ABRASION  Surface wear on the wires of a wire rope.

AIRCRAFT CABLES  Strands and wire ropes made of special strength wire primarily for aircraft controls and miscellaneous uses.

ALTERNATE LAY  Lay of a wire rope in which the strands are alternately regular and lang lay.

AREA, METALLIC  Sum of the cross-sectional areas of individual wires in a wire rope or strand.

BECKET LOOP  A loop of small rope or strand fastened to the end of a large wire rope to facilitate installation.

BENDING STRESS  Stress imposed on wires of a wire rope by bending.

CABLE-LAID WIRE ROPE  A wire rope made of several wire ropes laid into a single wire rope.

CENTERS  Wire, strand or fiber in the center of a strand about which the wires are laid.

CLOSING LINE  Wire rope that closes a clamshell or orange peel bucket.

COMMON STRAND  A grade of galvanized strand.

CONSTRUCTION  Design of the wire rope including number of strands, the number of wires per strand and the arrangement of wires in each strand.

CORE  The axial member of a wire rope about which the strands are laid. It may be fiber, a wire strand or an independent wire rope.

CORROSION  Chemical decomposition of the wires in a rope by exposure to moisture, acids, alkalines or other destructive agents.

CORRUGATED  The term used to describe the grooves of a sheave or drum when worn so as to show the impression of a wire rope.

DESIGN FACTOR  The ratio of the minimum breaking force to the design maximum working force. The minimum breaking force is the published catalog strength of the wire rope involved, and the design maximum working force is the maximum calculated static load to be applied.

DIAMETER, ROPE  The distance measured across the center of a circle circumscribing the strands of a wire rope.

DOG-LEG  Permanent short bend in a wire rope caused by improper use.

DRUM  A cylindrical flanged barrel, either of uniform or tapering diameter, on which rope is wound either for operation or storage. Its surface may be smooth or grooved.

EFFICIENCY OF WIRE ROPE  Percentage ratio of measured breaking strength of a wire rope to the aggregate strength of all individual wires tested separately.

ELASTIC LIMIT  Limit of stress above which a permanent deformation occurs.

EQUALIZING SHEAVE  The sheave at the center of a rope system over which no rope movement occurs other than equalizing movement. It is frequently overlooked during crane inspections with disastrous consequences. It can be a source of severe degradation.

FATIGUE RESISTANCE  The characteristic of a wire rope which allows it to bend repeatedly under stress.

FIBER CORE  Rope made of vegetable or synthetic fiber used in the core of a wire rope.

FILLER WIRE  A strand construction that has small auxiliary wires for spacing and positioning other wires.

FITTING  Any accessory used as an attachment to a wire rope.

FLATTENED STRAND ROPE  Wire rope with triangular shaped strands that presents a flattened rope surface.

GRADES, ROPE  Classification of wire rope by its minimum breaking force. See the table of common grades on page 8, listed in order of increasing strength.

GRADES, STRAND  Classification of zinc-coated strand by its minimum breaking force. In order of increasing minimum breaking force, they are: Common, Siemens-Martin, High Strength and Extra-High Strength. A Utilities grade strand is also made to meet special requirements.

GROOVED DRUM  Drum with a grooved surface to guide the rope for proper winding.

GROOVES  Depressions in the periphery of a sheave or drum that are shaped to position and support the rope.

IDLER  Sheave or roller used to guide or support a rope.

IMPROVED PLOW STEEL ROPE  See “GRADES, ROPE.”

INDEPENDENT WIRE ROPE CORE (IWRC)  A wire rope used as the core of a larger wire rope.

INNER WIRES  All wires of a strand except the outer wires.

IWRC  See “INDEPENDENT WIRE ROPE CORE.”

KINK  A sharp bend in a wire rope that permanently distorts the wires and strands; the result of a loop being pulled through.

LANG LAY ROPE  Wire rope in which the wires in the strands are laid in the same direction that the strands in the rope are laid.
LAY (1) The manner in which the wires are helically laid into a strand or the strands in a rope, or (2) the length along the rope that one strand uses to make one complete revolution around the core.

LEFT LAY (1) Strand – a rope strand in which the cover wires are laid in a helix having a left-hand pitch, or (2) Rope – a rope in which the strands are laid in a helix having a left-hand pitch.

MARLINE CLAD ROPE A rope with individual strands spirally wrapped with marline or synthetic fiber cord.

MINIMUM BREAKING FORCE Published strength that’s been calculated and accepted by the wire rope industry following a set standard procedure. The wire rope manufacturer uses this strength as a minimum strength when designing the wire rope, and the user should consider this to be the strength when making his design calculations.

NON-ROTATION-RESISTANT WIRE ROPE Stranded wire rope, the design of which is not intended to reduce load-induced torque. Also known as standard wire rope.

PEENING Permanent distortion of outside wire in a rope caused by pounding.

PREFORMED WIRE ROPE Wire rope in which the strands are permanently shaped before fabrication into the rope to the helical form they assume in the wire rope.

PREFORMED STRAND Strand in which the wires are permanently shaped before fabrication in the strands to the helical form they assume in the strand.

PRESTRETCHING Stressing a wire rope or strand before use under such a tension and for such a time that the constructional stretch is largely removed.

REEL The flanged spool on which wire rope or strand is wound for storage or shipment.

REGULAR LAY ROPE Wire rope in which the wires in the strands and the strands in the rope are laid in opposite directions.

RESERVE STRENGTH The percentage of the minimum breaking force represented by the inner wires of the outer strands of a wire rope.

RIGHT LAY (1) Strand – a strand in which the cover wires are laid in a helix having a right-hand pitch or (2) Rope – a rope in which the strands are laid in a helix having a right-hand pitch.

ROTATION-RESISTANT ROPE A wire rope consisting of at least two layers of strands where the lay direction of the outer layer is opposite of its underlying layer.