



Wire Rope Terminology / Information

Types of Construction:

1x19: Stiff wire. Not flexible. Known as guy wire or seizing wire. The 1x19 construction 316 grade stainless steel wire rope is stronger than other types of stainless steel cable and has less stretch. 1x19 stainless steel wire rope is often used in yacht and sail boat rigging, architectural structural rigging and balustrading. 1x19 construction wire rope does not allow for kinks or bends

1x7, 3x7: small size diameters, 1/64" to 3/64" diameters.

7x7: flexible, 1/16" to 3/16" diameters. The flexible 7x7 construction stainless steel wire rope is less strong but more flexible than 1x19 strand and yet stronger than 7x19 rope. 7x7 AISI 316 grade stainless steel cable is suitable for tensioning, security cables, marine, landscape and architectural use, stainless cable balustrading, stainless steel cable railing and decorative applications. Cable diameters below 2mm are very flexible.

7x19: 1/16" to 5/16" diameters. The 7x19 construction stainless steel wire rope is highly flexible. This also means it is not as strong as either 1x19 or 7x7. **7x19 wire rope is suitable for most running load applications & numerous applications such as security cables & winch cables.**

6x19 6x25 6x36 6x37: Usually 1/2" or larger. Common diameter 5/8", 3/4" 7/8" 1" 1-1/4". These wire configurations are often substituted for each other, depending on the way it is used. Very strong and flexible.

Material:

Galvanized steel: Very Strong, zinc coating applied to strengthen the wire.

Stainless steel: Rust resistant, 302- 304 type has alloys, will have small amount of rust eventually. 316 should not rust at all.

Bright steel: No galvanization in the process. Can be brittle. Dull finish.

Wire Rope Terms:

MIL-SPEC: Meets military standards. Commonly, MIL DTL 83420 type.

IPS: Improved plow steel.

EIPS: Extra improved plow steel.

IWRC: Independent wire rope core.

FIBER ROPE CORE: Has a fiber at the center of the wire.

NON-ROT or NON ROTATING: Will not twist when unwound. Usually 19x7 construction> Used in helicopter rescue and cranes. Prevents spinning.

RRL: Right Regular Lay, direction of wire twist, right hand. LRL= left lay, same, but left twist.

LL: Lang Lay, wires are all twisted in the same direction.

Alternate Lay: Inner core and outer core wires are twisted in opposite direction.

Jacketed or coated wire: Has a coating over the wire. Usually nylon or vinyl.

Load:

Minimum Break Load (MBL) / Break Strength / Ultimate Load = The stress which, when steadily applied to a structural member, is just sufficient to break or rupture it. Also known as ultimate load.

SWL - Safe Working Load = Briefly defined, the 'safe working load' of a line is the load that can be applied without causing any kind of damage to the wire rope. Note that the safe working load is considerably less than the breaking strength.

Factors of safety should always be applied when calculating maximum wire rope loading conditions. In cases of doubt, an engineer should be consulted to assess the loading and advise on suitable factors of safety to ensure that overloading cannot occur.