

AWG Abbreviation for American Wire Gauge.	Color Code A system for circuit identification through use of solid colors and contrasting tracers.
AWM Designation for appliance wiring material.	Compound An insulating or jacketing material made by mixing two or more ingredients.
Alternating Current Electric current that continually reverses its direction. Is expressed in cycles per second (hertz or Hz).	Concentricity In a wire or cable, the measurement of the location of the center of the conductor with respect to the geometric center of the surrounding insulation.
Ambient Temperature The temperature of the medium (gas, liquid or earth) surrounding an object.	Conductor An uninsulated wire suitable for carrying electrical current.
American Mustang A premium grade thermoset cord, UL listed as SOOW or SJOOW, CSA SOOW and SJOOW.	Contacts The parts of the connector that actually carry the electrical current and that touch the equivalent parts in the mating connector.
American Wire Gauge (AWG) A standard system for designating wire diameter. Also referred to as the Brown and Sharpe (B&S) wire gauge.	Continuity Check A test to determine whether electrical current flows continuously throughout the length of a single wire or individual wires in a cable.
Ampacity See Current Carrying Capacity.	Cord A flexible insulated wire suitable for carrying electric current.
Ampere The unit of current. One ampere is the current flowing through one ohm of resistance at one volt potential.	Corona Ionization of air surrounding a conductor caused by the influence of high voltage. Causes deterioration of insulation materials.
Anneal Relief of mechanical stress through application of heat and gradual cooling. Annealing copper renders it soft and less brittle.	Crazing The minute cracks on the surface of plastic materials.
Audio Frequency The range of frequencies audible to the human ear. Usually 20–20,000 Hz.	CSA Abbreviation for Canadian Standards Association, a nonprofit, independent organization that operates a listing service for electrical and electronic materials and equipment. The Canadian counterpart of the Underwriters Laboratories
Braid A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.	Current Carrying Capacity The maximum current an insulated conductor can safely carry without exceeding its insulation and jacket temperature limitations. It is dependent on the installation conditions.
Breakdown Voltage The voltage at which the insulation between two conductors breaks down.	Decibel (db) A unit that expresses differences of power or voltage level. It is used to express power loss in passive circuits or cables.
Bunch Stranding A group of wires of the same diameter twisted together without a predetermined pattern.	Dielectric Strength The voltage that an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).
Cabling The twisting together of two or more insulated conductors to form a cable.	Direct Capacitance The capacitance measured directly from conductor to conductor through a single insulating layer.
Capacitance The ability of a dielectric material between conductors to store electricity when a difference of potential exists between the conductors. The unit of measurement is the farad, which is the capacitance value that will store a charge of one coulomb when a one-volt potential difference exists between the conductors. In AC, one farad is the capacitance value that will permit one ampere of current when the voltage across the capacitor changes at a rate of one volt per second.	Drain Wire In a cable, the uninsulated wire laid over the shield component or components and used as a ground connection.
Circuit (Electric) The complete path of an electrical current. When the continuity is broken, it is called an open circuit; when continuity is maintained, it is called a closed circuit.	Drawing In wire manufacture, pulling the metal through a die or series of dies to reduce diameter to a specified size.
Cold Flow Permanent deformation of the insulation due to mechanical force or pressure (not due to heat softening).	

AMERICAN WIRE GROUP
1920 E. Hallandale Beach Blvd.
Suite PH8
Hallandale, Florida 33009
Telephone: 1-954-455-3050
Fax: 1-954-455-9886
E-Mail: sales@buyawg.com

TOLL FREE 1-800-342-7215
www.buyawg.com



Wire & Cable Glossary of Terms

Eccentricity

Like concentricity, a measure of the center of a conductor's location with respect to the circular cross section of the insulation. Expressed as a percentage of displacement of one circle within the other.

Elongation

The fractional increase in length of a material stressed in tension.

EMI

Abbreviation for electromagnetic interference.

Farad

A unit of electrical capacitance.

Filler

1) A material used in multiconductor cables to occupy large interstices formed by the assembled conductors;
2) An inert substance added to a compound to improve properties or decrease cost.

Flame Resistance

The ability of a material to resist the propagation of flame once the heat source is removed.

Flex Life

The measurement of the ability of a conductor or cable to withstand repeated bending.

Frequency

The number of times an alternating current repeats its cycle in one second.

G

An industry designation for a 2kV portable power cable consisting of 2 4 insulated conductors with ground wires placed in the valleys for use in mines and similar applications.

Gauge

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

G-GC designation

An industry for a 2kV portable power cable consisting of 3 insulated conductors with 2 ground wires, and a ground check conductor. For use in mines and similar applications.

Ground

An electrical term meaning to connect to the earth or other large conducting body to serve as an earth, thus making a complete electrical circuit.

Harness

An arrangement of wires and cables, usually with many breakouts, which have been tied together or pulled into a rubber or plastic sheath, used to interconnect an electric circuit.

Hertz (Hz)

A term replacing cycles per second as an indication of frequency.

Hi-Pot

A test designed to determine the highest voltage that can be applied to a conductor without breaking through the insulation.

HPD

Heater cord with thermoset insulation and cotton or rayon braid overall.

HPN

Parallel heater cord.

Hz

Abbreviation for hertz.

Impedance

The total opposition that a circuit offers to the flow of alternating current or any other varying current at a particular frequency. It is a combination of resistance R and reactance X, measured in ohms.

Inductance

The property of a circuit or circuit element that opposes a change in current flow, thus causing current changes to lag behind voltage changes. It is measured in henrys.

Insulation

A material having high resistance to the flow of electric current. Often called a dielectric in radio frequency cable.

Jacket

An outer non-metallic protective covering applied over an insulated wire or cable.

Jumper Cable

A short flat cable interconnecting two wiring boards or devices.

Lay

The length measured along the axis of a wire or cable required for a single strand (in stranded wire) or conductor (in cable) to make one complete turn about the axis of the conductor or cable.

Longitudinal Shield

A tape shield, flat or corrugated, applied longitudinally with the axis of the core being shielded.

MTW

Thermoplastic insulated machine tool wire.

Multiconductor

More than one conductor within a single cable complex.

Mylar

A synthetic compound with high dielectric qualities made by DuPont and used extensively in the wire and cable industry in tape form.

NEMA

Abbreviation for National Electrical Manufacturers Association.

Ohm

A unit of electrical resistance.

OSHA

Abbreviation for Occupational Safety and Health Act, specifically the Williams Steiger Law passed in 1970 covering all factors relating to safety in places of employment.

Plasticizer

A chemical agent added to plastics to make them softer and more pliable.

Potting

The sealing of a cable termination or other component with a liquid that cures into an elastomer.

Primary Insulation

The first layer of nonconductive material applied over a conductor, whose prime function is to act as electrical insulation.



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Put-Up

Packaging of finished wire or cable by size and length.

PVC

Abbreviation for polyvinylchloride.

Rated Voltage

The maximum voltage at which an electrical component can operate for extended periods without undue degradation or safety hazard.

REA

Abbreviation for Rural Electrification Administration, which is part of the US Dept. of Agriculture. REA establishes specifications and provides approval for telephone station wire and power cables.

Resistance

A measure of the difficulty in moving electrical current through a medium when voltage is applied. It is measured in ohms.

RFI

Abbreviation for radio frequency interference.

S

Heavy duty, rubber insulated portable cord. Standard copper conductors with separator and individual rubber insulation. Two or more color-coded conductors cabled with filler, wrapped with separator and rubber jacketed overall 600V.

SEO

Same construction as STO, except insulation and jacket are made of Thermoplastic Elastomer Rubber (TPE) 600V.

SE00W

Same construction as SEOW, except with oil resistant insulation.

SEOW

Same construction as SEO, except suitable for outdoor use. Usually UL listed for continuous submersion in water 600V.

Separator

Pertaining to wire and cable, a layer of insulating material such as textile paper, Mylar, etc., which is placed between a conductor and its dielectric, between a cable jacket and the components it covers, or between various components of multiple conductor cable. It can be utilized to improve stripping qualities and/or flexibility, or can offer additional mechanical or electrical protection to the components it separates.

Shield

A tape shield, or braid of metal, usually copper, aluminum or other conducting material, placed around or between electric circuits or cables or their components to contain any unwanted radiation, or to keep out an unwanted interference.

SJ

Junior hard service rubber insulated pendant or portable cord. Same construction as SJT, except insulation and jacket is thermoset (rubber) 300V.

SJE

Same construction as SJT, except insulation and jacket made of Thermoplastic Elastomer Rubber (TPE) 300V.

SJEO

Same construction as SJO, except insulation and jacket made of Thermoplastic Elastomer Rubber (TPE).

SJEOW

Same construction as SEOW except 300 volt rated.

SJO

Same as SJ, but oil resistant outer jacket. Can also be made "water resistant." 300V, 60°C, 75°C, 900°C or 105°C.

SJ00W

Same as SOOW except 300 volt rated.

SJT

Junior hard service thermoplastic conductors with overall thermoplastic jacket, 300V, 60°C, 75°C, 900C or 105°C.

SJTO

Same as SJT, but oil resistant thermoplastic outer jacket.

SLC

Stage Lighting Cable. A 600-volt single conductor cable for use with indoor and outdoor stages, fairs and carnivals.

SO

Hard service cord. Same construction as type S, except oil resistant thermoset jacket. 600V, 600°C to 105°C.

SO0W

Same as SOW except oil resistant insulation.

SOW

Same as SO except suitable for outdoor use.

SP-1

All rubber, parallel jacketed, two conductor light duty cord for pendant or portable use. 300V.

SP-2

Same as SP-1, but heavier construction, with or without third conductor for grounding purposes. 300V.

SP-3

Same as SP-2, but heavier construction for refrigerators or room air conditioners. 300V.

Spacing

Distance between the closest edges of two adjacent conductors.

Spark Test

A test designed to locate pinholes in the insulation of a wire or cable by application of a voltage for a very short period of time while the wire is being drawn through a field of electrodes.

SPE

Same construction as SP-1, except insulation and jacket made of Thermoplastic Elastomer Rubber (TPE).

Spiral Wrap

The helical wrap of a tape or other material over a core or component.

SPT-1

Same as SP-1, except all thermoplastic, 300V. With or without third conductor for grounding.

SPT-2

Same as SP-2, except all thermoplastic. 300V. With or without third conductor for grounding.

SPT-3

Same as SP-3, except all thermoplastic. 300V. With or without third conductor for grounding.

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ST	Hard service cord, jacketed. Same as type S, except all plastic construction. 600V, 600°C to 105°C.
STO	Same as ST, but with oil resistant thermoplastic outer jacket. 600V, 600°C to 105°C.
Strand	A single uninsulated wire.
Stranded Conductor	A conductor composed of wires or groups of wires twisted together.
Surge	A temporary and relatively large increase in the voltage or current in an electric circuit or cable. Also called a transient.
SV	Vacuum cleaner cord, rubber insulated with rubber jacket, rated at 300V.
SVE	Same construction as SV, except insulation and jacket made of Thermoplastic Elastomer (TPE).
SVT	Same as SV, except all plastic construction. With or without third conductor for grounding purposes only. 300V, 600°C to 105°C.
TC	Tray Cable. Multi-conductor cable specifically approved for use installed in cable trays.
Tensile Strength	The pull stress required to break a given specimen.
Thermoplastic	A material that softens and melts when heated and becomes firm on cooling.

Thermoset	A material that hardens or sets when heat is applied and that, once set, cannot be resoftened by heating. The application of heat cures or vulcanizes the material.
TPE	Abbreviation for Thermoplastic Elastomer.
UL	Abbreviation for Underwriters Laboratories, a nonprofit independent organization that operates a listing service for electrical and electronic materials and equipment.
Voltage	The term most often used in place of electromotive force, potential, potential difference or voltage drop to designate the electrical pressure that exists between two points and is capable of producing a current when a closed circuit is connected between two points.
VW-1	A flammability rating established by Underwriters Laboratories for wires and cables that pass a specific vertical flame test, formerly designated FR-1.
W (Type)	An industry designation for a 2kV portable power cable consisting of 1–6 insulated conductors. For use in mines and similar severe duty applications.
W	UL designation for outdoor listed flexible cord that is tested for sunlight and weather requirements (e.g., 5TW).
Water Resistant	UL designation for cords that have an insulation on the individual conductors that passes UL requirements (e.g., 5T Water Resistant or 5T Dry 105°C, Water Resistant 60°C).



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