Abrasion Resistance Ability of a wire, cable or material to resist surface wear.

Accelerated Aging A test in which voltage, temperature, etc. are increased above normal operating values to obtain observable deterioration in a relatively short period of time.

Aerial Cable A cable suspended in the air on poles or other overhead structure.

Admittance A value denoting the ease with which an AC current flows in a circuit.

Air Spaced Coaxial Cable One in which air is the essential dielectric material. A spirally wound synthetic filament or spacer may be used to center the conductor.

Alloy A metal formed by combining two or more different metals to obtain desirable properties.

ALS A type of cable consisting of insulated conductors enclosed in a continuous closely fitting aluminum tube.

Alternating Current (AC) Electric current that continually reverses its direction. It is expressed in cycles per second (hertz or Hz).

Ambient Temperature The temperature of a medium surrounding an object.

American Wire Gauge (AWG) A standard system for designating wire diameter. Primarily used in the United States.

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

Ampere The unit of current. One amper is the current flowing through one ohm of resistance at one volt potential.

Annealed Wire Wire, which after final drawdown, has been heated and slowly cooled to remove the effects of cold working.

ANSI Abbreviation for American National Standards Institute. A subsidiary of the Instrument Society of America (ISA) whose purpose is to oversee American Standards. Such standards define a product, process or procedure with reference to one or more of the following: nomenclature, composition, construction, dimensions, tolerances, safety, operating characteristics, performance quality, rating, certification, testing and the service for which it was designed.

Anti-Oxidant A substance which prevents or slows down oxidation of material exposed to air.

Armor A braid or wrapping of metal, usually steel or aluminum, used for mechanical protection.

ASA Abbreviation for American Standards Association. Former name of ANSI.

ASME Abbreviation for American Society of Mechanical Engineers. A non-profit society of mechanical engineers who endeavor to advance both the theories of mechanics and practical approaches to everyday problems.

ASTM Abbreviation for the American Society for Testing and Materials, a non-profit industry-wide organization which publishes standards, methods of test, recommended practices, definitions and other related material.

Attenuation Power loss in an electrical system. In cables, generally expressed in dB per unit length.

Audio Frequency Those frequencies audible to the human ear, generally considered to be in the range of 32 to 16,000 hertz (Hz).

AWG Abbreviation for American Wire Gauge.

AWM Designation for appliance wiring material.

Band Marking A continuous circumferential band applied to a conductor at regular intervals for identification.

Balanced Circuit A circuit so arranged that the impressed voltages on each conductor of the pair are equal in magnitude but opposite in polarity with respect to ground.

Binder A spirally served tape or thread used for holding assembled cable components in place awaiting subsequent manufacturing operations.

Bond Strength Amount of adhesion between surfaces, e.g., in cemented ribbon cable.

Braid A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.

Braid Angle The smaller of the two angles formed by the shielding strand and the axis of the cable being shielded.

Braid Carrier A spool or bobbin on a braider which holds one group of strands or filaments consisting of a specific number of ends. The carrier revolves during braiding operations.

Braid Ends The number of strands used to make up one carrier. The strands are wound side by side on the carrier bobbin and lie parallel in the finished braid.

Breakdown Voltage The voltage at which the insulation between two conductors is destroyed.

Breakout The point at which a conductor or group of conductors is separated from a multiconductor cable to complete circuits at various points along the main cable.

Building Wire Wire used for light and power, 600 volts or less, usually not exposed to outdoor environment.

Bunch Stranding A group of wires of the same diameter twisted together without a predetermined pattern.

Buried Cable A cable installed directly in the earth without use of underground conduit. Also called “direct burial cable.”

Cable A group of individually insulated conductors in twisted or parallel configuration under a common sheath.

Cabling The twisting together of two or more insulated conductors to form an element.

Capacitance Storage of electrically separated charges between two plates having different potentials. The value depends largely on the surface area of the plates and the distance between them.

Capacitance, Direct The capacitance measured directly from conductor to conductor through a single insulating layer.

Capacitance, Mutual The capacitance between two conductors with all other conductors, including shield, shortcircuited to ground.

Capacitance, Unbalance An inequality of capacitance between the wires of two or more pairs which result in a transfer of unwanted signal from one pair to others.

Capacitance, Unbalance To Ground An inequality of capacitance between the ground capacitance of the conductors of a pair which results in a pickup of external source energy, usually from power transmission lines.

Capacitive Coupling Electrical interaction between two conductors caused by the potential difference between them.

CATV An acronym for Community Antenna Television.

Cellular Polyethylene Expanded or “foam” polyethylene consisting of individual closed cells suspended in a polyethylene medium.

Certificate of Compliance (C of C) A certificate which is normally generated by a Quality Control Department, which shows that the product being shipped meets customer’s specifications.

Certified Test Report (CTR) A report providing actual test data on a cable. Tests...
are normally run by a Quality Control Department, which shows that the product being shipped conforms to test specifications.

**Characteristic Impedance** The impedance that, when connected to the output terminals of a transmission line of any length, makes the line appear infinitely long. The ratio of voltage to current at every point along a transmission line on which there are no standing waves.

**Circuit Sizes** A popular term for building wire sizes 14 through 10 AWG.

**Circular Mil** The area of a circle one mil (.001”) in diameter; 7.845 x 10-7 sq. in. Usually used in expressing wire cross sectional area.

**Cladding** A method of applying a layer of metal over another metal whereby the junction of the two metals is continuously welded.

**Coaxial Cable** A cable consisting of two cylindrical conductors with a common axis, separated by a dielectric.

**Cold Flow** Deformation of the insulation due to mechanical force or pressure (not due to heat softening).

**Common Mode (Noise)**, caused by a difference in “ground potential.” By grounding at either end rather than both ends (usually grounded at source) one can reduce this interference.

**Composite Cable** A cable containing more than one gauge size or a variety of circuit types, e.g. pairs, triples, quads, coaxials, etc.

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

**Concentric Stranding** A central wire surrounded by one or more layers of helically wound strands in a fixed round geometric arrangement.

**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.

**Conductance** The ability of a conductor to carry an electric charge. The reciprocal of resistance.

**Conductivity** The capability of a material to carry electrical current—usually expressed as a percentage of copper conductivity (copper being 100%).

**Conductor** An uninsulated wire suitable for carrying electrical current.

**Conduit** A tube or trough in which insulated wires and cables are run.

**Connector** A device used to physically and electrically join two or more conductors.

**Continuous Vulcanization** Simultaneous extrusion and curing of elastomeric wire coating materials.

**Control Cable** A multiconductor cable made for operation in control or signal circuits.

**Copolymer** A compound resulting from the polymerization of two different monomers. Copper-Clad Steel with a coating of copper welded to it, as distinguished from copper-plated.

**Core** A small, flexible insulated cable.

**Cord** In cables, a component or assembly of components over which additional components (shield, sheath, etc.) are applied.

**Corona** A discharge due to ionization of air around a conductor due to a potential gradient exceeding a certain critical value.

**Corona Resistance** The time that the insulation will withstand a specified level of field-intensified ionization that does not result in the immediate complete breakdown of the insulation.

**Corrosion** The deterioration of a material by chemical reaction or galvanic action.

**Crazing** The minute cracks on the surface of plastic materials.

**CRCS** An acronym for continuous rigid cable support. Synonymous with Tray.

**Creep** The dimensional change with time of a material under load.

**Cross-Linked** A term denoting inter-molecular bonds between long chain thermoplastic polymers, effected by chemical or irradiation techniques.

**Crosstalk** A type of interference caused by signals from one circuit being coupled into adjacent circuits.

**C.S.A.** Abbreviation for Canadian Standards Association, a non-profit, independent organization which operates a listing service for electrical and electronic materials and equipment. The Canadian counterpart of the Underwriters Laboratories.

**Current Carrying Capacity** The maximum current an insulated conductor can safely carry without exceeding its insulation and jacket temperature limitations. (Same as Ampacity.)

**Cut-Through Resistance** The ability of a material to withstand mechanical pressure, usually a sharp edge or small radius, without separation.

**C.V.** Abbreviation for continuous Vulcanization.

**Decibel (dB)** A unit to express differences of power level. Used to express power gain in amplifiers or power loss in passive circuits or cables (10 times the common logarithm of power ratios, 20 times the common logarithm of the voltage or current ratios).

**Derating Factor** A factor used to reduce the current carrying capacity of a wire when used in environments other than that for which the value was established.

**Dielectric** Any insulating material between two conductors which permits electrostatic attraction and repulsion to take place across it.

**Dielectric Constant (K)** The ratio of the capacitance using the material in question as the dielectric, to the capacitance resulting when the material is replaced by air.

**Dielectric Strength** The voltage which an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).

**Direct Current (DC)** An electric current which flows in only one direction.

**Dissipation Factor** The tangent of the loss angle of the insulating material. (Also referred to as loss tangent, tan S, and approximate power factor.)

**Double Foot** Combined length of one linear foot of paired material; i.e. One double foot is equal to one foot of positive material plus one foot of negative material. Usually used in determining thermocouple wire loop resistance.

**Drain Wire** In a cable, the uninsulated wire in intimate contact with a shield to provide for easier termination of such a shield to a ground point.

**Drawing** In wire manufacturing, pulling the metal through a die or series of dies to reduce diameter to a specified size.

**Duct** An underground or overhead tube for carrying electrical conductors.

**Duplex Insulated** In the thermocouple industry, a combination of dissimilar metal conductors of a thermocouple or thermocouple extension wire.

**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.

**EIA** Abbreviation for Electronic Industries Association.

**Elastomer** A class of long chain polymers capable of being crosslinked to produce elastic compounds, e.g. polychloroprene and ethylene propylene rubber.

**Electromagnetic** Pertaining to the combined electric and magnetic fields associated with movements of electrons through conductors.

**Electromotive Force (e.m.f.)** Pressure or voltage. The force which causes current to flow in a circuit.

**Electrostatic** Pertaining to static electricity or electricity at rest. A constant intensity electric charge.

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

**EMI** Abbreviation for electromagnetic interference.

**Ethylene Propylene Rubber (EPR)** An ozone resistant rubber consisting primarily of ethylene propylene copolymer (EPM) or ethylene propylene diene terpolymer (EPDM).

**Expanded Diameter** Diameter of shrink tubing as supplied. When heated the tubing will shrink to its extruded diameter.

**External Interference** The effects of electrical waves or fields which cause spurious signals other than the desired intelligence, e.g. noise.