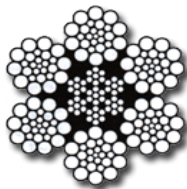
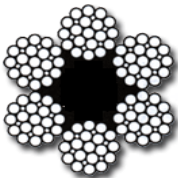


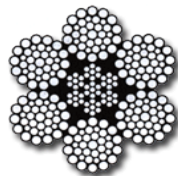
# WIRE ROPE



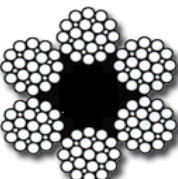
6 x 26 IWRC



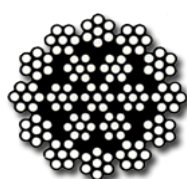
6 x 19 FC



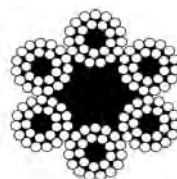
6 x 36 IWRC



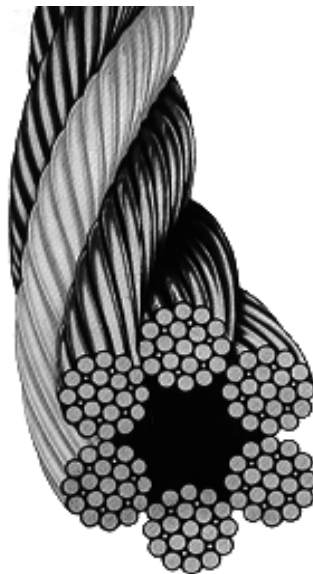
6 x 36 FC



19 x 7 IWRC



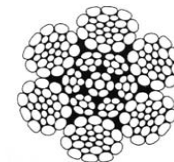
6 x 24 FC



7 x 7 x 7



1 x 7



Swaged



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## Wire Rope Cores

The core forms the heart of the rope and is the component around which the main strands are laid. The core supports the strand and is intended to keep them from jamming against or contacting each other under normal loads and flex. The most popular core constructions are the following:

### Fiber Core (FC):

These cores can be made from natural or synthetic fibers. The majority of Vanguard's Fiber Core ropes feature a Polypropylene Core (PPC), as they are less susceptible to compacting (especially under moist conditions) and are impervious to many acids

### Independent Wire Rope Core (IWRC):

IWRC ropes are used in applications requiring maximum strength, resistance to crushing and all applications for which fiber core ropes are not suitable (i.e. excessive heat of 250° F or greater).

### Strand Core (SC):

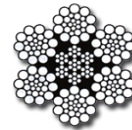
This type of core would only be chosen for applications where 'stiffness' of the rope is not a drawback but is, in fact, desirable.



Fibre core



Strand Core



Independent  
Wire rope core

To protect against friction and corrosion, proper lubrication of individual wires and strands plays an important role in the production of wire rope. Additional field lubrication may be required if the ropes are subjected to heavy usage or lengthy storage. The type of lubrication depends on the intended usage of the rope:

**Type A-1 & A-2:** Vaseline based lubricant, for light and medium duty applications

**Type B:** Petroleum based lubricant, for more severe applications (i.e. construction)

**Type C:** Asphalt based lubricant, often specified for non-rotating ropes

For additional protection against premature corrosion, the individual wires of an uncoated rope (generally referred to as 'bright' or 'black') are hot dip galvanized at finished size. This will, however, reduce the breaking strength of the rope by approximately 10 % from a comparable bright rope.

Where wire ropes are subject to severe corrosive elements such as salt water, various acids, etc., stainless steel ropes may have to be considered.



## Wire Rope Lay

The term 'rope lay' signifies the direction of rotation of the wires and the strands in the rope.

Rotation is either:

Right Lay - Clockwise, or  
Left Lay - Counter-clockwise



Right Lang Lay (RLL)



Left Lang Lay (LLL)

### Regular Lay :

Wires in strands are laid in one direction, while the strands in the rope are laid in the opposite direction. This results in wire crown running approximately parallel to the longitudinal axis of the rope. These ropes are stable, have good resistance to kinking and twisting and are easy to handle. They are also able to withstand a considerable amount of 'crushing' and distortion due to short length of exposed wires



Right Lay Regular Lay (RRL)



Left Lay Regular Lay (LRL)

### Lang Lay:

Wires are laid in the same direction as the strands of the rope, and in an angle to the rope axis. With the outer wires presenting greater wearing surfaces, these ropes have greater resistance to abrasion than regular lay ropes. They are also more flexible ; possess greater fatigue resistance. Lang Lay ropes should have both ends permanently fixed to prevent untwisting. They are not recommended for use on single part hoist-lines, nor should they be used with swivel end terminals.

## Other Consideration :

### Stretch:

There are two types of stretch that occur in wire ropes:

#### Constructional Stretch:

This is a permanent elongation that takes place due to a slight lengthening of the rope lay, compression of the core and adjustment of the wires and strands to the load. Constructional stretch varies with the severity of the operation and generally occurs during the first weeks of operation. It increases the length of the rope by approximately.  $1/2 f_s$  for fiber core ropes and  $1/4 f_s$  for steel core ropes.

#### Elastic Stretch:

This is a recoverable elongation similar to the stretch in a rubber cord. If the load is kept within the elastic limit of the rope, the theory of elastic materials will apply.

#### Shifting Points of Wear:

Wear and fatigue usually take place at certain definite points along a rope. Removing short lengths from the drum end of the rope shifts these wear points and exposes relatively unworn sections of the rope to the harder working areas. To take advantage of this method of increasing service life, it is obviously necessary to initially order a slightly longer rope length than required.

#### Turning Rope End for End:

On many installations, destructive forces are more severe along one half of the rope than the other. By turning the rope end for end, it is possible to increase its service life.

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## Measuring Wire Rope:

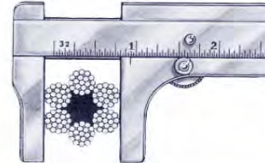
The diameter of a wire rope is the diameter of the circle which encloses all the wires. When measuring wire rope, it is important to take the greatest distance of the outer limits of the 'crowns' of two opposite strands.

A measurement across the valleys will result in incorrect (lower) readings.

**Correct:**



**Incorrect:**



## Rope Constructions:

### Small Diameter Cables:

Ranging in diameters up to 3/8", the construction, material and finish of these cables depends on their ultimate use:

- 1) **Commercial quality cables (often referred to as aircraft cables but not for use in aircraft!)**
- 2) **Control cables (used in the automotive industry)**
- 3) **Conveyor belt cables**

### Engineering & General Purpose Wire Ropes

The construction of wire ropes and strands covered under this heading varies within specific Classifications and will depend on the desired performance features, such as flexibility, resistance to abrasion, resistance to rotation, etc.:

#### 1 x 7 Classification (Guy Strand)

#### 6 x 7 Classification

Used where ropes are dragged over the ground or over rollers and where resistance to abrasion is an important factor. The large outer wires will withstand a great deal of wear at the expense of flexibility.

#### 6 x 19 Classification

Constructions falling under this classification are the most widely used throughout all industries, as they feature a good balance between abrasion resistance and flexibility.

#### 6 x 37 Classification

Increasing the number of wires while reducing the wire diameter results in greater flexibility but diminishes abrasion resistance

#### 19 x 7 Classification

Due to their rotation resistance characteristics, ropes falling under this classification are being used for many hoisting applications, but failure to easily detect damage to the inner core is among the reasons that usage has declined in favour of Specialty Ropes.

#### 8 x 19 Classification

Reverse bends and small sheaves may render 8 strand ropes a better choice than 19 x 7 or other rope constructions. Specialty Ropes

For applications where performance, down-time and/or safety considerations outweigh a rope's cost of acquisition, a wide range of specialty ropes has been developed. Proper selection, handling and installation of such ropes is essential in maximizing results.

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## Ungalvanized 6 x 19 Class FC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



| Ungalv.<br>Wire Rope<br>Size | Construction<br>IPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Construction<br>EIPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Weight<br>100 ft |
|------------------------------|---------------------------|---------------------------|-----------------|----------------------------|---------------------------|-----------------|------------------|
| 1/4"                         | 6 x 26 FC                 | 2.74                      | 25300016        | 6 x 26 FC                  | 3.02                      | 25310016        | 10.50            |
| 5/16"                        | 6 x 26 FC                 | 4.26                      | 25300020        | 6 x 26 FC                  | 4.69                      | 25310020        | 16.40            |
| 3/8"                         | 6 x 26 FC                 | 6.10                      | 25300024        | 6 x 26 FC                  | 6.71                      | 25310024        | 23.60            |
| 7/16"                        | 6 x 26 FC                 | 8.27                      | 25300028        | 6 x 26 FC                  | 9.09                      | 25310028        | 32.00            |
| 1/2"                         | 6 x 26 FC                 | 10.70                     | 25300032        | 6 x 26 FC                  | 11.80                     | 25310032        | 42.00            |
| 9/16"                        | 6 x 26 FC                 | 13.50                     | 25300036        | 6 x 26 FC                  | 14.90                     | 25310036        | 53.00            |
| 5/8"                         | 6 x 26 FC                 | 16.70                     | 25300040        | 6 x 26 FC                  | 18.30                     | 25310040        | 66.00            |
| 3/4"                         | 6 x 26 FC                 | 23.80                     | 25300048        | 6 x 26 FC                  | 26.20                     | 25310048        | 95.00            |
| 7/8"                         | 6 x 26 FC                 | 32.20                     | 25300056        | 6 x 26 FC                  | 35.40                     | 25310056        | 129.00           |
| 1"                           | 6 x 26 FC                 | 41.80                     | 25300100        | 6 x 26 FC                  | 46.00                     | 25310100        | 168.00           |
| 1-1/8"                       | 6 x 26 FC                 | 52.60                     | 25300108        | 6 x 26 FC                  | 57.90                     | 25310108        | 213.00           |
| 1-1/4"                       | 6 x 26 FC                 | 64.60                     | 25300116        | 6 x 26 FC                  | 71.00                     | 25310116        | 263.00           |

Other sizes available upon request

### APPLICATIONS

Most widely used of all wire rope - cranes hoists, skip hoists, haulage, mooring lines, conveyors, etc.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

|                    |
|--------------------|
| Prefix             |
| 2512xxxx 6 x 19 FC |
| 2526xxxx 6 x 25 FC |

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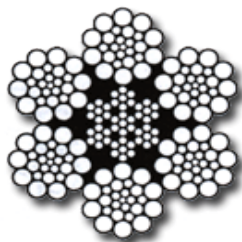
## Ungalvanized 6 x 19 Class IWRC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

6 x 19 classification wire rope provides an excellent balance between fatigue and wear resistance.

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



| Ungalv.<br>Wire Rope<br>Size | Construction<br>IPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Construction<br>EIPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Weight<br>100 ft |
|------------------------------|---------------------------|---------------------------|-----------------|----------------------------|---------------------------|-----------------|------------------|
| 1/4"                         | 6 x 26 IWRC               | 3.00                      | 25800016        | 6 x 26 IWRC                | 3.40                      | 25810016        | 11.00            |
| 5/16"                        | 6 x 26 IWRC               | 4.40                      | 25800020        | 6 x 26 IWRC                | 5.27                      | 25810020        | 18.00            |
| 3/8"                         | 6 x 26 IWRC               | 6.40                      | 25800024        | 6 x 26 IWRC                | 7.55                      | 25810024        | 25.00            |
| 7/16"                        | 6 x 26 IWRC               | 8.60                      | 25800028        | 6 x 26 IWRC                | 10.20                     | 25810028        | 34.00            |
| 1/2"                         | 6 x 26 IWRC               | 11.80                     | 25800032        | 6 x 26 IWRC                | 13.30                     | 25810032        | 44.00            |
| 9/16"                        | 6 x 26 IWRC               | 14.30                     | 25800036        | 6 x 26 IWRC                | 16.80                     | 25810036        | 56.00            |
| 5/8"                         | 6 x 26 IWRC               | 17.70                     | 25800040        | 6 x 26 IWRC                | 20.60                     | 25810040        | 69.00            |
| 3/4"                         | 6 x 26 IWRC               | 25.50                     | 25800048        | 6 x 26 IWRC                | 29.40                     | 25810048        | 99.00            |
| 7/8"                         | 6 x 26 IWRC               | 34.40                     | 25800056        | 6 x 26 IWRC                | 39.80                     | 25810056        | 135.00           |
| 1"                           | 6 x 26 IWRC               | 44.80                     | 25800100        | 6 x 26 IWRC                | 51.70                     | 25810100        | 176.00           |
| 1-1/8"                       | 6 x 26 IWRC               | 57.00                     | 25800108        | 6 x 26 IWRC                | 65.00                     | 25810108        | 223.00           |
| 1-1/4"                       | 6 x 26 IWRC               | 70.40                     | 25800116        | 6 x 26 IWRC                | 79.90                     | 25810116        | 275.00           |

Other sizes and construction available upon request

### APPLICATIONS

Boom hoists, logging and tubing lines; IWRC shown, fiber core available

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Prefix:

2563xxxx 6 x 19 IWRC  
2566xxxx 6 x 19 IWRC S  
2576xxxx 6 x 25 IWRC

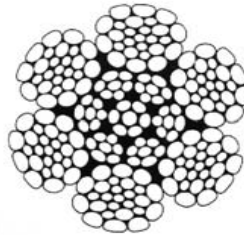
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## Ungalvanized Swaged IWRC

Developed to meet the demands of logging operations but can be adapted for other uses. Swaged ropes are produced by reducing the diameter of a regular round rope by compacting it. Swaging provides additional stability to rope shape and creates surface-to-surface contact between element wires. By packing more steel into a smaller diameter, the swaging process produces a superior strength to diameter ratio and breaking that is higher than traditional rope.



| Ungalv.<br>Wire Rope | Construction<br>Swaged | B/S<br>Tons | Product<br>Code | Weight<br>100 ft | Construction<br>Super Swaged | B/S<br>Tons | Product<br>Code | Weight<br>100 ft |
|----------------------|------------------------|-------------|-----------------|------------------|------------------------------|-------------|-----------------|------------------|
| Size                 |                        |             |                 | (2000 lbs)       |                              |             |                 |                  |
| 1/2"                 | 6 x 26 IWRC            | 15.90       | 25990032        | 55               | 6 x 26 IWRC                  | 17.40       | 25990033        | 61.00            |
| 9/16"                | 6 x 26 IWRC            | 19.30       | 25990036        | 71               | 6 x 26 IWRC                  | 21.90       | 25990041        | 78.00            |
| 5/8"                 | 6 x 26 IWRC            | 24.20       | 25990040        | 87               | 6 x 26 IWRC                  | 27.00       | 25990045        | 96.50            |
| 3/4"                 | 6 x 26 IWRC            | 34.90       | 25990048        | 125              | 6 x 26 IWRC                  | 38.50       | 25990049        | 138.00           |
| 7/8"                 | 6 x 26 IWRC            | 34.40       | 25990056        | 170              | 6 x 26 IWRC                  | 52.00       | 25990058        | 187.00           |
| 1"                   | 6 x 26 IWRC            | 62.00       | 25990100        | 222              | 6 x 26 IWRC                  | 66.50       | 259901002       | 244.00           |
| 1-1/8"               | 6 x 26 IWRC            | 73.50       | 25990108        | 281              | 6 x 26 IWRC                  | 79.50       |                 | 309.00           |
| 1-1/4"               | 6 x 26 IWRC            | 90.00       | 25990116        | 347              | 6 x 26 IWRC                  | 97.50       |                 | 382.00           |

Other sizes and construction available upon request

### APPLICATIONS

Boom hoists, logging operations but can be adapted for other uses; IWRC shown, fiber core available

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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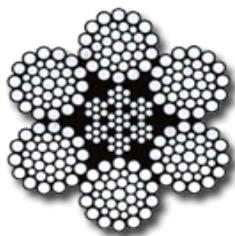




## Ungalvanized 6 x 36 Class IWRC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



| Ungalv.<br>Wire Rope<br>Size | Construction<br>IPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Construction<br>EIPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Weight<br>100 ft |
|------------------------------|---------------------------|---------------------------|-----------------|----------------------------|---------------------------|-----------------|------------------|
| 1/4"                         | 6 x 36 IWRC               | 2.94                      | 25900016        | 6 x 36 IWRC                | 3.40                      | 25910016        | 11.60            |
| 5/16"                        | 6 x 36 IWRC               | 4.58                      | 25900020        | 6 x 36 IWRC                | 5.27                      | 25910020        | 18.00            |
| 3/8"                         | 6 x 36 IWRC               | 6.56                      | 25900024        | 6 x 36 IWRC                | 7.55                      | 25910024        | 26.00            |
| 7/16"                        | 6 x 36 IWRC               | 8.89                      | 25900028        | 6 x 36 IWRC                | 10.20                     | 25910028        | 35.00            |
| 1/2"                         | 6 x 36 IWRC               | 11.50                     | 25900032        | 6 x 36 IWRC                | 13.30                     | 25910032        | 46.00            |
| 9/16"                        | 6 x 36 IWRC               | 14.50                     | 25900036        | 6 x 36 IWRC                | 16.80                     | 25910036        | 59.00            |
| 5/8"                         | 6 x 36 IWRC               | 17.90                     | 25900040        | 6 x 36 IWRC                | 20.60                     | 25910040        | 72.00            |
| 3/4"                         | 6 x 36 IWRC               | 25.60                     | 25900048        | 6 x 36 IWRC                | 29.40                     | 25910048        | 104.00           |
| 7/8"                         | 6 x 36 IWRC               | 34.60                     | 25900056        | 6 x 36 IWRC                | 39.80                     | 25910056        | 142.00           |
| 1"                           | 6 x 36 IWRC               | 44.90                     | 25900100        | 6 x 36 IWRC                | 51.70                     | 25910100        | 185.00           |
| 1-1/8"                       | 6 x 36 IWRC               | 56.50                     | 25900108        | 6 x 36 IWRC                | 65.00                     | 25910108        | 234.00           |
| 1-1/4"                       | 6 x 36 IWRC               | 69.40                     | 25900116        | 6 x 36 IWRC                | 79.90                     | 25910116        | 289.00           |

Other sizes and construction available upon request

### APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd.



## Ungalvanized 6 x 36 Class FC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



| Ungalv.<br>Wire Rope<br>Size | Construction<br>IPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Construction<br>EIPS Grade | B/S<br>Tons<br>(2000 lbs) | Product<br>Code | Weight<br>100 ft |
|------------------------------|---------------------------|---------------------------|-----------------|----------------------------|---------------------------|-----------------|------------------|
| 1/4"                         | 6 x 36 FC                 | 2.74                      | 25400016        | 6 x 36 FC                  | 3.02                      |                 | 10.50            |
| 5/16"                        | 6 x 36 FC                 | 4.26                      | 25400020        | 6 x 36 FC                  | 4.69                      |                 | 16.40            |
| 3/8"                         | 6 x 36 FC                 | 6.10                      | 25400024        | 6 x 36 FC                  | 6.71                      |                 | 23.60            |
| 7/16"                        | 6 x 36 FC                 | 8.27                      | 25400028        | 6 x 36 FC                  | 9.09                      |                 | 32.00            |
| 1/2"                         | 6 x 36 FC                 | 10.70                     | 25400032        | 6 x 36 FC                  | 11.80                     |                 | 42.00            |
| 9/16"                        | 6 x 36 FC                 | 13.50                     | 25400036        | 6 x 36 FC                  | 14.90                     |                 | 53.00            |
| 5/8"                         | 6 x 36 FC                 | 16.70                     | 25400040        | 6 x 36 FC                  | 18.30                     |                 | 66.00            |
| 3/4"                         | 6 x 36 FC                 | 23.80                     | 25400048        | 6 x 36 FC                  | 26.20                     |                 | 95.00            |
| 7/8"                         | 6 x 36 FC                 | 32.20                     | 25400056        | 6 x 36 FC                  | 35.40                     |                 | 129.00           |
| 1"                           | 6 x 36 FC                 | 41.80                     | 25400100        | 6 x 36 FC                  | 46.00                     |                 | 168.00           |
| 1-1/8"                       | 6 x 36 FC                 | 52.60                     | 25400108        | 6 x 36 FC                  | 57.90                     |                 | 213.00           |
| 1-1/4"                       | 6 x 36 FC                 | 64.60                     | 25400116        | 6 x 36 FC                  | 71.00                     |                 | 263.00           |

Other sizes and construction available upon request

### APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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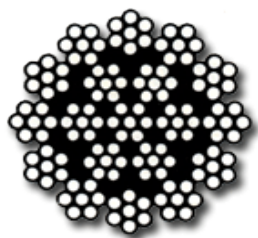


## Ungalvanized 19 x 7 IWRC

The non-rotating charactericting is achived by two layers of strand, one having Right Lay, the other Left Lay.

This rope construction requires frequent inspection as damage to inner strands and wires cannot be easily detected.

Not recommended for multiple part lifting.



| Ungalvanized<br>Wire Rope | Construction<br>EIPS Grade | B/S<br>Tons | Product<br>Code | Weight<br>100 ft |
|---------------------------|----------------------------|-------------|-----------------|------------------|
| Size                      | (2000 lbs)                 |             |                 |                  |
| 1/4"                      | 19 x 7 IWRC                | 2.70        | 25970016        | 10.50            |
| 5/16"                     | 19 x 7 IWRC                | 4.30        | 25970020        | 16.40            |
| 3/8"                      | 19 x 7 IWRC                | 6.10        | 25970024        | 23.60            |
| 7/16"                     | 19 x 7 IWRC                | 8.33        | 25970028        | 32.00            |
| 1/2"                      | 19 x 7 IWRC                | 10.50       | 25970032        | 42.00            |
| 9/16"                     | 19 x 7 IWRC                | 13.30       | 25970036        | 53.00            |
| 5/8"                      | 19 x 7 IWRC                | 16.00       | 25970040        | 66.00            |
| 3/4"                      | 19 x 7 IWRC                | 23.50       | 25970048        | 95.00            |
| 7/8"                      | 19 x 7 IWRC                | 31.80       | 25970056        | 129.00           |
| 1"                        | 19 x 7 IWRC                | 41.60       | 25970100        | 168.00           |
| 1-1/8"                    | 19 x 7 IWRC                | 52.30       | 25970116        | 213.00           |

### APPLICATIONS

Rotation Resistant but NOT Non Rotating.

Hoisting ropes on derricks, boom cranes, shaft sinking hoists and freely suspended mine hoists, deck cranes and piling rigs.

Prefix:  
2596xxxx IPS

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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## Wireline Cable

The term wireline usually refers to a cabling technology used by operators of oil and gas wells to lower equipment or measurement devices into the well for the purposes of well intervention and reservoir evaluation

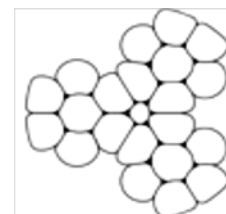
### Swaged Wire Rope

A wire rope 3/16 in or 1/4 in (4.8 mm or 6.4 mm) in diameter; used to handle the inner tube of a wire-line core barrel.

The 3-strand compacted design provides resistance to rotation while also providing a high strength/weight ratio.

These 3-strand ropes are ideal for diamond drilling operations.

| Ungalvanized Wire Rope | Construction Swaged | B/S lbs | Weight 100 ft | Product Code |
|------------------------|---------------------|---------|---------------|--------------|
| Size                   |                     |         |               |              |
| 3/16"                  | 3 x 7 IWRC          | 5240    | 8.00          | 25990012     |
| 1/4"                   | 3 x 7 IWRC          | 9240    | 16.00         | 25990016     |

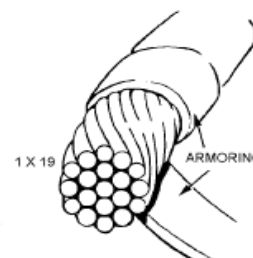
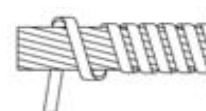


### Armored Cable

Used for retrieving core samples

Armoring prevents fraying of cable in rough terrain

| Outer Diameter | Inside Diameter | Construction | B/S lbs | Weight 100 ft | Product Code |
|----------------|-----------------|--------------|---------|---------------|--------------|
| 11/16"         | 1/8"            | 1 x 19       | 4000    | 8             | 25991111     |



Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.



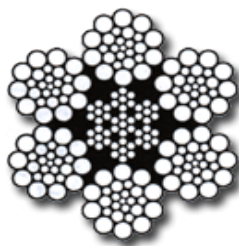
## Galvanized 6 x 19 Class IWRC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

6 x 19 classification wire rope provides an excellent balance between fatigue and wear resistance.

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



| Ungalvanized Wire Rope | Construction IPS Grade | B/S Tons | Product Code | Weight 100 ft |
|------------------------|------------------------|----------|--------------|---------------|
| Size                   | (2000 lbs)             |          |              |               |
| 1/4"                   | 6 x 19 IWRC            | 3.00     | 26660016     | 11.00         |
| 5/16"                  | 6 x 19 IWRC            | 4.40     | 26660020     | 18.00         |
| 3/8"                   | 6 x 19 IWRC            | 6.40     | 26660024     | 25.00         |
| 7/16"                  | 6 x 19 IWRC            | 8.00     | 26660028     | 34.00         |
| 1/2"                   | 6 x 19 IWRC            | 10.30    | 26660032     | 44.00         |
| 5/8"                   | 6 x 19 IWRC            | 16.10    | 26660040     | 69.00         |
| 3/4"                   | 6 x 19 IWRC            | 23.00    | 26660048     | 99.00         |
| 7/8"                   | 6 x 19 IWRC            | 31.10    | 26660056     | 135.00        |
| 1"                     | 6 x 19 IWRC            | 40.40    | 26660100     | 176.00        |
| 1-1/8"                 | 6 x 19 IWRC            | 50.90    | 26660108     | 223.00        |
| 1-1/4"                 | 6 x 19 IWRC            | 62.50    | 26660116     | 275.00        |

Other sizes and construction available upon request

### APPLICATIONS

Boom hoists, logging and tubing lines; IWRC shown, fiber core available

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

Prefix:

2663xxxx 6 x 19 IWRC  
2676xxxx 6 x 25 IWRC  
26806xxxx 6 x 26 IWRC

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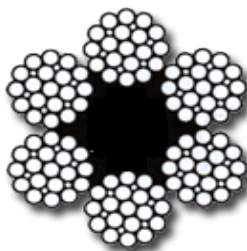


## Galvanized 6 x 19 Class FC

A general purpose wire rope.

Most flexible rope in classification; best balance of abrasion and fatigue resistance

They give excellent service with sheaves and drums of moderate size. 6 x 19 classification ropes contain 6 strands with 15 through 26 wires per strand, no more than 12 of which are outside wires.



| Ungalvanized<br>Wire Rope | Construction<br>IPS Grade | B/S<br>Tons | Product<br>Code | Weight<br>100 ft |
|---------------------------|---------------------------|-------------|-----------------|------------------|
| Size                      | (2000 lbs)                |             |                 |                  |
| 3/8"                      | 6 x 19 FC                 | 5.49        | 26120024        | 23.60            |
| 7/16"                     | 6 x 19 FC                 | 7.44        | 26120028        | 32.00            |
| 1/2"                      | 6 x 19 FC                 | 6.93        | 26120032        | 42.00            |
| 9/16"                     | 6 x 19 FC                 | 12.10       | 26120036        | 53.00            |
| 5/8"                      | 6 x 19 FC                 | 15.00       | 26120040        | 66.00            |
| 3/4"                      | 6 x 19 FC                 | 21.40       | 26120048        | 95.00            |
| 7/8"                      | 6 x 19 FC                 | 29.00       | 26120056        | 129.00           |
| 1"                        | 6 x 19 FC                 | 37.60       | 26120100        | 168.00           |
| 1-1/8"                    | 6 x 19 FC                 | 47.30       | 26120108        | 213.00           |
| 1-1/4"                    | 6 x 19 FC                 | 58.10       | 26120116        | 263.00           |

Other sizes available upon request

### APPLICATIONS

Most widely used of all wire rope - cranes hoists, skip hoists, haulage, mooring lines, conveyors, etc.

**Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.**

|                    |
|--------------------|
| Prefix             |
| 2512xxxx 6 x 19 FC |
| 2526xxxx 6 x 25 FC |

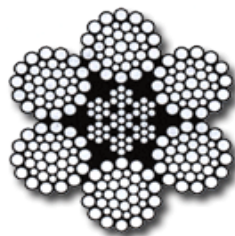
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## Galvanized 6 x 36 Class IWRC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



| Ungalvanized Wire Rope | Construction EIPS Grade | B/S Tons | Weight 100 ft | Product Code |
|------------------------|-------------------------|----------|---------------|--------------|
| Size                   | (2000 lbs)              |          |               |              |
| 1/4"                   | 6 x 36 IWRC             | 3.06     | 11.60         | 26900016     |
| 5/16"                  | 6 x 36 IWRC             | 4.74     | 18.00         | 26900020     |
| 3/8"                   | 6 x 36 IWRC             | 6.80     | 26.00         | 26900024     |
| 7/16"                  | 6 x 36 IWRC             | 9.18     | 35.00         | 26900028     |
| 1/2"                   | 6 x 36 IWRC             | 11.97    | 46.00         | 26900032     |
| 9/16"                  | 6 x 36 IWRC             | 15.12    | 59.00         | 26900036     |
| 5/8"                   | 6 x 36 IWRC             | 18.54    | 72.00         | 26900040     |
| 3/4"                   | 6 x 36 IWRC             | 26.46    | 104.00        | 26900048     |
| 7/8"                   | 6 x 36 IWRC             | 35.82    | 142.00        | 26900056     |
| 1"                     | 6 x 36 IWRC             | 46.53    | 185.00        | 26900100     |
| 1-1/8"                 | 6 x 36 IWRC             | 58.50    | 234.00        | 26900108     |
| 1-1/4"                 | 6 x 36 IWRC             | 71.90    | 289.00        | 26900116     |

Other sizes and construction available upon request

### APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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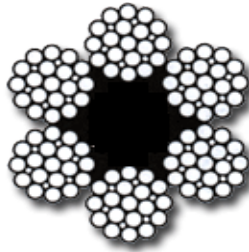




## Galvanized 6 x 36 Class FC

6 x 36 Classification Wire Ropes have a third layer of wires which make them more flexible, although less abrasion-resistant than ropes of the 6x19 class. Each strand contains numerous, comparatively small diameter wires which offer superior bending ability. As the number of wires in each strand increases, flexibility increases.

This classification covers ropes with 6 strands having 27 to 49 wires per strand.



| Ungalvanized<br>Wire Rope | Construction<br>IPS Grade | B/S<br>Tons | Weight<br>100 ft | Product<br>Code |
|---------------------------|---------------------------|-------------|------------------|-----------------|
| Size                      | (2000 lbs)                |             |                  |                 |
| 1/4"                      | 6 x 36 FC                 | 2.40        | 10.50            | 26400016        |
| 5/16"                     | 6 x 36 FC                 | 3.74        | 16.40            | 26400020        |
| 3/8"                      | 6 x 36 FC                 | 5.36        | 23.60            | 26400024        |
| 7/16"                     | 6 x 36 FC                 | 7.26        | 32.00            | 26400028        |
| 1/2"                      | 6 x 36 FC                 | 9.45        | 42.00            | 26400032        |
| 9/16"                     | 6 x 36 FC                 | 11.90       | 53.00            | 26400036        |
| 5/8"                      | 6 x 36 FC                 | 14.60       | 66.00            | 26400040        |
| 3/4"                      | 6 x 36 FC                 | 21.00       | 95.00            | 26400048        |
| 7/8"                      | 6 x 36 FC                 | 28.40       | 129.00           | 26400056        |
| 1"                        | 6 x 36 FC                 | 36.90       | 168.00           | 26400100        |
| 1-1/8"                    | 6 x 36 FC                 | 46.50       | 213.00           | 26400108        |
| 1-1/4"                    | 6 x 36 FC                 | 57.10       | 263.00           | 26400116        |

Other sizes and construction available upon request

### APPLICATIONS

Overhead crane and mobile crane hoist ropes; winch lines; large diameter towing lines.

The ropes in this group have excellent flexibility, reasonable resistance to crushing, and are well adapted to high speed and multiple reeving applications.

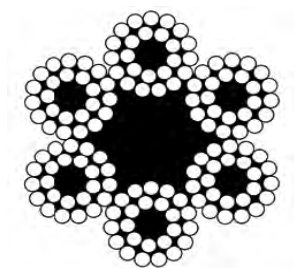
Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

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## Galvanized 6 x 24 FC

This 6-strand rope with seven fibre cores provides extreme flexibility, but low breaking strength.



| Ungalvanized<br>Wire Rope | Construction<br>IPS Grade | B/S<br>Tons | Product<br>Code | Weight<br>100 ft |
|---------------------------|---------------------------|-------------|-----------------|------------------|
| Size                      | (2000 lbs)                |             |                 |                  |
| 3/8"                      | 6 x 24 FC                 | 4.77        | 26210024        | 20.00            |
| 1/2"                      | 6 x 24 FC                 | 8.40        | 26210032        | 35.00            |
| 9/16"                     | 6 x 24 FC                 | 10.60       | 26210036        | 44.00            |
| 5/8"                      | 6 x 24 FC                 | 13.00       | 26210040        | 54.00            |
| 3/4"                      | 6 x 24 FC                 | 18.60       | 26210048        | 78.00            |
| 7/8"                      | 6 x 24 FC                 | 25.20       | 26210056        | 106.00           |
| 1"                        | 6 x 24 FC                 | 33.90       | 26210100        | 138.00           |
| 1-1/8"                    | 6 x 24 FC                 | 42.20       | 26210108        | 175.00           |
| 1-1/4"                    | 6 x 24 FC                 | 52.20       | 26210116        | 216.00           |

Other sizes available upon request

### APPLICATIONS

Used for towboat, goods net, timber floating, shipping loading and unloading, binding, fastening. Slings, Lashing and Fishing.

Accepted strength is not less than 2.5 % below the nominal breaking strength listed  
DO NOT EXCEED WORK LOAD LIMIT OR 20% OF THE PRODUCT'S BREAK STRENGTH.

Vanguard Steel Ltd.



## Cable Laid IWRC Galvanized

An extremely flexible wire rope

Cable-laid rope consists of several constituent wire ropes that are helically laid or wound over a core into a single cable.

For example, a 7X7X7 cable-laid wire rope consists of seven (7x7) cables.



| Galv. Wire Rope | Construction   | B/S *<br>lbs | Weight<br>100 ft | Product<br>Code |
|-----------------|----------------|--------------|------------------|-----------------|
| Size            |                |              |                  |                 |
| 5/16"           | 7 x 7 x 7 IWRC | 10,700       | 14.00            | 36010020        |
| 3/8"            | 7 x 7 x 7 IWRC | 11,400       | 21.00            | 36010024        |
| 7/16"           | 7 x 7 x 7 IWRC | 18,000       | 30.00            | 36010028        |

### \* LISTED FOR COMPARISON ONLY

ACTUAL OPERATING LOADS MAY VARY, BUT SHOULD NEVER EXCEED RECOMMENDED DESIGN FACTOR OF 20% OF CATALOGUE BREAKING STRENGTH !

CABLE-LAID WIRE ROPE IS TO BE USED FOR MECHANICALLY SWAGED SLINGS ONLY.  
DO NOT USE FOR HAND-SPLICED ASSEMBLIES OR GENERAL PURPOSE OPERATING ROPE.

Vanguard Steel Ltd. \_\_\_\_\_

# Galvanized Grade 220 Guy Strand

Commonly used for guying purposes where flexibility is not important.

1x19 Extra High Strength Galvanized Strand is very stiff and cannot be spliced

Used as a messenger cable for guying high-performance communications cables and electrical conductors

Manufactured to CSA G12-92



| Description   |                                    | Galv. Guy Strand     |
|---|------------------------------------|----------------------|
| Diameter  |                                    | 1"                   |
| Construction  |                                    | 1 x 19 IWRC          |
| <b>HTGS Wires after stranding</b>                               |                                    |                      |
| <b>Diameter</b>   | Standard                           | 25.40 mm             |
|   | Minimum                            | 25.27 mm             |
|   | Maximum                            | 25.53 mm             |
| <b>Minimum ultimate tensile strength on 250 mm gauge length</b> |                                    |                      |
|   | Before Stranding N/mm <sup>2</sup> | 0.1511               |
|   | After Stranding N/mm <sup>2</sup>  | 0.1448               |
| % of Elongation on 250 mm Gauge length                          |                                    | 4%                   |
| Minimum Mass of Zinc Coating g/m <sup>2</sup>                   |                                    | 305 g/m <sup>2</sup> |
| <b>Lay direction</b>  |                                    |                      |
|   | 6 + 1 wire layer                   | 14x-RHL              |
|   | 12 wire layer                      | 13x-LHL              |
|   | 18 wire layer                      | n/a                  |
|   | Outmost layer                      | LHL                  |
| Min B/Sof Guy Wire  |                                    | 118,100 lbs.         |
| Standard Weight of Guy Wire                                     |                                    | 207.3 lbs/100 ft.    |

\* Minimum strand breaking load= A x T x E

- A** = Nominal metallic cross-sectional area of the strand in square inch  
**T** = Tensile grade of the wire in pounds per square inch  
**E** = Stranding efficiency factor  
.90 for strands containing 19 or more wires.

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