

# Wire Rope Stretch



In any cable or wire rope application, stretch may be a concern. There are two forms of stretch in cable and wire rope: Structural Stretch and Elastic Stretch.

## Structural Stretch

Structural stretch is the lengthening of the lay in the construction of cable and wire rope as the individual wires adjust under load. Structural stretch in Strand Core products is less than 1% of the total cable length. This form of stretch can be completely removed by applying a cable or wire rope prestretching operation prior to shipment.

## Elastic Stretch

Elastic stretch is the actual physical elongation of the individual wires under load. The elastic stretch can be calculated by using the following formula\*:

$$(E = (W \times G) / D^2)**$$








Where:

E = Elastic Stretch as a % of Length

W = Weight of load in pounds

D = Diameter of wire rope in inches

G = stretch Factor (See Chart Below)

"G" Factor				
Wire Rope	"G" Factor	Construction	Wire Rope	"G" Factor
1x7 302 SS	0.0000735		1x7 Galv	0.0000661
1X19 302 SS	0.0000779		1x19 Galv	0.0000698
7X7 302 SS	0.0000120		7x7 Galv	0.0000107
7X19 302 SS	0.0000162		7x19 Galv	0.0000140
6X19 IWRC 302 SS	0.0000157		6x19 IWRC Galv	0.0000136
6X37 IWRC 302 SS	0.0000160		6x37 IWRC Galv	0.0000144
19X7 302 SS	0.0000197		19x7 Galv	0.0000178

\*Values derived from this calculator are an approximation.

\*\*Remember to keep your units of measure constant. The length of your cable must be calculated in inches to correspond with the diameter measurement, also in inches.