of the cable away from the observer. Described as “right hand” or “left hand” lay.

Leakage Current
The undesirable loss of current through or over the surface of insulation

LEED
Leadership in Energy & Environmental Design; program of the U.S. Green Building Council

Listed
Conductors or other equipment included in a list that is certified and published by a nationally recognized testing laboratory.

MC Cable (Metal-Clad)
The construction of 600 Volt MC cable consists of aluminum circuit and grounding conductors covered with thermoplastic insulation and an overall protective polypropylene cable assembly tape under an outer galvanized steel or aluminum interlocked armor

MCM
One thousand circular mils

Messenger
The linear supporting member, usually a high-strength steel wire, used as the supporting element of a suspended aerial cable. The messenger may be an integral part of the cable or exterior to it.

Metal-Clad Cable
(See MC Cable)

Moisture-Resistance
The ability of a material to resist absorbing moisture from the air or when immersed in water

Multi-Conductor
More than one conductor within a single cable complex

National Electrical Code (NEC)
A consensus standard published by the National Fire Protection Association (NFPA) and incorporated in OSHA regulations

NEC
National Electrical Code

NEMA
National Electrical Manufacturers Association

NFPA
National Fire Protection Association
**NM-B**
Type NM, Non-metallic Sheathed Cable. A cable assembly consisting of insulated conductors jacketed with a nonmetallic material (usually PVC).

**Nylon**
A group of polyamide polymers that are used for wire and cable protective jackets

**OD**
Outside diameter

**Oil-Resistance**
The ability of a conductor or cable insulation to resist physical degradation caused by exposure to oil

**OSHA**
Occupational Safety and Health Administration

**Overall Diameter**
Finished diameter over wire and cable

**Pair**
Two insulated wires of a single circuit associated together

**Polyethylene**
A thermoplastic material having the chemical identity of polymerized ethylene

**Polyvinyl Chloride (PVC)**
A thermoplastic material composed of polymers of vinyl chloride, which may be rigid or elastomeric, depending on specific formulation

**Put-Up**
Refers to packaging of wire and cable. The term itself refers to the packaged product that is ready to be stored or shipped.

**PVC** *(See Polyvinyl Chloride)*

**Quad**
A four-conductor cable

**Raceway**
An enclosed channel, such as a conduit, tubing, and wireways designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this Code.

**Rated Temperature**
The maximum temperature at which an electric component can operate for extended periods without undue degradation or safety hazard

**Rated Voltage**
The maximum voltage at which an electric component can operate for extended periods without loss of its basic properties

**Resistance**
In DC circuits, the opposition a material offers to current, measured in ohms. In AC circuits, resistance is the real component of impedance, and may be higher than the value measured at DC.

**RH**
Type RH. A rubber or XLPE-insulated conductor for use at 75°C in dry locations.

**RHH**
Type RHH. A rubber or XLPE-insulated conductor for use at 90°C in dry locations.

**RHW**
Type RHW. A rubber or XLPE-insulated conductor for use at 75°C in dry and wet locations.

**RHW-2**
Type RHW-2. A rubber or XLPE-insulated conductor for use at 90°C in dry and wet locations.

**RoHS**
European directive for the Restriction of Hazardous Substances

**Service Drop**
The overhead conductors between the utility electrical supply system and the service point of a structure

**Sheath**
The outer covering or jacket of a multi-conductor cable

**Shield**
A metallic layer placed around a conductor or group of conductors to prevent electrostatic interference between the enclosed wires and external fields

**Single Input Wire Construction**
A stranded conductor design which varies the number of wires within a range of conductor sizes in order to permit that range of conductor sizes to be constructed from wires of a single diameter

**Single-Rated**
Normally used in reference to underground secondary distribution cables with aluminum conductors of 1350 series alloy and bear the solitary UL rating of “USE-2”. Not allowed inside the building envelope

**SmartSun®**
Encore Wire’s Photovoltaic Wire. UL-4703 certified and sunlight-resistant in all colors and sizes. SmartSun® carries a 20-year warranty for compact aluminum stranded conductors.

**Solid Conductor**
A single unit not divided into parts

**Spacing**
Distance between the closest edges to two adjacent conductors

**Spiral Wrap**
The helical wrap of a material over a core

**Stranded Conductor**
A conductor composed of a group of wires, usually twisted, or of any combination of such groups of wires

**Sunlight-Resistance**
The ability of a conductor or cable insulation to resist degradation caused by exposure to ultraviolet rays

**SuperSlick Elite®**
Slick, nylon outer jacket on THHN/THWN-2, XHHW-2 & USE-2 products. Eliminates the need for lube.

**Tape Wrap**
A helically applied protective tape over insulated or uninsulated wires

**TC**
Tray Cable

**Temperature Rating**
The maximum temperature rating of an insulation whereby the cable may be used in continuous operation without loss of properties

**Tensile Strength**
The maximum load per unit of original cross-sectional area that a conductor attains when tested in tension to rupture

**TFFN**
Fixture wire; thermoplastic covered, stranded with a Nylon sheath. 90°C

**Thermoplastic**
A material that softens when heated and becomes firm on cooling

**THHN**
75°C, 600V, nylon-jacketed building wire for dry and damp locations. Older Reference for THWN-2.

**THHN-2**
Incorrect reference, commonly misapplied when THWN-2 is called out

**THW-2**
Thermoplastic, vinyl-insulated building wire. Flame-retardant, moisture and heat-resistant. 90°C. Dry and wet locations. No nylon jacket.

**THWN**
75°C, 600V, nylon-jacketed building wire for dry or wet locations. Older reference for THWN-2.

**THWN-2**
90°C, 600V, nylon-jacketed building wire for dry or wet locations.
Tinned Copper
Tin coating added to copper to aid in soldering and inhibiting corrosion

Tray Cable
A factory-assembled, multi-conductor or multi-pair control, signal, or power cable specifically approved under the National Electrical Code for installation in trays or for direct burial

Triple-Rated
Normally used in reference to underground secondary distribution cables with aluminum conductors of 8000 series alloy and which bear the triple UL ratings of “USE-2/RHH/RHW-2”. Allowed inside the building envelope.

Twisted Pair
A twisted pair is composed of two small separately insulated wires twisted together without a common covering

UF
Thermoplastic underground feeder and branch circuit cable

UL
Abbreviation for Underwriters Laboratories Inc., an independent organization that operates safety certification services for electrical and electronic materials and equipment

Underground Secondary Distribution
The underground conductors between the utility electrical supply system and the service point of a structure

USE
Underground Service Entrance cable, rubber-insulated, neoprene or XLPE-jacketed

Volt
A unit of electrical pressure. One volt is the amount of pressure that will cause one ampere of current in one ohm of resistance.

Voltage
Electrical potential or electromotive force expressed in volts

Voltage Drop
The amount of voltage loss from original input in a conductor of given size and run length

VW-1
Vertical flame test that determines the resistance of a wire, cable, or cord to the vertical propagation of flame and the dropping of flame particles as prescribed in UL 2556. Test is performed with potentially having up to 5 continuous cycles of 15 second on/off exposures to flame. The cable must self-extinguish during each of the 15 second intervals when flame is removed.

Wall Thickness
The thickness of the applied insulation or jacket

Wire Gauge
A measure of the diameter or size of wires. The sizes are expressed by numbers.

XHHW-2
High temperature (90°C), chemically cross-linked, polyethylene-jacketed

XLPE
Cross-linked polyethylene

GLOSSARY

SOCIAL MEDIA

LET’S GET SOCIAL.
Connect with us on social media to stay up to date on all the latest Encore Wire news, information, and products.

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