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GLOSSARY OF TERMS

With Specific Reference to Electrical Wire and Cable

- A -

ABRASION RESISTANCE: The ability of a material to withstand surface wear.

ACCELERATED AGING: A test in which parameters, such as voltage and temperature, are increased above normal operating values to obtain observable or measurable deterioration in a relatively short period of time. The plotted results predict expected service life under normal operating conditions. Also called accelerated life test.

ACCELERATOR: A chemical additive used to hasten the chemical reaction under specific conditions.

ACCEPTANCE TEST: A test that determines conformance of a product to design specifications as a basis for acceptance.

ACTIVATOR: A chemical additive used to initiate the chemical reaction in a specific chemical mixture.

ADHESIVE BONDING: (see potting) Bonding is accomplished by adding an adhesive coating to the surface of wire or cable and curing the adhesive to form a bond. Examples are bonding to potting material at the cable end of an electrical connector and bonding to silicone pressure seals.

ADJACENT CONDUCTOR: An insulated conductor next to any other insulated conductor.

ALLOY: A substance having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.

ALTERNATING CURRENT (AC): An electrical current which reverses direction at regular intervals, with the rate expressed as hertz (cycles per second).

ALUMINUM CONDUCTOR: An aluminum wire or group of wires, not insulated from each other, to carry electrical current.

AMBIENT TEMPERATURE: The temperature of the surrounding environment.

AMERICAN WIRE GAUGE (AWG): A standard system for identifying the physical size of wire.

AMPERE (A): The standard unit for measuring the strength of an electric current (the amount of current sent by one volt through a resistance of one ohm).

ANNEAL: To heat and then gradually cool in order to relieve mechanical and thermal stress.

ANTIOXIDANT: A substance used to prevent or retard the degradation of material through exposure to oxygen or to an oxygen containing environment.

ANTIOZONANT: A substance used to prevent or retard the degradation of material through exposure to ozone.

ARMOR: Mechanical protection usually a metallic layer of tape, braid, or served wires.

ARMORED CABLE: A wire or cable covered with armor.

ATTENUATION: Power loss in an electrical system. In cables the loss is expressed in decibels per unit length of cable, at a given frequency.

AUDIO FREQUENCY: The band of frequency which is audible to the human ear. Usually 20 to 20,000 Hz.

AUTOCATALYTIC DEGRADATION: The phenomenon whereby the breakdown products of the initial phase of degradation act to accelerate the rate at which subsequent degradation proceeds.

- B -

BAND MARKING: A circular band applied at regular intervals to the insulation of a conductor for the purpose of size designations or circuit identification.

BERYLLIUM: A metal lighter than aluminum, non-magnetic, and characterized by good electrical conductivity and high thermal conductivity. Beryllium is used in alloys, especially beryllium copper alloy.

BINDER: A spirally served tape or thread wrap used for holding in place assembled cable components which are awaiting further manufacturing operations.

BIRDCAGE: A defect in stranded wire where the strands have separated from the normal lay.

BRAID: An assembly of fibrous or metallic filaments woven to form a protective and/or conductive covering over one or more wires, or as a flexible metallic conductive cable such as a grounding strap.

BRAID ANGLE: The angle of the braided filaments or fibers in relation to the longitudinal axis of the wire or cable.

BRAID CARRIER: The yarn or strand, or group of yarns or strands, laid parallel in the braid by a single bobbin of the braider.

BRAID END: An individual yarn or strand in a braid carrier.

BRAIDER: A machine used to apply a woven fibrous or metallic braid over a wire or cable. Also used to produce sleeving and tape for tying or lacing purposes.

BRAZING: A joining process whereby a filler material which melts at a temperature in excess of 800°F but less than the melting point of the base metal, combines with the base metal.

BREAKDOWN VOLTAGE: The electrical potential necessary to cause the passage of a specified electric current through an insulator or insulating material.

BREAKOUT: The point other than at the end, along the length of a harness or other multiconductor configuration, at which a wire or group of wires leaves the configuration.

BUNCHED STRANDING: Any number of conductor strands of the same diameter twisted together in the same direction without regard to geometric arrangement of the individual strands.

BUNDLE: A number of individually insulated conductors (wires), and/or cables, groups, harnesses, routed together.

BUTT BRAZE: Joining of two conductors end-to-end, with no overlap and with axis in line, using the process of brazing.

BUTT SPLICE: A splice wherein two conductors are joined end-to-end with their longitudinal axis in line and not overlapping. A device for accomplishing such a splice.

BUTT WRAP: A spirally wrapped tape over a cable core where the trailing edge of one wrap just meets the leading edge of the preceding wrap with neither overlap nor spacing.

- C -

CABLE: Two or more insulated conductors, solid or stranded, contained in a common covering, or two or more insulated conductors twisted or molded together without a common covering, or one or more insulated conductors with a covering; such as a shield and/or jacket.

CABLE ASSEMBLY: A completed cable and its associated hardware.

CABLE CORE: The portion of an insulated cable which lies under the protective covering or coverings.

CABLE CORE BINDER: A wrapping of tapes or cords around the several conductors of a multiple-conductor cable used to hold them together. Cable core binder is usually supplemented by an outer covering of braid, jacket or sheath.

CABLE FILLER: Material used in multiple conductor cables to occupy the interstices formed by the assembly of the insulated conductors, thus forming a cable core of the desired shape.

CABLING: The act of twisting together two or more insulated conductors to form a cable.

CAPACITANCE: That property of a system of conductors and dielectrics which permits the storage of electricity when potential differences exist between the conductors. Its value is expressed as the ratio of the electrostatic charge on a conductor to the potential difference between the conductors required to maintain that charge. Capacitance is measured in farads.

CAPACITIVE COUPLING: Electrical interaction between two conductors caused by the capacitance between them.

CAPILLARY ACTION: The phenomenon of liquid rising in a small interstice due to surface tension.

CAST TAPE (FILM): A material which is formed directly into a tape (or film) by means of flowing or casting a solution or dispersion of the film forming material onto a suitable carrier, then removing the solvents.

CHAFING: Repeated relative motion between wires, cables, groups, harnesses or bundles, or between these wiring system components and structure or equipment, which results in deleterious wear.

CHARACTERISTIC IMPEDANCE (Zo): Characteristic impedance of a uniform line is the ratio of an applied potential difference to the resultant current at the point where the potential difference is applied, when the line is of infinite length. The term is applied only to a uniform line. Coaxial cable is such a uniform line.

CARRIER: The element or combination of several elements laid parallel in the braid by a single bobbin of a braider.

CIRCUIT: A complete path over which electrons can flow from the negative terminals of a voltage source through parts and wires to the positive terminals of the same voltage source.

CIRCULAR MIL: A unit of measure used to express the cross-sectional area of a conductor. It is the unit of area equal to $\pi/4$ times a square mil.

CIRCULAR MIL AREA (CMA): The cross-sectional area of the current carrying portion of a conductor expressed in circular mils.

CLADDING: A method of applying a layer of metal over another metal whereby the junction of the two metals is continuously bonded.

COAXIAL: A construction of two (usually cylindrical) entities sharing a common axis.

COAXIAL CABLE: A cable in which one conductor completely surrounds the other, the two being coaxial, and separated by a continuous (usually solid) insulating material.

COEFFICIENT OF EXPANSION: The fractional change in dimension of a material for a unit change in temperature.

COLD BEND: A test used to determine the affect of low temperatures on the insulation system of wire and cable when the wire or cable is flexed. Failure is characterized by the appearance of cracks or other defects in the insulation system.

COLD FLOW: Permanent deformation of wire insulation due to mechanical forces, without the aid of heat softening.

COLD SOLDER JOINT: A solder connection exhibiting poor wetting and grayish, porous appearance due to insufficient heat, inadequate cleaning prior to soldering, or excessive impurities in the solder solution.

COLOR CODE: A color identification mark appearing on the surface of a wire or cable component (sometimes in the form of a stripe) to identify a given component within a complex.

COMPOUND: A homogeneous substance, composed of two or more essentially different chemicals which are present in definite proportions, having properties which are different from those of its constituent elements.

COMPRESSION SET: The amount of compression an elastomer retains. Expressed as a percentage of original dimension.

CONCENTRIC LAY CONDUCTOR: A conductor with one or more layers of helically wound strands in a fixed round geometric arrangement. It is optional for the direction of lay for successive layers to be alternately reversed or in the same direction. If the direction of the lay for successive layers is the same, the lay length shall increase with each successive layer. The standard direction of lay of the outer layer is left hand.

CONCENTRIC LAY: A method of cabling or stranding in which a central core strand or insulated conductor is surrounded by one or more layers of helically wound strands or insulated conductors.

CONCENTRICITY: The measurement which is the location of the center of the conductor with respect to the geometric center of the circular insulation.

CONDUCTANCE: A measure of the ability of any material to conduct an electric charge. Conductance is a ratio of the current flow to the potential difference causing the current flow.

CONDUCTED SUSCEPTIBILITY: The tendency of a piece of equipment to have its performance degraded in response to interference on its connecting wires.

CONDUCTIVITY (ELECTRICAL): The capability of a material to carry an electric charge. Conductivity of metals is usually expressed as a percentage of copper conductivity - copper being one hundred percent (100%).

CONDUCTOR: A strand or group of strands of any geometric shape or configuration used to transmit an electric current.

CONSTANTAN: An alloy of 55% copper and 45% nickel used with copper in thermocouples in the temperature range 169°C to 386°C. Temperature coefficient of resistivity, 0.0002/°C. Normally, the copper is the positive wire, and the constantan is the negative wire.

CONTRAHELICAL: A method of applying two or more layers of spirally twisted, served, or wrapped materials, where each successive layer is wrapped in the opposite direction to the preceding layer.

COPOLYMER: A compound resulting from the polymerization of two or more different monomers.

COPPER: A basic element, atomic number 29, which is widely used for electrical conductors.

COPPER ALLOY: An alloy in which copper is the predominant element. Generally, the addition of sulfur, lead, or tellurium improves machinability. Cadmium improves tensile strength and wearing qualities. Chromium gives very good mechanical properties at temperatures well above 200°C. Zirconium provides hardness, ductility, strength, and relatively high electrical conductivity at temperatures where copper, and common high conductivity copper alloys tend to weaken. Nickel improves corrosion resistance, while silicon offers much higher mechanical properties. Beryllium, when present in an approximate 2% content in copper alloys, permits maximum strength, while about 0.5% content offers high conductivity.

COPPER, ETP: Electrolytic tough pitch copper (ETPC) has a minimum copper content of 99.9%. Annealed conductivity averages 101% with a 100% minimum.

COPPER, OFHC: Oxygen-free high conductivity copper (OFHC) has a 99.95% minimum copper content with an average annealed conductivity of 101%. It is suitable for apparatus that is welded or exposed to reducing gasses at high temperatures. This copper has no residual deoxidant.

COPPER, SILVER BEARING: Silver bearing copper with a 99.9% copper content provides nearly the same electrical conductivity as ETP copper, but offers a higher softening point, greater resistance to creep, and higher strength at elevated temperatures. It also offers higher resistance to wear and oxidation, and improved machinability.

CORE: (See Cable Core) A component or assembly of components over which other components, such as a shield, jacket, sheath, or armor are applied in order to form a cable.

CORONA: An electrically detectable (usually luminous) field-intensified ionization that occurs in an insulating system due to a potential gradient which exceeds a certain critical level.

CORONA ONSET POINT: The critical value of electrical potential where corona is first detected. Also known as ignition voltage.

COSMETIC DEFECT: A variation from the conventional appearance of an item, such as a slight deviation from its usual color, which is not detrimental to the items performance.

COVERAGE: The calculated percentage which defines the completeness with which a metal braid covers the underlying surface. The higher percentage of coverage, the greater the protection against external interference.

CRAZING: Minute cracks on or near the surface of materials.

CRIMP TERMINATION: A termination accomplished by the controlled reforming of the wire barrel portion of a terminating device, through physical compression exerted by appropriate tooling.

CROSS-LINKING: The establishing of chemical links between the molecular chains in polymers through the process of chemical reaction, electron bombardment, or vulcanization.

CROSS-SECTIONAL AREA OF A CONDUCTOR: The sum of the cross-sectional areas of its component wires, that of each wire being measured perpendicular to its axis.

CURE: To change the physical properties of a material by chemical reaction, by the action of heat and catalysts, alone or in combination with or without pressure.

CURRENT: Rate of transfer of electricity expressed in amperes.

CURRENT CARRYING CAPACITY: The maximum current which a wire or cable with a given circular mil area is capable of carrying without exceeding its temperature limit.

CURRENT RATING: The maximum continuous electrical flow of current recommended for a given wire in a given configuration, expressed in amperes.

CUT-THROUGH RESISTANCE: The ability of a material to withstand mechanical pressure, usually a sharp edge, without penetration of the impinging item through the material.

CYCLE: The complete sequence including reversal of the flow of an alternating current.

- D -

DECIBEL (dB): The unit used to express differences of power level. The decibel is ten times the common logarithm of the power ratio. It is used to express power loss in cables. A 3dB loss approximates a 50% decrease. A 2dB loss approximates a 27% decrease.

DEGREE RISE: The amount of increase in temperature caused by the flow of electrical current through a wire.

DELAMINATION: The separation of layers in a laminate through failure of the adhesive bond.

DELAY LINE: A cable constructed so as to provide very low velocity of propagation with a specific electrical delay for transmitted signals.

DENSITY: Weight per unit volume of a substance.

DENIER: A term which describes the weight of a yarn, which in turn determines its physical size.

DERATING FACTOR: A factor used to determine the acceptable reduced current carrying capacity of a wire when that wire is used in an environment or application other than that for which its original current carrying capacity was determined.

DIELECTRIC: An insulator or nonconductor. (1) An insulating medium which intervenes between two conductors. (2) A material having the property that energy required to establish an electric field may be stored, and later recovered in whole or in part, as electrical energy.

DIELECTRIC BREAKDOWN: The voltage required to cause an electrical failure or breakthrough of the insulation. (See breakdown voltage).

DIELECTRIC CONSTANT: Permittivity, capacitivity, specific inductivity capacity. (1) The dielectric constant k', is a measure of the stored energy impressed in the molecular structure of the dielectric material by an external electric field. (2) The ratio of the permittivity of the dielectric material to the permittivity of a vacuum. (3) The ratio of the capacitance of a capacitor filled with a given dielectric to that of the same capacitor having a vacuum for a dielectric.

DIELECTRIC LOSS: The time rate at which electric energy is transformed into heat in a dielectric when it is subjected to a changing electric field.

DIELECTRIC STRENGTH: The voltage which an insulating material can withstand before breakdown occurs. It is usually expressed as a voltage gradient such as "volts per mil".

DIELECTRIC TEST: Test which consists of the application of a voltage higher than the rated voltage for a specified time for the purpose of determining the adequacy against breakdown of the insulation under normal conditions.

DIRECT CURRENT (DC): An electrical current which travels uniformly in one direction.

DIRECT CURRENT RESISTANCE: The resistance offered by any circuit or circuit component to the flow of direct current.

DIRECTION OF LAY: The lateral direction in which the strands of a conductor, or component wires of a cable, run over the top of the conductor or cable as they recede from an observer looking along the axis of the conductor or cable.

DISPERSION: Finely divided particles in suspension in another substance.

DISSIPATION FACTOR: A measure of the AC power loss. The ratio of the loss index to its relative permittivity. The ratio of the energy dissipated to the energy stored in the dielectric per cycle. The tangent of the loss angle. Dissipation factor is proportional to the power loss per cycle (f) per potential gradient (E^2) per unit volume, as follows:

$$\text{Dissipation Factor} = \frac{\text{power loss}}{E^2 \times f \times \text{volume} \times \text{constant}}$$

DRAWING: A process used in the manufacture of wire. It consists of pulling the metal through a die, or series of dies, for the purpose of reducing the diameter.

- E -

ECCENTRICITY: (See 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 center displacement of one circle within another.

ELASTOMER: Any elastic, rubber-like substance, such as natural or synthetic rubber.

ELECTROLYTIC CORROSION: Corrosion caused by electrochemical reactions.

ELECTROLYSIS: The production of chemical changes by passage of an electric current through an electrolyte.

ELECTROPLATE: The application of a metallic coating on a surface by means of electrolytic action.

ELONGATION: (1) The permanent extension in length of a material which has been mechanically stressed by tension or exposure to heat. (2) The break point expressed in percentage increase in length from a tensile/elongation test. (3) In a stress/strain measurement, it is the strain measurement.

ENDS: See "braid ends".

ENERGIZE: To apply rated voltage to a circuit or device in order to activate it.

EQUILAY STRANDING: Stranding composed of more than one layer of helically laid strands, with a reversed direction of lay, and the same length of lay for each successive layer.

ETCHED WIRE INSULATION: A process applied to a fluoroplastic insulated wire in which the wire is passed through a sodium bath to create a rough surface to allow a material to bond to the surface of the fluoroplastic.

EXTRUSION: Method of forcing plastic or elastomer material through an orifice to apply insulation or jacketing to a conductor or cable.

- F -

FARAD (F): Unit of electrical capacitance. The capacitance of a capacitor which, when charged with one coulomb, gives a difference of potential of one volt.

FILLER: (1) A material used in cable to fill large interstices. (2) A substance, often inert, added to a compound to improve properties and/or reduce cost.

FILM: (See cast tape) Thin sheeting. The finished form of a material which is (1) processed by casting a fluid material on a large surface (usually a rotating drum) and exposing it to a curing process, or (2) melt extruded directly into the sheets.

FLAME RESISTANCE: A characteristic of material which is demonstrated by the tendency of the material, when burning to self-extinguish once the ignition source is removed.

FLAMMABLE: A characteristic of a material which is demonstrated by the tendency of the material to ignite and burn when an ignition source is brought sufficiently close.

FLAT CABLE: A cable with geometric configuration which is flat or essentially flat rather than round. In a multiconductor flat cable the conductors are laid side by side in the same plane.

FLAT CONDUCTOR: A conductor with a rectangular cross section.

FLAT CONDUCTOR CABLE: A cable constructed using flat conductors.

FLEX LIFE: The number of flexes that can be achieved when flexing an item under given conditions (temperature, radius of bend, load, arc, etc.) before the failure point is reached.

FLUOROPOLYMER: A polymer which contains fluorine as one of it's elements.

FLUOROCARBON: A polymer or gas containing only carbon and fluorine.

FREQUENCY (Hz): The number of times an alternating current repeats its cycle in one second.

FRAYING: The unraveling of a material, usually a woven fibrous braid.

- G -

GAUGE: A term used to denote the physical diameter of a wire or conductor.

GROUND LOOP: The generation of undesirable current flow within a ground conductor, owing to the circulation currents which originate from a second source of voltage - frequently as a result of connecting two separate grounds to a single circuit.

GROUP: A number of wires and/or cables secured together and routed to a single item or set-up of equipment.

- H -

HARD DRAWN COPPER WIRE: Copper wire that has been drawn to size and not annealed.

HARNESS: An assembly of wires and/or cables arranged so it may be installed and removed as a unit.

HARNESS - HIGH DENSITY: A harness designed to save weight and space.

HEAT AGING: A test used to determine the ability of a wire or material to withstand a specific temperature for a specific length of time. The test temperature is usually higher than the rated temperature of the test specimen. Sometimes referred to as "life cycle".

HEAT SHOCK: A test used to determine the stability of a material by sudden exposure to a high temperature for a short period of time.

HELICAL STRIPE: A continuous, colored spiral stripe applied over the outer perimeter of an insulated conductor for circuit identification purposes.

HELIX: A spiral winding.

HENRY (H): Unit of inductance. The inductance of a circuit in which an electromotive force (emf) of one volt is produced when the current in the circuit changes uniformly at the rate of one ampere per second.

HERTZ (Hz): Unit of frequency equal to one cycle per second.

HIGH STRENGTH ALLOY CONDUCTOR: A conductor which shows a maximum of 20% increase in resistance and a minimum of a 70% increase in breaking strength over the equivalent construction in pure copper while exhibiting a minimum elongation of 5% in 10 inches. As required, the alloy should be capable of sustaining continuous exposure to temperatures as high as 300°C without suffering an appreciable permanent change in properties.

HOT DIP: A method of coating whereby the item to be coated is immersed in a molten bath of the coating material.

HYBRID CABLE: A multiconductor cable containing two or more types of conductors. Such a cable could include optical fiber and electrical conductors.

- I -

IACS: Abbreviation for "International Annealed Copper Standard". A method of rating the conductivity of copper.

IMPACT STRENGTH: A test for determining the resistance of an insulating material or system to damage caused by impacting with a given weight dropped from a given distance in a controlled environment.

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

IMPULSE STRENGTH: The voltage breakdown of insulation under voltage surges on the order of microseconds in duration.

INDUCTANCE (L): The property of a circuit or circuit element that opposes a change in current flow. Inductance causes current changes to lag behind voltage changes. Inductance is measured in henrys.

INDUCTIVE COUPLING: Crosstalk resulting from the action of the electromagnetic field of one conductor on the other.

INSERTION LOSS: The loss in load power resulting from the insertion of a cable. It is expressed in decibels as the ratio of power received at the load before insertion to the power received at the load after insertion.

INSULATION: Material having a high resistance to the flow of electric current, which is used to prevent leakage of current from a conductor.

INSULATION RESISTANCE: The ratio of applied voltage to the total current between two electrodes in contact with a specific insulation, usually expressed in megohms for 1000 feet.

INTERCONNECT WIRE: A type of wire used in general purpose application in aerospace vehicles for interconnecting individual electrical or electronic devices.

INTERFERENCE: Any undesirable electromagnetic emission or any electrical or electromagnetic disturbance, phenomenon, signal or emission, man-made or natural which causes an undesirable response, malfunction or degradation of the performance of electrical or electronic equipment.

INTERSTICE: The space or void left between or around the cabled or stranded components.

IONIZATION: Generally the disassociation of an atom or molecule into positive or negative ions or electrons. Restructively, the state of an insulator whereby it facilitates the passage of current due to the presence of charged particles, usually induced artificially.

IONIZATION VOLTAGE (CORONA LEVEL): The minimum value of falling r.m.s. voltage which sustains electrical discharge within the vacuous or gas-filled spaces in the cable construction or insulation.

IRRADIATION: The exposure of an insulating or jacketing material to high energy emissions for the purpose of favorably altering the molecular structure by providing cross-linking of molecular chains.

- J -

JACKET: (Sheath) The outermost separable layer of insulating material on a wire or cable.

- K -

KILOVOLT AMPERE (kVA): 1000 volt x amperes.

KILOVOLTS (kV): 1000 volts.

KILOWATT (kW): A unit of power equal to one thousand watts.

- L -

LACQUER: A liquid material applied to fibrous braid to prevent fraying, wicking or moisture absorption in the braid. A saturant.

LAMINATED TAPE: A tape consisting of two or more layers of different materials bonded together.

LAY: The axial length of a turn of the helix made by a helical element of a conductor or cable.

LIFE CYCLE: See "heat aging".

LOSS: Energy dissipated without accomplishing useful work.

LOSS FACTOR: A factor of an insulating material which is equal to the product of its dissipation factor and dielectric constant.

LOSSY LINE: A cable having large attenuation per unit of length.

LOW LOSS: Term applied to a dielectric material or cable that has a small amount of power loss over long lengths making it suitable for transmission of radio frequency energy.

LOW NOISE CABLE: A cable configuration specially constructed to eliminate spurious electrical disturbances caused by capacitance changes or self generated noise.

- M -

MELT EXTRUSION: An extrusion process in which the insulation material is heated above its melting point and forced through a die.

MELT INDEX: Extrusion rate of a thermoplastic material through an orifice of specified diameter and length under specified condition of time, temperature and pressure. Also known as melt flow number.

MHO: Unit of conductance. Reciprocal of an ohm. One ampere of current passing through a material under a potential difference of one volt provides one mho of conductance.

MICA: An inorganic material which separates into layers and has high insulation resistance, dielectric strength and heat resistance. It is used as an insulation wrap in wires and cables to a limited degree where resistance requirements are severe and for high temperature work demanding good heat resistance.

MICRO (μ): Prefix denoting one-millionth.

MICROFARAD (μf): One-millionth of a farad, a unit of capacitance.

MICROSECOND (μs): One-millionth of a second (10^{-6} second).

MIL: One one-thousandth of an inch.

MILLISECOND: One thousandth of a second (10^{-3} second).

MODULUS OF ELASTICITY: The ratio of stress to strain in material that is elastically deformed.

MOISTURE ABSORPTION: Generally, the amount of moisture, in percentage, that an insulation will absorb under specified conditions.

MOISTURE RESISTANCE: The ability of a material to resist absorbing moisture.

MONOMER: Any molecule that can be chemically bound as a unit of a polymer.

MULTICONDUCTOR: A cable containing more than one component wire.

MUTUAL CAPACITANCE: Capacitance between two conductors when all other conductors, including ground, are connected together and then regarded as an ignored ground.

- N -

NANOSECOND (ns): One billionth of a second (10^{-9} second).

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA): A group of U.S. manufacturers in the electrical industry who support committee activity for the purpose of standardization and preparation of voluntary standards and specifications of wire and cable.

NICKEL: This metal offers combination of corrosion resistance, formability, and tough physical properties. For these reasons, nickel is used for alloying purposes and as a coating for copper.

- O -

ORGANIC: Designating or composed of matter originating in plant or animal life or composed of chemicals of hydrocarbon origin, either natural or synthetic.

ORGANIC FIBER: A fiber derived or composed of matter originating in plant or animal life, or composed of chemicals of hydrocarbon origin, either natural or synthetic.

OUTGASSING: The dissipation of gas from a dielectric evidencing decomposition.

OVERLAP: A condition in which one portion of an item lays upon another portion of that same or some other item, such a "tape overlap".

- P -

PERCENT CONDUCTIVITY: Conductivity of a material expressed as a percentage of that of copper.

PERFLUOROALKOXY (PFA): A fluorocarbon resin which offers excellent electrical characteristics, high temperature resistance, chemical inertness and flame resistance.

PERMITTIVITY: Preferred term for dielectric constant.

PICK: The open area left by the crossing of any two carriers in the weave of a braid axially along its length.

PICOFARAD (pF): A measure of capacitance (10^{-12} farads).

PITCH DIAMETER: The diameter of a circle passing through the centers of the conductors in any layer of a multiconductor cable.

PIGTAIL: A conductor or wire extending from an electrical or electronic device, or from a cable shield, to serve as a connection.

PLANETARY TWISTER: A twisting machine whose payoff spools are mounted in rotating cradles that hold the axis of the spools in a fixed direction as the spools are revolved about one another, so the wire will not kink as it is twisted.

PLASTICIZER: A chemical agent added in compounding plastics to make them softer and more flexible.

PLATING: The electrolytic application of one metal over another.

POLYAMIDE: Nylon. A polymer containing a characteristic amide linkage which is derived from the condensation products of diacids and diamines, or amino acids.

POLYCHLOROPRENE: Chemical name for Neoprene. A synthetic elastomer rubber material.

POLYETHYLENE: A thermoplastic material composed of polymers of ethylene, and derived from the polymerization of ethylene gas.

POLYIMIDE: Kapton, Liquid "H". A polymer containing a characteristic imide linkage which is usually based on the reaction between aromatic dianhydrides and aromatic diamines.

POLYMER: A material formed by the chemical union of one or more monomers.

POLYOLEFIN: Any of the polymers and copolymers of the olefin family of hydrocarbons such as ethylene, propylene, butylene, etc.

POLYPROPYLENE: A tough, light-weight, rigid plastic made by the polymerization of high-purity propylene gas.

POLYVINYLCHLORIDE (PVC): A family of insulating compounds whose basic ingredient is either polyvinylchloride or its copolymer with vinyl acetate.

POLYVINYLIDENE FLUORIDE (PVF_2): Thermoplastic resin, characterized by good mechanical, electrical, and chemical properties. Radiation cross-linking improves heat resistance.

POTTING: A liquid thermosetting material used as a sealant.

PRIMARY INSULATION: The layer or layers of nonconducting material which is designed to act as electrical insulation, excluding cosmetic top coatings.

PROPAGATION CONSTANT: A complex quality, characteristic of a radio frequency transmission line, which indicates the effect of the line on the transmitted wave. The real part indicates the attenuation, the imaginary part the phase shift.

PUSH BACK: The property of a braid of shield which allows the braid or shield to be pushed back along the cable core easily.