



Crane Ropes

 **Union**[®]
A WireCo[®] WorldGroup Brand

CONTENTS

Page

| | |
|------------------------------------|----|
| Flex-X 6 | 3 |
| Flex-X 9 | 4 |
| Flex-X 19 | 5 |
| Flex-X 7CC | 6 |
| 7-Flex and 7-Flex PFV | 8 |
| Flattened Strand | 9 |
| XLT ⁴ | 10 |
| Crane Pendants | 11 |
| 19x7 and 8x25 Resistwist | 12 |
| 6x19 and 6x36 Class | 12 |

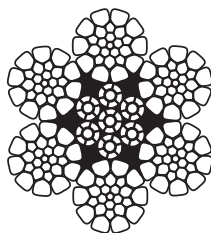
Broad range. Best manufacturer. Unmatched support.

At Union, we understand the crane market. Our years of climbing on the cranes with you, combined with the latest metallurgical practices and unique design capabilities, have enabled us to continue to innovate and provide the most cost effective line of crane ropes in the world. Union is part of the global leader in manufacturing, engineering and distributing wire rope, wire rope assemblies, high carbon wire, and electromechanical cable: WireCo WorldGroup. We apply thorough design and manufacturing controls – including complete material traceability. And we are the only manufacturer in the world that is QPL qualified, API Spec 9A certified, and registered to both ISO 9001 and AS-9100 Quality Systems. So buy from the best...WireCo WorldGroup – The world is our worksite.

Flex-X® 6: Increased rope stability.

- Superior performance 6-strand rope
- Increased service life
- Less sheave and drum wear

Most applications for wire rope are extremely demanding. Wire rope must resist crushing, bending fatigue and abrasion. For example, clamshell closing lines must resist bending fatigue and boom hoists are subject to pressures that cause crushing. Overhead hoists test the stability and strength of a wire rope. All drum-related applications demand a rope that will spool and operate smoothly and dependably.

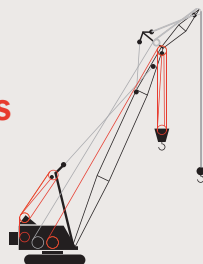


For crane applications where rotation-resistance is not required, Flex-X 6 provides users with superior performance and increased service life in many applications compared to the ropes they had previously employed. When compared to conventional 6 strand ropes, Flex-X 6 ropes provide greater surface area and more steel per given diameter, which increases rope stability and strength, too. This results in longer service life and less sheave and drum wear.

FLEX-X 6 is recommended for:

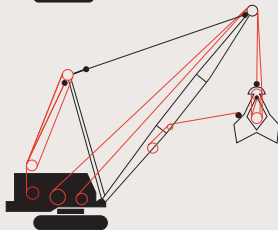
CRAWLER AND TRUCK CRANES

Main hoist rope
Boom hoist rope



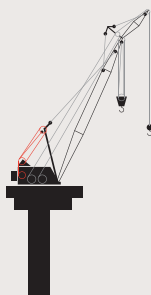
CLAMSHELLS AND GRAPPLES

Holding line
Closing line
Boom hoist rope



PEDESTAL/TOWER LUFFING CRANES

Boom hoist rope

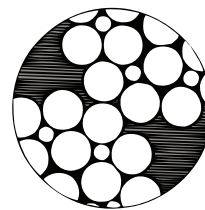


MINIMUM BREAKING FORCE AND WEIGHTS FOR FLEX-X 6 ROPES

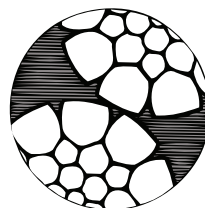
| Diameter (in) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
|---------------|---------------------|--------------------------------------------|
| 3/8 | 0.32 | 8.8 |
| 7/16 | 0.41 | 11.9 |
| 1/2 | 0.55 | 15.3 |
| 9/16 | 0.70 | 19.3 |
| 5/8 | 0.86 | 22.7 |
| 3/4 | 1.25 | 32.4 |
| 7/8 | 1.67 | 43.8 |
| 1 | 2.18 | 56.9 |
| 1 1/8 | 2.71 | 71.5 |
| 1 1/4 | 3.43 | 87.9 |
| 1 1/2 | 5.01 | 125 |

Should not be used with a swivel.

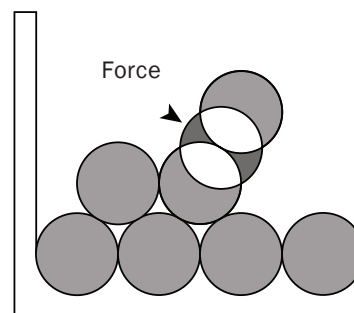
FLEX-X VS STANDARD 6 X 26 WS



The increased surface area of Flex-X can be seen in the comparison of the contact points of a standard 6 x 26 WS (top) and Flex-X (bottom).



Drum scrubbing between the lead line and the previous wrap is reduced.



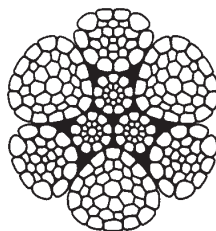
Smooth contact creates less interference, less metal loss and wire deformation.

Flex-X® 9: The best solution when drum crushing is your problem.

EXTRA STRENGTH AND VALUE

Designed to combat drum crushing challenges in boom hoisting applications, Flex-X 9 features compacted strands and swaging for extra drum crushing resistance and increased stability. Its high-density strands deliver extra strength, surprising bendability and a stubborn resistance to abrasion.

Flex-X 9 is manufactured with a dual compaction process to produce a compact cross-section with minimum voids and greater surface area on outer wires that contact drums, sheaves and the rope, itself, during operation. The high-density, compacted strands minimize nicking at strand-to-strand contact points.

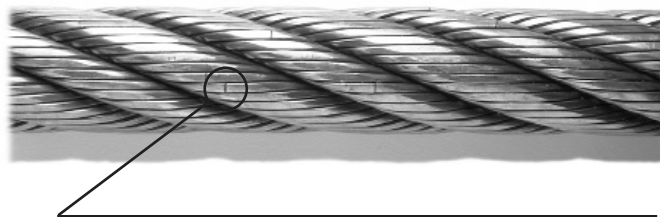


Flex-X 9 features compacted strands and swaging for an extra measure of drum crushing resistance and increased stability.

FLEX-X 9 TAKES THE GUESSING GAME OUT OF ROPE INSPECTION

While standard swaged ropes may develop internal broken wires before they do externally, FLEX-X 9's unique design combines compacted strands and a parallel lay minimizing internal stresses, making external wire breaks more likely to develop first. This makes inspection easier for you.

Removal criteria are more stringent for difficult-to-see interior breaks than for breaks on the outside wires.



Flex-X 9 allows users to stay abreast of rope fatigue with easy-to-locate breaks on its outside wires.

MINIMUM BREAKING FORCE AND WEIGHTS FOR FLEX-X 9

| Diameter (in) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
|---------------|---------------------|--------------------------------------------|
| 5/8 | 0.90 | 26.2 |
| 3/4 | 1.30 | 37.4 |
| 7/8 | 1.79 | 50.6 |
| 1 | 2.33 | 65.7 |
| 1 1/8 | 2.93 | 82.7 |

Should not be used with a swivel.

FLEX-X 9 is recommended for:

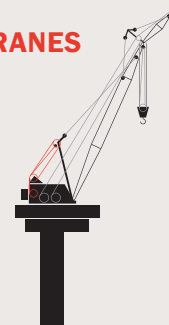
CRAWLER AND TRUCK CRANES

Boom hoist rope



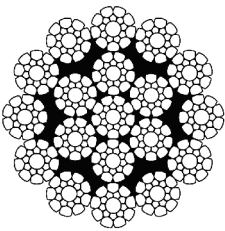
PEDESTAL /TOWER LUFFING CRANES

Boom hoist rope



Flex-X® 19: Designed for single-part hoist systems on cranes.

- Longer service life
- Lower operating costs
- Less wear to sheaves and drums



Flex-X 19, is designed for use anywhere the rotation-resistant characteristics of a category 2 rotation-resistant rope are required. Six strands are laid around a core strand in one direction, and then 12 strands are laid around this first operation in the opposite direction. Because of its tightly compacted smooth design, Flex-X 19 offers more crushing resistance than standard 19 x 7 rope, higher strength- to-diameter, resistance to bending fatigue, exceptional stability, reduced wear to sheaves and drums, and improved handling, operating and spooling characteristics.

Flex-X 19 has also demonstrated greater fatigue resistance to substantially cut rope expense and extend service life. It's ideal for multi-part hoist lines wherever you encounter spooling problems, drum crushing, block twisting or have fast line speeds.

MINIMUM BREAKING FORCE AND WEIGHTS FOR FLEX-X 19

| Diameter (in) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
|---------------|---------------------|--------------------------------------------|
| 7/16 | 0.43 | 11.2 |
| 1/2 | 0.49 | 14.6 |
| 9/16 | 0.65 | 18.5 |
| 5/8 | 0.78 | 22.7 |
| 3/4 | 1.16 | 32.4 |
| 7/8 | 1.58 | 43.8 |
| 1 | 2.05 | 56.9 |
| 1 1/8 | 2.57 | 71.5 |

Should not be used with a swivel.

FLEX-X 19 is recommended for:

CRAWLER AND TRUCK CRANES

Main hoist rope
Auxiliary hoist rope

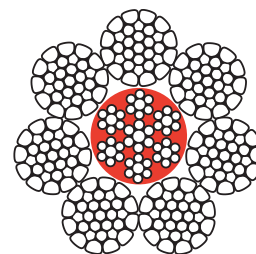
Flex-X® 7 CC: Extended duty container crane hoist and trolley rope.

Container crane hoist and trolley ropes are subjected to the stressful combination of bending fatigue and abrasion from operating over a series of intricate sheaves and drums. Union has developed Flex-X 7 CC, a wire rope for container cranes that's so revolutionary it's guaranteed to provide you with a significant lift in service life when compared with standard ropes.

Flex-X 7 CC will operate longer – under virtually all standard operating conditions. A combination of superior design and manufacturing technique helps reduce metal fatigue, internally and externally, while helping to extend the life of sheaves and drums.

In addition to container crane applications, Flex-X 7 CC is now providing extended service life in carriage operations and other applications where multi-sheave equipment and rigorous duty cycles induce fatigue stresses. Almost any application currently using one of the 6X19 class or 6X36(37) class constructions can gain an increase in service life with Flex-X 7 CC.

Fatigue tests have shown that Flex-X 7 CC will outperform competitors' premium 8-strand compacted, coated core ropes by 60% or more. These tests have also shown that Flex-X 7 CC outlasts standard ropes by up to 88%.



MINIMUM BREAKING FORCE AND WEIGHTS FOR FLEX-X 7 CC ROPES

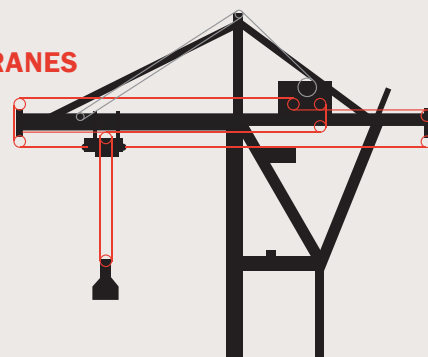
| Diameter (in) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
|---------------|---------------------|--------------------------------------------|
| 1/2 | 0.50 | 15.3 |
| 9/16 | 0.63 | 19.3 |
| 5/8 | 0.80 | 22.7 |
| 3/4 | 1.13 | 32.4 |
| 7/8 | 1.55 | 43.8 |
| 1 | 2.01 | 56.9 |
| 1 1/8 | 2.54 | 71.5 |
| 1 1/4 | 3.14 | 87.9 |
| 1 3/8 | 3.80 | 106 |
| 1 1/2 | 4.43 | 125 |

Should not be used with a swivel.

FLEX-X 7 CC is recommended for:

CONTAINER CRANES

Trolley rope
Hoist rope



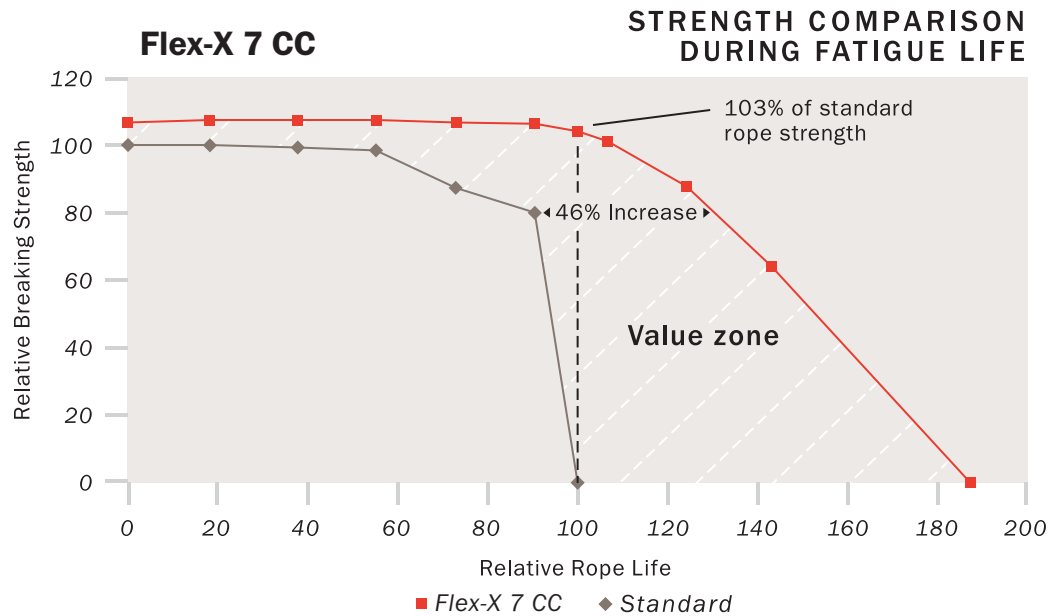
THE RESEARCH: UNDENIABLE PROOF

Test data confirms that Flex-X 7 CC is far superior to standard ropes when subjected to bending fatigue and surface wear.

As demonstrated from the charts below, the evidence is conclusive that Flex-X 7 CC offers you superior performance over the rope you're currently using. We tested our rope against the highest quality wire rope in use today and demonstrated the following:

FLEX-X 7 CC STARTS OUT STRONGER

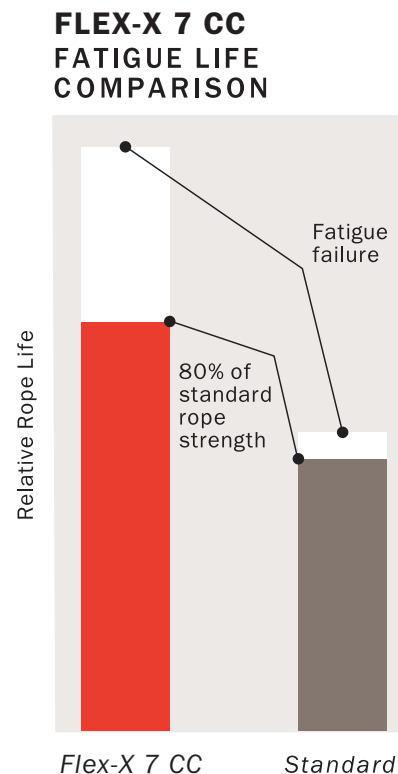
Take a look at the strength comparison and you'll see that Flex-X 7 CC provides a significant increase in initial strength. Actual test results show this differential increases throughout the fatigue life of the rope. In fact, Flex-X 7 CC rope still has 103% of the standard rope's original strength at the point the standard rope experiences complete fatigue failure.



FLEX-X 7 CC LASTS LONGER

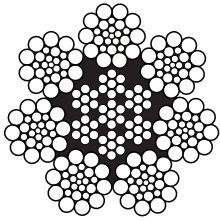
Flex-X 7 CC's longer service life will result in lower maintenance costs due to fewer rope changes.

All ropes gradually lose strength due to wear and fatigue but test data has proven that Flex-X 7 CC has superior fatigue life over standard rope. With the ropes subjected to the same operating conditions (load and sheave diameter), the chart at right illustrates how Flex-X 7 CC's service exceeded standard rope by 46% when both ropes reached 80% of the standard rope's strength.



7-Flex®: Improved resistance to fatigue.

7-FLEX®



We offer 7-Flex ropes for many applications that currently use 6 x 19 or 6 x 36 classification ropes. Their operating characteristics are similar in many ways to 6 x 36 classification ropes.

Typical applications such as container cranes, logging portal cranes and sawmill carriages have reported increased service life with the 7-Flex rope.

The 7-Flex construction offers improved resistance to bending fatigue compared to a 6 x 26 due to a combination of the outer wire size and the seventh strand.

MINIMUM BREAKING FORCE AND WEIGHTS FOR 7-FLEX ROPES

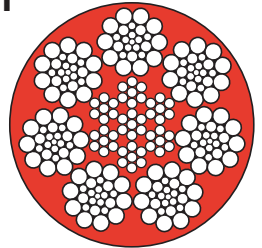
| Diameter (in) | Approx. wt/ft (lbs) | | Minimum breaking force (tons of 2,000 lbs) XIP® IWRC |
|------------------|------------------------|------------|------------------------------------------------------------------|
| | 7-Flex | 7-Flex PFV | |
| 3/8 | 0.26 | 0.27 | 7.55 |
| 7/16 | 0.35 | 0.37 | 10.2 |
| 1/2 | 0.46 | 0.49 | 13.3 |
| 9/16 | 0.59 | 0.61 | 16.8 |
| 5/8 | 0.72 | 0.76 | 20.6 |
| 3/4 | 1.04 | 1.09 | 29.4 |
| 7/8 | 1.42 | 1.49 | 39.8 |
| 1 | 1.85 | 1.94 | 51.7 |
| 1 1/8 | 2.34 | 2.46 | 65.0 |
| 1 1/4 | 2.89 | 3.03 | 79.9 |

Should not be used with a swivel.

7-FLEX PFV®

- Reduce wire-contact stress
- Keep lubrication inside
- Provide greater wear area
- Reduce internal abrasion

Combining the advantages of PFV, a high-grade thermoplastic material, extruded into a 7-Flex lubricated wire rope, provides additional advantages over non-PFV ropes.

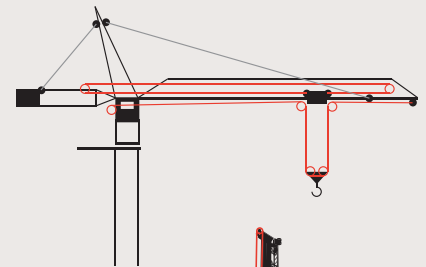


On the inside, you'll find our 7-Flex wire rope that withstands the tough pressures of your demanding jobs while the PFV cushions the strands, distributes internal stresses, keeps in wire rope lubricant and keeps out dirt and debris. PFV also helps shed water and dirt, giving you a clean, smooth surface to make it easy to pass over sheaves and onto drums. This smooth surface works to clean and polish as it extends the service life of your sheaves and drums, while also reducing your cleanup requirements and your maintenance costs.

7-FLEX is recommended for:

TOWER CRANES

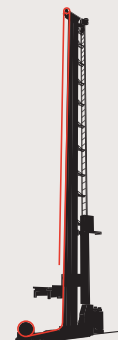
Trolley rope
Hoist rope



7-FLEX PFV is recommended for:

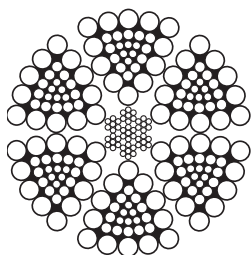
RETRIEVAL CRANES

Main hoist rope



Flattened Strand: More surface contact.

- **Crush-resistant**
- **More rope surface contact with sheaves**
- **More steel in cross section than standard round strand rope of equal size**



Also called triangular strand, flattened strand ropes perform exceptionally well on certain installations, especially those involving heavy loads where the speed of operation is slow, where adequate diameter

sheaves and drums are used, or where a crush resistant rope is required.

Their distinguishing physical feature is their relatively flat exposed surfaces of strands. As a result, the rope exterior is more nearly a smooth, continuous circle than that of regular round strand wire rope. Flattened strand ropes are made with two layers of 12 wires around a triangular-shaped center. We offer a 6x30 Style G using a six-wire center as the standard construction.

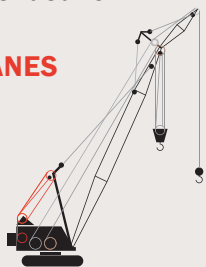
THE ADVANTAGES OF FLATTENED STRAND ROPES

The triangular shaped strands form a bearing surface with more contact points on each strand than a round strand rope. With more sheave contact, weight and wear on the rope are distributed more uniformly than on a typical round strand rope. The triangular strand structure also results in more steel in the cross-section than a standard round strand rope of equal size.

Flattened Strand is recommended for:

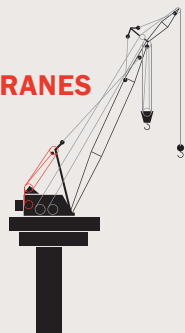
CRAWLER AND TRUCK CRANES

Boom hoist rope



PEDESTAL/TOWER LUFFING CRANES

Boom hoist rope



MINIMUM BREAKING FORCE AND WEIGHTS FOR FLATTENED STRAND XIP ROPES

| Diameter (in) | FIBER CORE | | IWRC | |
|------------------|---------------------------|-----------------------------------------------------|---------------------------|-----------------------------------------------------|
| | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
| 5/8 | 0.70 | 20.1 | 0.74 | 21.7 |
| 3/4 | 1.01 | 28.8 | 1.06 | 31.0 |
| 7/8 | 1.39 | 39.0 | 1.46 | 41.9 |
| 1 | 1.80 | 50.6 | 1.89 | 54.4 |
| 1 1/8 | 2.28 | 63.6 | 2.39 | 68.5 |
| 1 1/4 | 2.81 | 78.2 | 2.95 | 84 |
| 1 3/8 | 3.40 | 93.9 | 3.57 | 101 |
| 1 1/2 | 4.05 | 111 | 4.25 | 119 |
| 1 5/8 | 4.75 | 130 | 4.99 | 140 |
| 1 3/4 | 5.51 | 151 | 5.79 | 161 |

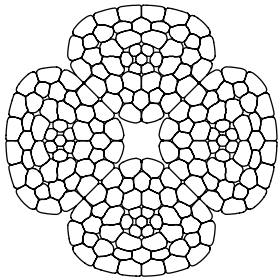
Should not be used with a swivel.

XLT⁴®: High strength, low torque.

- Greater lifting capacity, toughness and durability than any rotation-resistant rope you operate.

- Higher capacity, less torque, lower cost.

XLT⁴ ropes are specially designed to provide very low torque, a high minimum breaking force and high resistance to wear in multi-layer spooling.



What sets XLT⁴ apart is its unique design. Double compacted XLT⁴ packs more high-tensile steel wire into the rope's diameter, resulting in one of the highest

strength-to-diameter ratios ever achieved – with a minimum breaking force 33% higher than standard 6-strand XIP ropes.

Under load, XLT⁴ generates near-zero torque, matching or surpassing the stability of Category 1 35 x 7 class rotation-resistant ropes. Yet, thanks to its unique design, XLT⁴ is not classified as a “rotation-resistant” rope. It can be used with or without a swivel as a mobile crane hoist rope at design factors as low as 3.5 to 1.

XLT⁴ rope's compact construction keeps more steel in contact with sheaves and drums for unmatched resistance to crushing and wear – for lower maintenance, less downtime and longer service life. With the rope's high capacity, lifts may be feasible using fewer parts of line – boosting the speed, efficiency and productivity of crane work.

Because of its unique construction, XLT⁴ performs best on grooved drums that are larger than the minimum required D/d and where the entire length of the rope is subjected to loading in normal operation. Where

there is multiple layer spooling, the base layers on the drum must be under tension to assure proper spooling and to avoid “pull-in” of the upper layers. The tension on these lower layers ensures that the rope is both tight against adjacent wraps and tight around the drum which establishes a solid foundation for the upper layers.

MINIMUM BREAKING FORCE AND WEIGHTS FOR XLT⁴ ROPES

| Diameter (in) | Diameter (mm) | Approx. wt/ft (lbs) | Minimum breaking force (tons of 2,000 lbs) |
|---------------|---------------|---------------------|--------------------------------------------|
| 1/2 | 12 | 0.45 | 15.8 |
| | 14 | 0.51 | 17.7 |
| 9/16 | 16 | 0.61 | 21.4 |
| | | 0.65 | 22.3 |
| 5/8 | 19 | 0.79 | 27.4 |
| | | 0.79 | 27.8 |
| 3/4 | 22 | 1.1 | 39.0 |
| | 23 | 1.1 | 39.2 |
| 7/8 | 24 | 1.5 | 52.0 |
| | 26 | 1.5 | 53.0 |
| 1 | 28 | 1.6 | 56.8 |
| | 28 | 1.8 | 61.7 |
| 1-1/8 | 28 | 2.1 | 68.9 |
| | | 2.1 | 72.1 |
| 1-1/8 | 28 | 2.4 | 83.3 |
| | | 2.6 | 86.7 |

May be used with a swivel.

XLT⁴ is recommended for:

CRAWLER AND TRUCK CRANES

Main hoist rope
Auxiliary hoist rope



Crane Pendants: Custom fabricated.

WIRE ROPE ASSEMBLIES WITH SWAGED SOCKETS

Each Union crane pendant is produced with precise manufacturing techniques to meet your exacting standards. Our rope, coupled with the sockets of your choice are made to order. Our wire rope assemblies are offered in both poured (spelter) sockets and mechanically swaged sockets. A Design Factor of five has been used to establish the rated capacities seen in the charts.

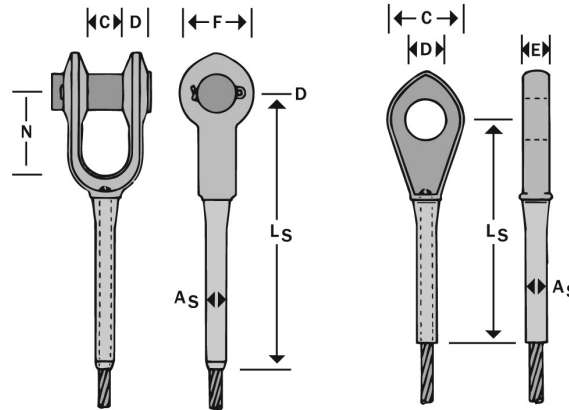
In mechanically swaged fittings, high pressure presses and precision dies cause the metal of the socket to flow around the wires and strands to result in the ultimate compactness and strength with minimum weight. The material is weldless, drop-forged steel.

Normally, only regular lay rope is used in the swaged sockets. The swaged assemblies are interchangeable with poured sockets up through 2" rope diameters. Assembly length is measured from the centerline of pins for both open and closed swaged sockets.

For more information contact us today.

115 SWAGED SOCKET

| Rope Dia. (in.) | RATED CAPACITY In Tons of 2000 lbs. | |
|--------------------|-------------------------------------------|-------|
| | XIP® | XXIP® |
| 1/4 | 0.68 | 0.74 |
| 5/16 | 1.1 | 1.2 |
| 3/8 | 1.5 | 1.7 |
| 7/16 | 2.0 | 2.2 |
| 1/2 | 2.7 | 2.9 |
| 9/16 | 3.4 | 3.7 |
| 5/8 | 4.1 | 4.5 |
| 3/4 | 5.9 | 6.5 |
| 7/8 | 8.0 | 8.8 |
| 1 | 10 | 11 |
| 1-1/8 | 13 | 14 |
| 1-1/4 | 16 | 18 |
| 1-3/8 | 19 | 21 |
| 1-1/2 | 23 | 25 |
| 1-3/4 | 31 | 34 |
| 2 | 40 | 43 |
| 2-1/4 | 49 | 54 |
| 2-1/2 | 60 | 66 |



115 OPEN SWAGED SOCKET

| Rope Dia | C | D | F | N | Pin | As Max. After Swage Dia | Ls Approx. After Swage Length |
|----------|------|------|------|------|------|-------------------------------------|-------------------------------------------|
| 1/4 | 0.69 | 0.38 | 1.38 | 1.47 | 0.69 | 0.46 | 4.25 |
| 5/16 | 0.80 | 0.48 | 1.62 | 1.67 | 0.81 | 0.71 | 5.50 |
| 3/8 | 0.80 | 0.48 | 1.62 | 1.67 | 0.81 | 0.71 | 5.50 |
| 7/16 | 1.00 | 0.56 | 2.00 | 1.96 | 1.00 | 0.91 | 7.00 |
| 1/2 | 1.00 | 0.56 | 2.00 | 1.96 | 1.00 | 0.91 | 7.00 |
| 9/16 | 1.25 | 0.68 | 2.38 | 2.21 | 1.19 | 1.16 | 8.50 |
| 5/8 | 1.25 | 0.68 | 2.38 | 2.21 | 1.19 | 1.16 | 8.50 |
| 3/4 | 1.50 | 0.80 | 2.75 | 2.69 | 1.38 | 1.42 | 10.50 |
| 7/8 | 1.75 | 0.94 | 3.13 | 3.20 | 1.63 | 1.55 | 12.25 |
| 1 | 2.00 | 1.07 | 3.69 | 3.68 | 2.00 | 1.80 | 14.00 |
| 1-1/8 | 2.25 | 1.17 | 4.12 | 4.18 | 2.25 | 2.05 | 15.75 |
| 1-1/4 | 2.50 | 1.27 | 4.59 | 4.68 | 2.50 | 2.30 | 17.25 |
| 1-3/8 | 2.41 | 1.46 | 5.25 | 5.25 | 2.50 | 2.56 | 19.00 |
| 1-1/2 | 3.00 | 1.70 | 5.50 | 5.70 | 2.75 | 2.81 | 20.75 |
| 1-3/4 | 3.50 | 2.11 | 6.25 | 6.67 | 3.50 | 3.06 | 24.25 |
| 2 | 4.00 | 1.81 | 7.80 | 8.19 | 3.75 | 3.56 | 28.25 |

All dimensions in inches.

115 CLOSED SWAGED SOCKET

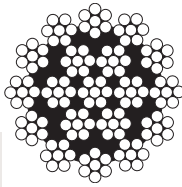
| Rope Dia. | C | D | E | As Max. After Swage Dia. | Ls Approx. After Swage Length |
|-----------|------|------|------|--------------------------------------|-------------------------------------------|
| 1/4 | 1.38 | 0.76 | 0.50 | 0.46 | 3.75 |
| 5/16 | 1.62 | 0.88 | 0.68 | 0.71 | 4.75 |
| 3/8 | 1.62 | 0.88 | 0.68 | 0.71 | 4.75 |
| 7/16 | 2.00 | 1.07 | 0.87 | 0.91 | 6.00 |
| 1/2 | 2.00 | 1.07 | 0.87 | 0.91 | 6.00 |
| 9/16 | 2.38 | 1.28 | 1.14 | 1.16 | 7.75 |
| 5/8 | 2.38 | 1.28 | 1.14 | 1.16 | 7.75 |
| 3/4 | 2.88 | 1.49 | 1.33 | 1.42 | 9.25 |
| 7/8 | 3.12 | 1.73 | 1.53 | 1.55 | 10.75 |
| 1 | 3.62 | 2.11 | 1.78 | 1.80 | 12.25 |
| 1-1/8 | 4.00 | 2.37 | 2.03 | 2.05 | 13.50 |
| 1-1/4 | 4.50 | 2.62 | 2.25 | 2.30 | 15.25 |
| 1-3/8 | 5.00 | 2.62 | 2.29 | 2.56 | 16.75 |
| 1-1/2 | 5.38 | 2.87 | 2.56 | 2.81 | 18.00 |
| 1-3/4 | 6.25 | 3.63 | 3.08 | 3.06 | 21.25 |
| 2 | 7.25 | 3.88 | 3.31 | 3.56 | 24.25 |

All dimensions in inches.

Additional Crane Ropes.

19x7 CLASS ROPES

MINIMUM BREAKING FORCE AND WEIGHTS FOR 19x7 ROPES

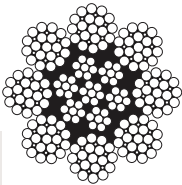


| Diameter (in.) | Approx. wt./ft. (lbs.) | Minimum breaking force (tons of 2,000 lbs.) XIP®IWRC |
|-------------------|------------------------------|------------------------------------------------------------------|
| 3/16 | 0.064 | 1.57 |
| 1/4 | 0.113 | 2.77 |
| 5/16 | 0.177 | 4.30 |
| 3/8 | 0.25 | 6.15 |
| 7/16 | 0.35 | 8.33 |
| 1/2 | 0.45 | 10.8 |
| 9/16 | 0.58 | 13.6 |
| 5/8 | 0.71 | 16.8 |
| 3/4 | 1.02 | 24.0 |
| 7/8 | 1.39 | 32.5 |
| 1 | 1.82 | 42.2 |
| 1 1/8 | 2.30 | 53.1 |
| 1 1/4 | 2.83 | 65.1 |
| 1 3/8 | 3.43 | 78.4 |
| 1 1/2 | 4.08 | 92.8 |

Should not be used with a swivel.
Category 2 rotation-resistance per
ASTM A1023.

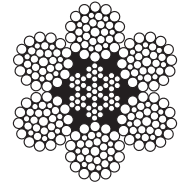
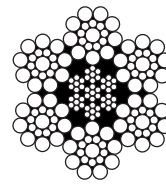
8x25 RESISTWIST ROPES

MINIMUM BREAKING FORCE AND WEIGHTS FOR 8x25 RESISTWIST



| Diameter (in.) | Approx. wt./ft. (lbs.) | Minimum breaking force (tons of 2,000 lbs.) XIP®IWRC |
|-------------------|------------------------------|------------------------------------------------------------------|
| 5/16 | 0.18 | 4.63 |
| 3/8 | 0.26 | 6.63 |
| 7/16 | 0.36 | 8.97 |
| 1/2 | 0.47 | 11.6 |
| 9/16 | 0.60 | 14.7 |
| 5/8 | 0.73 | 18.1 |
| 3/4 | 1.06 | 25.9 |
| 7/8 | 1.44 | 35.0 |
| 1 | 1.88 | 45.5 |
| 1 1/8 | 2.39 | 57.3 |
| 1 1/4 | 2.94 | 70.5 |
| 1 3/8 | 3.56 | 84.9 |
| 1 1/2 | 4.24 | 100 |

Should not be used with a swivel.
Category 3 rotation-resistance per
ASTM A1023.



6x19 AND 6x36(37) CLASS ROPES

MINIMUM BREAKING FORCE AND WEIGHTS FOR STANDARD 6x19 AND 6x36 CLASS ROPES

| Diameter (in.) | Approx. wt./ft. (lbs.) | IWRC Minimum breaking force (tons of 2,000 lbs.) | |
|-------------------|------------------------------|--------------------------------------------------------|-------|
| | | XIP® | XXIP® |
| 1/4 | 0.116 | 3.40 | |
| 5/16 | 0.18 | 5.27 | |
| 3/8 | 0.26 | 7.55 | 8.30 |
| 7/16 | 0.35 | 10.2 | 11.2 |
| 1/2 | 0.46 | 13.3 | 14.6 |
| 9/16 | 0.59 | 16.8 | 18.5 |
| 5/8 | 0.7 | 20.6 | 22.7 |
| 3/4 | 1.0 | 29.4 | 32.4 |
| 7/8 | 1.42 | 39.8 | 43.8 |
| 1 | 1.85 | 51.7 | 56.9 |
| 1 1/8 | 2.34 | 65.0 | 71.5 |
| 1 1/4 | 2.89 | 79.9 | 87.9 |
| 1 3/8 | 3.50 | 96.0 | 106 |
| 1 1/2 | 4.16 | 114 | 125 |
| 1 5/8 | 4.88 | 132 | 146 |
| 1 3/4 | 5.67 | 153 | 169 |
| 1 7/8 | 6.50 | 174 | 192 |
| 2 | 7.39 | 198 | 217 |
| 2 1/8 | 8.35 | 221 | 244 |
| 2 1/4 | 9.36 | 247 | 272 |

Should not be used with a swivel.
Available in drawn galvanized at equivalent
strengths.



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