

# Glossary

## Copper Glossary of Terms

**ACR (Attenuation to Crosstalk Ratio):** The difference between attenuation and crosstalk, measured in dB, at a given frequency. Important characteristic in networking transmission to assure that signal sent down a twisted pair is stronger at the receiving end of the cable than are any interference signals imposed on that same pair by crosstalk from adjacent pairs.

**ADSL (Asymmetric Digital Subscriber Line):** Modems attached to twisted pair copper wiring that transmit from 1.5 Mbps to 9 Mbps downstream (to the subscriber) and from 16 kbps to 800 kbps upstream, depending on line distance.

**Amplifier:** Any device that intensifies a signal without distorting the shape of the wave.

**Analog:** A signal that varies continuously (i.e. sound waves). Analog signals have a frequency and bandwidth measured in hertz (Hz).

**ANSI: (American National Standards Institute).**

**Armor:** A protective covering of steel wires or tape over the sheath of a telephone cable to prevent damage during its service life.

**Asynchronous Transfer Mode (ATM):** A high-speed, packet-switching technology used to transmit video, data, voice, etc. via fixed-length cells of 53 bytes.

**Attenuation:** Loss of signal power between two points. Attenuation is a ratio of input power vs. output power, measured in decibels per unit length, usually dB/km. The received signal is lower in signal power than the transmitted signal.

**Backbone:** The facility, such as cables and connectors, that connects equipment rooms, telecommunications closets and entrance facilities. Can be inter-building or intra-building.

**Bandwidth:** A measure of capacity of communications media. Greater bandwidth allows communication of more information in a given period of time. Bandwidth is generally described either in terms of analog signals in units of Hertz (Hz), which describes the maximum number of cycles per second, or in terms of digital signals in units of bits per second.

**BER (Bit-Error Rate):** The ratio of incorrectly transmitted bits to correctly transmitted bits.

**Binder:** A spirally applied colored thread or plastic ribbon used to separate and identify units and groups of cable pairs by means of color coding.

**B-ISDN (Broadband Integrated Digital Network):** A digital network with ATM switching operating at data rates in excess of 1.544 or 2.048 Mbps. ATM enables transport and switching of voice, data, image and video over the same infrastructure.

**Broadband:** An adjective used to describe large-capacity networks that are able to carry several services at the same time, such as data, voice and video.

**Byte:** Eight bits of digital data.

**Cable, Aerial:** Cable suspended in the air usually on utility poles. Except for self supporting cables an external messenger strand is used to support the cable.

**Cable, Armored:** A cable having an outer protection usually in the form of a steel corrugated tape.

**Cable, Buried:** A cable that is buried directly in the ground without being placed in underground conduit. Generally waterproof type cables are employed.

**Cable, Plastic Insulated (PIC):** Cable in which the conductors are insulated with plastic. Common insulation is polyethylene and polypropylene. Although a plastic, PVC insulated conductors are not referred to as PIC.

**Cable, Waterproof:** Cable containing a waterproof filling compound that fills all available space in the core and between core tape and shield and thus preventing the entrance of water.

**Cable, Drop Wire:** One or more pairs of insulated wires used to run a subscriber's line from the distribution terminal at a pole to the protector on the subscriber's premises.

**Cable, Figure 8:** Cables designed for self supporting aerial installations. The multi-pair core and steel support messenger are integrated in a parallel configuration to enable simultaneous installation of cable and messenger.

**Capacitance:** The ability of a dielectric material between conductors to store electrical energy 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

**Capacitance, Mutual:** One of the primary constants of a cable pair which contributes to transmission loss.

**Capacitance, Unbalance To Ground:** The inequality between the grounded capacitance of a wire and its mate of a pair which causes pickup of energy from external sources, usually power transmission lines

**CATV: (Community Antenna Television)**

**CCTV: (Closed-circuit Television)**

**Central Office:** A building housing the telephone switching apparatus and transmission equipment.

**Characteristic Impedance:** In a transmission line of infinite length, the ratio of the applied voltage to the resultant current at the point the voltage is applied. Or the impedance which makes a transmission cable seem infinitely long, when connected across the cable's output terminals.

**CLEC (Competitive Local Exchange Carrier):** An American term for a telephone company that was created after the Telecommunications Act of 1996 made it legal for companies to compete with the ILECs. Contrast with ILEC.

**Closure, Cable:** Any of several types of housings that can be used to enclose cable sheath openings necessary for splicing or terminating.

**CO (Central Office):** A telephone company facility that handles the switching of telephone calls on the public switched telephone network (PSTN) for a small regional area.

**Coaxial Capacitance:** The capacitance of a single insulated conductor completely surrounded by a dielectric medium.

**Conductor:** A material that offers low resistance to the flow of electrical current.

**Core Network:** Combination of telephone switching offices and transmission plant connecting switching offices together. In the United States, local exchange core networks are linked by several competing inter-exchange networks; in the rest of the world (ROW) the Core Network extends to national boundaries.

**Crosstalk:** The transmitted signal on one circuit or cable pair causes interference in another circuit or cable pair.

**Crosstalk, Far-End:** Crosstalk measured by applying the disturbing signal on one pair at the near end and measuring the pick up on the disturbed pair at the far end.

**Crosstalk, Near-End:** Crosstalk measured by applying and measuring the disturbing signal on two pairs at the same end.

**Data Link:** The cable, receiver and transmitter that connect two points communicating with digital data.

**Decibel (dB):** The unit used to describe relative gain or loss of signal power, generally per unit length. Abbreviated dB, the decibel is a ratio of power out vs. power in. Increases or reductions of 3 dB will result in doubling or halving, respectively, the power in a circuit.

**Delay Skew:** The propagation delay difference between the slowest and fastest cable pair.

**Digital:** Encoded as a discrete signal in binary ones and zeros.

**Digital Signal:** A signal that takes on only two values, off or on, typically represented by "0" or "1". Digital signals require less power but (typically) more bandwidth than analog and copies of digital signals can be made exactly like the original.

**DLC (Digital Loop Carrier):** A digital transmission system designed for a telephony subscriber's loop plant. It multiplexes multiple circuits onto very few wires or onto a single fiber pair.

**DS1 (Digital Signal 1):** Twenty-four voice channels packed into a 193-bit frame and transmitted at 1.544 Mbps. The unframed version, or payload, is 192 bits at a rate of 1.536 Mbps.

**DS1C:** Two T2 frames packed into a higher-level frame transmitted at 3.15 Mbps.

**DS2 (Digital Signal 2):** Four T1 frames packed into a higher-level frame transmitted at 6.312 Mbps.

## Copper Glossary of Terms

**DSL (Digital Subscriber Line):** Modems on either end of a single twisted pair wire that delivers ISDN Basic Rate Access.

**DSLAM (Digital Subscriber Line Access Multiplexer):** Specifically, a device which takes a number of ADSL subscriber lines and concentrates these to a single ATM line.

**Duct:** Conduit for the installation and protection of cables in congested areas.

**EF&I: (Engineer Furnish and Install)**

**Electromagnetic Coupling:** The transfer of energy by means of a varying magnetic field.

**ELFEXT (Equal Level Far-end Crosstalk):** The ratio of the unwanted crosstalk at the far-end of the disturbed pair, used to quantify the noise seen at a receiver due to a far-end transmitter on another pair. Usually expressed in decibels (dB). Similar to ACR but is measured at the far end of the cable. It is an indication of the quality of the signal sensed by the receiver.

**EMI (Electromagnetic Interference):** "Noise" generated in copper conductors when electromagnetic fields induce currents. EMI may be caused by other copper cables and is caused by proximity to motors and machinery. The all-dielectric fiber optic cable design makes them immune to EMI.

**Equipment Room:** A centralized space for telecommunications equipment that serves the occupants of a building. An equipment room is considered distinct from a telecommunications closet because of the nature or complexity of the equipment.

**Eye, Pulling:** A strong metal ring usually installed at the factory, for use in pulling a cable into a duct.

**Farad:** A unit of capacitance that will store one coulomb of electrical charge when one volt of electrical pressure is applied.

**FEP (Fluorinated Ethylene-Propylene):** A thermoplastic material with good electrical properties insulating

**FEXT (Far-End Crosstalk):** Refers to crosstalk that is measured at the opposite end of the cable from which it is being disturbed.

**F (Frequency):** The number of times a periodic action occurs in a unit of time. The number of cycles that an electric current completes in one second, expressed in Hertz.

**Flooding:** The act of applying a liquid material over a cable or any of its components, usually for the purpose of adhesion, corrosion deterrent, or to fill voids to accomplish a specific purpose.

**Frequency, Voice:** Although frequencies from 32 to 16 kHz are audible to some persons the band normally used for telephone communications is limited to about 3500 Hz. Test frequency most commonly used is 1kHz.

**Gas Pressurization:** A method of preventing water from entering small cracks in cable splices or sheath

and for alerting personnel to larger leaks by keeping cables under pressure with dry gas.

**Gigabit Ethernet:** This standard was written by the IEEE 802.3 committee and adopted as a new standard for Gigabit transmission of LANs.

**Group Binder:** A binder applied over a number of units giving group identification.

**Headroom:** The amount of margin in ACR. A good rule of thumb for adequate cable headroom is 10dB ACR.

**Hertz:** The unit of frequency, one cycle per second.

**Hybrid Cable (Copper):** An assembly of two or more cables, of the same or different types or categories, continuously bound with an overall sheath to form a single unit.

**Hygroscopic:** Readily absorbing and retaining moisture.

**IC (Intermediate Cross-Connect):** A secondary cross-connect in the backbone cabling used to mechanically terminate and administer backbone cabling between the main cross-connect and horizontal cross-connect.

**ILEC (Incumbent Local Exchange Carrier):** A local telephone company service consistent with the services provided by a previous carrier. ILECs compete with upstart Competitive Local Exchange Carriers (CLEC).

**Laminate:** A sheet material made by bonding together two or more layers of the same or different material.

**LAN (Local Area Network):** A network connecting several nodes within a limited geographic area, usually within a building or campus

**Lay:** The longitudinal distance that a pair or unit advances in one spiral turn about the cable axis.

**LCL (Longitudinal Conversion Loss):** Ratio of the common-mode (longitudinal) signal applied to a cable or transmission channel to the resultant differential signal measured at the same end. Used to quantify the longitudinal signal seen at the transmitter due to the differential signals present on the cable or transmission channel which influences the electromagnetic emissions. Usually expressed in decibels (dB).

**LCTL (Longitudinal Conversion Transfer Loss):** Ratio of the common-mode (longitudinal) signal applied at the near-end of a cable or transmission channel to resultant differential signal measure at the far-end. Used to quantify the undesired differential noise seen at the receiver due to longitudinal noise coupled onto the cable from external sources. Usually expressed in decibels (dB).

**LEC (Local Exchange Carrier):** Any carrier that has been given permission by the state public utility commission to provide local voice level telecommunications services within a predetermined area.

**MB/s (Megabit per second):** A million bits per second.

**MC (Main Cross-Connect):** The centralized portion of the backbone cabling used to mechanically terminate and administer the backbone cabling, providing connectivity between equipment rooms, entrance facilities, horizontal cross-connects and intermediate cross-connects.

**nm (Nanometer):** One-billionth of a meter;  $10^{-9}$  meter.

**ns (Nanosecond):** One-billionth of a second;  $10^{-9}$  second.

**OEM:** Original Equipment Manufacturer

**Ohm:** The electrical unit of resistance. The value of resistance through which a potential difference of one volt will maintain a current of one ampere.

**Outside Plant:** Usually considered all cable and equipment used outside of the central office and customers' premises.

**Pair:** Two wires forming a single circuit, held together by twisting, binding, or a common jacket.

**Pedestal:** An above ground watertight housing for splicing and terminating buried cables.

**Plant, Inside:** Usually considered being all cable and equipment inside the central office and customer's premises.

**Plenum:** A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system (i.e. the space above the drop ceiling).

**Plenum Cable:** Cable made of fire-retardant materials that generates little smoke. These cables are installed in plenum air ducts, vertical shafts etc.

**Polyethylene:** A thermoplastic material having excellent electrical properties.

**Polyurethane:** Broad class of polymers noted for good abrasion and solvent resistance. Can be in solid or cellular form.

**Polyvinyl Chloride (PVC):** A general purpose thermoplastic used for wire and cable insulation and jackets.

**POTS (Plain Old Telephone Service):** The only name recognized around the world for basic analog telephone service. POTS takes the lowest 4kHz of bandwidth on twisted pair wiring. Any service sharing a line with POTS must either use frequencies above POTS or convert POTS to a digital signal.

**POTS splitter:** A device that uses filters to separate voice from data signals when they are to be carried on the same phone line, required for several types of DSL service.

# Glossary

## Copper / Fiber Glossary of Terms

**Power Sum:** The method of evaluating the performance of a single cable pair taking into account the impact of other cable pairs operating simultaneously.

**Propagation Delay:** The time loss due to the transmission medium between when a signal is transmitted and when it is received.

**PS-ACR (Power Sum Attenuation to Crosstalk Ratio):** Similar to ACR except Power Sum Near-end crosstalk is used in the calculation instead of near-end crosstalk. Used to quantify the noise seen at the receiver due to multiple near-end transmitters relative to the attenuated transmit signal present at the receiver. Usually expressed in decibels (dB).

**PS-ELFEXT (Power Sum Equal Level Far-end crosstalk):** The mathematical summation of the equal level far-end crosstalk power relative to the attenuated signal of the disturbing pair, coupled into a disturbed pair from all other pairs within a cable or transmission channel. Usually expressed in decibels (dB). Used to quantify the noise seen at the receiver due to multiple far-end transmitters.

**PS-NEXT (Power Sum Near End Crosstalk):** The measurement of the total crosstalk energy in the cable when more than one cable pair is operating simultaneously. It is determined by measuring the crosstalk of each of the pair combinations in the cable.

**PSTN (Public Switched Telephone Network):** The worldwide communications network that carries phone calls and data.

**RBOC (Regional Bell Operating Company):** The regional holding companies that resulted from the divestiture of AT&T. The original 22 Bell Telephone companies were combined into seven regional companies in 1984.

**Resistance:** That property of a conductor, wire or shield that determines the current flow for a given applied voltage. In DC circuits, the opposition a material offers to current flow, measured in Ohms. In AC circuits, resistance is the real component of impedance and may be higher than the value measured at DC.

**Return Loss (RL):** Also known as echo. Ratio of the reflected power in a cable or transmission channel to the incident power. Effectively expresses the relationship of impedance changes throughout a cable or transmission channel, as a function of frequency, relative to the normal system impedance. Used to quantify the noise seen at a receiver due to reflections (echo) from a near-end transmitter on the same pair when full duplex, bi-directional transmission is employed. Usually expressed in decibels (dB).

**Riser:** Pathways for indoor cables that pass between floors. It is normally a vertical shaft or space. Also a fire code rating for indoor cable.

**Riser cables:** Riser cables are intended for use in elevator (vertical) shafts between floors in a building. Also a fire-code rating for indoor cable connectorization.

**Router:** The central switching device in a packet-switched computer network that directs and controls the flow of data through the network.

**RoHS:** (The Restriction of Hazardous Substances Directive) RoHS 2002/95/EC was adopted in February 2003 by the European Union. The RoHS took effect on July 1, 2006, but is not a law; it is simply a directive for participating countries, including the European Union (exclusive of the United States and many other countries). This directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. RoHS is often referred to as the "lead-free" directive.

**Sag:** The downward curvature of an aerial cable or wire due to its weight.

**Sheath, Cable:** The protective outer covering over the cable core.

**Shield:** A tape, serve or braid of metal, usually copper, aluminum, or other conductive material placed around or between electric circuits or cables or their components, to prevent signal leakage or interference.

**Spare Pair:** An additional pair in a cable, above the guaranteed number, available in case a pair is defective when it leaves the factory.

**Splice Case:** A metal or plastic housing used around a cable splice to provide a water and gas tight closure.

**Structural Return Loss (SRL):** Ratio of the reflected power in a cable to the incident power expressed in decibels. Effectively expresses the relationship of impedance changes throughout a cable, as a function of frequency relative to the characteristic impedance of the cable. Important consideration for transmission of Analog video. Used as a figure of merit for consistency of impedance in a cable due to changes in the cable's construction or structure down a long length.

**T-1:** Same as DS1.

**Telcordia:** Formerly Bell Core, a research company once owned by the RBOCs.

**TIA:** The Telecommunications Industry Association. TIA creates telecommunications standards.

**UL:** Underwriters Laboratories, Inc.

**UTP (Unshielded Twisted Pair):** Cable containing one or more pairs of twisted copper without metallic shielding.

**Velocity of Propagation:** The transmission speed of electrical energy in a length of cable compared to speed in free space. Usually expressed as a percentage.

## FIBER GLOSSARY OF TERMS

**Absorption:** The loss of light energy in an optical fiber, resulting from conversion of optical power into heat and caused primarily by impurities and defects in the glass.

**Aerial Cable:** Fiber optic cable installed on aerial supporting structures such as poles.

**All-dielectric:** Non-conducting; made entirely of dielectric (insulating) materials, without any metal conductors.

**Aramid Yarn:** Strength elements that provide tensile strength, support and additional protection of the fiber bundles. Kevlar® is a particular brand of aramid yarn.

**Armor:** Additional protective covering beneath outer jacket to provide physical protection against severe outdoor environments. Usually made of plastic-coated steel, it may be corrugated for flexibility.

**Attenuation:** A general term indicating the decrease in power of a signal in transmission as it passes from one point to another. In optical fibers, the power loss results from absorption and scattering and is normally measured in decibels (dB) per kilometer at a specific wavelength.

**Bandwidth:** Measure of the information-carrying capacity of an optical fiber. (This term is often used to specify the normalized bandwidth of a multimode fiber).

**Bend Radius:** The radius which a fiber or cable can be bent before risking increased attenuation or fiber breaks.

**Blown Fiber:** A method for installing fiber cable in which the cable is blown through the duct.

**Bonding:** Electrically connecting the metallic components of cable sheaths together.

**Break Out Cable:** Multi fiber cables where each fiber is further protected by an additional jacket and strength elements.

**Breaking Strength:** The amount of force needed to break a fiber.

**Broadband:** Denotes transmission facilities capable of handling a wide range of frequencies simultaneously, thus permitting multiple channels in data systems, rather than direct modulation.

**Buffering:** (1) An additional protective material extruded directly over the fiber coating to protect it from the environment and handling (tight-buffered); (2) extruding a tube around the coated fiber to allow isolation of the fiber from stresses in the cable (buffer tubes).

**Buffer Tubes:** A hard plastic cylindrical tube, with a diameter several times larger than the fiber, covering optical fiber(s) used for protection and isolation.

**Cable:** An assembly of one or more optical fibers formed into a core and covered with a protective sheath providing mechanical and environmental protection.

**Cable Bend Radius:** The effective radius resulting when a cable is bent. Often specified as a minimum bend radius that can be applied without causing damage to the cable's components.

**Central Member:** The center component in some cable designs. It serves as a strength and anti-buckling element. The central member material is typically either steel or glass-reinforced plastic.

**Cladding:** The material surrounding the core of an optical fiber. The cladding must have a lower index of refraction to keep the light in the core.

## Fiber Glossary of Terms

**Coating:** A protective material applied directly over the cladding of the fiber during the draw process to protect the fiber from the environment and handling.

**Composite Cable:** A cable containing both fiber and copper media per Article 770 of the National Electrical Code (NEC).

**Conduit:** A pipe or tube that may be buried or installed within buildings through which cables can be pulled or housed. Synonym for duct.

**Core, Cable:** The central portion of a cable containing the optical fibers and surrounded by a sheath.

**Core, Fiber:** The central region of an optical fiber through which light is transmitted. Fiber cores have a higher index of refraction than the cladding in order to contain the light.

**Decibel (dB):** The unit for measuring the relative strength of light signals (attenuation), normally expressed in dB.

**Dielectric Cable:** A cable that contains no electrically conducting materials such as metal. Glass fibers are considered dielectric. Dielectric cables are sometimes used in areas subject to high lightning or electromagnetic interference.

**Distribution Cable:** Generally tight buffered fiber cables used for various indoor applications. Distribution cables are usually 6 thru 144 fiber count cables.

**Duct:** See conduit.

**Duplex Cable:** A cable containing 2 fibers. Standard configurations are duplex round and duplex zip.

**Electromagnetic Interference (EMI):** Any electrical interference that causes undesirable interference or failure in electronic equipment. Optical fibers neither emit nor receive EMI.

**Fiber:** An optical fiber is a thin piece of glass used for transmitting optical signals. An optical fiber consists of three layers: the core, cladding and coating. It is capable of carrying information in the form of light.

**Fiber Bend Radius:** Radius a fiber can bend before the risk of breakage or increase in attenuation.

**Fiber Distributed Data Interface (FDDI):** A transmission standard for a fiber optic local area network.

**Fiber Optics:** Light transmission through optical fibers for communication or signaling.

**Grounding:** Connecting the metal components of a cable sheath to earth, generally through a ground rod.

**Hybrid Cable:** A fiber optic cable containing two or more different types of fiber. The most common hybrid includes 62.5/125  $\mu\text{m}$  multimode mixed with Single mode fiber.

**Inside Plant:** Tight buffered fiber optic cables used for indoor applications.

**Interbuilding:** Refers to between buildings.

**Interconnect:** Tight buffer cables such as simplex, duplex and quad cables.

**Intrabuilding:** Refers to within buildings.

**Jacket:** A plastic extrusion over a cable. Kevlar®: A strong material used in cable strength members. The name is a trademark of the Dupont Company.

**Kilometer (km):** One thousand meters, or approximately 3,281 feet, or 0.62 miles. The kilometer is a standard unit of length measurement in fiber optics.

**LAN (Local Area Network):** See Local Area Network.

**Lashing:** Attachment of a cable to a support strand by wrapping steel wire helically around them.

**Local Area Network (LAN):** A geographically limited communications network intended for the local transport of voice, data and video.

**Loose Tube Cable:** A type of cable construction where the fibers are encased in buffer tubes having a diameter several times larger than the fiber offering excellent fiber protection and segregation. This design offers excellent protection for outdoor environments.

**Macrobending:** Visible bends often caused by exceeding suggested bend radius of a cable.

**Megahertz (MHz):** A unit of frequency that is equal to one million cycles per second.

**Microbending:** A small fiber bend, invisible to the unaided eye, that results in light displacement and increased loss. They can occur due to coating, cabling, installation and temperature.

**Minimum Bend Radius:** The amount of bend a fiber (or cable) can withstand before experiencing problems in performance.

**Mode:** A term used to describe an independent light path through a fiber. Only one mode propagates in a Single mode fiber whereas several modes propagate in a multimode fiber.

**Mode Field Diameter (MFD):** The diameter of the one mode of light propagating in a Single mode fiber. Since the mode field diameter is larger than the core diameter, it replaces core diameter as the practical parameter in Single mode fiber. Synonym for spot size.

**Multifiber Cable:** An optical fiber cable that contains two or more fibers.

**Multimode Fiber (MM):** A type of optical fiber in which light travels in multiple modes. The most common multimode fiber sizes (core/cladding) are 50/125 and 62.5/125.

**National Electrical Code (NEC):** Defines flammability requirements for cables installed within buildings. (Local codes take precedence but may refer to or require compliance to the NEC.)

**Nanometer (nm):** A unit of measurement typically used to express the wavelength of light.

**Nonmetallic Cable:** See dielectric cable. Optical Fiber: See Fiber.

**Plenum:** A compartment or chamber to which one or more air ducts are connected and that forms part of the air distribution system (i.e. the space above the drop ceiling).

**Polarization Mode Dispersion (PMD):** The broadening of a light pulse due to the time delay of one of the two pulse components. If significant enough, the result is a bit error.

**RoHS:** (The Restriction of Hazardous Substances Directive) RoHS 2002/95/EC was adopted in February 2003 by the European Union. The RoHS took effect on July 1, 2006, but is not a law; it is simply a directive for participating countries, including the European Union (exclusive of the United States and many other countries). This directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. RoHS is often referred to as the "lead-free" directive.

**Scattering:** A property of the fiber that causes light to change direction, contributes to optical attenuation.

**Sheath:** The protective outer covering of a cable core, including metallic shields and jackets.

**Single mode Fiber (SM):** An optical fiber in which the signal travels in one mode. The fiber has a small core diameter, typically 8.3  $\mu\text{m}$ .

**Spot Size:** See mode field diameter.

**Stranding:** The manufacturing process by which cable components, such as buffer tubes and yarns, are helically assembled around a central member forming a round core.

**Strength Member:** The part of a fiber optic cable composed of aramid yarns or fiberglass that increase the tensile strength of the cable.

**Tensile Strength:** The pulling strength or force necessary to break a material.

**Thermoplastic:** A material that softens with heat but returns to its original condition when cooled.

**Tight-Buffered Cable:** Type of cable construction where the plastic buffer is applied directly over the coating on the fiber to a diameter of 900  $\mu\text{m}$ .

**Outside Plant:** The portion of a cable network that resides outside of buildings.

**PE:** Abbreviation used to denote polyethylene. A type of thermoplastic material used for outside plant cable jackets.

**Riser cables:** Riser cables are intended for use in elevator (vertical) shafts between floors in a building. They are OFNR listed (UL 1666). Also a fire-code rating for indoor cable connectorization.

**Wavelength:** The distance between two successive points on adjacent waves, usually measured in nanometers (nm).

**Window:** A range of wavelengths within which a fiber best operates.