

## Wire Rope Common Terms

**AIRCRAFT CABLES** – Strands and wire ropes made of special strength wire originally used primarily for aircraft controls and miscellaneous uses of aircraft industry. No longer made to that specification.

**CLOSED SOCKET** – Wire rope and fitting consisting of basket and bail made integral

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

**CORE** – Member of a wire rope about which the strands are laid. It may be fiber, a wire strand or an independent wire rope

**CORRUGATED** – Term used to describe the grooves of a sheave or drum when worn so as to show the impression of a wire rope

**DIAMETER** – Distance measured across the center of a circle circumscribing the wires of a strand or the strands of a wire rope

**GALVANIZED ROPE** – Rope made of galvanized wire

**GRADES, ROPE** – Classification of wire rope by its breaking strength. In order of increasing breaking strengths they are Iron, Traction, Mild Plow Steel, Plow Steel, Improved Plow Steel, Extra Improved Plow Steel

**GRADES, STRAND** – Classification of strand by its breaking strength. In order of increasing breaking strengths they are Common, Siemens Martin, High Strength and Extra-high Strength. A Utilities grade strand is also made to meet special requirement

**INNER WIRES** – All wires of a strand except surface or cover wires

**INTERNALLY LUBRICATED** – Wire rope or strand having all wires coated with lubricant

**IWRC** – “Independent Wire Rope Core”

**LANG LAY ROPE** – Wire rope in which the wires in the strands in the rope are laid in the same direction

**LAY** – Manner in which wires are helically laid into strands or strands into rope

**LEFT LAY** – (a) Strand – Strand in which the cover wires are laid in a helix having a left-hand pitch; (b) Rope – Rope in which the strands are laid in a helix having a left-hand pitch

**MOORING LINES** – Galvanized wire rope, usually 6 x 12, 6 x 24 or spring lay construction, for holding ships to dock

**OPEN SOCKET** – Wire rope fitting consisting of a “basket” and two “ears” with a pin

### **SUPER-FLEX SLINGS**

Several wire ropes helically laid by machine form sling body of 3, 4, 5, 7 or 9 parts. Offer higher rated capacity than hand formed slings. Flemish-type splices and mechanically pressed sleeves form eyes, providing “centerline” pull. High flexibility. Every sling proof tested.

### **BRAIDED SLINGS**

One or more wire ropes are braided to provide wide bearing surface in the body. Very flexible and capable of bending in tight radius to “snug up tight” around loads. 5, 6 and 7-part slings have flat bodies, 8-part is round.

**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

**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

**REVERSE LAY** – Synonymous with “Alternate Lay”

**ROTARY LINES** – The wire rope on a rotary drilling rig which raises and lowers the traveling block

**SOCKET** – Type of wire rope fitting. See “Closed Sockets,” “Open Sockets” and “Wedge Sockets”

**STAINLESS STEEL ROPE** – Wire rope made of chrome-nickel steel wires having great resistance to corrosion

**STRENGTH, NOMINAL** – Published catalog strength which has 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

**STRENGTH, ACCEPTANCE** – Strength which is 2-1/2% lower than the nominal strength. This variance is used to offset possible variables which might exist when the test is made to determine the breaking strength of a specific piece of wire rope. Its use originated with the basic government wire rope specification

**STRENGTH, BREAKING** – Load, applied through some type of tensile machine, that it takes to pull that piece of rope apart. This is the load at which a tensile failure occurs in the piece of wire rope being tested

**STRENGTH, AGGREGATE** – Sum of the breaking strength in tension of all the wires of a wire rope when the wires are tested individually

**THIMBLE** – Grooved metal fitting to protect the eye of a wire rope

**WEDGE SOCKET** – Wire rope fitting in which the rope is secured by a wedge

**WIRE ROPE** – A plurality of strands laid helically around an axis or a core

### **HAND LAID & SPLICED SLINGS**

Fabricated from one or more wire ropes helically laid together continuously through both eyes and sling body. Rope ends secured by hand-tucked splices. High flexibility, conform well to irregular loads, snug load tighter in choke hitch and easier to pull from under loads than mechanically spliced eyes.

### **CABLE LAID SLINGS**

These smooth, clean slings are made from a rope-like fabric formed by laying 6 wire ropes in a helical pattern around a core rope. Flemish splices secured by pressed sleeves provide “centerline” pull at eyes. More flexible than same capacity single-part slings.



## Standard Wire Rope Abbreviations

### STRAND CONSTRUCTION

PRF .....preformed  
NP .....non-preformed  
S .....scale  
FW.....filler wire  
SFW .....scale filler wire  
FWS .....filler wire scale

### LAYS

RRL.....right regular lay  
LRL.....left regular lay  
RLL.....right lang lay  
LLL .....left lang lay  
AL1-1 .....alternating lay of strands, 1 lang  
                  and 1 regular  
AL2-1 .....alternating lay of strands, 2 lang  
                  and 1 regular

### TYPE OF CORE

FC.....fiber rope core; natural or synthetic  
                  fiber  
IWRC .....independent wire rope core  
PPC .....polypropylene rope core  
SC.....strand core

### GRADE AND FINISH OF WIRE

IPS .....improved plow steel  
GIPS .....galvanized improved plow steel  
DR.....drawn galvanized improved plow  
                  steel  
EIPS .....extra improved plow steel  
GEIPS .....galvanized extra improved plow  
                  steel  
DR/GXIP .....drawn galvanized extra improved  
                  plow steel  
EEIPS .....extra extra improved plow steel  
GAC.....galvanized aircraft  
SS.....stainless steel wire  
GI.....galvanized iron wire  
COM GI.....galvanized common iron grade of  
                  wire, for strand  
GI SZG .....galvanized iron grade of wire for  
                  seizing strand  
BRIGHT .....wire without any coating, such as  
                  zinc or tin  
BRZ .....bronze wire

## How to Order Wire Rope Products

To insure that your order is filled accurately, according to your requirements, the following information should be included for each item:

1. LENGTH ..... The length of each piece and the number of pieces required should be specified.
2. DIAMETER ..... Specify the exact diameter of rope required.
3. CONSTRUCTION ..... It is necessary to state the required construction of the rope.
4. FINISH ..... When galvanized finish is required, it should be specified. If no finish is specified, bright or ungalvanized finish will be furnished.
5. GRADE ..... The grade of steel should be specified; i.e., Improved Plow Steel (IPS) or Extra-improved Plow Steel (EIPS).
6. PREFORMING ..... The requirements of preformed or non-preformed rope must be specified.
7. LAY..... The direction and type of lay should be specified. If no lay is specified, Right Regular Lay will be furnished.
8. CORE ..... Specify which core type is desired.
9. PURPOSE ..... It is preferred that you state the purpose or end use of the rope.
10. SPECIAL PROCESSING ... Any special instructions not included in the above should be specifically stated.

