

WIRE ROPE

By

COLUMBIA STEEL
COMPANY



UNITED STATES STEEL

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5464

December, 1940

Information

U.S. AMERICAN TIGER BRAND WIRE ROPE

See Page 1

B133



CATALOG OF
SIZES, GRADES, CONSTRUCTIONS,
PRICE LISTS, DATA TABLES AND
INFORMATION ON THE PROPER
USE OF WIRE ROPE

COLUMBIA STEEL COMPANY

In addition to Wire Rope, Columbia Steel Company manufactures many other steel products on the Pacific Coast and also serves as distributor for the following United States Steel Corporation Subsidiaries:

American Bridge Co. Carnegie-Illinois Steel Corp.
American Steel & Wire Co. National Tube Co.
Tennessee Coal, Iron & R.R. Co.

UNITED STATES STEEL

Transmission or Haulage
6 x 7

Standard Hoisting
6 x 19

Special Ropes

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables

Partial List of U·S·S Products

ROLLED STEEL

BARS
BEAMS
FLATS
PLATES
SHAPES
RAILS

SHEETS

GALVANIZED
BLACK
BLUE ANNEALED
COLD ROLLED
TIN PLATE

STAINLESS STEEL

ROLLED STEEL
PRODUCTS
SHEET PRODUCTS
WIRE PRODUCTS
TUBULAR

WIRE PRODUCTS

NAILS (STEEL AND
COPPER)
TACKS, STAPLES
STANDARD WIRE
PRODUCTS
WOVEN WIRE FENCE
AND NETTING
BALE TIES

BARBED WIRE
COLD ROLLED STRIP
ELECTRICAL WIRES
AND CABLES
WIRE ROPE, STRAND
AND CABLE
MANUFACTURERS
WIRES

FENCE POSTS, GATES
AERIAL TRAMWAYS
(FREIGHT AND
PASSENGER)
CONCRETE REIN-
FORCING FABRIC
SPRING WIRE AND
SPRINGS

NATIONAL TUBULAR GOODS

STANDARD PIPE
DUROLINE PIPE
OIL COUNTRY GOODS

OIL REFINERY TUBULAR MATERIAL
BOILER AND CONDENSER TUBES
SEAMLESS MECHANICAL TUBING

MISCELLANEOUS

AXLES
GRINDING BALLS
TURNABLES
TOWERS
RAILROAD TRACK
PRODUCTS
BRIDGES
BARGES

CASTINGS
FORGINGS
PIG IRON
PILING
WHEELS
MINE CARS
STEEL BUILDINGS
COKE AND COKE
BY-PRODUCTS

USS HIGH TENSILE
STEELS
USS ABRASION RE-
SISTING STEELS
CARNEGIE CON-
TROLLED CARBON
STEELS

CATALOGS AND STOCK LISTS ON REQUEST

GENERAL OFFICE

RUSS BUILDING, SAN FRANCISCO

Telephone SÜtter 2500

LOS ANGELES

2087 EAST SLAUSON AVENUE
Telephone LAfayette 1171

SEATTLE

1054 FOURTH AVE. SOUTH
Telephone MAin 1972

PORTLAND

2345 N. W. NICOLAI STREET
Telephone BEacon 7261

SALT LAKE CITY

WALKER BANK BUILDING
Telephone 4-3519

U·S·S AMERICAN TIGER BRAND WIRE ROPE

Rope users need no introduction to U·S·S American Wire Rope. Not only is its past reputation for strength and dependability known to them, but new records for long life are bringing back to them new profits through lower operating costs. U·S·S American Wire Rope maintains this leadership in its field through the alertness of its makers in anticipating the many and complex needs of modern industry.

The ropes illustrated in this catalog are the ones most frequently used. Special grades and constructions can be furnished on application. Whatever the need may be, there is a Tiger Brand Wire Rope construction especially built to best meet that need, and our Engineering and Technical Department will gladly cooperate with you in selecting the right construction for every job. We have available special catalogs covering Elevator Wire Rope and Wire Lines for the Oil Fields, which we shall be glad to send you upon request.

U·S·S EXCELLAY (Preformed) WIRE ROPE

The data on the following pages is based on our Standard Wire Ropes. In addition to the standard construction we are prepared to furnish Excellay (Preformed) Wire Rope. In making Excellay Wire Rope available to industry—the Columbia Steel Company wishes to emphasize that back of it are the unexcelled manufacturing facilities of this organization.

Where indicated by service conditions—Excellay Wire Rope offers exceptional operating and economy advantages. Because the wires used in its construction are Preformed before assembly they lie inert and will not fly apart. This feature enables cutting or splicing without necessity of seizing—no displacement of wires or strands.

We are prepared to furnish Excellay Wire Ropes in the sizes, constructions and grades designated by footnotes at the bottom of many pages in this catalog. Prices will be furnished on request.

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Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track StrandUnreeling
and
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Splicing

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18-8 STAINLESS STEEL WIRE ROPE, CORDS AND STRAND

The resistance of U·S·S 18-8 Stainless Steel Wire Rope to high temperatures and other corrosive conditions is unique. These products not only offer marked resistance to oxidation at elevated temperatures, but also possess outstanding creep strength at high temperatures. At 1650 degrees F. U·S·S 18-8 scales comparatively little. It resists even a moderate sulphur content in gases below 1500 degrees. In the process industries, where acids, fumes and steam play havoc with the ordinary rope construction, U·S·S 18-8 Wire Rope is especially desirable. It is immune to these industrial influences and this, combined with its resistance to fatigue, results in longer useful wire rope life.

The broader application of U·S·S 18-8 Stainless Steel Wire Rope to Industrial tasks is a move for lower maintenance and more dependable service. It is especially adaptable for use in connection with the following elements:

Acetic Acid (cold at any concentration)	Ferrous Sulphate
Acetic Acid (hot—up to approximately 10%)	Hydrogen Peroxide
Ammonium Hydroxide	Hydrogen Sulphide
Ammonium Salts	Nitric Acid
Alcohol	Potassium Chloride
Acid Mine Water	Potassium Hydroxide
Acetone	Potassium Sulphate
Bichloride of Mercury (dilute—antiseptic strength)	Photographic Solution
Carbolic Acid	Salt Solution
Carbonated Water	Sea Water
Citric Acid	Sodium Sulphate
Copper Sulphate	Sulphur Dioxide
Calcium Brine	Sulphuric Acid (cold)
Creosote	Sulphurous Acid (cold)
Crude Oil	Tanning Liquor
Fruit Juices	Wood Pulp
	Zinc Chloride
	Zinc Nitrate

U·S·S 18-8 Stainless Steel Wire Rope, Cords and Strand are available in Excellay Preformed construction—the wires and strands are preformed—making splicing easier, eliminating crankiness and the need for seizing.

Call or write your nearest Columbia Steel Company office for further information or catalog covering U·S·S 18-8 Stainless Steel Wire Rope, Cords and Strands.

General Information

Lay of Wire Rope

Wire Rope is usually laid up as follows:

Regular Lay, Right Lay Rope

Wires in the strands laid to the left, strands laid to the right.



Regular Lay, Left Lay Rope

Wires in the strands laid to the right, strands laid to the left.

Lang Lay

Wires in the strands and the strands themselves all laid the same way, either right or left.

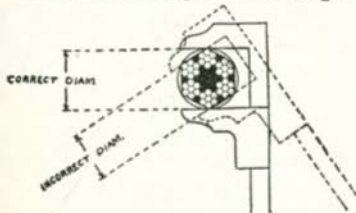


The list prices shown hereinafter are for either Right Lay, Left Lay or Lang Lay; also for Seale Patent.

Regular Right Lay furnished unless otherwise specified.

All list prices subject to discounts which will be furnished upon application.

How to Gauge Wire Rope



The diameter of a wire rope is the diameter of the circle which will enclose all the strands. Care should be taken in gauging a wire rope to take the greatest and not the smallest diametrical dimension, as shown above.

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General Information (Continued)

Wire Rope Grades

Columbia Steel Company American Wire Ropes are produced in six grades. These in the order of increasing tensile strengths are:

Iron	Mild Plow Steel
Traction Steel	Plow Steel
Cast Steel	Stainless Steel
	Monitor Steel

Iron

Iron is a low tensile strength material, very soft and ductile and due to its comparatively low tensile strength is of limited usefulness. It is used for some guy ropes and to a limited extent for elevator ropes.

Traction Steel

Traction Steel is the latest addition to the grades in which the Columbia Steel Company ropes are produced. It was originated to meet the requirements of ropes for high speed electric traction elevators. It is of specially selected stock with a tensile strength approximately twice that of iron.

Cast Steel

A minimum tensile strength material, tough and pliable and of general utility. It was originally called Crucible Cast Steel because of the early method of making carbon steel in small hand operated crucibles. It is harder than iron and better resists external wear.

Mild Plow Steel

This is a grade midway between Cast Steel and Plow Steel in tensile strength and is tough and pliable. The strength is about two and one-half times that of Iron.

Plow Steel

This is a tough, strong steel of higher strength than Mild Plow Steel or almost three times as strong as Iron.

Stainless Steel

U·S·S 18-8 Stainless Steel is next to the strongest material used in wire rope. It is of higher strength than plow steel and only slightly exceeded in breaking strength by Monitor Steel. In addition to this property, U·S·S 18-8 Stainless Steel is highly resistant to high temperatures and other corrosive conditions. See page 2 for particulars.

Monitor Steel

Monitor Steel is the trade name for Columbia Steel Company's Improved Plow Steel grade of rope. This is the strongest grade of steel used in wire rope manufacture and is the toughest steel of its strength that can be produced, and is fully three times as strong as iron. In addition to great strength, it has great abrasion resisting qualities.

ORDERING WIRE ROPE

To avoid delay caused by incomplete information, it is necessary to specify clearly the following:

1. Length of each piece.
2. Diameter of rope required.
3. Construction — which means the combination of strands and wires—(6x7), (6x19), (8x19), (6x37).
4. Grade of steel:

{	(Iron), (Traction Steel), (Cast Steel), (Mild Plow Steel), (Plow), (Stainless Steel), (Monitor Steel).
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5. State whether hemp center, wire rope center, or wire strand center.
6. Purpose for which the rope is intended.

A description of the work for which the line is intended will greatly assist us in filling the order correctly. For example, "Main Line" or "Haul Back" in Logging—"Rotary Casing Line" in the Oil Country, "Drag Line" or "Hoist Line" for shovels, etc.

In complicated installations where size of sheaves, diameter of drum, speed, load, safety factors, etc., are involved, it is best to call on our engineers for examination and recommendations.

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Proper Working Loads for Wire Rope

It is never advisable for the working load of a Wire Rope for general purposes, to exceed one-fifth of the breaking strength. This means that the factor of safety should be not less than five. To determine proper working load, divide the breaking strength by the proper factor of safety; e.g., a 1" diameter 6x19 Monitor Steel Rope has a breaking strength of 42 tons and with a factor of safety of five the proper working load would be not over 8.4 tons.

Factors of safety in excess of five, varying up to eight and even more, are often required for safe and economical operation. The proper factor of safety for a wire rope should be determined by careful and thorough consideration of all pertinent data. Such data should include all loads, acceleration, deceleration, rope speed, rope attachments, the number, size and arrangement of all sheaves and drums, existing conditions causing corrosion and abrasion, length of rope in service, economical rope life and the degree of danger to life and property.

No fixed arbitrary values for factor of safety can be properly set for various classifications of service. These can safely vary, within limits, with the conditions present on individual installations and should any doubt arise, we suggest that you consult with us.

Common Causes of Wire Rope Failures

Of the many forms of abuse of wire ropes, the most commonly encountered are:

- Ropes of incorrect size, construction, or grade.
- Ropes allowed to drag over obstacles.
- Ropes not properly lubricated.
- Ropes operating over sheaves and drums of inadequate size.
- Ropes overwinding or crosswinding on drums.
- Ropes operating over sheaves and drums out of alignment.
- Ropes operating over sheaves and drums with improperly fitting grooves or broken flanges.
- Ropes permitted to jump sheaves.
- Ropes subjected to moisture or acid fumes.
- Ropes with improperly attached fittings.
- Ropes permitted to untwist.
- Ropes subjected to excessive heat.
- Ropes kinked.
- Ropes subjected to severe overloads due to inefficient operation.
- Ropes destroyed by internal wear caused by grit penetrating between strands and wires.

The **TIGER TRADE MARK** is a symbol
of **Strength and Dependability**

THE MARK FOR *GENUINE*
AMERICAN WIRE ROPE

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Lubrication of Wire Rope

Wire Rope may be considered to be a fine machine. The individual wires, strands, and center are the working parts of this machine. As one would not expect any other type of machine to operate satisfactorily without periodic lubrication, one cannot expect to obtain maximum rope service unless wire ropes are properly preserved and lubricated.

When selecting a wire rope lubricant, consideration should be given to the type of work performed by the rope. The lubricant should not contain acids or other ingredients that might corrode the steel. It should be capable of ready penetration through the spaces between the strands. The film of lubricant should be readily self-spreading and highly adhesive and water repellent.

A general rule for selecting a wire rope lubricant is that the higher the speed at which the rope operates, the lighter the lubricant, or, technically speaking, the lower the viscosity of the lubricant.

For low speed installations, such as shovels, cranes, and derricks, a heavy petroleum oil or grease with viscosity of approximately 1000 seconds at 210° F. applied hot will give good lubrication.

This same lubricant will also give satisfactory lubrication to stationary ropes. Either an oil or grease can be used for stationary ropes provided it adheres to the rope under all conditions.

For heavy haulage installations, such as slope ropes and logging ropes, a lighter lubricant with a viscosity of from 500 to 800 seconds at 210° F. should be used.

For high speed hoisting ropes, such as mine hoists an even lighter lubricant is recommended. One with a viscosity of 400 to 500 seconds at 100° F. gives good service when automatic lubrication is employed.

In all cases, viscosity should be such that the lubricant will cover the rope and penetrate thoroughly, and withstand pressures, but not be thin enough to run off the rope.

Crude oils are in most cases detrimental to both the steel wires and the hemp core of wire ropes, and therefore should not be used as wire rope lubricants.

Only new oils and greases should be used for lubricating wire ropes. It is poor economy to use old lubricants. Only by the use of new lubricants is the wire rope user certain that he is applying lubricants free from grit and acid contamination.

Applying a wire rope lubricant hot will increase its penetration, and when cooled the lubricant will exist as a plastic filler to lubricate the wires and strands and keep moisture from penetrating to the core of the rope. This is most easily accomplished by passing a rope through a bath of heated oil. When this is not feasible, the rope can be lubricated by placing a drum of heated lubricant over the rope so that the oil will run on to the rope as the rope passes beneath it. This method is wasteful in that only a portion of the lubricant running on to the rope remains there. Wire ropes may be lubricated by hand application of lubricants. When this method is used, a piece of sheepskin with the wool coat on the inside is recommended as a wiper. The wool should be thoroughly saturated with the wire rope lubricant, and the sheepskin held around the rope which passes slowly through it.

Wire rope is not necessarily properly lubricated when the outside appears greasy. To be properly lubricated, the lubricant must penetrate to the core. It is better to use a lighter oil or lubricant that will penetrate than to use a heavy grease that will not.

While in storage, wire ropes should be kept in a dry place protected from the weather, well coated with oil, and away from acid and acid fumes. When a used rope is stored, it should be thoroughly cleaned before it is oiled, and then treated the same as a new rope.

Special lubrication is required for ropes on installations where satisfactory operation depends upon the ropes gripping the drums or sheaves about which they pass. Columbia Steel Company Traction Steel Elevator Rope is an example of rope in this classification. Special instructions covering lubrication of these ropes accompany each shipment, and should be carefully followed.

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OIL WELL LINES

Columbia Steel Company supplies all types of these lines. For more complete information call or write the nearest Columbia Steel Company office.

Drilling Lines for Standard Rig

Standard Lines: These lines are usually made in Cast Steel grade. The Coarse or "Hard Laid" has six strands seven wires to the strand, one hemp core, and the "Soft Laid" has six strands, nineteen wires to the strand, one hemp core (either right or left lay). Orders should specify which lay is desired.

Standard lines are also made in Mild Plow Steel, Plow Steel and Monitor Steel, where greater tensile strength is desired. Monitor Steel—lines are recommended for deep holes.

American Special drilling lines, the standard lines used in California, are Mild Plow Steel grade, left lay, 6 strands, 19 wires, hemp center.

The AMGAL, or specially processed galvanized line, has been designed for use in localities where salt water is encountered. It serves well in place of the standard type of line Bright finish which is more susceptible to destructive corrosive action.

Standard Casing Lines: Casing Lines, as the name indicates, are used to handle the casing. They are generally reeved through wire rope blocks, known as casing blocks or sheaves. For this purpose, Cast Steel Rope may be used, six strands, 19 wires to the strand or Cast Steel, Non-spinning 18 x 7 Hemp Core. Where greater strength is required Mild Plow Steel, Plow Steel or Monitor Steel should be used.

Drilling or Casing Lines for Rotary Rigs

For California: Monitor and Plow Steel, Seale Patent, either Regular or Lang Lay, made up 6 strands, 19 wires each, with hemp center.

Under certain conditions the following grades and constructions are recommended:

For drums 20" in diameter and less, 6x21 Type M Regular Lay Monitor Steel with Hemp Center. Or

6x19, Type N, Regular Lay Monitor Steel Hemp Center.

For drums over 20" in diameter, 6x25 Type B Monitor Steel—Flattened Strand with Hemp Center. Or

6x21, Type M, Lang Lay or Regular Lay Monitor Steel with Hemp Center.

Sand Lines: Sand Lines, sometimes called Bailing Lines, are used to operate a bailer in the hole to remove the debris and water from the hole as it is being drilled by standard cable tools and to remove the muddy fluid after a hole is finished if drilled with rotary equipment. These lines are always right lay and in sizes $\frac{3}{4}$ in. and smaller, six strands, seven wires to the strand, hemp center. Cast Steel grade is generally used.

NOTE

Catalog covering Oil, Gas and Water Well Lines will be furnished free on request.

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Flat Rope

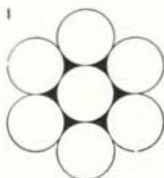
Smooth Coil
Track Strand

Unreeling
and
Uncoiling

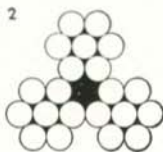
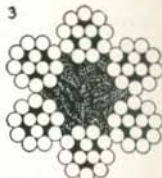
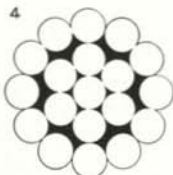
Splicing

Data Tables

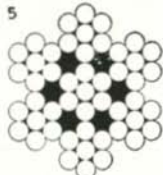
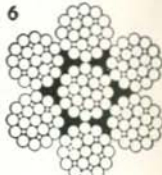
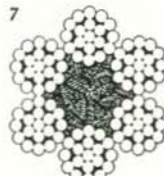
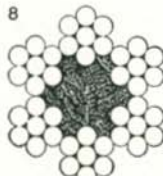
Cross Sections of Wire Rope Constructions



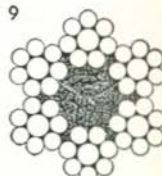
7 WIRE STRAND

3x7
GUARD RAIL6x12
GUY ROPE

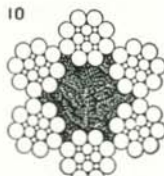
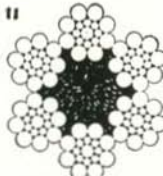
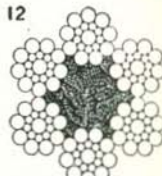
19 WIRE STRAND

7x7
GUARD RAIL7x19
BRIDGE CABLE6x19
AERO CORD

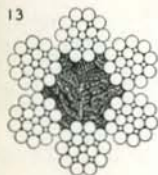
6x7



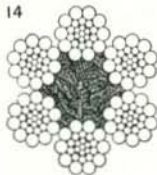
6x8

6x17
TYPE L6 x 17
SEALE PATENT6x19
SEALE PATENT

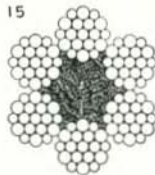
Cross Sections of Wire Rope Constructions



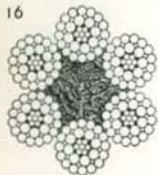
6x21
TYPE M



6x21
SEALE PATENT



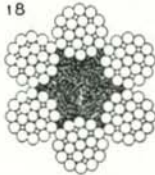
6x19
WARRINGTON



6x33
TYPE R



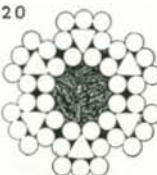
6x29
TYPE P



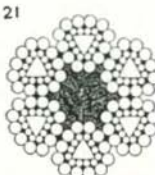
6x19
TYPE N



6x19-TYPE N
WIRE ROPE CORE



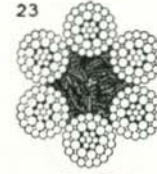
6x8-TYPE D
FLATTENED STRAND



6x25-TYPE B
FLATTENED STRAND



6x30-TYPE G
FLATTENED STRAND



6x37
TYPE S



8x19
SEALE PATENT

Transmission
or Haulage
6 x 7

Standard
Hoisting
6 x 19

Special Ropes

Extra
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and
Uncoiling

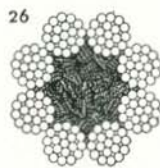
Splicing

Data Tables

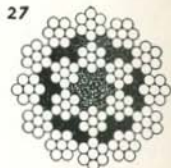
Cross Sections of Wire Rope Constructions



8x19
WARRINGTON



8x19



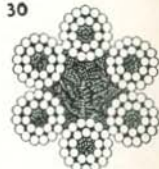
18x7
NON-SPINNING



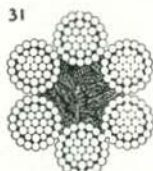
6x42-7HEMP CORES
TILLER ROPE



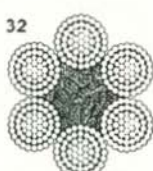
6x12-7HEMP CORES
RUNNING ROPE



6x24-7HEMP CORES
MOORING LINE



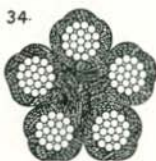
6x37
HAWSER



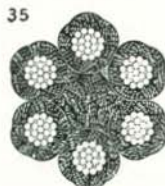
6x6l



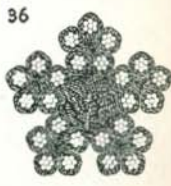
5x7
MARLIN CLAD



5x19
MARLIN CLAD

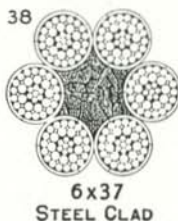
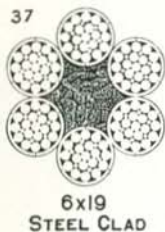


6x19
MARLIN CLAD



5x5x7
MARLIN CLAD

Cross Sections of Wire Rope Constructions



Comparison of Wearing Surface of Lang Lay and Regular Lay Ropes



Regular Lay



Lang Lay

Transmission
or Haulage
6 x 7

Standard
Hoisting
6 x 19

Special Ropes

Extra
Flexible
Hoisting
8 x 19

Special
Flexible
Hoisting
6 x 37

Tiller or
Hand Rope

Non-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track Strand

Unreeling
and
Uncoiling

Splicing

Data Tables

SECTION I



U.S.S. AMERICAN
WIRE ROPE AND STRAND
MANUFACTURED on the PACIFIC COAST

by

COLUMBIA STEEL COMPANY



The **TIGER TRADE MARK** is a symbol
of Strength and Dependability

THE MARK FOR *GENUINE*
AMERICAN WIRE ROPE

Transmission
or Haulage
6 x 7

Standard
Hoisting
6 x 19

Special Ropes

Extra
Flexible
Hoisting
8 x 19

Special
Flexible
Hoisting
6 x 37

Tiller or
Hand Rope

Non-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track Strand

Unreeling
and
Uncoiling

Splicing

Data Tables

Transmission or Haulage Rope

“Transmission” and “Haulage” are terms that are applied to rope composed of six strands—seven wires to the strand. The demand for rope of this construction for transmission of power has lessened appreciably in recent years. The principal use to which it is now put is for haulage in mines, on inclined planes, on tramways and in the yards of manufacturing plants. It is also used for drilling and Sand Lines in certain districts by well drilling contractors.

By comparing the cut, page 15, with the Hoisting Rope cut on page 20 you will note the coarseness of wires. They are nearly twice as large. This is a desirable feature, as in haulage work for which service it is particularly applicable, it is dragged along the ground and over rough rollers, etc., being subjected to much abrasive wear. Finer wires would wear through and break much more quickly.

While the coarseness of the wires is an asset so far as abrasion is concerned, the rope is less flexible than one of the Hoisting Rope designs. This should be taken into consideration if the rope is to be subjected to much bending. For bending, where greater flexibility is required, ropes composed of finer wires are usually preferred.

Made in five grades, or strengths, as follows:

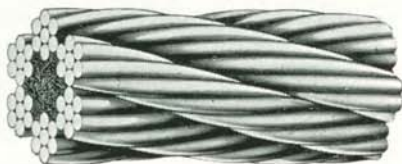
1. *Iron*
2. *Cast Steel*
3. *Mild Plow Steel*
4. *Plow Steel*
5. *Monitor Steel*

**The TIGER TRADE MARK is a symbol
of Strength and Dependability**

**THE MARK FOR GENUINE
AMERICAN WIRE ROPE**

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



1

Iron

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.51	1 1/2	4 3/4	3.38	29.7	See page 6	See page 86
.43	1 3/8	4 1/4	2.84	25.2		
.36	1 1/4	4	2.34	21.		
.30	1 1/8	3 1/2	1.90	17.2		
.24	1	3	1.50	13.7		
.18 1/2	7/8	2 3/4	1.15	10.5		
.14	3/4	2 1/4	.84	7.86		
.10	5/8	2	.59	5.52		
.08 1/4	9/16	1 3/4	.48	4.49		
.06 1/2	1/2	1 1/2	.38	3.57		
.05 1/2	7/16	1 1/4	.29	2.76		
.04 1/2	3/8	1 1/8	.21	2.05		
.03 3/4	5/16	1	.15	1.43		
.03 1/4	9/32	7/8	.12	1.17		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Transmission or Haulage
6 x 7Standard
Hoisting
6 x 19

Special Ropes

Extra
Flexible
Hoisting
8 x 19Special
Flexible
Hoisting
6 x 37Tiller or
Hand RopeNon-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

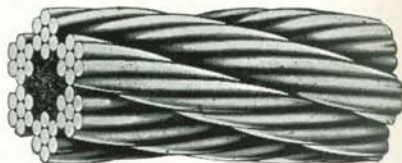
Smooth Coil
Track StrandUnreeing
and
Uncoiling

Splicing

Data Tables

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



2

Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.60	1 1/2	4 3/4	3.38	62.5	See page 6	See page 86
.51	1 3/8	4 1/4	2.84	53.		
.43	1 1/4	4	2.34	44.5		
.36	1 1/8	3 1/2	1.90	36.4		
.29	1	3	1.50	29.		
.23	7/8	2 3/4	1.15	22.4		
.18 1/2	3/4	2 1/4	.84	16.5		
.13 1/2	5/8	2	.59	11.5		
.11 1/2	9/16	1 3/4	.48	9.4		
.09	1/2	1 1/2	.38	7.5		
.07	7/16	1 1/4	.29	5.8		
.05 3/4	3/8	1 1/8	.21	4.3		
.04 1/2	5/16	1	.15	3.1		
.04 1/4	9/32	7/8	.12	2.52		
.04	1/4	3/4	.094	2.		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



3

Mild Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.75	1 1/2	4 3/4	3.38	68.7	<i>See page 6</i>	<i>See Page 86</i>
.64	1 3/8	4 1/4	2.84	58.2		
.53	1 1/4	4	2.34	48.7		
.44	1 1/8	3 1/2	1.90	40.		
.35	1	3	1.50	31.9		
.27	7/8	2 3/4	1.15	24.6		
.22	3/4	2 1/4	.84	18.1		
.16	5/8	2	.59	12.6		
.13 3/4	9/16	1 3/4	.48	10.3		
.10 1/2	1/2	1 1/2	.38	8.2		
.08 1/2	7/16	1 1/4	.29	6.3		
.06 3/4	3/8	1 1/8	.21	4.7		
.05 1/2	5/16	1	.15	3.35		
.06 1/4	9/16	7/8	.12	2.72		
.05	1/4	3/4	.094	2.15		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Standard Hoisting
6 x 19

Special Ropes

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Fiat Rope

Smooth Coil Track Strand

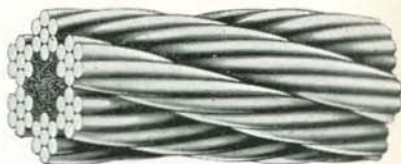
Unreeling and Uncoiling

Splicing

Data Tables

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



4

Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.90	1 1/2	4 3/4	3.38	75.	See page 6	See page 86
.76	1 3/8	4 1/4	2.84	63.5		
.62	1 1/4	4	2.34	53.		
.51	1 1/8	3 1/2	1.90	43.6		
.41	1	3	1.50	34.8		
.32 1/2	7/8	2 3/4	1.15	26.8		
.26	3/4	2 1/4	.84	19.8		
.19	5/8	2	.59	13.8		
.16 1/4	9/16	1 3/4	.48	11.3		
.12 1/2	1/2	1 1/2	.38	9.		
.10 1/2	7/16	1 1/4	.29	6.9		
.08	3/8	1 1/8	.21	5.15		
.06 1/2	5/16	1	.15	3.65		
.06 1/4	9/32	7/8	.12	2.95		
.06	1/4	3/4	.094	2.35		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

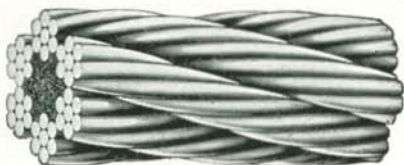
Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Transmission or Haulage Rope

6 Strands—7 Wires to the Strand—1 Hemp Core



5

Monitor Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.05	1 1/2	4 3/4	3.38	86.5	See page 6	See page 86
.88	1 3/8	4 1/4	2.84	73.5		
.72	1 1/4	4	2.34	61.		
.58	1 1/8	3 1/2	1.90	50.		
.48	1	3	1.50	40.		
.37	7/8	2 3/4	1.15	30.8		
.28 1/2	3/4	2 1/4	.84	22.8		
.20 1/2	5/8	2	.59	16.		
.17	9/16	1 3/4	.48	13.		
.13 1/2	1/2	1 1/2	.38	10.3		
.11 1/2	7/16	1 1/4	.29	7.9		
.08 3/4	3/8	1 1/8	.21	5.9		
.08 1/4	5/16	1	.15	4.2		
.07 1/2	9/32	7/8	.12	3.4		
.07	1/4	3/4	.094	2.7		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Ropes not listed above composed of more than 7 wires and less than 19 wires with the exception of 6x8 take 19 wire list.

Excally Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Standard Hoisting
6 x 19

Special Ropes

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core

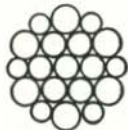


Type N

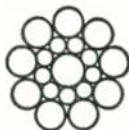
"Standard Hoisting" is a term applied to rope composed of six strands, nineteen wires to the strand. The wires being smaller than those in the 6x7 construction shown on page 15, the rope is more flexible, and can be more readily passed around sheaves and drums of moderate size. The component wires being finer, however, the 6x19 is not expected to stand as much abrasion as the coarser Haulage Rope.

The 6x19 rope is by far the most universally used. It is employed more extensively and in a greater variety of work than any construction that we manufacture. In the Iron and Traction Steel grades it is commonly used on passenger and freight elevators; while in the Cast Steel, Mild Plow Steel, Plow and Monitor grades it is used in mines, quarries, ore docks, coal docks, on cranes, dredges, steam shovels, pile drivers, derricks, tramways, cableways, and, in fact, on almost every known type of modern wire rope using apparatus, also for well drilling.

A careful scrutiny of the cross section of the standard hoisting rope illustrated above shows six individual strands around a hemp center, each strand being composed of one size of wire with fillers, same being known as "type N" construction strand. Below are illustrations of two types that are sometimes used, viz.:



Three-sized-
wire
Construction



Seale
Patent

Each of these constructions imparts slightly different properties to the rope to meet special requirements in the field, i.e., One-sized-wire with filler for skidder work, etc.

Made in six grades or strengths as follows:

1. *Iron*
2. *Traction Steel*
3. *Cast Steel*
4. *Mild Plow Steel*
5. *Plow Steel*
6. *Monitor Steel*

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



6

Iron
Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.70	2 3/4	8 5/8	12.10	95.	See page 6	See page 86
1.40	2 1/2	7 7/8	10.	79.1		
1.17	2 1/4	7 1/8	8.10	64.8		
.95	2	6 1/4	6.40	51.8		
.88	1 7/8	5 3/4	5.63	45.8		
.80	1 3/4	5 1/2	4.90	40.1		
.65	1 5/8	5	4.23	34.8		
.57	1 1/2	4 3/4	3.60	29.7		
.49	1 3/8	4 1/4	3.03	25.2		
.40	1 1/4	4	2.50	21.		
.33	1 1/8	3 1/2	2.03	17.2		
.26	1	3	1.60	13.7		
.21	7/8	2 3/4	1.23	10.6		
.17	3/4	2 1/4	.90	7.86		
.13 1/2	5/8	2	.63	5.52		
.11 1/2	9/16	1 3/4	.51	4.49		
.09 1/2	1/2	1 1/2	.40	3.57		
.08 1/2	7/16	1 1/4	.31	2.76		
.07 1/2	3/8	1 1/8	.23	2.05		
.06 3/4	5/16	1	.16	1.43		
.06 1/2	1/4	3/4	.10	.97		

Intermediate sizes of wire rope are to take the list price of the next larger size. NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x19 Elevator rope see page 22.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Standard
Hoisting
6 x 19

Special Ropes

Extra
Flexible
Hoisting
8 x 19Special
Flexible
Hoisting
6 x 37Tiller or
Hand RopeNon-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Aberstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track StrandUnreeling
and
Uncoiling

Splicing

Data Tables

Standard Elevator Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



6A Iron Elevator Rope—Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.26	1	3	1.60	13.7	See page 6	See page 86
.21	$\frac{7}{8}$	$2\frac{3}{4}$	1.23	10.6		
.17	$\frac{3}{4}$	$2\frac{1}{4}$	.90	7.86	
$.13\frac{1}{2}$	$\frac{5}{8}$	2	.63	5.52		
$.11\frac{1}{2}$	$\frac{9}{16}$	$1\frac{3}{4}$	.51	4.49	
$.09\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	.40	3.57	
$.08\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$	.31	2.76	
$.07\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.23	2.05	
$.06\frac{3}{4}$	$\frac{5}{16}$	1	.16	1.43		
$.06\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	.10	.97	
$.06\frac{1}{4}$	$\frac{3}{16}$	$\frac{9}{16}$	.06	.55	

7 Traction Steel Elevator Rope

\$0.31	1	3	1.60	27.	See page 6	See page 86
.25	$\frac{7}{8}$	$2\frac{3}{4}$	1.23	21.		
$.20\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{4}$	.90	16.	
$.15\frac{3}{4}$	$\frac{5}{8}$	2	.63	11.5		
$.13\frac{3}{4}$	$\frac{9}{16}$	$1\frac{3}{4}$	.51	9.25	
.12	$\frac{1}{2}$	$1\frac{1}{2}$	.40	7.25	
$.10\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$	.31	5.5	
$.09\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.23	4.1	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Composite Iron

This special construction is designed principally for elevator service. The list prices are the same as that shown above for Traction Steel.

Iron Floor Selector Cable

These cables are generally supplied in sizes $\frac{1}{4}$ " and $\frac{3}{8}$ " dia. Two constructions are in common use, i.e., 6x19 and 8x19.

The list prices for 6x19 are shown above under table 6A. For 8x19, see page 28.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



8

Cast Steel
Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$2.10	2 3/4	8 5/8	12.10	212.	See page 6	See page 86
1.75	2 1/2	7 7/8	10.	176.		
1.44	2 1/4	7 1/8	8.10	144.		
1.30	2 1/8	6 5/8	7.22	128.		
1.16	2	6 1/4	6.40	114.		
1.02	1 7/8	5 3/4	5.63	100.		
.90	1 3/4	5 1/2	4.90	88.		
.77	1 5/8	5	4.23	76.		
.66	1 1/2	4 3/4	3.60	65.		
.56	1 3/8	4 1/4	3.03	55.		
.46	1 1/4	4	2.50	46.		
.38	1 1/8	3 1/2	2.03	37.		
.31	1	3	1.60	29.5		
.25	7/8	2 3/4	1.23	22.8		
.20 1/2	3/4	2 1/4	.90	16.8		
.15 3/4	5/8	2	.63	11.8		
.13 3/4	9/16	1 3/4	.51	9.6		
.12	1/2	1 1/2	.40	7.7		
.10 1/2	7/16	1 1/4	.31	6.		
.09 1/2	3/8	1 1/8	.23	4.5		
.09 1/4	5/16	1	.16	3.2		
.09	1/4	3/4	.10	2.1		

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x17 type L—6x21 type M, use 6x19 list prices as shown above.

Excally Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Ropes

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



9

Mild Plow Steel Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$2.55	2 3/4	8 5/8	12.10	234.	See page 6	See page 86
2.10	2 1/2	7 7/8	10.	195.		
1.70	2 1/4	7 1/8	8.10	160.		
1.52	2 1/8	6 5/8	7.22	143.		
1.34	2	6 1/4	6.40	127.		
1.25	1 7/8	5 3/4	5.63	112.		
1.10	1 3/4	5 1/2	4.90	98.		
.94	1 5/8	5	4.23	85.		
.80	1 1/2	4 3/4	3.60	72.5		
.68	1 3/8	4 1/4	3.03	61.5		
.56	1 1/4	4	2.50	51.		
.46	1 1/8	3 1/2	2.03	41.5		
.37	1	3	1.60	33.		
.29	7/8	2 3/4	1.23	25.4		
.24	3/4	2 1/4	.90	18.7		
.18	5/8	2	.63	13.1		
.15 3/4	9/16	1 3/4	.51	10.6		
.13 3/4	1/2	1 1/2	.40	8.5		
.12	7/16	1 1/4	.31	6.6		
.11	3/8	1 1/8	.23	5.		
.10 3/4	5/16	1	.16	3.5		
.10 1/2	1/4	3/4	.10	2.3		

Intermediate sizes of wire rope are to take the list price of the next larger size. NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

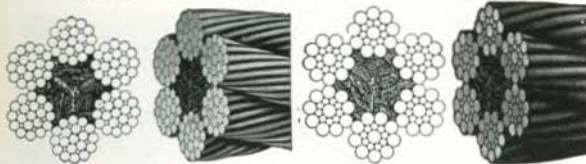
Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x17 type L—6x21 type M, use 6x19 list prices as shown above.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



Type N

Seale Patent

10

Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$3.00	2 3/4	8 5/8	12.10	256.	See page 6	See page 86
2.50	2 1/2	7 7/8	10.	214.		
2.00	2 1/4	7 1/8	8.10	176.		
1.79	2 1/8	6 5/8	7.22	157.		
1.58	2	6 1/4	6.40	140.		
1.46	1 7/8	5 3/4	5.63	123.		
1.30	1 3/4	5 1/2	4.90	108.		
1.08	1 3/8	5	4.23	94.		
.93	1 1/2	4 3/4	3.60	80.5		
.79	1 3/8	4 1/4	3.03	68.		
.65	1 1/4	4	2.50	56.5		
.54	1 1/8	3 1/2	2.03	46.		
.43	1	3	1.60	36.5		
.34 1/2	7/8	2 3/4	1.23	28.		
.28	3/4	2 1/4	.90	20.6		
.21	5/8	2	.63	14.4		
.18 1/4	9/16	1 3/4	.51	11.7		
.16	1/2	1 1/2	.40	9.4		
.14	7/16	1 1/4	.31	7.3		
.13	3/8	1 1/8	.23	5.5		
.12 1/4	9/16	1	.16	3.9		
.12	1/4	3/4	.10	2.5		

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6 x 17 type L—6 x 21 type M use 6 x 19 list prices as shown above.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Ropes

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeing and Uncoiling

Splicing

Data Tables

Standard Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



11

Monitor Steel Type N

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$3.45	2 3/4	8 5/8	12.10	294.	See page 6	See page 6
2.80	2 1/2	7 7/8	10.	246.		
2.50	2 1/4	7 1/8	8.10	202.		
2.15	2 1/8	6 5/8	7.22	181.		
1.85	2	6 1/4	6.40	161.		
1.75	1 7/8	5 3/4	5.63	142.		
1.60	1 3/4	5 1/2	4.90	124.		
1.30	1 5/8	5	4.23	108.		
1.10	1 1/2	4 3/4	3.60	92.5		
.90	1 3/8	4 1/4	3.03	78.5		
.75	1 1/4	4	2.50	65.		
.62	1 1/8	3 1/2	2.03	53.		
.50	1	3	1.60	42.		
.39	7/8	2 3/4	1.23	32.2		
.31	3/4	2 1/4	.90	23.7		
.22 1/2	5/8	2	.63	16.6		
.19	9/16	1 3/4	.51	13.5		
.17	1/2	1 1/2	.40	10.8		
.15 1/2	7/16	1 1/4	.31	8.4		
.14 1/2	3/8	1 1/8	.23	6.3		
.13 1/2	5/16	1	.16	4.5		
.13	1/4	3/4	.10	2.9		

Intermediate sizes of wire rope are to take the list price of the next larger size. NOTE—When ropes above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Rope made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6 x 17 type L—6 x 21 type M use 6 x 19 list price as shown above.

Excally Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Ropes



6 Strands—17 Wires to the Strand—1 Hemp Core

Type L. This construction with eight outer wires in each strand is a rugged rope more flexible than 6 x 7 which has six outer wires per strand, and less flexible than 6 x 21 and 6 x 19. The large outside wires make it an excellent rope for installations where abrasion is severe.

For list prices and weights, use those shown for 6 x 19, pages 21 to 26.

Breaking strengths are 3% less than 6 x 19 of the same size and grade.



6 Strands—21 Wires to the Strand—1 Hemp Core

Type M. More flexible than the 6 x 17 and especially recommended for Drag Lines. It will stand more wear than 6 x 19 because of the larger outside wires.

For list prices and weights, use those shown for 6 x 19, pages 21 to 26.

Breaking strengths are 3% less than 6 x 19 of the same size and grade.



6 Strands—29 Wires to the Strand—1 Hemp Core

Type P. An excellent rope for Clamshell buckets, steam shovels, and general hoisting purposes requiring a greater degree of flexibility than standard 6 x 19.

For list prices, weights and breaking strengths, use those shown for 6 x 37, pages 34 to 38.



6 Strands—33 Wires to the Strand—1 Hemp Core

Type R. This construction gives excellent service on cranes where abrasion is too severe for 6 x 37. The wires are a little larger than those in 6 x 37.

For list prices, weights and breaking strengths, use those shown for 6 x 37, pages 34 to 38.

All of the above ropes can be furnished in four grades, namely, Cast Steel, Mild Plow Steel, Plow Steel and Monitor Steel, but in most cases Monitor will give the best service.

Special Ropes

Extra
Flexible
Hoisting
8 x 19

Special
Flexible
Hoisting
6 x 37

Tiller or
Hand Rope

Non-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track Strand

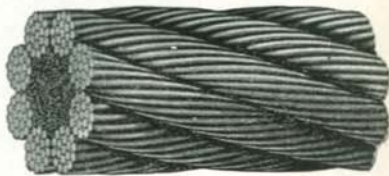
Unreeling
and
Uncoiling

Splicing

Data Tables

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



"Extra Flexible" is a term applied to rope composed of eight strands, nineteen wires to the strand. It will be noted that this construction contains two more strands than the Standard Hoisting Rope illustrated on page 20.

The addition of these two strands adds greatly to the flexibility of the rope, and permits of the rope being used over comparatively small sheaves and drums.

Made in six grades or strengths as follows:

1. Iron
2. Traction Steel
3. Cast Steel
4. Mild Plow Steel
5. Plow Steel
6. Monitor Steel

12

Iron

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.29	1	3	1.45	12.2	See page 6	See page 86
.23	$\frac{7}{8}$	$2\frac{3}{4}$	1.11	9.4		
.19 $\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{4}$	.82	6.95	
.15 $\frac{1}{2}$	$\frac{5}{8}$	2	.57	4.86		
.13	$\frac{9}{16}$	$1\frac{3}{4}$	.46	4.06	
.11	$\frac{1}{2}$	$1\frac{1}{2}$	.36	3.28	
.09 $\frac{1}{2}$	$\frac{7}{16}$	$1\frac{1}{4}$	.27	2.4	
.08 $\frac{1}{2}$	$\frac{3}{8}$	$1\frac{1}{8}$	.20	1.6	
.074	$\frac{5}{16}$	1	.13	1.1		
.07	$\frac{1}{4}$	$\frac{3}{4}$	.09	.8	

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

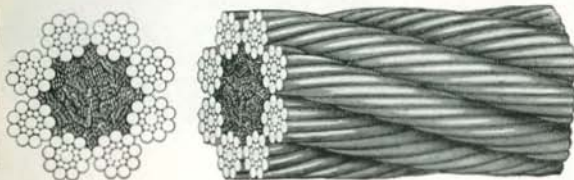
Iron Floor Selector Cable

These cables are generally supplied in sizes $\frac{5}{16}$ ", $\frac{1}{4}$ " and $\frac{3}{16}$ " dia. Two constructions are in common use, i.e., 6x19 and 8x19. The list prices for the 6x19 construction are given on page 22. Prices for the 8x19 are shown above.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Seale Patent Traction Steel Elevator Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



Seale Patent Traction Elevator Rope is a rope designed specially to give maximum resilience, flexibility and tractive effort, combined with smooth running qualities. This Rope gives excellent service on all "U" and "V" groove traction installations. These ropes give additional wearing surface owing to the somewhat larger wires, less wear on the sheaves and drums due to better contact and less slippage. Altogether, this rope possesses many desirable features not found in other styles of elevator ropes.

12A

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.34	1	3	1.45	25.	<i>See page 6</i>	<i>See page 86</i>
.28	$7/8$	$2 3/4$	1.11	19.		
.23	$3/4$	$2 1/4$	.82	14.	
$.17 1/2$	$5/8$	2	.57	10.		
$.15 1/2$	$9/16$	$1 3/4$	.46	8.	
$.13 1/2$	$1/2$	$1 1/2$	.36	6.5	
.12	$7/16$	$1 1/4$	.28	5.	
$.10 1/2$	$3/8$	$1 1/8$	.20	3.7	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Extra Flexible Hoisting
8 x 19

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

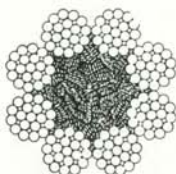
Unreeling and Uncoiling

Splicing

Data Tables

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



13

Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking in Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.73	1 1/2	4 3/4	3.26	57.5	See page 6	See page 86
.62	1 3/8	4 1/4	2.74	48.6		
.51	1 1/4	4	2.27	40.4		
.42	1 1/8	3 1/2	1.84	32.8		
.34	1	3	1.45	26.		
.28	7/8	2 3/4	1.11	20.		
.23	3/4	2 1/4	.82	14.8		
.17 1/2	5/8	2	.57	10.4		
.15 1/2	9/16	1 3/4	.46	8.5		
.13 1/2	1/2	1 1/2	.36	6.8		
.12	7/16	1 1/4	.28	5.3		
.10 1/2	3/8	1 1/8	.20	3.94		
.10 1/4	5/16	1	.14	2.79		
.10	1/4	3/4	.09	1.79		

Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

For Elevator rope list prices see page 29.

Excally Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



14

Mild Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.88	1 1/2	4 3/4	3.26	63.3	<i>See page 6</i>	<i>See page 86</i>
.75	1 3/8	4 1/4	2.74	53.4		
.62	1 1/4	4	2.27	44.4		
.51	1 1/8	3 1/2	1.84	36.		
.41	1	3	1.45	28.6		
.34	7/8	2 3/4	1.11	22.		
.27 1/4	3/4	2 1/4	.82	16.3		
.20 1/2	5/8	2	.57	11.4		
.18	9/16	1 3/4	.46	9.4		
.15 1/2	1/2	1 1/2	.36	7.5		
.14 1/4	7/16	1 1/4	.28	5.8		
.12 1/2	3/8	1 1/8	.20	4.33		
.12 1/4	5/16	1	.14	3.07		
.12	1/4	3/4	.09	1.97		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Flexible Hoisting 6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

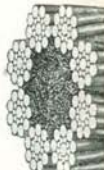
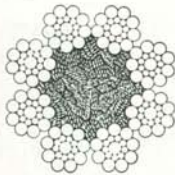
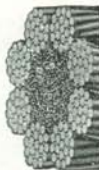
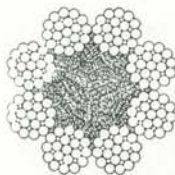
Unreeling and Uncolting

Splicing

Data Tables

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



Standard Construction

Scale Patent

15

Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.06	1 1/2	4 3/4	3.26	69.	See page 6	See page 86
.90	1 3/8	4 1/4	2.74	58.3		
.75	1 1/4	4	2.27	48.4		
.62	1 1/8	3 1/2	1.84	39.4		
.50	1	3	1.45	31.2		
.41	7/8	2 3/4	1.11	24.		
.32 1/2	3/4	2 1/4	.82	17.8		
.24	5/8	2	.57	12.5		
.21	9/16	1 3/4	.46	10.3		
.18 1/4	1/2	1 1/2	.36	8.2		
.17	7/16	1 1/4	.28	6.3		
.15	3/8	1 1/8	.20	4.7		
.14 1/2	5/16	1	.14	3.34		
.14 1/4	1/4	3/4	.09	2.15		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Extra Flexible Hoisting Rope

8 Strands—19 Wires to the Strand—1 Hemp Core



16

Monitor Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.19	1 1/2	4 3/4	3.26	79.5	See page 6	See page 86
.98	1 5/8	4 1/4	2.74	67.		
.82	1 1/4	4	2.27	55.7		
.68	1 1/8	3 1/2	1.84	45.2		
.55	1	3	1.45	35.8		
.43	7/8	2 3/4	1.11	27.6		
.34	3/4	2 1/4	.82	20.5		
.25	5/8	2	.57	14.4		
.22	9/16	1 3/4	.46	11.8		
.19	1/2	1 1/2	.36	9.5		
.17 1/2	3/16	1 1/4	.28	7.3		
.16 1/2	3/8	1 1/8	.20	5.45		
.16	5/16	1	.14	3.85		
.15 3/4	3/4	3/4	.09	2.47		

Intermediate sizes of wire rope are to take the list price of the next larger size.

NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Flexible Hoisting 6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Fiat Rope

Smooth Coil Track Strand

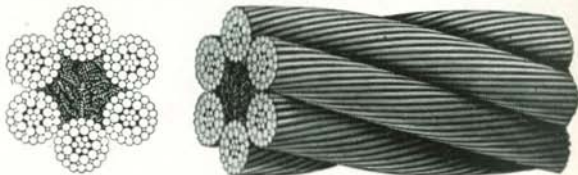
Unreeling and Uncoiling

Splicing

Data Tables

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



Type S

“Special Flexible” is a term applied to rope composed of six strands, thirty-seven wires to the strand. It is a very flexible rope and much used on cranes and similar machinery, where rope is operated at high speed and where sheaves and drums are of necessity small. Its wires are smaller than those in the Standard Hoisting construction, shown on page 20, and consequently will not stand as much abrasive wear.

It is a very efficient rope because a little over fifty per cent of the wires—and consequently over fifty per cent of the strength—are in the inner layers of the strand, protected from abrasion. This explains its particular advantage in addition to its flexibility.

Ropes larger than $1\frac{3}{4}$ inch diameter, used on hoisting apparatus, are usually made of this construction rather than 6 x 19.

Made in four grades, i.e.:

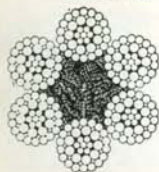
1. *Cast Steel*
2. *Mild Plow Steel*
3. *Plow Steel*
4. *Monitor Steel*

The **TIGER TRADE MARK** is a symbol
of Strength and Dependability

**THE MARK FOR GENUINE
AMERICAN WIRE ROPE**

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



17

Cast Steel—Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$3.75	3 1/2	11	19.	323.	<i>See page 6</i>	<i>See page 86</i>
3.25	3 1/4	10 1/4	16.37	281.		
2.75	3	9 1/2	13.95	241.		
2.30	2 3/4	8 5/8	11.72	204.		
1.92	2 1/2	7 7/8	9.69	170.		
1.60	2 1/4	7 1/8	7.85	139.		
1.48	2 1/8	6 3/4	7.	125.		
1.35	2	6 1/4	6.20	111.		
1.20	1 7/8	5 3/4	5.45	98.		
1.05	1 3/4	5 1/2	4.75	86.		
.89	1 5/8	5	4.09	74.3		
.79	1 1/2	4 3/4	3.49	63.5		
.65	1 3/8	4 1/4	2.93	53.5		
.55	1 1/4	4	2.42	44.3		
.46	1 1/8	3 1/2	1.96	36.		
.37	1	3	1.55	28.6		
.30	7/8	2 3/4	1.19	22.		
.24	3/4	2 1/4	.87	16.4		
.18 1/2	5/8	2	.61	11.6		
.16 1/2	9/16	1 3/4	.49	9.5		
.14	1/2	1 1/2	.39	7.7		
.12 1/2	7/16	1 1/4	.30	6.		
.12	3/8	1 1/8	.22	4.4		
.11 1/2	5/16	1	.15	3.1		
.11	1/4	3/4	.10	2.		

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P-6x33 type R-6x41 type T use 6x37 list prices as shown above.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Flexible Hoisting
6 x 37

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

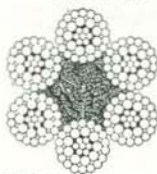
Unreeling and Uncoiling

Splicing

Data Tables

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



18

Mild Plow Steel—Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$4.60	3 1/2	11	19.	357.		
3.95	3 1/4	10 1/4	16.37	311.		
3.35	3	9 1/2	13.95	267.		
2.80	2 3/4	8 5/8	11.72	226.		
2.35	2 1/2	7 7/8	9.69	188.		
1.90	2 1/4	7 1/8	7.85	153.		
1.70	2 1/8	6 3/4	7.00	138.		
1.55	2	6 1/4	6.20	123.		
1.40	1 7/8	5 3/4	5.45	108.5		
1.28	1 3/4	5 1/2	4.75	95.		
1.07	1 5/8	5	4.09	82.		
.95	1 1/2	4 3/4	3.49	70.		
.78	1 3/8	4 1/4	2.93	59.		
.65	1 1/4	4	2.42	48.9		
.55	1 1/8	3 1/2	1.96	39.7		
.44	1	3	1.55	31.5		
.36	7/8	2 3/4	1.19	24.2		
.28 1/2	3/4	2 1/4	.87	18.1		
.21 1/2	5/8	2	.61	12.8		
.19 1/4	9/16	1 3/4	.49	10.5		
.16 1/4	1/2	1 1/2	.39	8.4		
.15	7/16	1 1/4	.30	6.6		
.14 1/4	3/8	1 1/8	.22	4.9		
.13 3/4	5/16	1	.15	3.4		
.13 1/2	1/4	3/4	.10	2.2		

See page 6

See page 86

Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

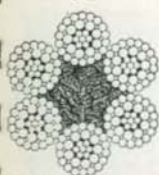
Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P—6x33 type R—6x41 type T use 6x37 list prices as shown above.

Excelay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



19

Plow Steel—Type S

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$5.35	3 1/2	11	19.	392.	See page 6	See page 86
4.65	3 1/4	10 1/4	16.37	341.		
3.95	3	9 1/2	13.95	293.		
3.30	2 3/4	8 5/8	11.72	248.		
2.75	2 1/2	7 7/8	9.69	206.		
2.20	2 1/4	7 1/8	7.85	168.		
2.00	2 1/8	6 3/4	7.	151.		
1.80	2	6 1/4	6.20	135.		
1.65	1 7/8	5 3/4	5.45	119.		
1.50	1 3/4	5 1/2	4.75	104.		
1.25	1 5/8	5	4.09	89.8		
1.15	1 1/2	4 3/4	3.49	76.7		
.93	1 3/8	4 1/4	2.93	64.6		
.78	1 1/4	4	2.42	53.5		
.66	1 1/8	3 1/2	1.96	43.5		
.52 1/2	1	3	1.55	34.4		
.43	7/8	2 3/4	1.19	26.5		
.34	3/4	2 1/4	.87	19.8		
.25	5/8	2	.61	14.		
.22 1/2	9/16	1 3/4	.49	11.5		
.19	1/2	1 1/2	.39	9.2		
.17 3/4	7/16	1 1/4	.30	7.2		
.17	3/8	1 1/8	.22	5.3		
.16 1/2	5/16	1	.15	3.8		
.16	1/4	3/4	.10	2.4		

Intermediate sizes of wire rope are to take the list price of the next larger size. NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6x29 type P—6x33 type R—6x41 type T use 6x37 list prices as shown above.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Tiller or Hand Rope

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables

Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



20

Monitor Steel—Type S

List Price Per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Diameter of Drum or Sheave Advised
\$6.10	3 1/2	11	19.	451.	See page 6	See page 86
5.25	3 1/4	10 1/4	16.37	392.		
4.50	3	9 1/2	13.95	337.		
3.75	2 3/4	8 5/8	11.72	285.		
3.15	2 1/2	7 7/8	9.69	237.		
2.75	2 1/4	7 1/8	7.85	194.		
2.40	2 1/8	6 3/4	7.	174.		
2.10	2	6 1/4	6.20	155.		
1.90	1 7/8	5 3/4	5.45	137.		
1.75	1 3/4	5 1/2	4.75	119.5		
1.45	1 5/8	5	4.09	103.3		
1.25	1 1/2	4 3/4	3.49	88.2		
1.05	1 3/8	4 1/4	2.93	74.3		
.86	1 1/4	4	2.42	61.5		
.75	1 1/8	3 1/2	1.96	49.9		
.59	1	3	1.55	39.5		
.46	7/8	2 3/4	1.19	30.5		
.36	3/4	2 1/4	.87	22.8		
.27	5/8	2	.61	16.1		
.23	9/16	1 3/4	.49	13.2		
.20	1/2	1 1/2	.39	10.6		
.18 1/2	7/16	1 1/4	.30	8.3		
.17 1/2	3/8	1 1/8	.22	6.1		
.17	5/16	1	.15	4.4		
.16 1/2	1/4	3/4	.10	2.8		

Intermediate sizes of wire rope are to take the list price of the next larger size.
 NOTE—When ropes named above are galvanized add 25% to above lists and apply bright rope discount, however this will lower the breaking strength by about 10%.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

For 6 x 29 type P—6 x 33 type R—6 x 41 type T use 6 x 37 list prices as shown above.

Excally Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Tiller Rope or Hand Rope

6 Strands of 42 Wires Each—252 Wires in All—7 Hemp Cores



"Tiller" and "Hand" are terms applied to rope composed of six strands of 42 wires each, each strand being a little wire rope in itself. This rope has seven hemp cores, one large one in the center of the rope, and one little one in each of the six strands.

It is an exceedingly flexible rope, in fact the most flexible of any we make, and is capable of being bent around very small sheaves. However, it will stand very little abrasive wear on account of the fine wires of which it is composed.

Tiller or Hand Rope is used principally for signal pull purposes in mines and factories, and in connection with the operating or controlling device on passenger and freight elevators. It is also used to a limited extent for steering lines on yachts and motor boats.

Made in three grades, i. e.—Iron, Cast Steel and Plow Steel.

Diameter in Inches	Circumference in Inches	List Price per Foot			Approximate Weight per Foot in Pounds	Approximate Breaking Strength in Tons of 2000 Lbs. Each		
		43 Iron	44 Cast Steel	44A Plow Steel		Iron	Cast Steel	Plow Steel
1	3	\$0.33	\$0.43	\$0.65	1.10	8.6	16.7	20.1
$7/8$	$2\ 3/4$	.27	.36	.55	.84	6.6	13.	15.6
$3/4$	$2\ 1/4$	.22	.30	.45	.62	5.1	9.7	11.7
$5/8$	2	.17	.24	.36	.43	3.5	6.9	8.28
$9/16$	$1\ 3/4$	.14	.20	.29	.35	3.02	5.6	6.73
$1/2$	$1\ 1/2$	.11 $\frac{1}{2}$	.17	.26	.28	2.39	4.46	5.33
$7/16$	$1\ 1/4$	.10	.15	.23	.21	1.91	3.44	4.13
$3/8$	$1\ 1/8$	.09	.14	.21	.16	1.40	2.54	3.05
$5/16$	1	.08	.12 $\frac{1}{2}$	.18	.11	.977	1.77	2.13
$1/4$	$3/4$	.07 $\frac{1}{2}$	.11	.16	.07	.625	1.14	1.36
$3/16$	$9/16$	.07	.10	...	.042	.35	.65	...

Intermediate sizes of wire rope are to take the list price of the next larger size.

Tiller or
Hand Rope

Non-Spinning
Hoisting

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

Smooth Coil
Track Strand

Unreeling
and
Uncoiling

Splicing

Data Tables

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core



Non-spinning Hoisting Rope is constructed as follows: First, 6 strands of 7 wires each, Lang's lay (wires in the strands and strands themselves twisted to the left) are laid around a hemp core; second, these strands are then covered with an outer layer composed of 12 strands, 7 wires, regular lay (wires in the strands twisted to the left and strands themselves twisted to the right).

The object of this combination of lays is to prevent a free load suspended on the end of a single line from rotating, or spinning, hence the name, "Non-spinning."

In attaching fittings, the outside strands must be secured by proper seizing. Any loosening of these strands will work to the detriment of the rope.

Made in four grades, i. e.: Cast Steel, Mild Plow Steel, Plow Steel and Monitor Steel.

47

Cast Steel

Last Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.46	1 1/4	4	2.70	42.5	See page 8	See page 86
.38	1 1/8	3 1/2	2.19	34.2		
.31	1	3	1.73	27.3		
.25	7/8	2 3/4	1.32	21.1		
.20 1/2	3/4	2 1/4	.97	15.6		
.15 3/4	5/8	2	.68	10.9		
.13 3/4	9/16	1 3/4	.55	8.9		
.12	1/2	1 1/2	.43	7.1		
.10 1/2	7/16	1 1/4	.33	5.5		
.09 1/2	3/8	1 1/8	.24	4.1		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core



48

Mild Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$0.56	1 1/4	4	2.70	47.2	See page 6	See page 86
.46	1 1/8	3 1/2	2.19	38.4		
.37	1	3	1.73	30.5		
.29	7/8	2 3/4	1.32	23.5		
.24	3/4	2 1/4	.97	17.3		
.18	5/8	2	.68	12.1		
.15 3/4	9/16	1 3/4	.55	9.8		
.13 3/4	1/2	1 1/2	.43	7.9		
.12	7/16	1 1/4	.33	6.1		
.11	3/8	1 1/8	.24	4.6		

Non-Spinning Hoisting

Sash Cord

Locomotive Switching and Ballast Unloader Galvanized Rope

Amerstrand

49

Plow Steel

\$0.65	1 1/4	4	2.70	52.3	See page 6	See page 86
.54	1 1/8	3 1/2	2.19	42.5		
.43	1	3	1.73	33.8		
.34 1/2	7/8	2 3/4	1.32	25.9		
.28	3/4	2 1/4	.97	19.		
.21	5/8	2	.68	13.3		
.18 1/4	9/16	1 3/4	.55	10.8		
.16	1/2	1 1/2	.43	8.7		
.14	7/16	1 1/4	.33	6.7		
.13	3/8	1 1/8	.24	5.1		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Airplane Strand and Cord

Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables

Non-Spinning Hoisting Rope

18 Strands—7 Wires to the Strand—1 Hemp Core



50

Monitor Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$1.60	1 3/4	5 1/2	5.3	115.	See page 6	See page 86
1.30	1 5/8	5	4.57	100.		
1.10	1 1/2	4 3/4	3.89	85.5		
.90	1 3/8	4 1/4	3.27	72.5		
.75	1 1/4	4	2.70	60.		
.62	1 1/8	3 1/2	2.19	49.		
.50	1	3	1.73	38.8		
.39	7/8	2 3/4	1.32	29.8		
.31	3/4	2 1/4	.97	21.9		
.22 1/2	5/8	2	.68	15.3		
.19	9/16	1 3/4	.55	12.5		
.17	1/2	1 1/2	.43	10.		
.15 1/2	7/16	1 1/4	.33	7.8		
.14 1/2	3/8	1 1/8	.24	5.8		

Intermediate sizes of wire rope are to take the list price of the next larger size.

The TIGER TRADE MARK is a symbol
of Strength and Dependability

THE MARK FOR GENUINE
AMERICAN WIRE ROPE

Sash Cord

6 Strands, 7 Wires to the Strand, 1 Cotton Core



Sash Cord is Iron or Copper Wire Rope of 6 strands, 7 wires each, cotton center construction, in sizes $\frac{1}{4}$ -inch diameter and smaller. It is a cord of many uses. While used in large quantities for attaching window weights to the window sash, it is also extensively used for miscellaneous purposes, such as bell cords, whistle cords, on shades and curtains, on freight elevator gates, and similar installations.

Unless otherwise specified, Sash Cord is made of Soft Annealed Iron in Bright, Galvanized, Tinned, or Enameled Finish. It can be furnished in Hard Drawn Iron in these finishes when additional strength is required. It is also manufactured in Bright Copper for special installations.

List Price			Diameter in Inches	Weight per Foot in Pounds		Breaking Strength in Pounds		
Iron, Annealed, or Hard Drawn		66 Bright Copper		Iron	Copper	Hard Drawn Iron	Annealed Iron (Standard)	Bright Copper
64 Bright	65 Tinned, Galvanized or Enam'd							
\$0.03	\$0.04	\$0.09	$\frac{1}{4}$	.094	.108	2040	1225	1225
.02 $\frac{3}{4}$	.03 $\frac{1}{2}$	.07 $\frac{1}{2}$	$\frac{7}{32}$	.072	.083	1570	940	940
.02 $\frac{1}{4}$	.03	.06	$\frac{5}{16}$	.053	.061	1150	688	688
.02	.02 $\frac{3}{4}$	.05 $\frac{1}{4}$	$\frac{3}{8}$	.038	.044	840	478	478
.01 $\frac{3}{4}$	.02 $\frac{1}{4}$	.04 $\frac{1}{2}$	$\frac{1}{8}$	.023	.026	560	306	306
.01 $\frac{1}{2}$	.02	.03 $\frac{1}{2}$	$\frac{3}{32}$	.013	.015	315	172	172
.01 $\frac{1}{4}$	.01 $\frac{3}{4}$	.03	$\frac{1}{16}$	.006	.007	140	77	77

For 7x7 sash cord, add 15% to list price.

Stone Sawing Strand

3 Wires Twisted Together



67

A. S. & W. Co.'s Steel Wire Gauge

List Price per 1000 Feet	Approximate Diameter in Inches	Approximate Gauge of Wire	Approximate Weight per 1000 Feet Pounds
\$24.00	$\frac{9}{32}$	11	127
19.00	$\frac{1}{4}$	12	99
18.00	$\frac{7}{32}$	13	75
16.50	$\frac{3}{16}$	14	56
15.75	$\frac{11}{64}$	14 $\frac{3}{4}$	48
14.00	$\frac{5}{32}$	15 $\frac{1}{2}$	40
12.00	$\frac{9}{64}$	16	33
10.50	$\frac{1}{8}$	17	26

Sash Cord

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Flat Rope

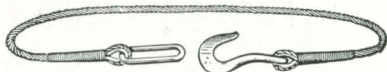
Smooth Coil
Track Strand

Unreeling
and
Uncolling

Splicing

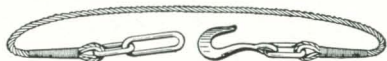
Data Tables

Locomotive Switching and Ballast Unloader Rope



Single Locomotive Switching Rope

Hook and thimble in one end; thimble and link in other end.



Double Locomotive Switching Rope

Hook, thimble and link in one end; thimble and two links in other end.

Wrecking Rope

Same construction as Switching Rope in single and double pattern, except made of high strength rope (usually Monitor "A" or "AA"), with proportionate increase in size and strength of hooks and links.

To determine the net selling price of Locomotive Switching, Ballast Unloader and Wrecking Ropes, add to the net price of the length, size and quality of rope specified extras furnished upon request. The net price of the rope is determined by using list and discount applying to the grade, quality and construction to which the fittings are to be attached, the length being measured from the bearing of hook in one end to the bearing of the last link in the other end. Extras include fittings and labor of splicing.

Prices on application.

Galvanized Rope

General Information

Galvanized Rope, like Bright Rope, is made in many grades and constructions to meet the varying conditions of service. It is used where exposure to the weather, constant or periodical moisture, etc., are among the conditions that tend to corrode a rope not protected in this way.

One should bear in mind however that galvanized rope is not well adapted for general hoisting purposes as the sheave action wears the zinc off the crowns of the wires, leaving them exposed to the corroding effects of the elements. Better results will usually be obtained from 6x19, 8x19 or 6x37 Bright Ropes (ungalvanized) for cargo falls and similar ropes along the waterfront or on ship board. Bright Ropes for such work should be ordered well lubricated.

Galvanized Rope is especially adapted to "standing" service, wherein no bending is encountered, such as guys for derricks and smokestacks; also for ships' rigging, towing, mooring lines, etc.

The succeeding pages show the list prices, grades and constructions of Galvanized Rope found in everyday use.

There are a few special constructions of Galvanized Rope that are not shown. List prices can be found for these by adding 25 per cent to the list price of the corresponding size, grade and construction of Bright (ungalvanized) Rope covered in the fore part of this catalogue.

Discount on Regular and Special constructions of Galvanized Rope furnished upon application.

Locomotive
Switching
and Ballast
Unloader
Galvanized
Rope

Amerstrand

Airplane
Strand
and Cord

Fiat Rope

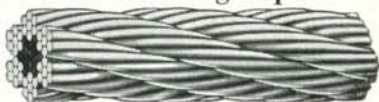
Smooth Coil
Track Strand

Unreeing
and
Uncoiling

Splicing

Data Tables

Galvanized Standing Rope*



72

6 Strands—7 Wires to the Strand—1 Hemp Core

Iron

List Price per Foot	Diameter in Inches	Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Lbs.	Circumference of Equal Manila Rope
\$0.55	1 $\frac{3}{4}$	5 $\frac{1}{2}$	4.60	37.	11
.51	1 $\frac{11}{16}$	5 $\frac{1}{4}$	4.27	34.7	10 $\frac{1}{2}$
.48	1 $\frac{5}{8}$	5	3.96	32.4	10
.44	1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.38	27.7	9 $\frac{1}{2}$
.39	1 $\frac{7}{16}$	4 $\frac{1}{2}$	3.10	25.6	9
.35	1 $\frac{3}{8}$	4 $\frac{1}{4}$	2.84	23.7	8 $\frac{1}{2}$
.31	1 $\frac{1}{4}$	4	2.34	19.9	8
.28	1 $\frac{3}{16}$	3 $\frac{3}{4}$	2.12	18.1	7 $\frac{1}{2}$
.24 $\frac{1}{2}$	1 $\frac{1}{8}$	3 $\frac{1}{2}$	1.90	16.5	6 $\frac{1}{2}$
.22	1 $\frac{1}{16}$	3 $\frac{1}{4}$	1.70	14.8	6
.18 $\frac{3}{4}$	1	3	1.50	13.2	5 $\frac{3}{4}$
.16 $\frac{3}{4}$	$\frac{7}{8}$	2 $\frac{3}{4}$	1.15	10.2	5 $\frac{1}{4}$
.13 $\frac{3}{4}$	1 $\frac{3}{16}$	2 $\frac{1}{2}$	.99	8.86	5
.11 $\frac{3}{4}$	$\frac{3}{4}$	2 $\frac{1}{4}$	.84	7.10	4 $\frac{3}{4}$
.09	$\frac{5}{8}$	2	.59	5.30	4 $\frac{1}{2}$
.08	$\frac{9}{16}$	1 $\frac{3}{4}$	.48	4.32	3 $\frac{3}{4}$
.06 $\frac{1}{2}$	$\frac{1}{2}$	1 $\frac{1}{2}$	.38	3.43	3
.05 $\frac{1}{4}$	$\frac{7}{16}$	1 $\frac{1}{4}$	.29	2.64	2 $\frac{1}{2}$
.04 $\frac{1}{2}$	$\frac{3}{8}$	1 $\frac{1}{8}$	.21	1.95	2 $\frac{1}{4}$
.03 $\frac{1}{2}$	$\frac{5}{16}$	1	.15	1.36	2
5 Strands					
.03	$\frac{9}{32}$	$\frac{7}{8}$	.125	1.20	1 $\frac{3}{4}$
.02 $\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	.09	.99	1 $\frac{1}{2}$
.02 $\frac{1}{4}$	$\frac{7}{32}$	$\frac{5}{8}$	.063	.79	1 $\frac{1}{4}$
.02	$\frac{3}{16}$	$\frac{1}{2}$	.04	.61	1 $\frac{1}{8}$

*Otherwise known as "Guy Rope" or "Yacht Rigging Rope."

Intermediate sizes of wire rope are to take the list price of the next larger size. Sizes $\frac{1}{16}$ inch and smaller, 5 strands of 7 wires to the strand.Ropes made with wire strand center add 15% to list prices. This will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Galvanized Standing and Guy Rope*

6 Strands—7 or 19 Wires to the Strand—1 Hemp Core



6x7



73

Cast Steel

List Price per Foot		Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds	Circumference of Equal Manilla Rope
19 Wires	7 Wires					
\$0.50	\$0.47	1 1/4	4	2.50	40.	13
.46	.44	1 3/16	3 3/4	2.26	36.4	12
.41 3/4	.39 1/2	1 1/8	3 1/2	2.03	32.8	11
.38	.35	1 1/16	3 1/4	1.81	29.4	10
.34	.31 3/4	1	3	1.60	26.1	9
.26 1/4	.24 3/4	7/8	2 3/4	1.23	20.	8 1/2
.23 1/2	.22	13/16	2 1/2	1.06	17.3	8
.20 3/4	.18 1/2	3/4	2 1/4	.90	14.8	7
.15 1/4	.13	5/8	2	.63	10.4	6
.13	.11	9/16	1 3/4	.51	8.5	5 1/4
.12	.08 3/4	1/2	1 1/2	.40	6.8	4 3/4
.11 1/2	.08	15/32	1 3/8	.35	6.	4 1/2
.11	.07	7/16	1 1/4	.31	5.3	4 1/4
.10 1/4	.06	3/8	1 1/8	.23	3.9	3 3/8
.10	.04 3/4	5/16	1	.16	2.8	3

*Otherwise known as "Yacht Rigging Rope."

Intermediate sizes of wire rope are to take the list price of the next larger size.
NOTE—When made with Wire Strand Center add 15% to list price per foot. This will increase the breaking strength by about 7 1/2%.

Highway Guard Rail Strand

3 Strands—7 Wires in Each Strand

Extra galvanized



Made according to the requirements of the state highway departments. Galvanized by our new perfected process so that each wire is properly protected with zinc.

Also made in other constructions such as 7x7. Price on application. Can also be furnished in single galvanized.

Amerstrand

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Strand
and Cord

Flat Rope

Smooth Coil
Track StrandUnreeling
and
Uncoiling

Splicing

Data Tables

Galvanized Deep Sea Towing Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



76

Special Plow Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds
\$1.60	$2\frac{3}{8}$	$7\frac{1}{2}$	8.74	173.3
1.52	$2\frac{5}{16}$	$7\frac{1}{4}$	8.29	164.6
1.44	$2\frac{1}{4}$	$7\frac{1}{8}$	7.85	156.2
1.35	$2\frac{1}{8}$	$6\frac{3}{4}$	7.	140.2
1.28	$2\frac{1}{16}$	$6\frac{1}{2}$	6.59	132.6
1.20	2	$6\frac{1}{4}$	6.20	125.
1.12	$1\frac{15}{16}$	6	5.82	117.8
1.05	$1\frac{13}{16}$	$5\frac{3}{4}$	5.09	103.4
.98	$1\frac{3}{4}$	$5\frac{1}{2}$	4.75	96.5
.91	$1\frac{11}{16}$	$5\frac{1}{4}$	4.41	89.8
.84	$1\frac{5}{8}$	5	4.09	83.4
.77	$1\frac{1}{2}$	$4\frac{3}{4}$	3.49	71.2
.71	$1\frac{1}{16}$	$4\frac{1}{2}$	3.20	65.5
.65	$1\frac{3}{8}$	$4\frac{1}{4}$	2.93	60.
.60	$1\frac{1}{4}$	4	2.42	49.7
.54	$1\frac{3}{16}$	$3\frac{3}{4}$	2.19	44.9
.48	$1\frac{1}{8}$	$3\frac{1}{2}$	1.96	40.3
.42	$1\frac{1}{16}$	$3\frac{1}{4}$	1.75	36.
.37	1	3	1.55	31.9
.31	$\frac{7}{8}$	$2\frac{3}{4}$	1.19	24.6
.26	$\frac{13}{16}$	$2\frac{1}{2}$	1.02	21.3
.23	$\frac{3}{4}$	$2\frac{1}{4}$	.87	18.3

Intermediate sizes of wire rope are to take the list price of the next larger size.

Galvanized Running Rope*

6 Strands—12 Wires to the Strand—7 Hemp Cores



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List Price per Foot			Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds		
Iron	Cast Steel	Plow Steel				Iron	Cast Steel	Plow Steel
.....	\$0.78	.....	2 ¹ / ₁₆	6 ¹ / ₂	4.47	.....	66.6	81.3
.....	.72	.....	2	6 ¹ / ₄	4.20	.....	62.7	76.9
.....	.67	.....	1 ¹⁵ / ₁₆	6	3.94	.....	59.	72.2
.....	.62	.....	1 ¹³ / ₁₆	5 ³ / ₄	3.45	.....	51.7	63.4
.....	.57	.....	1 ³ / ₄	5 ¹ / ₂	3.22	.....	48.3	59.3
.....	.53	.....	1 ¹¹ / ₁₆	5 ¹ / ₄	2.99	.....	45.	55.3
.....	.49	\$0.79	1 ⁵ / ₈	5	2.77	.....	41.8	51.5
.....	.44	.71	1 ¹ / ₂	4 ³ / ₄	2.36	.....	35.8	44.3
.....	.41	.65	1 ⁷ / ₁₆	4 ¹ / ₂	2.17	.....	33.	40.7
.....	.38	.60	1 ³ / ₈	4 ¹ / ₄	1.99	.....	30.2	37.4
.....	.35	.55	1 ¹ / ₄	4	1.64	.....	25.1	31.
.....	.33	.49 ¹ / ₂	1 ³ / ₁₆	3 ³ / ₄	1.48	.....	22.8	28.1
.....	.31	.44	1 ¹ / ₈	3 ¹ / ₂	1.33	.....	20.5	25.3
\$0.22	.30	.40	1 ¹ / ₁₆	3 ¹ / ₄	1.19	.....	18.3	22.6
.20	.27	.36	1	3	1.05	8.1	16.3	20.
.17	.23	.31	7 ⁷ / ₈	2 ³ / ₄	.80	6.3	12.5	15.4
.14 ¹ / ₂	.20	.27	1 ³ / ₁₆	2 ¹ / ₂	.69	5.46	10.8	13.3
.12	.16 ¹ / ₂	.22	3 ³ / ₄	2 ¹ / ₄	.59	4.7	9.26	11.3
.10	.14	.19	5 ⁵ / ₈	2	.41	3.35	6.46	7.9
.08	.11	.15	9 ⁹ / ₁₆	1 ³ / ₄	.33	2.75	5.26	6.43
.07	.09	.12	1 ¹ / ₂	1 ¹ / ₂	.26	2.18	4.23	5.1
.06 ¹ / ₂	.08 ¹ / ₂	.11 ¹ / ₄	7 ⁷ / ₁₆	1 ¹ / ₄	.20	1.69	3.29	4.01
.06	.07 ³ / ₄	.10 ¹ / ₄	3 ³ / ₈	1 ¹ / ₈	.15	1.26	2.47	3.01
.05 ¹ / ₂	.07	.09 ¹ / ₂	5 ⁵ / ₁₆	1	.10	.88	1.76	2.13

*Sometimes called Hawser and Mooring Line.

Intermediate sizes of wire rope are to take the list price of the next larger size.

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Data Tables

Galvanized Steel Hawser*

6 Strands—24 Wires to the Strand—7 Hemp Cores



80

Cast Steel and Plow Steel

List Price per Foot		Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot	Breaking Strength in Tons of 2000 Pounds	
Cast Steel	Plow Steel				Cast Steel	Plow Steel
\$1.22	\$1.52	2 1/16	6 1/2	5.87	98.	118.
1.14	1.42	2	6 1/4	5.52	92.	112.
1.06	1.32	1 15/16	6	5.18	86.6	105.
1.00	1.25	1 13/16	5 3/4	4.53	76.2	92.3
.93	1.16	1 3/4	5 1/2	4.23	71.2	86.2
.86	1.07	1 11/16	5 1/4	3.93	66.3	80.2
.80	1.00	1 5/8	5	3.64	61.6	74.5
.73	.91	1 1/2	4 3/4	3.11	52.6	63.6
.67	.84	1 7/16	4 1/2	2.85	48.4	58.5
.62	.77	1 3/8	4 1/4	2.61	44.4	53.6
.57	.71	1 1/4	4	2.16	36.7	44.4
.51	.64	1 3/16	3 3/4	1.95	33.2	40.1
.45	.56	1 1/8	3 1/2	1.75	29.9	36.
.40	.50	1 1/16	3 1/4	1.56	26.7	32.2
.35	.44	1	3	1.38	23.7	28.5
.29	.36	7/8	2 3/4	1.06	18.3	22.
.25	.31	13/16	2 1/2	.91	15.8	19.1
.22	.27	3/4	2 1/4	.78	13.6	16.4
.20	.25	5/8	2	.54	9.59	11.6
.18	.22	1/2	1 1/2	.35	6.37	7.63
.16	.20	3/8	1 1/8	.194	3.67	4.4

*Sometimes called "Mooring Lines."

Intermediate sizes of wire rope are to take the list price of the next larger size.

Galvanized Steel Bridge Cables

6 Strands, 7, 19, or 37 Wires to the Strand, Wire Center



6 Strands, 19 Wires to the Strand, 7x7 Independent Wire Rope Center

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Plow Steel

Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds
3	9 $\frac{3}{8}$	15.75	360
2 $\frac{3}{4}$	8 $\frac{5}{8}$	13.25	310
2 $\frac{5}{8}$	8 $\frac{1}{4}$	12.10	283
2 $\frac{1}{2}$	7 $\frac{7}{8}$	11.00	256
2 $\frac{3}{8}$	7 $\frac{1}{2}$	9.90	232
2 $\frac{1}{4}$	7 $\frac{1}{8}$	8.85	208
2 $\frac{1}{8}$	6 $\frac{5}{8}$	7.90	185
2	6 $\frac{1}{4}$	7.00	164
1 $\frac{7}{8}$	5 $\frac{7}{8}$	6.25	144
1 $\frac{3}{4}$	5 $\frac{1}{2}$	5.36	124
1 $\frac{5}{8}$	5 $\frac{1}{8}$	4.62	106
1 $\frac{1}{2}$	4 $\frac{3}{4}$	3.80	90
1 $\frac{3}{8}$	4 $\frac{3}{8}$	3.30	75
1 $\frac{1}{4}$	3 $\frac{7}{8}$	2.70	62
1 $\frac{1}{8}$	3 $\frac{1}{2}$	2.20	54
1	3 $\frac{1}{8}$	1.75	42

Prices furnished upon request.

Data on larger Bridge Cables and Bridge Cables of higher strength furnished upon request. The number of wires to the strand depends upon the size of the Bridge Cable.

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Data Tables

Galvanized Mast Arm or Arc Light Rope

8 or 9 Strands—4 or 7 Wires to the Strand—1 Cotton Core



9x7



82

List Price per Foot	Diameter in Inches	Weight per Foot in Pounds	Breaking Strength in Pounds	Construction
\$0.07	$\frac{1}{2}$	.335	4700	9x7
.06	$\frac{7}{16}$	.245	3400	9x7
.05	$\frac{3}{8}$	.163	2300	*9x7
.03 $\frac{1}{2}$	$\frac{5}{16}$	.107	1530	9x4
.02 $\frac{3}{4}$	$\frac{1}{4}$	.077	1100	*8x4

Used for Arc Lights, Mast Arms, or other purposes where operated over small sheaves and exposed to moisture. It is more durable than manila rope and does not shrink when exposed to moisture.

The constructions shown are standard.

*For these sizes 9x4 can be furnished if desired and at same prices.

The **TIGER TRADE MARK** is a symbol
of Strength and Dependability

THE MARK FOR *GENUINE*
AMERICAN WIRE ROPE

Amerstrand Galvanized and Extra Galvanized Strand



7 or 19 Steel Wires Twisted into a Single Strand

This is a strand of moderate strength. It is used chiefly for guying poles and smoke stacks or supporting trolley wires, and for operating railroad signals.

Made in galvanized and extra galvanized, the latter being protected by a heavier coating of spelter to meet the requirements of customers desiring the additional protection and wearing value.

LIST PRICES

84 7 Steel Wires Twisted into a Single Strand— Common Grade Galv. or Extra Galv.

List Price per 100 Feet	Diameter Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet in Lbs.	Approximate Strength in Pounds
\$14.00	$\frac{3}{4}$	.250	1,200	16,700
8.50	$\frac{5}{8}$	.207	813	11,600
7.00	$\frac{9}{16}$	.188	671	9,600
5.50	$\frac{1}{2}$	.165	517	7,400
4.50	$\frac{7}{16}$	.145	399	5,700
3.50	$\frac{3}{8}$	.120	273	4,250
2.50	$\frac{5}{16}$	.104	205	3,200
2.25	$\frac{9}{32}$	.093	164	2,570
1.75	$\frac{1}{4}$	.080	121	1,900
1.50	$\frac{7}{32}$	.072	98.3	1,540
1.25	$\frac{3}{16}$	.062	72.9	1,150
1.15	$\frac{5}{32}$	.052	51.3	870
1.10	$\frac{9}{64}$.047	40	700
1.00	$\frac{1}{8}$.041	31.8	540
.90	$\frac{7}{64}$.035	25	450
.80	$\frac{3}{32}$.031	20	400
.70	$\frac{5}{64}$.026	13	300

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Data Tables

85 19 Wires Twisted into a Single Strand— Galv. or Perfected Extra Galv.

\$26.00	1	.200	2,073	28,700
20.70	$\frac{7}{8}$	.175	1,581	21,900
16.80	$\frac{3}{4}$	.150	1,155	16,000
11.00	$\frac{5}{8}$	.125	796	11,000
9.25	$\frac{9}{16}$	.110	637	9,640
7.30	$\frac{1}{2}$	.100	504	7,620

Intermediate sizes take price of next higher size on the list.

Amerstrand

Extra Galvanized 7 or 19 Wires Twisted into a Single Strand

Made in three grades, or strengths to meet all requirements for durability, strength, toughness and light weight, i.e., Siemens-Martin Strand, High Strength (Cast Steel) Strand, Extra High Strength (Plow Steel) Strand.

All three are composed of seven or nineteen wires, having the heaviest coating of galvanizing that will insure the longest life.

Used for guying electric railway, telegraph and telephone poles, for supporting trolley wire on electric railroads, also for "messenger" purposes, where extra strengths are required.

The above grades of strand are made to meet the most rigid specifications as to galvanizing, tensile strength and other mechanical requirements—especially the specifications of the American Telegraph and Telephone Company, who are large users.

Siemens-Martin Grade

86

7 Wires

List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$8.25	$\frac{5}{8}$	.207	813	19,100
6.00	$\frac{9}{16}$	.188	671	15,700
5.25	$\frac{1}{2}$	.165	517	12,100
4.30	$\frac{7}{16}$	.145	399	9,350
3.25	$\frac{3}{8}$	.120	273	6,950
2.50	$\frac{5}{16}$	.104	205	5,350
2.05	$\frac{9}{32}$	.093	164	4,250
1.70	$\frac{1}{4}$	.080	121	3,150
1.35	$\frac{3}{16}$	.062	72.9	1,900
.90	$\frac{1}{8}$	.041	31.8	910

87

19 Wires

.....	1	.200	2,073	47,000
\$16.65	$\frac{7}{8}$	.175	1,581	35,900
13.35	$\frac{3}{4}$	.150	1,155	26,200
10.00	$\frac{5}{8}$	.125	796	18,100
8.25	$\frac{9}{16}$	.110	637	16,100
6.75	$\frac{1}{2}$	.100	504	12,700
5.60	$\frac{7}{16}$	....	395	9,000
4.50	$\frac{3}{8}$	....	288	6,800

(Minimum elongation in 24' length, all sizes 8%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

Amerstrand

High Strength Grade

88

7 Wires

List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$12.00	$\frac{5}{8}$	.207	813	29,600
9.50	$\frac{9}{16}$	.188	671	24,500
7.25	$\frac{1}{2}$	.165	517	18,800
6.00	$\frac{7}{16}$	.145	399	14,500
4.40	$\frac{3}{8}$	.120	273	10,800
3.20	$\frac{5}{16}$	.104	205	8,000
2.80	$\frac{9}{32}$	.093	164	6,400
2.25	$\frac{1}{4}$	.080	121	4,750
1.80	$\frac{3}{16}$	.062	72.9	2,850
1.20	$\frac{1}{8}$	.041	31.8	1,330

89

19 Wires

.....	1	.200	2,073	73,200
\$23.50	$\frac{7}{8}$	.175	1,581	55,800
17.50	$\frac{3}{4}$	.150	1,155	40,800
12.25	$\frac{5}{8}$	.125	796	28,100
10.65	$\frac{9}{16}$	.110	637	24,100
9.00	$\frac{1}{2}$	.100	504	19,100
7.00	$\frac{7}{16}$	....	395	15,000
5.25	$\frac{3}{8}$	....	288	11,500

(Minimum elongation in 24" length, all sizes 5%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

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Data Tables

Amerstrand

Extra High Strength Grade
7 Wires

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List Price per 100 Feet	Size Diameter in Inches	Approximate Size of Wire	Approximate Weight per 1000 Feet	Breaking Strength in Pounds
\$14.60	$\frac{5}{8}$	.207	813	42,400
11.70	$\frac{9}{16}$	.188	671	35,000
8.80	$\frac{1}{2}$	.165	517	26,900
7.20	$\frac{7}{16}$	.145	399	20,800
5.25	$\frac{3}{8}$	.120	273	15,400
4.25	$\frac{5}{16}$	.104	205	11,200
3.50	$\frac{9}{32}$	.093	164	8,950
2.85	$\frac{1}{4}$	.080	121	6,650
2.40	$\frac{3}{16}$	.062	72.9	3,990
1.60	$\frac{1}{8}$	.041	31.8	1,830

91

19 Wires

.....	1	.200	2,073	104,500
\$28.50	$\frac{7}{8}$	.175	1,581	79,700
22.00	$\frac{3}{4}$	.150	1,155	58,300
15.50	$\frac{5}{8}$	.125	796	40,200
13.25	$\frac{9}{16}$	.110	637	33,700
11.00	$\frac{1}{2}$	.100	504	26,700
8.50	$\frac{7}{16}$	....	395	22,500
6.50	$\frac{3}{8}$	....	288	17,250

(Minimum elongation in 24" length, all sizes 4%.)

When either intermediate sizes or strengths are called for, if they are exactly midway between two sizes provided for, the average price of the two sizes shall apply; otherwise the price of the nearest size and strength shall apply.

Airplane Strand and Cord



STRAND

List Per 100 Feet Tinned or Galv.	Diameter	Number of Wires	Approx. Weight per 1,000 Feet	Breaking Strength
	$\frac{5}{16}$ "	19	214 lbs.	12,500 lbs.
	$\frac{1}{4}$ "	19	136 lbs.	8,000 lbs.
	$\frac{7}{32}$ "	19	106 lbs.	6,100 lbs.
	$\frac{3}{16}$ "	19	75 lbs.	4,600 lbs.
	$\frac{5}{32}$ "	19	57 lbs.	3,200 lbs.
	$\frac{3}{8}$ "	19	35 lbs.	2,100 lbs.
	$\frac{7}{16}$ "	19	28 lbs.	1,600 lbs.
	$\frac{5}{16}$ "	19	20 lbs.	1,100 lbs.
	$\frac{3}{8}$ "	19	14 lbs.	780 lbs.
	$\frac{1}{2}$ "	19	8.8 lbs.	500 lbs.
	$\frac{5}{8}$ "	7	2.2 lbs.	185 lbs.

7 x 7 Construction

List per 100 Feet Tinned or Galv.	Diameter	Approx. Weight per 1,000 Feet	Breaking Strength
	$\frac{5}{16}$ "	166 lbs.	9,200 lbs.
	$\frac{1}{4}$ "	106 lbs.	5,800 lbs.
	$\frac{7}{32}$ "	81 lbs.	4,600 lbs.
	$\frac{3}{16}$ "	61 lbs.	3,200 lbs.
	$\frac{5}{32}$ "	43 lbs.	2,600 lbs.
	$\frac{3}{8}$ "	27 lbs.	1,350 lbs.
	$\frac{5}{16}$ "	16 lbs.	920 lbs.
	$\frac{3}{8}$ "	10.9 lbs.	550 lbs.
	$\frac{1}{2}$ "	6.9 lbs.	480 lbs.

6 x 7 Construction, Cotton Center

	$\frac{1}{2}$ "	391 lbs.	20,000 lbs.
	$\frac{7}{16}$ "	300 lbs.	14,200 lbs.
	$\frac{3}{8}$ "	214 lbs.	11,800 lbs.
	$\frac{5}{16}$ "	148 lbs.	7,900 lbs.
	$\frac{9}{32}$ "	121 lbs.	6,200 lbs.
	$\frac{1}{4}$ "	96 lbs.	5,000 lbs.
	$\frac{5}{16}$ "	73 lbs.	4,000 lbs.
	$\frac{3}{8}$ "	55 lbs.	2,750 lbs.
	$\frac{5}{16}$ "	38 lbs.	2,200 lbs.
	$\frac{3}{8}$ "	24 lbs.	1,150 lbs.
	$\frac{1}{2}$ "	19 lbs.	830 lbs.
	$\frac{3}{4}$ "	14 lbs.	780 lbs.
	$\frac{5}{8}$ "	10 lbs.	480 lbs.
	$\frac{3}{4}$ "	6.2 lbs.	400 lbs.

7 x 19 Construction

	$\frac{3}{8}$ "	232 lbs.	14,400 lbs.
	$\frac{11}{32}$ "	195 lbs.	12,500 lbs.
	$\frac{5}{16}$ "	161 lbs.	9,800 lbs.
	$\frac{9}{32}$ "	131 lbs.	8,000 lbs.
	$\frac{1}{4}$ "	103 lbs.	7,000 lbs.
	$\frac{5}{16}$ "	79 lbs.	5,600 lbs.
	$\frac{3}{8}$ "	60 lbs.	4,200 lbs.
	$\frac{5}{16}$ "	42 lbs.	2,800 lbs.
	$\frac{3}{8}$ "	27 lbs.	2,000 lbs.

All above made to latest U. S. Army, Navy and Naval Aircraft Factory specifications.

Excellay Preformed Wire Rope can be furnished in the above construction and sizes. Prices on request.

Airplane Strand and Cord

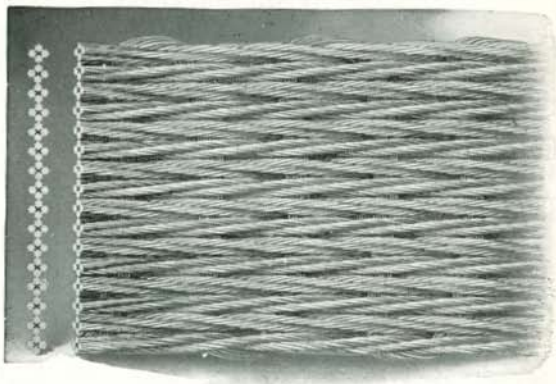
Flat Rope

Smooth Coil Track Strand

Unreeling and Uncoiling

Splicing

Data Tables



Flat Rope

Flat Rope is composed of a number of wire ropes called "flat rope strands," of alternate right and left lay, placed side by side, then secured or sewed together with soft Swedish iron or steel wire, thus forming a complete rope as shown in the cut, usually of cast steel, although it can be made of iron or plow steel, if necessary. The sewing or filling wires, being so much softer than the steel wires composing the strands of the rope, act as a cushion or soft bed for the strands, and wear out much faster than the harder wires composing the latter. When the sewing wires are worn out, the flat rope can be resewed with new wire, and if any of the rope strands are also worn or damaged, these can be replaced by new portions. In fact, flat ropes admit of being repaired by the replacing of any worn or injured part. Strands of any kind, size or quality can be furnished.

Flat Rope is used principally for hoisting purposes. When large and long rope is used in hoisting heavy loads out of deep shafts, round rope requires large and heavy drums on which to wind, while flat rope, winding on itself, needs a reel but a little wider than the width of the rope. When space for machinery is an object, the advantage of using the style of rope requiring the smallest reel is obvious. Furthermore, flat rope does not spin or twist in the shaft. Flat rope can be furnished from $1\frac{3}{4}$ inches to 8 inches in width, and from $\frac{1}{4}$ inch to $\frac{7}{8}$ inch in thickness, the length varying from 20 to 3,000 feet.

Flat Rope

83

Width and Thickness in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds		Approximate Working Load in Tons of 2000 Lbs.
		Cast Steel	Plow Steel	
$\frac{7}{8} \times 8$	10.69	224.3	275.3	<i>See page 6</i>
$\frac{7}{8} \times 7$	9.63	201.9	247.8	
$\frac{7}{8} \times 6$	8.56	179.4	220.2	
$\frac{7}{8} \times 5$	7.50	157.	192.7	
$\frac{3}{4} \times 8$	9.70	184.5	228.3	
$\frac{3}{4} \times 7$	8.13	167.7	207.5	
$\frac{3}{4} \times 6$	7.31	150.9	186.8	
$\frac{3}{4} \times 5$	6.50	134.2	166.	
$\frac{5}{8} \times 8$	8.32	174.6	216.	
$\frac{5}{8} \times 7$	7.23	151.3	187.	
$\frac{5}{8} \times 6$	6.14	128.1	158.	
$\frac{5}{8} \times 5\frac{1}{2}$	5.59	116.4	143.8	
$\frac{5}{8} \times 5$	5.04	104.8	129.4	
$\frac{5}{8} \times 4\frac{1}{2}$	4.50	93.1	115.	
$\frac{5}{8} \times 4$	3.95	81.5	100.6	
$\frac{5}{8} \times 3\frac{1}{2}$	3.40	69.9	86.3	
$\frac{1}{2} \times 7$	5.85	122.	150.4	
$\frac{1}{2} \times 6$	4.85	106.7	131.6	
$\frac{1}{2} \times 5\frac{1}{2}$	4.50	99.1	122.2	
$\frac{1}{2} \times 5$	4.16	91.5	112.8	
$\frac{1}{2} \times 4\frac{1}{2}$	3.82	76.2	94.	
$\frac{1}{2} \times 4$	3.16	68.6	84.6	
$\frac{1}{2} \times 3\frac{1}{2}$	2.82	61.	75.2	
$\frac{1}{2} \times 3$	2.47	53.4	65.8	
$\frac{1}{2} \times 2\frac{1}{2}$	2.13	45.8	56.4	
$\frac{3}{8} \times 6$	3.63	76.5	93.7	
$\frac{3}{8} \times 5\frac{1}{2}$	3.42	72.2	88.5	
$\frac{3}{8} \times 5$	3.03	63.8	78.1	
$\frac{3}{8} \times 4\frac{1}{2}$	2.83	59.5	72.8	
$\frac{3}{8} \times 4$	2.44	51.	62.4	
$\frac{3}{8} \times 3\frac{1}{2}$	2.23	46.7	57.2	
$\frac{3}{8} \times 3$	1.84	38.3	46.8	
$\frac{3}{8} \times 2\frac{1}{2}$	1.64	34.	41.6	
$\frac{3}{8} \times 2$	1.25	25.5	31.2	
$\frac{5}{16} \times 4$	2.17	45.	54.8	

Refer to office for prices.

(Continued on next page)

Flat Rope

Smooth Coil
Track StrandUnreeling
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83 (Continued) Flat Rope

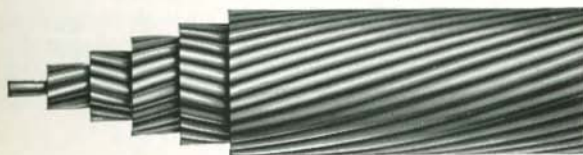
Width and Thickness in Inches	Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds		Approximate Working Load in Tons of 2000 Lbs.
		Cast Steel	Plow Steel	
$\frac{5}{16} \times 3\frac{1}{2}$	1.89	39.	47.5	
$\frac{5}{16} \times 3$	1.61	33.	40.1	
$\frac{5}{16} \times 2\frac{1}{2}$	1.33	27.	32.8	
$\frac{5}{16} \times 2$	1.05	21.	25.5	
$\frac{5}{16} \times 1\frac{1}{2}$	.77	15.	18.2	
$\frac{1}{4} \times 3$	1.34	26.	31.3	
$\frac{1}{4} \times 2\frac{1}{2}$	1.15	22.	26.5	
$\frac{1}{4} \times 2$	.88	18.	21.7	
$\frac{1}{4} \times 1\frac{1}{2}$	.69	14.	16.9	

Refer to office for prices.

The TIGER TRADE MARK is a symbol
of Strength and Dependability

THE MARK FOR GENUINE
AMERICAN WIRE ROPE

Smooth Coil Track Strand for Aerial Tramways



Dia. in Inches	No. of Wires in Strand	Weight per 100 Feet in lbs.	60 CAST STEEL		61 PLOW STEEL	
			List Prices per 100 Feet	Breaking Strength in Tons of 2,000 lbs.	List Prices per 100 Feet	Breaking Strength in Tons of 2,000 lbs.
2 1/2	91	1,272	\$318.00	285.00	\$350.00	335.00
2 1/4	91	1,019	253.00	233.00	278.00	266.00
2 1/8	91	928	233.00	204.00	256.00	240.00
2	61	813	189.00	185.00	208.00	218.00
1 7/8	61	711	166.00	161.00	182.00	189.00
1 3/4	61	621	140.00	145.80	154.00	171.00
1 5/8	61	536	117.50	124.00	129.00	146.00
1 1/2	37	455	95.30	108.40	104.50	127.50
1 3/8	37	379	69.40	88.80	79.00	105.00
1 1/4	37	310	55.00	71.80	63.90	84.60
1 1/8	37	258	46.25	60.00	50.80	70.70
1	19	198	38.20	49.20	44.00	58.00
7/8	19	155	29.90	37.60	34.30	44.40
3/4	19	112	19.35	27.60	21.30	32.50
5/8	19	79	12.80	19.20	13.80	22.30
9/16	19	63	10.40	15.00	11.45	18.00
1/2	19	49	8.20	12.60	9.05	15.30

Discounts upon application.

NOTE—Above are standard constructions. For list price on other constructions add 10% to above lists for each additional layer of wires, i. e., the standard construction for 1 3/8" is 37 wires, for list price on 1 3/8"-61 wires, add 10% to list for 1 3/8"-37 wires, for 1 3/8"-91 wires, add 21% to list price of 1 3/8"-37 wires. Breaking strengths and weights will be about the same.

The importance of the wire rope tramway for transporting all kinds of material makes it expedient to insert the foregoing table of two different grades of track strand. This strand is designed to give as much flexibility as possible as well as a fairly smooth surface for traveler wheels to run upon. The plow steel quality affords the greatest strength with the least weight, a very important advantage, especially in long spans.

See our Aerial Tramways catalogue.

Smooth Coil
Track Strand

Unreeling
and
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Unreeling and Uncoiling Wire Rope

When removing wire rope from the reel on which it is received, or from the coil if it is a coil shipment, it is imperative that the reel or coil rotate as the rope unwinds. Attempts to unwind rope from stationary coils or reels will result in kinking the rope, and once a kink is formed the rope at that point is ruined beyond repair.

UNREELING:

If the rope is to be unwound from a reel, there are three correct methods of unreeling.

1. The reel may be mounted on a shaft supported by two jacks as shown in Figure 1. The rope is then pulled



(Fig. 1)

from the reel by a workman holding the end of the rope and walking away from the reel which rotates as the rope unwinds. This is the common approved method of unreeling wire rope.

2. The reel may be mounted on a turntable as shown in Figure 2. It is then unwound in the same manner as



(Fig. 2)

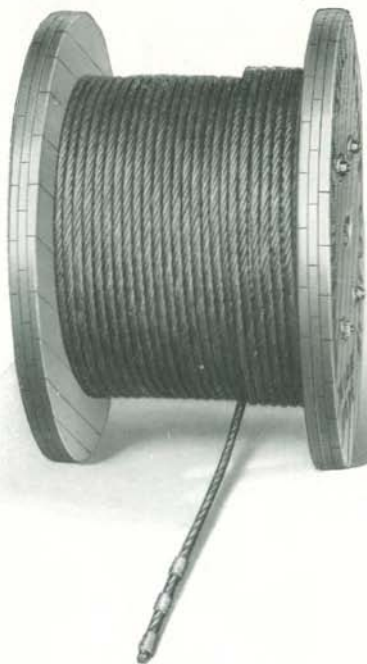
described above. Care must be exercised to keep the rope under sufficient tension to prevent slack accumulating and the rope dropping below the lower reel head.

Unreeling
and
Uncoiling

Splicing

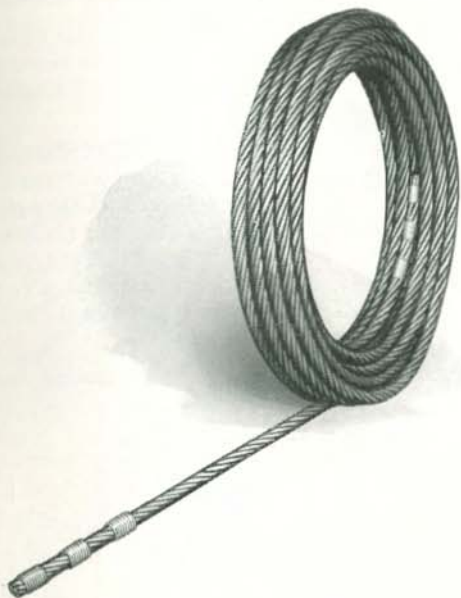
Data Tables

3. The end of the rope may be held and the reel rolled along the ground as shown in Figure 3.



(Fig. 3)

UNCOILING: If the rope is to be unwound from a coil, there is only one correct method of uncoiling. The end of the rope should be held and the coil rolled on the ground like a hoop as shown in Figure 4.



(Fig. 4)

Failure to use one of these methods has ruined many lengths of wire rope. Hemp rope can be unwound by pulling through the eye of the coil or from the stationary reel standing on end without seriously injuring it. These methods should never be attempted when handling wire rope.

Directions for Splicing 6 Strand Ropes

When a rope is spliced endless, or two similar ropes are spliced together, a short length of each of the two ends is consumed in making the splice. This should be considered when ordering the lengths to be spliced.

There are two endless splices: the Standard Short Splice used for splicing most six strand ropes; and the Long Splice used for splicing Haulage Ropes and long lengths of wire rope operating under heavy loads. The Long Splice differs from the Standard Short Splice in that the distance between tucks and length of tuck is greater and more rope is consumed in making the splice. Otherwise the two are the same.

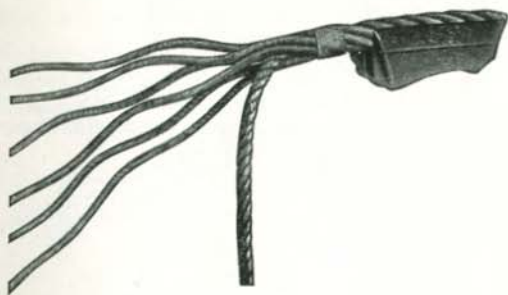
The total amount of rope to allow for making endless splices is:

Diameter of Wire Rope in Inches	$\frac{1}{4}$ - $\frac{3}{8}$	$\frac{1}{2}$ - $\frac{5}{8}$	$\frac{3}{4}$ - $\frac{7}{8}$	1- $1\frac{1}{8}$	$1\frac{1}{4}$ - $1\frac{3}{8}$	$1\frac{1}{2}$
Length of Rope to Allow in Feet						
{ Standard Short Splice . . .	15	20	24	28	32	36
{ Long Splice . . .	30	40	50	60	70	80

Place a seizing on each of the two rope ends to be spliced together at a distance from the end equal to one-half the allowance for splicing. As an example, if splicing two lengths of $\frac{1}{2}$ inch diameter rope together by the Standard Short Splice, the seizings would be placed ten feet from the ends.

It is unnecessary to apply seizings when using Excellay Preformed Wire Rope.

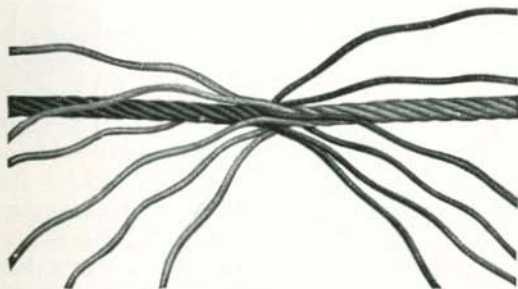
Unlay the strands of each end to these seizings. See Fig. 5.



(Fig. 5)

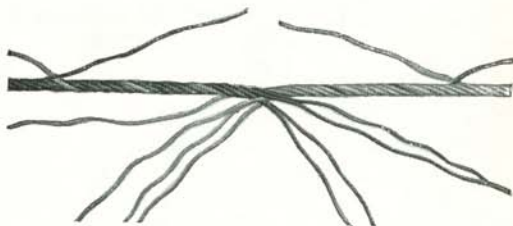
Cut off the hemp centers as near the seizings as possible.

Interlock the six strands of each end in a finger lock position. Force the ends together so that seizings are as near each other as possible. Remove the seizings. See Fig. 6.



(Fig. 6)

Unlay one strand, filling the groove vacated by this strand with a strand from the other rope end. Fig. 7 shows the first strand from each rope end being replaced by a strand from the other rope end.



(Fig. 7)

This process should be continued with the first strand from each rope end until only strand equal to the length of tuck remains.

The length of tuck is approximately one-twelfth the amount of rope allowed for the splice.

Diameter of Rope in Inches.	$\frac{1}{4}$ - $\frac{3}{8}$	$\frac{1}{2}$ - $\frac{5}{8}$	$\frac{3}{4}$ - $\frac{7}{8}$	1- $1\frac{1}{8}$	$1\frac{1}{4}$ - $1\frac{3}{8}$	$1\frac{1}{2}$
Length of Tuck in Inches.						
{ Standard { Short { Splice	15	20	24	28	32	36
{ Long { Splice	30	40	50	60	70	80

The second strand from each rope end should be unlayed and replaced by a strand from the other rope end in the same manner, but stopped at a distance of twice the length of tuck from the point where the first pair of strands

protrude. In a similar manner, the third strand from each end should be replaced by a strand from the other end for a distance equal to the length of tuck.

The twelve strands now protrude from the rope in pairs at points separated by twice the length of tuck.

The protruding strand ends should next be cut off leaving lengths equal to the length of tuck. Fig. 8 shows two of the six pairs of strand ends.



(Fig. 8)

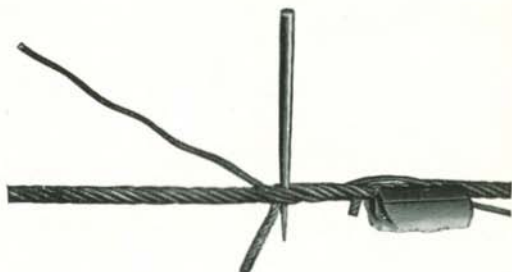
The strand ends should be wrapped with friction tape. A layer of tape helps hold the tucked ends in place as it makes them larger in diameter and increases the binding action of the outer strands. It is advisable to build up the diameter of the strand ends with tape as much as possible without making the rope oversize when the strand ends are tucked.

The method of tucking the six pairs of strand ends is the same for each pair.

If a vise is available, it should be used as it facilitates the tucking operation. If a vise cannot be obtained, a manila rope sling and a short wooden lever may be used to untwist and open the rope.

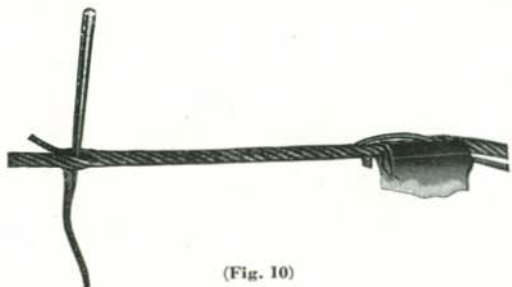
Place the rope in the vise so that the vise grips the rope and one of the two strand ends just beyond the point where a pair of strand ends protrude from the rope. See Fig. 9. Drive marlin spike under three strands, opening the rope so that the hemp center may be cut and the end pulled through the opening made by the point of the marlin spike. Start the wrapped strand end into the space left vacant by the removal of the hemp center.

Rotate the marlin spike so as to force out the hemp center and force the strand end into the center of the rope. See Fig. 9.



(Fig. 9)

By rotating the spike, the strand end is tucked its entire length. See Fig. 10.



(Fig. 10)

The rope is then regripped in the vise so that the second strand end can be tucked. See Fig. 11.

Drive the marlin spike under three strands as before.

In order to start the second strand end into the rope without any slack, a pair of splicing tongs or some other form of clamp should be used to force this strand into its proper position. See Fig. 11.



(Fig. 11)

The marlin spike is then rotated forcing the hemp center from the rope and forcing the wrapped strand end into the space vacated by the hemp center. The strand end is tucked its entire length in this manner. See Fig. 12.



(Fig. 12)

When splicing regular lay ropes the strand ends should not cross at the point where the tucks begin. See Figs. 12, 13 and 14.

When splicing Lang lay ropes, it is advisable to have the strand ends cross at the points where the tucks begin, as this increases the holding power of the splice. This is accomplished by inserting the marlin spike under the strand end which has been tucked when starting the tucking operation on the second strand end.

The rope will be somewhat deformed at the point where the tucks start. This can be remedied by hammering the rope at this point with wooden mallets. See Fig. 13.



(Fig. 13)

Fig. 14 shows one of six similar points of the finished splice where one pair of tucked strands start. A rope spliced in this manner is nearly as strong as the original rope. After running a few days, a well made splice cannot be detected except by a careful examination of the rope.



(Fig. 14)

Directions for Splicing 8 Strand Ropes

Because the hemp center in an eight strand rope is so much greater in diameter than the strands, it is not practical to tuck the strand ends by the method outlined for splicing six strand ropes. The strand ends are secured by twisting or tying them together. This is known as the Nash Tuck.

The process for splicing together two similar eight strand ropes, or splicing an eight strand rope endless, is similar to that for splicing a six strand rope up to the point where the strands are to be tucked. See Fig. 8. The only difference is that the length of tuck is approximately one sixteenth the amount of rope allowed for splicing.

The method of tucking the eight pairs of strand ends is the same for each pair.

Place seizings on rope each side of point where the strands project. Split the strand ends in two back to the seizings. See Fig. 15.



(Fig. 15)

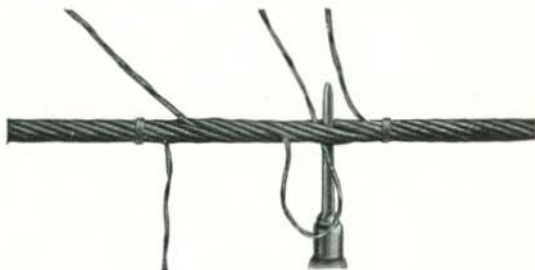
Take one-half of each strand end and tie a double knot. See Fig. 16.



(Fig. 16)

Knot should be drawn down tight by a hand clamp or some similar tool.

Insert spike under the three strands beyond the knot and pull the half strands through. Fig. 17 shows one-half strand pulled through and the second half strand in the process of being pulled through.



(Fig. 17)

The two half strands which have been tied and tucked are cut off close to the rope and each short end forced into the valley between the strands.

The other two half strands are tucked by inserting a marlin spike under the adjacent strand and pulling the half strand through. The ends are then cut off close to the rope and the short ends forced into the valleys between the strands.

Any unevenness in the rope should be removed by hammering with wooden mallets in the manner shown by Fig. 13.

Fig. 18 shows one of eight similar points of the finished splice.



(Fig. 18)

Directions for Eye Splicing Wire Ropes

While the following directions cover splicing a galvanized thimble into a six strand wire rope, the process is also used for eight strand ropes and for splicing eyes into ropes when thimbles are not used.

The process of splicing a thimble into a rope consists of bending the rope about the thimble and fastening the short end by tucking the individual strands under similar strands of the long end of the rope a sufficient number of times to hold them securely. Four tucks are usually sufficient for all ropes containing not more than nineteen wires to the strand. For ropes with more than 19 wires to the strand five tucks should be used.

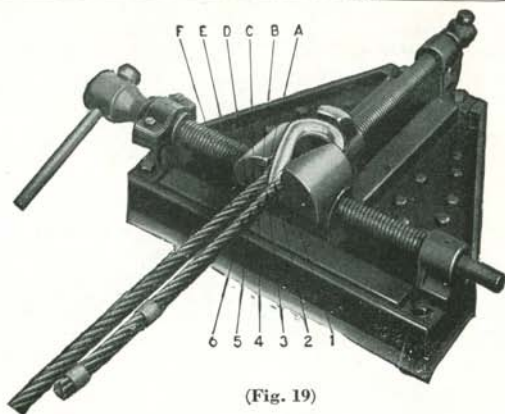
A short length of wire rope is consumed in making an eye splice. The amounts required for Regular and Heavy wire thimbles are shown below. For larger thimbles, a proportionally greater amount of rope is required.

Diameter of Rope in Inches.....	$\frac{1}{4}$ - $\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$ - $\frac{3}{4}$	$\frac{7}{8}$ -1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$
Length to Allow in Feet.	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4

A riggers vise as shown in the following illustration is best adapted for eye splicing. A common bench vise can be used if a riggers vise is not available.

Measure off the amount of rope allowed for making the splice. Bend the rope about the thimble at this point and place rope and thimble in vise. See Fig. 19.

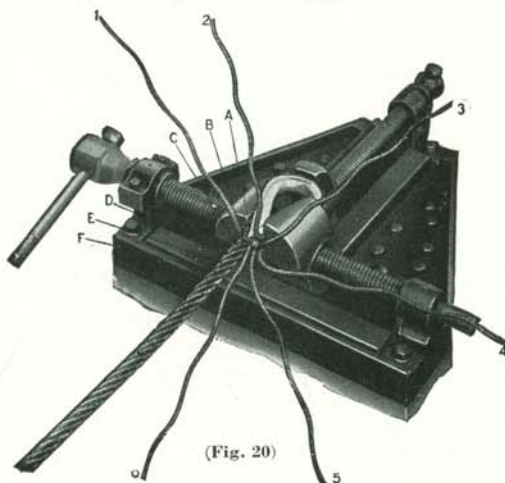
In these illustrations the strands of the short end of the rope have been numbered 1 to 6, inclusive, and the strands of the long end of the rope have been lettered A to F, inclusive. Strand 1 is to be tucked under Strand A; Strand 2 under Strand B; Strand 3 under Strand C; etc. Each strand of the short end of the rope is to be tucked



(Fig. 19)

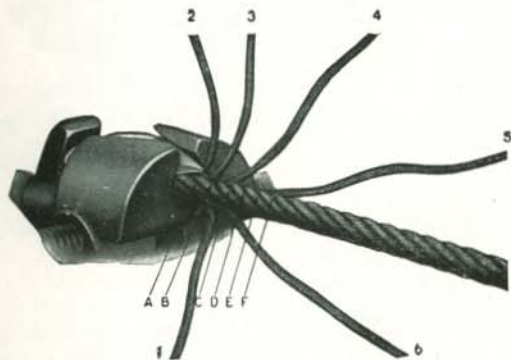
under its corresponding strand of the long end of the rope four times.

Remove seizings from the short end of the rope and separate the strands. Cut off the hemp center at the point where the strands separate. See Fig. 20.



(Fig. 20)

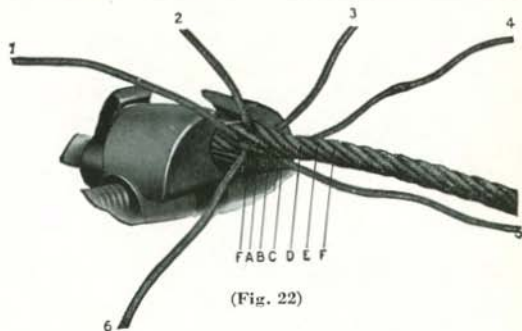
Insert a marlin spike under the first two strands nearest the point of the thimble, Strands A and B, and rotate the spike a half turn away from the thimble. Insert Strand 1 through the opening so formed and rotate spike back towards the thimble taking Strand 1 with it and pull Strand 1 tight. This gives Strand 1 one tuck. See Fig. 21.



(Fig. 21)

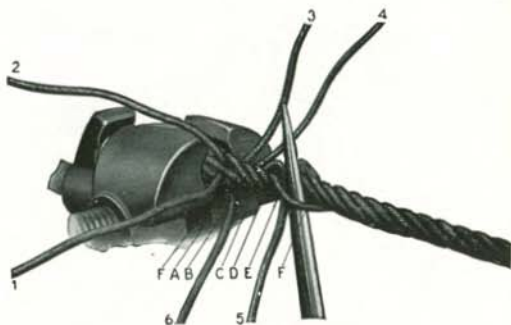
Insert marlin spike under next single strand, Strand B, and tuck Strand 2 by the same method.

Omit the next strand, Strand C, and insert marlin spike under the two strands beyond, Strands D and E, and tuck Strand 6 by inserting it through the opening in the direction opposite to which Strands 1 and 2 were tucked. Rotate the marlin spike back to the point of the thimble, forcing Strand 6 with it, and pull Strand 6 tight. Figure 22 shows the splice at this point. Strands 6, 1, and 2 have been tucked once under Strands F, A, and B, respectively.



(Fig. 22)

Insert marlin spike under Strand E and tuck Strand 5 in the same manner as Strand 2 was tucked. See Fig. 23.



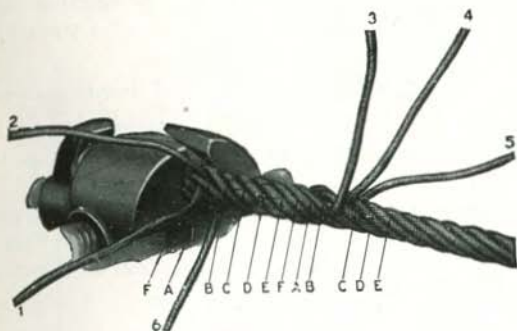
(Fig. 23)

Without removing the marlin spike give Strand 5 three additional tucks. This is accomplished by winding Strand 5 spirally around Strand E three times. Each tuck is made by rotating the spike a half turn, pulling Strand 5 through the opening, and rotating the spike back toward the thimble to tighten the tuck.

Give Strand 4 four tucks by winding it about Strand D in the same manner.

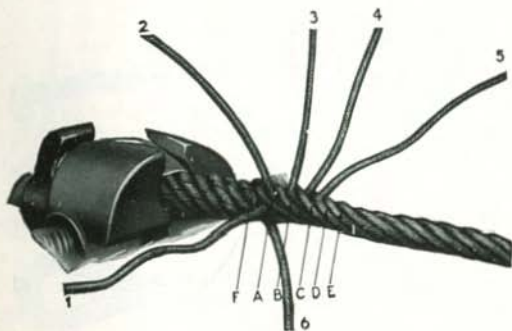
Tuck Strand 3 four times about Strand C.

Fig. 24 shows Strands 3, 4, and 5 after these strands have been given four tucks.



(Fig. 24)

Strands 6, 1, and 2, should be given three additional tucks about Strands F, A, and B, respectively, in the manner outlined for Strand 5. Fig. 25 shows four completed tucks in each of the six strands. If the rope contains more than nineteen wires per strand, each strand should be given an additional tuck.



(Fig. 25)

An eye splice made in this manner will have a slight taper as shown in Figs. 26 and 27. If a more pronounced taper is desired, this can be secured by splitting each strand before the final tuck and cutting off a portion of the wires.

The protruding strand ends are cut off close to the rope.

Any inequalities in the splice should be removed by hammering with wooden mallets as shown by Fig. 13, page 72.

The splice should be wrapped with serving wire to protect the hands of workmen handling the rope. This is best accomplished by using a serving iron as shown in Fig. 26.



(Fig. 26)

Fig. 27 shows a Galvanized Heavy Wire Rope Thimble spliced into the end of a 6x19 wire rope by the method here outlined.



(Fig. 27)

Fleet Angles

On installations where the wire rope passes over a lead sheave and then on to a drum, it is important that the lead sheave be located at a sufficient distance from the drum to maintain a small fleet angle at all times. The fleet angle is the side angle at which the rope approaches the sheave from the drum. It is the angle between the center line of the sheave and the wire rope.

The maximum fleet angle should not exceed one and one-half degrees for smooth drums, and two degrees for grooved drums. The maximum fleet angle is the angle between the center line of the lead sheave and the rope when it is at the end of its traverse travel on the drum. A fleet angle of one and one-half degrees is the equivalent of approximately forty feet of lead for each foot of rope travel each side of the center line of the sheave. Two degrees represents approximately 30 feet of lead per foot of rope travel each side of the center line.



Thus, a drum with three feet traverse travel, with its center of travel in line with the lead sheave, should be located approximately 45 feet from the lead sheave, if the drum is grooved, and 60 feet if the drum is smooth.

GROOVES

Grooves in sheaves and drums should be slightly larger than the rope in order to avoid pinching and binding of the strands and to permit the rope to adjust itself to the radius of curvature. The greater the angle of approach to the groove, the larger the tolerance required to prevent excessive flange wear.

The diameter of an unused rope may exceed the theoretical diameter by the amounts specified in the United States Master Specification for Wire Rope.

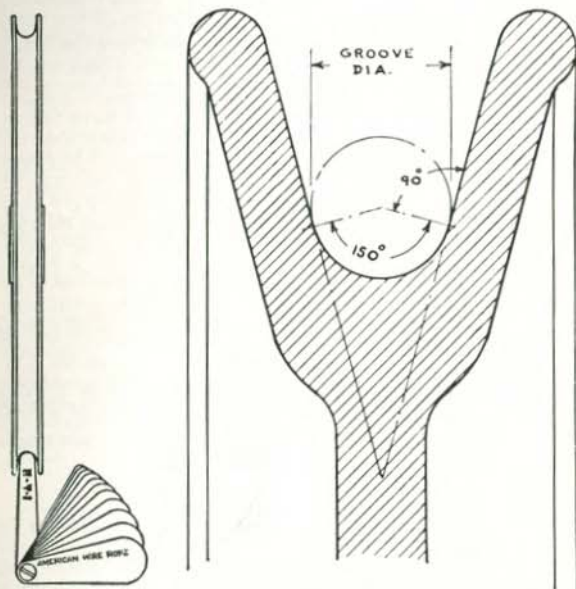
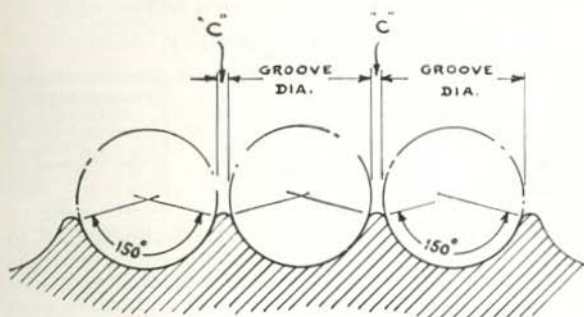
Diameter Tolerances for Wire Rope

Nominal Rope Diameter in Inches	Undersize in Inches	Oversize in Inches
0 to $\frac{3}{4}$	0	$\frac{1}{32}$
$\frac{1}{2}$ to $1\frac{1}{8}$	0	$\frac{3}{64}$
$1\frac{3}{8}$ to $1\frac{1}{2}$	0	$\frac{1}{16}$
$1\frac{9}{16}$ to $2\frac{1}{4}$	0	$\frac{3}{32}$
$2\frac{5}{16}$ and larger.....	0	$\frac{1}{8}$

Minimum Tolerances of Groove Diameters

In the recommended minimum tolerances of groove diameters given below, allowances have been made for the rope being slightly oversize. Grooves of too large diameter do not properly support the rope, and permit it to become elliptical.

Nominal Rope Diameter in Inches	Tolerance in Inches
0 to $\frac{3}{4}$	$\frac{1}{16}$
$\frac{1}{2}$ to $1\frac{1}{8}$	$\frac{5}{64}$
$1\frac{3}{8}$ to $1\frac{1}{2}$	$\frac{3}{32}$
$1\frac{9}{16}$ to $2\frac{1}{4}$	$\frac{1}{8}$
$2\frac{5}{16}$ and larger.....	$\frac{3}{16}$



RECOMMENDED CLEARANCES "C"

(See diagram on page 83)

Rope Diameter in Inches	Clearance "C" in Inches
1/2—1 1/4	1/8
1 3/8—1 3/4	3/32
1 7/8—2 1/2	1/8

Grooved drums are recommended in preference to smooth drums as the grooves furnish better support for the rope than the flat surfaces of smooth drums, and the more uniform winding results in less abrasive wear on the rope.

Annular, or concentric grooves in drums should not be greater in depth than 10% of the rope diameter. Deep grooves will cause undue distortion of the rope at the points of cross-over from one groove to the next. Clearances recommended for spiral type grooves are suitable for annular grooves.

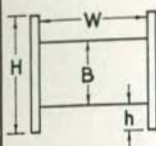
Grooves should be smooth. Those which have taken the imprint of the outer wires of previous ropes exert a grinding action on new ropes. A harder metal is recommended for installations where the unit pressure of the rope on the groove scores the groove. This unit pressure is directly proportional to the load on the rope, and inversely proportional to the diameter of the rope and the tread diameter of the sheave or drum. This may be expressed as:

$$P = \frac{L}{RD}$$

Where: P—Pressure in pounds per square inch
 L—Load on the rope in pounds
 R—Tread radius (one-half tread diameter)
 of the sheave in inches.
 D—Diameter of the rope in inches

Cast iron sheaves and drums are usually satisfactory for unit pressures up to 450 pounds per square inch. Cast steel of .30-.40 carbon is satisfactory for pressures up to 600 pounds per square inch and, if properly heat treated, will resist pressures to 900 pounds per square inch. For greater pressures, manganese or special alloy steels, heat treated, should be used.

DRUM AND REEL CAPACITIES



Let H = Diameter of Head in Inches.
 B = " " Barrel " "
 h = Depth of Cable " "
 W = Width between Flanges in Inches.
 d = Diameter of Cable in Inches.
 L = Length of Cable in Feet.

$$L = \frac{\pi W (H+B)(H-B)}{48 d^2} = \frac{W(H+B)(H-B)}{15.28 d^2} = \frac{.06545 W(H+B)(H-B)}{d^2} = \frac{.2618 W h (B+h)}{d^2}$$

Table of Factors for $\frac{.2618}{d^2}$

Cable Dia.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$
Factor	4.19	1.86	1.37	1.05	828	.670	465	342	262	207	168	138	116
Cable Dia.	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	2	$2\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{3}{4}$	$2\frac{7}{8}$	3	$3\frac{1}{4}$
Factor	.099	.085	.074	.066	.058	.052	.046	.042	.038	.035	.032	.029	.025

To Compute Length of Cable in Feet for any Reel or Drum. $L = \text{Factor} \times W \times h \times (B+h)$

The Formula can be readily derived:

$$(1) \text{ Length of Coil of Middle Layer} = \frac{\pi}{12} \left(B + \frac{H-B}{2} \right)$$

$$\text{Number of Coils} = \frac{W}{d} \quad \text{Number of Layers} = \frac{H-B}{2d}$$

$$L = \frac{\pi}{12} \left(B + \frac{H-B}{2} \right) \times \frac{W}{d} \times \frac{H-B}{2d} = \frac{\pi W (H+B)(H-B)}{48 d^2}$$

$$(2) \text{ Volume of Drum in Cubic Inches.} = W \left(\frac{\pi H^2}{4} - \frac{\pi B^2}{4} \right)$$

$$L = \frac{W}{12d} \left(\frac{\pi H^2}{4} - \frac{\pi B^2}{4} \right) = \frac{\pi W}{48d^2} (H^2 - B^2) = \frac{\pi W (H+B)(H-B)}{48 d^2}$$

When shipping rope on reels, the reels should not be completely filled. A margin (m) should be left to protect the rope. H then becomes H - 2m and h becomes h - m.

This Formula is based on the assumption that: the cable is exact in size and does not flatten when coiled; and that it is in perfectly uniform layers with no meshing of the coils. These factors vary with size and construction of the cable and with the dimensions of the reel or drum. As these variables tend to offset each other, this method of computing reel and drum capacities has proved to be reliable.

Incline Planes

The stresses on Incline Ropes are due to three factors, first, that necessary to overcome the force of gravity resolved along the angle of the Grade, second, the rolling friction of the car along the track and the friction in its own bearings, and third, the friction of the rope itself.

These stresses may be readily determined by use of the following table. Stresses due to acceleration of load should be taken into consideration. For ordinary purposes it is accurate enough to add 5% to the calculated stress for rope speeds up to 500 feet per minute; 10% for speeds between 500 and 1,000 feet per minute but for greater speeds the standard formula for calculating acceleration stress should be used. For raising a load, take the sum of the stresses as figured from columns 3, 4 and 5. For lowering a load deduct from the stress figured from column 3, the sum of the stresses as figured from columns 4 and 5. To determine the proper size of rope a factor of safety of not less than five should be used.

Percent—Grade or "Rise per 100 Ft. Run"	Equivalent Angle	Stress on Rope Due to Gravity per Ton Load	Rolling Friction per Ton Car Load	Rope Friction per Ton of Rope Weight	Percent—Grade or "Rise per 100 Ft. Run"	Equivalent Angle	Stress on Rope Due to Gravity per Ton Load	Rolling Friction per Ton Car Load	Rope Friction per Ton of Rope Weight
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Pct. or Ft.	Degrees	Lbs.	Lbs.	Lbs.	Pct. or Ft.	Degrees	Lbs.	Lbs.	Lbs.
1	0-34	20	50	100	29	16-10	557	48	96
2	1- 9	40	50	100	30	16-42	575	48	96
3	1-43	60	50	100	31	17-13	592	48	95
4	2-17	80	50	100	32	17-45	610	48	95
5	2-52	100	50	100	33	18-16	627	47	95
6	3-26	120	50	100	34	18-47	644	47	95
7	4- 0	140	50	100	35	19-17	660	47	94
8	4-34	159	50	100	36	19-48	677	47	94
9	5- 9	179	50	100	37	20-18	694	47	94
10	5-43	199	50	100	38	20-48	710	47	93
11	6-17	219	50	99	39	21-18	727	47	93
12	6-51	239	50	99	40	21-48	743	46	93
13	7-24	257	50	99	41	22-18	759	46	93
14	7-58	277	50	99	42	22-47	775	46	92
15	8-32	297	49	99	43	23-16	790	46	92
16	9- 5	316	49	99	44	23-45	805	46	92
17	9-39	335	49	99	45	24-14	821	46	91
18	10-12	354	49	98	46	24-42	836	45	91
19	10-45	373	49	98	47	25-10	851	45	91
20	11-19	392	49	98	48	25-39	865	45	90
21	11-52	411	49	98	49	26- 6	880	45	90
22	12-24	429	49	98	50	26-34	894	45	89
23	12-57	448	49	97	51	27- 1	908	45	89
24	13-30	467	49	97	52	27-29	922	44	89
25	14- 2	485	49	97	53	27-56	937	44	88
26	14-34	503	48	97	54	28-22	950	44	88
27	15- 7	522	48	97	55	28-49	964	44	88
28	15-39	540	48	96	56	29-15	977	44	87

Percent—Grade or "Rise per 100 Ft. Run"	Equivalent Angle	Stress on Rope Due to Gravity per Ton Load	Rolling Friction per Ton Car Load	Rope Friction per Ton of Rope Weight	Percent—Grade or "Rise per 100 Ft. Run"	Equivalent Angle	Stress on Rope Due to Gravity per Ton Load	Rolling Friction per Ton Car Load	Rope Friction per Ton of Rope Weight
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
Pct. or Ft.	Degrees	Lbs.	Lbs.	Lbs.	Pct. or Ft.	Degrees	Lbs.	Lbs.	Lbs.
57	29-41	990	43	87	95	43-32	1378	36	72
58	30- 7	1004	43	87	96	43-50	1385	36	72
59	30-33	1017	43	86	97	44- 8	1393	36	72
60	30-58	1029	43	86	98	44-25	1400	36	71
61	31-23	1042	43	85	99	44-43	1407	36	71
62	31-48	1054	43	85	100	45- 0	1414	35	71
63	32-13	1066	42	85	105	46-24	1448	34	69
64	32-37	1078	42	84	110	47-44	1480	34	67
65	33- 2	1090	42	84	115	48-59	1509	33	66
66	33-26	1101	42	83	120	50-12	1537	32	64
67	33-49	1113	42	83	125	51-20	1562	31	63
68	34-13	1125	41	83	130	52-26	1585	30	61
69	34-36	1136	41	82	135	53-28	1607	30	60
70	35- 0	1147	41	82	140	54-28	1628	29	58
71	35-23	1158	41	82	145	55-24	1646	28	57
72	35-45	1168	41	81	150	56-19	1664	28	55
73	36- 8	1179	40	81	155	57-10	1680	27	54
74	36-30	1190	40	80	160	58- 0	1696	26	53
75	36-52	1200	40	80	165	58-47	1710	26	52
76	37-14	1210	40	80	170	59-32	1724	25	51
77	37-36	1220	40	79	175	60-15	1736	25	50
78	37-57	1230	39	79	180	60-57	1748	24	49
79	38-19	1240	39	78	185	61-36	1759	24	48
80	38-40	1250	39	78	190	62-15	1770	23	47
81	39- 0	1259	39	78	200	63-26	1789	22	45
82	39-21	1268	39	77	225	66- 2	1828	20	41
83	39-42	1277	39	77	250	68-12	1857	19	37
84	40- 2	1286	38	77	275	70- 1	1880	17	34
85	40-22	1295	38	76	300	71-34	1897	16	32
86	40-42	1304	38	76	350	74- 3	1923	14	27
87	41- 1	1313	38	75	400	75-57	1940	12	24
88	41-21	1321	38	75	450	77-28	1952	11	22
89	41-40	1330	37	75	500	78-41	1961	10	20
90	41-59	1338	37	74	600	80-32	1973	8	16
91	42-18	1346	37	74	750	82-24	1982	6	13
92	42-37	1354	37	74	900	83-40	1988	5	11
93	42-55	1362	37	73	999	84-17	1990	5	10
94	43-14	1370	36	73					

NOTE: "Load" includes weight of car plus weight of material plus weight of rope.

The maximum angle for good practice without guides is approximately 70°.

Proper Sizes of Sheaves and Drums for Wire Rope

Sheaves and Drums should be carefully examined for proper size, free running and proper groove diameters for most economical wire rope service. It is advisable to design the sheave and drum equipment so that the tread diameters are approximately as follows:

AVERAGE DIAMETERS RECOMMENDED

For	6x7	Rope, 72 times rope diameter			
"	18x7 Non-spinning	"	51	"	"
"	6x19	}	45	"	"
"	6x21 Type M				
"	6x25 Type B				
"	6x37	"	27	"	"
"	8x19	"	31	"	"

Various service conditions allow, and often require for economical service, changes from these diameters; for example, on larger hoisting installations, sheaves for use with 6x7 rope are sometimes set at 96 times the rope diameter and, for 6x19 rope, are sometimes set as high as 90 times diameter.

It is also true that for certain classes of service, ratios smaller than these are possible and economical, but it is advisable to never allow the sheave and drum diameters to be set below the following:

MINIMUM DIAMETERS

For	6x7	Rope, 42 times rope diameter			
"	18x7 Non-spinning	"	34	"	"
"	6x19	}	30	"	"
"	6x21 Type M				
"	6x25 Type B				
"	6x37	"	18	"	"
"	8x19	"	21	"	"

It should be thoroughly appreciated that diameters larger than those listed as minimum will give increased rope life and, consequently, more economical service. Should there be a question as to their size or the material composing sheaves and drums for a particular installation, we would suggest that you consult with us.

SECTION II

SPECIAL WIRE ROPE AND FITTINGS
MANUFACTURED BY
AMERICAN STEEL & WIRE COMPANY



The TIGER TRADE MARK is a symbol
of Strength and Dependability

THE MARK FOR GENUINE
AMERICAN WIRE ROPE

DISTRIBUTED ON THE PACIFIC COAST

by

**COLUMBIA
STEEL COMPANY**

Marlin
Clad

Flattened
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Cables

Attaching
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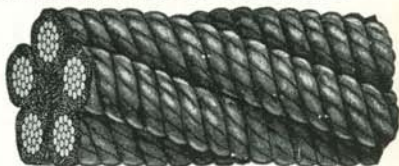
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Marlin Clad Wire Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



"Marlin Clad" is a round strand rope, the strands of which have been given an external serving of tarred marlin. The usual number of wires in a strand in seven or nineteen, and number of strands, four, five or six.

This rope is particularly adapted for Ships' Rigging, Cargo Hoist, Power Transmission, Grain Shovels, etc. Marlin Clad Rope is considerably stronger than Manila Rope of the same diameter. For instance, 1 inch diameter Marlin Clad plow steel rope has a strength of 26,400 pounds, and the strength of 1 inch diameter Manila rope is 7,500 pounds. Marlin Clad Rope weighs approximately 30 per cent less than Manila rope of the same strength.

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Cast Steel

List Price per Foot	Diameter in Inches before Serving	Approximate Diameter after Serving with Marlin	Approximate Circumference after Serving with Marlin	Breaking Strength in Tons of 2000 Lbs.	Allowable Working Strain	Minimum Size of Drum or Sheave	Approx. Weight per Foot in Lbs.
\$1.85	1 3/4	2 1/8	6 5/8	81.	See page 6	See page 86	5.00
1.62	1 5/8	2	6 1/4	70.			4.29
1.45	1 1/2	1 7/8	5 7/8	60.			3.69
1.24	1 3/8	1 3/4	5 1/2	50.5			3.14
1.04	1 1/4	1 5/8	5 1/8	42.			2.58
.85	1 1/8	1 1/2	4 3/4	34.			2.12
.75	1	1 3/8	4 5/16	27.			1.70
.66	7/8	1 1/4	3 7/8	21.			1.32
.55	3/4	1 1/8	3 1/2	15.4			1.10
.42	5/8	1	3 1/8	10.8			.81
.38	9/16	7/8	2 3/4	8.8			.62
.34	1/2	13/16	2 1/2	7.1			.51
.30 1/2	7/16	3/4	2 3/8	5.5	.42		
.27	3/8	11/16	2 1/8	4.1	.36		
.24 1/2	5/16	5/8	2	2.9	.28		
.22	1/4	9/16	1 3/4	1.9	.21		

Intermediate sizes of wire rope are to take the list price of the next larger size.

*For list price of six strands or wire center add 20 per cent to the above list.

Breaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to above list prices.

Marlin Clad Hoisting Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



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Mild Plow Steel

Last Price per Foot	Diameter in Inches before Servicing	Approximate Diameter after Servicing with Marlin	Approximate Circumference after Servicing with Marlin	Breaking Strength in Tons of 2000 Lbs.	Proper Working Load	Minimum Size of Drum or Sheave	Approx. Weight per Foot in Lbs.
\$2.04	1 3/4	2 1/8	6 5/8	90.	<i>See page 6</i>	<i>See page 86</i>	5.00
1.78	1 5/8	2	6 1/4	78.			4.29
1.60	1 1/2	1 7/8	5 7/8	66.5			3.69
1.36	1 3/8	1 3/4	5 1/2	56.5			3.14
1.15	1 1/4	1 5/8	5 1/8	47.			2.58
.95	1 1/8	1 1/2	4 3/4	38.			2.12
.83	1	1 3/8	4 5/16	30.3			1.70
.73	7/8	1 1/4	3 7/8	23.3			1.32
.61	3/4	1 1/8	3 1/2	17.1			1.10
.47	5/8	1	3 1/8	12.			.81
.42	9/16	7/8	2 3/4	9.7			.62
.36	1/2	13/16	2 1/2	7.8			.51
.33	7/16	3/4	2 3/8	6.1			.42
.30	3/8	11/16	2 1/8	4.6			.36
.27	5/16	5/8	2	3.2			.28
.24	1/4	9/16	1 3/4	2.1			.21

Intermediate sizes of wire rope are to take the list price of the next larger size.

*For list price of six strands or wire center add 20 per cent to the above list.

B.eaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to above list prices.

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Tramway
Track
CablesAttaching
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Fittings

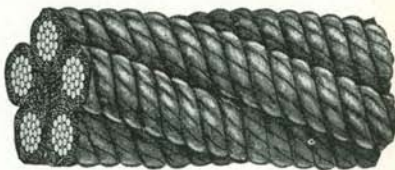
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Marlin Clad Hoisting Rope

*5 Strands—19 Wires to the Strand—1 Hemp Core



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Plow Steel

List Price per Foot	Diameter in Inches before Servicing	Approximate Diameter after Servicing with Marlin	Approximate Circumference after Servicing with Marlin	Breaking in Tons Strength of 2000 Lbs.	Proper Working Load	Minimum Size of Drum or Sheave	Approximate Weight per Foot in Lbs.
\$2.20	1 3/4	2 1/8	6 5/8	99.	See page 6	See page 86	5.00
1.90	1 5/8	2	6 1/4	86.			4.29
1.70	1 1/2	1 7/8	5 7/8	74.			3.69
1.46	1 3/8	1 3/4	5 1/2	62.5			3.14
1.22	1 1/4	1 5/8	5 1/8	52.			2.58
1.02	1 1/8	1 1/2	4 3/4	42.			2.12
.89	1	1 3/8	4 5/16	33.5			1.70
.79	7/8	1 1/4	3 7/8	25.7			1.32
.66	3/4	1 1/8	3 1/2	18.9			1.10
.51	5/8	1	3 1/8	13.2			.81
.45	9/16	7/8	2 3/4	10.7			.62
.38	1/2	13/16	2 1/2	8.6			.51
.35	7/16	3/4	2 3/8	6.7			.42
.32	3/8	11/16	2 1/8	5.0			.36
.29	5/16	5/8	2	3.6			.28
.26	1/4	9/16	1 3/4	2.3			.21

Intermediate sizes of wire rope are to take the list price of the next larger size.

*For list price of six strands or wire center add 20 per cent to the above list.

Breaking strengths of 6x19 to be 20% greater than 5x19.

Other constructions of Marlin Clad rope made to order.

When galvanized wire is required, add 10% to list prices.

Marlin Clad Rope

Special Construction

Marlin Clad Hawser Rope

5 Strands—35 Wires to the Strand—Six Hemp Cores

This rope is made of 5 separate ropes around a hemp core, each rope consisting of 5 strands—7 wires to the strand—one hemp core, and covered with an external serving of tarred marlin.

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Cast Steel	Mild Plow Steel	Plow	Diameter of Each of 5 Component Ropes in Inches	Approx. Outside Dia. of Hawser in Inches After Serving	Approx. Circ. in Inches After Serving	Approximate Weight per Foot in Lbs.	Breaking Strength in Tons of 2000 Pounds		
							Cast Steel	Extra Strong Cast Steel	Plow Steel
\$2.45	\$2.70	\$2.90	$5\frac{5}{8}$	$25\frac{5}{8}$	$81\frac{1}{4}$	3.80	47.9	52.5	57.5
1.80	2.00	2.15	$1\frac{1}{2}$	2	$6\frac{1}{4}$	2.60	31.2	34.2	37.5
1.60	1.80	1.90	$7\frac{7}{16}$	$17\frac{7}{8}$	$57\frac{7}{8}$	2.30	24.2	26.2	28.7
1.45	1.55	1.70	$3\frac{5}{8}$	$13\frac{3}{4}$	$51\frac{1}{2}$	2.10	17.9	19.6	21.4

Flattened Strand

Steel Clad

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Marlin Clad Grain Shovel Rope—Extra

Mild Plow Steel

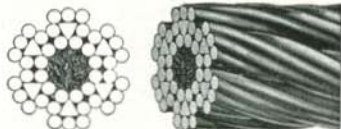
6 Strands—19 Wires to the Strand—One Hemp Core

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List Price per Foot	Diameter in Inches Before Serving	Approximate Diameter After Serving With Marlin	Approximate Circumference After Serving	Approximate Strength in Tons of 2000 Lbs.	Approximate Weight per Foot in Lbs.
\$0.34	$3\frac{3}{8}$	$3\frac{3}{4}$	$21\frac{1}{4}$	5.5	.43
.28	$1\frac{1}{4}$	$5\frac{5}{8}$	2	2.5	.25

Intermediate sizes of wire rope are to take the list price of the next larger size. For proper working load, see page 6.

Flattened Strand Haulage or Transmission Rope



**Type D—6 Strands—8 Wires to the
Strand—1 Hemp Core**

Type "D" Flattened Strand Rope is laid up with coarse wires, making it especially well suited to Haulage and Transmission work. Among the Flattened Strand Ropes it occupies the

same place as does the 6x7 among the ropes of Round Strand construction.

As the name implies, Flattened Strand Rope is composed of flattened strands in contradistinction to the ropes of round strand construction. By means of flattened strand a much larger per cent of the surface of the strand is put in contact with the sheave or drum, in fact the wearing surface is from 100 to 150 per cent greater than in ropes of round strand.

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Cast Steel

Type D

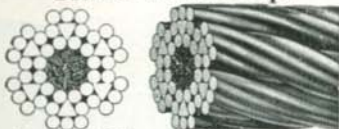
Diameter in Inches	List Price per Foot	Breaking Strength in Tons of 2000 Pounds	Proper Working Loads	Approximate Weight per Foot in Pounds	Diameter of Drum or Sheave Advised
1 1/2	\$0.75	67.	<i>See page 6</i>	4.05	<i>See page 86</i>
1 3/8	.64	57.		3.40	
1 1/4	.54	48.		2.81	
1 1/8	.45	39.		2.28	
1	.35	31.		1.80	
7/8	.27 1/2	24.		1.39	
3/4	.20 1/2	17.8		1.01	
5/8	.14	12.4		.70	
1/2	.10	8.1		.45	
3/8	.07	4.6		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Haulage or Transmission Rope



Type D—6 Strands—8 Wires to the
Strand—1 Hemp Core

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MILD PLOW STEEL

Type D

Diameter in Inches	List Price per Foot	Breaking Strength in Tons of 2000 Pounds	Proper Working Loads	Approximate Weight per Foot in Pounds	Diameter of Drum or Sheave Advised
1 1/2	\$0.93	74.	<i>See page 6</i>	4.05	<i>See page 86</i>
1 3/8	.80	62.		3.40	
1 1/4	.68	52.		2.81	
1 1/8	.54	43.		2.28	
1	.45	34.		1.80	
7/8	.35	26.5		1.39	
3/4	.27	19.5		1.01	
5/8	.18	13.5		.70	
1/2	.14	8.8		.45	
3/8	.11	5.0		.25	

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MONITOR STEEL

Type D

Diameter in Inches	List Price per Foot	Breaking Strength in Tons of 2000 Pounds	Proper Working Loads	Approximate Weight per Foot in Pounds	Diameter of Drum or Sheave Advised
1 1/2	\$1.28	93.	<i>See page 6</i>	4.05	<i>See page 86</i>
1 3/8	1.08	79.		3.40	
1 1/4	.88	65.		2.81	
1 1/8	.70	54.		2.28	
1	.58	43.		1.80	
7/8	.44	33.2		1.39	
3/4	.35	24.6		1.01	
5/8	.25	17.2		.70	
1/2	.16 1/4	11.		.45	
3/8	.13 1/4	6.35		.25	

Intermediate sizes of wire rope are to take the list price of the next larger size.
Ropes made with wire strand center add 15% to list prices. Ropes made with
Independent Wire Rope Center (any construction) add 15% to list prices.
Either Wire Strand or Wire Rope Center will increase the breaking strength by
about 7 1/2%.

Flattened
StrandSteel
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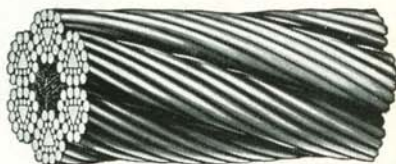
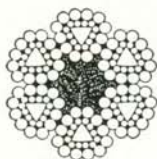
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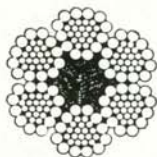
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Flattened Strand Hoisting Rope



Type B—6 Strands—25 Wires to the Strand—1 Hemp Core



Type G—6 Strands—30 Wires to the Strand—1 Hemp Core

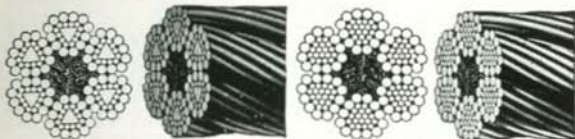
Flattened strand hoisting rope is made in two types known as Type "B," and Type "G." Both are flexible and are designed especially for hoisting purposes.

Type "B," like the 6x19 of the Round Strand Construction, can be readily passed around sheaves of moderate size, and can stand severe strains without deforming. In fact, Type "B" is the most rigid rope we make, the small hemp core and the flattened construction of the strands combining to make it hold its shape under extreme strain.

Type "G" differs from Type "B" in the construction of the strand cores. The single triangular-shaped core wire of Type "B" is replaced by a triangular-shaped core strand of six wires. The advantage of the six-wire strand core over the single-wire core is its greater resistance to fatigue. The six round wires are more flexible and will withstand more bending than the larger, shaped wire.

Made in four grades, i. e.: 1. *Cast Steel*; 2. *Mild Plow Steel*; 3. *Plow Steel*; 4. *Monitor Steel*.

Flattened Strand Hoisting Rope



Type B—6 Strands—25 Wires to the Strand—1 Hemp Core Type G—6 Strands—30 Wires to the Strand—1 Hemp Core

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Cast Steel

Diameter in Inches	List Price per Foot	TYPE B		TYPE G		Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	
2 3/4	2.65	233.	See page 6	13.6	233.	See page 86
2 1/2	2.20	193.		11.2	193.	
2 1/4	1.82	158.		9.1	158.	
2	1.44	125.		7.2	125.	
1 3/4	1.21	96.		5.51	96.	
1 5/8	.96	83.		4.75	83.	
1 1/2	.86	71.		4.05	71.	
1 3/8	.73	60.		3.40	60.	
1 1/4	.59 1/2	50.5		2.81	50.5	
1 1/8	.50	40.		2.28	40.	
1	.39 1/2	32.		1.80	32.	
7/8	.30	25.		1.39	25.	
3/4	.24	18.4		1.01	18.4	
5/8	.18 1/4	12.9		.70	12.9	
9/16	.16 1/2	10.5		.57	10.5	
1/2	.14 1/2	8.4		.45	8.4	
3/8	.12 1/2	4.9	.25	4.9		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

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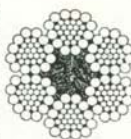
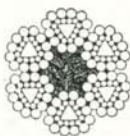
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Flattened Strand Hoisting Rope



Type B—6 Strands—25 Wires to the Strand—1 Hemp Core

Type G—6 Strands—30 Wires to the Strand—1 Hemp Core

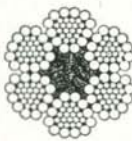
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Mild Plow Steel

Diameter in Inches	List Price per Foot	TYPE B		TYPE G		Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Working Load	Breaking Strength in Tons of 2000 Pounds	Proper Working Load	
2 3/4	\$3.60	257.	<i>See page 6</i>	13.6	257.	<i>See page 6</i>
2 1/2	2.80	214.		11.2	214.	
2 1/4	2.20	176.		9.1	176.	
2	1.77	139.		7.2	139.	
1 3/4	1.55	107.		5.51	107.	
1 5/8	1.30	93.		4.75	93.	
1 1/2	1.05	79.		4.05	79.	
1 3/8	.90	67.		3.40	67.	
1 1/4	.70	56.		2.81	56.	
1 1/8	.59	45.5		2.28	45.5	
1	.48	36.		1.80	36.	
7/8	.38	27.9		1.39	27.9	
3/4	.30	20.5	1.01	20.5		
5/8	.22 1/2	14.4	.70	14.4		
9/16	.19 1/2	11.6	.57	11.6		
1/2	.17 1/2	9.3	.45	9.3		
3/8	.15 1/4	5.5	.25	5.5		

Intermediate sizes of wire rope are to take the list price of the next larger size. Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices. Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Flattened Strand Hoisting Rope

Type B—6 Strands—25 Wires
to the Strand—1 Hemp CoreType G—6 Strands—30 Wires
to the Strand—1 Hemp Core

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Monitor Steel

Diameter in Inches	List Price per Foot	TYPE B			TYPE G			Diameter of Drum or Sheave Advised
		Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	Breaking Strength in Tons of 2000 Pounds	Proper Work- ing Load	Approximate Weight per Foot in Pounds	
2 3/4	\$4.30	323.	See page 6	13.6	323.	13.6	See page 86	
2 1/2	3.50	270.		11.2	270.	11.2		
2 1/4	2.85	222.		9.1	222.	9.1		
2	2.25	177.		7.2	177.	7.2		
1 3/4	2.08	136.		5.51	136.	5.51		
1 5/8	1.56	118.		4.75	118.	4.75		
1 1/2	1.37	101.		4.05	101.	4.05		
1 3/8	1.12	86.		3.40	86.	3.40		
1 1/4	.89	71.5		2.81	71.5	2.81		
1 1/8	.71	58.		2.28	58.	2.28		
1	.60	46.	1.80	46.	1.80			
7/8	.49	35.4	1.39	35.4	1.39			
3/4	.37 1/2	26.	1.01	26.	1.01			
5/8	.28	18.2	.70	18.2	.70			
9/16	.25	14.8	.57	14.8	.57			
1/2	.20 3/4	11.8	.45	11.8	.45			
3/8	.18 1/4	6.9	.25	6.9	.25			

Intermediate sizes of wire rope are to take the list price of the next larger size.
Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

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Steel Clad Hoisting Rope

"Steel Clad Hoisting Rope" is a term applied to regular round strand rope, the strands of which have been given an external serving of flat strip steel. This flat steel strip does not increase the tensile strength of the rope but gives additional wearing service without sacrificing the flexibility in any way. When the outer flat steel winding is worn through in service, a complete hoisting rope remains with unimpaired strength, the strip having served to protect the inner wires from all wear up to this point. When thoroughly worn, the strip naturally crowds down between the strands of the rope, thus providing additional wearing surface.

Ropes of this construction may be used for unusually severe conditions where the additional wearing surface due to the flat strips materially increases the durability of the rope thus employed. It is used especially on high duty dredges, steam shovels, drag line excavators, and the like.

In view of the fact that a steel clad rope is only as strong as the plain bare rope, care should be exercised so that no error is made in the strength. Users needing a line that has the strength of a 1 inch ordinary standard Plow steel will have to use $1\frac{1}{8}$ inch Steel Clad of the same grade and construction in order to secure the same strength. This for the reason that the exterior serving of flat steel adds nothing to the strength.

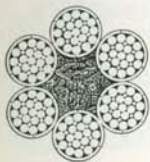
It naturally follows that before ordering Steel Clad for the first time, one must look carefully to his equipment to see if the sheaves and drums will accommodate the larger diameter of rope. Usually they will, especially if a little worn.

In ordering, always specify the outside diameter, as we will understand that this is the intention in the absence of anything to the contrary.

Made in two grades, i.e.: 1. *Plow Steel*. 2. *Monitor Steel*.

Steel Clad Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



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Plow Steel

List Price per Foot	Finished Diameter over Servicing in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$2.14	2 $\frac{1}{4}$	2	7.82	140.	<i>See page 6</i>	<i>See page 86</i>
1.87	2 $\frac{1}{16}$	1 $\frac{7}{8}$	7.01	123.		
1.68	1 $\frac{15}{16}$	1 $\frac{3}{4}$	6.05	108.		
1.42	1 $\frac{13}{16}$	1 $\frac{5}{8}$	5.39	94.		
1.25	1 $\frac{11}{16}$	1 $\frac{1}{2}$	4.66	80.5		
1.09	1 $\frac{9}{16}$	1 $\frac{3}{8}$	3.99	68.		
.93	1 $\frac{7}{16}$	1 $\frac{1}{4}$	3.35	56.5		
.79	1 $\frac{5}{16}$	1 $\frac{1}{8}$	2.75	46.		
.66	1 $\frac{3}{16}$	1	2.23	36.5		
.55	1	$\frac{7}{8}$	1.66	28.		
.46	$\frac{7}{8}$	$\frac{3}{4}$	1.40	20.6		
.37	$\frac{3}{4}$	$\frac{5}{8}$	1.05	14.4		
.30	$\frac{5}{8}$	$\frac{1}{2}$	.64	9.4	

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 $\frac{1}{2}$ %.

Steel Clad

Aerial Tramway Track Cables

Attaching Sockets

Fittings

Fiege Tiger-Claw Sockets

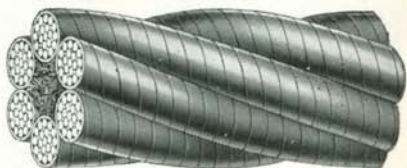
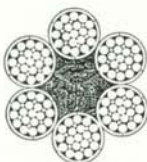
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Steel Clad Hoisting Rope

6 Strands—19 Wires to the Strand—1 Hemp Core



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Monitor Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$2.40	2 1/4	2	7.82	161.	See page 6	See page 86
2.15	2 1/16	1 7/8	7.01	142.		
1.97	1 15/16	1 3/4	6.05	124.		
1.64	1 13/16	1 5/8	5.39	108.		
1.41	1 11/16	1 1/2	4.66	92.5		
1.19	1 9/16	1 3/8	3.99	78.5		
1.02	1 7/16	1 1/4	3.35	65.		
.86	1 5/16	1 1/8	2.75	53.		
.72	1 3/16	1	2.23	42.		
.59	1	7/8	1.66	32.2		
.51	7/8	3/4	1.40	23.7		
.40	3/4	5/8	1.05	16.6		
.34	5/8	1/2	.64	10.8		

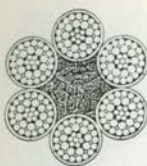
Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/4%.

Steel Clad, Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



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Plow Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$2.90	2 1/2	2 1/4	10.03	168.	<i>See page 6</i>	<i>See page 86</i>
2.38	2 1/4	2	7.82	135.		
2.08	2 1/16	1 7/8	7.01	119.		
1.90	1 15/16	1 3/4	6.05	104.		
1.62	1 13/16	1 5/8	5.39	89.8		
1.44	1 11/16	1 1/2	4.66	76.7		
1.23	1 9/16	1 3/8	3.99	64.6		
1.04	1 7/16	1 1/4	3.35	53.5		
.90	1 5/16	1 1/8	2.75	43.5		
.75	1 3/16	1	2.23	34.4		
.62	1	7/8	1.66	26.5		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope Center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

Aerial
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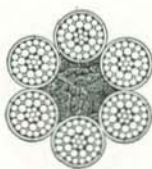
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Steel Clad, Special Flexible Hoisting Rope

6 Strands—37 Wires to the Strand—1 Hemp Core



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Monitor Steel

List Price per Foot	Finished Diameter over Serving in Inches	Diameter of Bare Rope in Inches	Approximate Weight per Foot in Pounds	Approximate Strength in Tons of 2000 Pounds	Proper Working Load	Diameter of Drum or Sheave Advised
\$3.20	2 1/2	2 1/4	10.03	194.	See page 6	See page 86
2.66	2 1/4	2	7.82	155.		
2.33	2 1/16	1 7/8	7.01	137.		
2.14	1 15/16	1 3/4	6.05	119.5		
1.80	1 13/16	1 5/8	5.39	103.3		
1.57	1 11/16	1 1/2	4.66	88.2		
1.35	1 9/16	1 3/8	3.99	74.3		
1.14	1 7/16	1 1/4	3.35	61.5		
1.00	1 5/16	1 1/8	2.75	49.9		
.82	1 3/16	1	2.23	39.5		
.67	1	7/8	1.66	30.5		

Intermediate sizes of wire rope are to take the list price of the next larger size.

Ropes made with wire strand center add 15% to list prices. Ropes made with Independent Wire Rope center (any construction) add 15% to list prices.

Either Wire Strand or Wire Rope Center will increase the breaking strength by about 7 1/2%.

American Steel & Wire Company Aerial Tramways



Hourly capacity of this tramway is 200 tons of coal over a distance of 3,250 feet

Aerial tramways have long been recognized as an economical and efficient method of transportation; their application, in the early days, was principally in mining operations where very often the aerial tramway was the only available method for connecting the mine with the Smelter or the nearest railroad, the contour of the ground being so rugged as to make the use of a surface railroad impossible.

Later, through radical improvements in methods and materials of manufacture of tramway cables and machinery and through a thorough understanding of the engineering principles of tramway design, the field of application of Aerial Tramways was greatly enlarged, so that now we have many of our installations carrying coal, mine waste, logs, sawed lumber, pulp wood, sand and gravel, explosives, salt, cement, sugar, stone, and other materials too numerous to mention. Recently tramways of large capacity and considerable length were built for the construction of large dams.

These tramways vary in length from a few hundred feet to thirteen miles and in capacity from a few tons to 250 tons per hour and larger.

Illustrations of the track cables appear on the following pages. Special tramway catalogue and other literature will be furnished on request.

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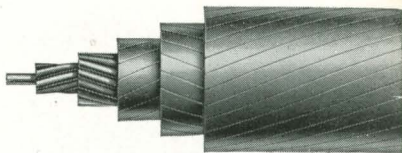
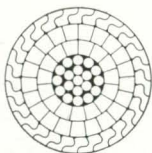
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Locked Coil Track Cable



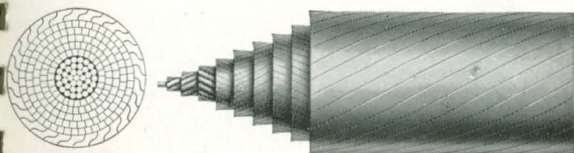
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Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in Lbs.	Approximate Breaking Stress in Tons of 2,000 lbs.
\$2.30	2	6 $\frac{1}{4}$	10.	158
2.05	1 $\frac{7}{8}$	5 $\frac{3}{4}$	8.79	138
1.78	1 $\frac{3}{4}$	5 $\frac{1}{2}$	7.66	125
1.54	1 $\frac{5}{8}$	5 $\frac{1}{8}$	6.60	108
1.32	1 $\frac{1}{2}$	4 $\frac{3}{4}$	5.63	93
1.12	1 $\frac{3}{8}$	4 $\frac{1}{4}$	4.73	78
.95	1 $\frac{1}{4}$	4	3.91	65
.79	1 $\frac{1}{8}$	3 $\frac{1}{2}$	3.16	54
.64	1	3	2.5	42
.49	$\frac{7}{8}$	2 $\frac{3}{4}$	1.92	32

Locked Coil Track Cables are manufactured up to 3" in diameter. Prices and breaking strengths to cover larger sizes than those included in the above table will be furnished on request. Locked Coil Track Cable possesses sufficient flexibility to allow it to be shipped in coils from 5 feet to 6 feet in diameter. Locked Coil Track Cable is used expressly as a stationary overhead cable for aerial tramways. For such purposes it is superior in durability to any other construction and is used in the American Steel & Wire Company Aerial Tramways, manufactured by us. If a cheaper track cable than the Locked Coil type is desired, the Smooth Coil Track Strand, shown on page 61 may be used, but it is not as durable and its external surface is not as smooth for the carriage wheels that run upon it.

Locked Wire Cable



Cast Steel

List Price per Foot	Diameter in Inches	Approximate Circumference in Inches	Approximate Weight per Foot in lbs.	Approximate Breaking Strength in Tons of 2,000 lbs.
\$3.00	2 1/4	7 1/8	12.65	195
2.30	2	6 1/4	10.00	158
2.05	1 7/8	5 7/8	8.79	138
1.78	1 3/4	5 1/2	7.66	125
1.54	1 5/8	5 1/8	6.60	108
1.32	1 1/2	4 3/4	5.63	93
1.12	1 3/8	4 1/4	4.73	78
.95	1 1/4	4	3.91	65
.79	1 1/8	3 1/2	3.16	54
.64	1	3	2.50	42
.49	7/8	2 3/4	1.92	32
.36	3/4	2 1/4	1.41	22
.23 1/2	5/8	2	.98	16
.21	9/16	1 3/4	.79	13
.18 1/2	1/2	1 1/2	.63	10

This cable may be used for fixed track lines on overhead cableways having fixed spans, and because of its very smooth external surface will not wear out the carriage wheels which run upon it. For such use it has no equal. This cable is suitable only for fixed spans, but cannot be used for running purposes. Customers should give full information as to the use to which it is to be put and character of the work.

See our Aerial Tramways catalogue.

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Sockets

Fittings

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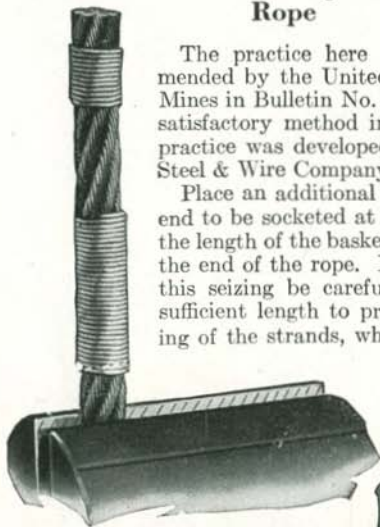
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Directions for Attaching Sockets to Wire Rope

The practice here detailed is recommended by the United States Bureau of Mines in Bulletin No. 75. It is the most satisfactory method in use today. This practice was developed by the American Steel & Wire Company.

Place an additional seizing on the rope end to be socketed at a distance equal to the length of the basket of the socket from the end of the rope. It is important that this seizing be carefully applied and of sufficient length to prevent any untwisting of the strands, which would result in unequal tension on the strands when socket is attached.

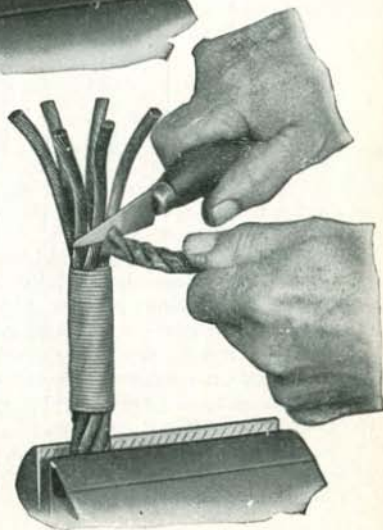


(Fig. 28)

A seizing iron as shown in Fig. 26, page 80 is recommended for applying the seizing.

Place rope end upright in bench vise as shown in Fig. 28.

Remove any seizing above the one referred to in previous paragraph. Cut the hemp center at the seizing. See Fig. 29.



(Fig. 29)

Untwist the strands and broom out the wires. The wires should be separated but not straightened. See Fig. 30.



(Fig. 30)

The wires for the distance they are to be inserted in the socket should be carefully cleaned with benzine, naphtha, or gasoline, and then dipped in a bath of commercial muriatic acid for about 30 seconds to one minute, or until the acid has thoroughly cleaned each wire. The acid should be neutralized by next dipping the wires into boiling water to which has been added a small amount of soda.

Draw the ends of the wires together with a piece of seizing wire so that the socket can be forced down over them. See Fig. 31.

Attaching
Sockets

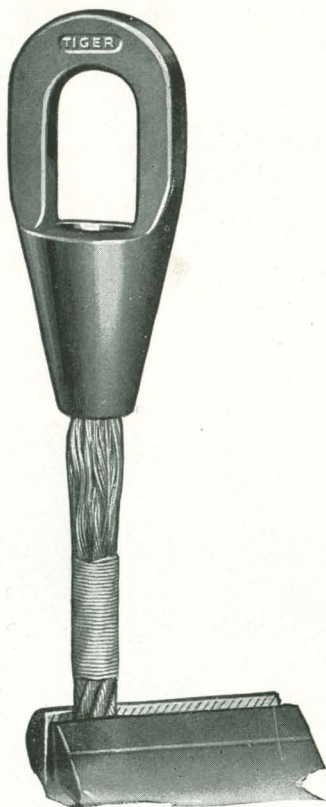
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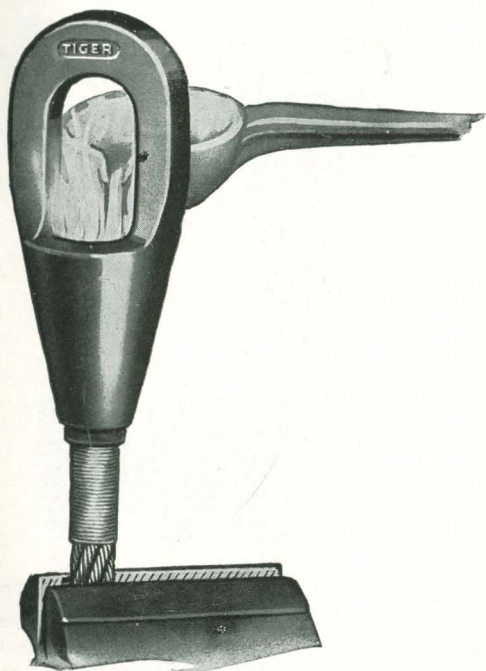
(Fig. 31)

Force the socket down over the rope end until it reaches the seizing on the wire rope. Remove the seizing wire from the wires and allow the wires to expand within the socket basket. The ends of the wires should be level with the upper end of the socket basket.

Care should be taken to see that the axis of the socket is in line with the axis of the rope.

Seal the base of the socket with putty, clay, or similar substance.

Fill the socket basket with molten zinc. The zinc must not be too hot or it will anneal the wires, particularly on small ropes or ropes of small wires. From 800 to 875 degrees Fahrenheit is the correct temperature. See Fig. 32



(Fig. 32)

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When the zinc has congealed the socket can be plunged into cold water to cool it.

The seizing can then be removed.

Fig. 33 shows a Tiger Wire Rope Socket applied by this method before the seizing was removed.



(Fig. 33)

If the socketing is properly done, when tested to destruction, a wire rope will break before it will pull from the socket.

Turnbuckles



113
Eye and
Hook



113A
Shackle
and Eye

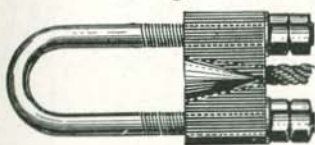


113B
Two
Eyes

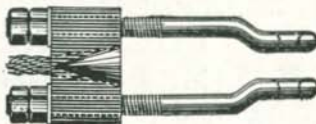


113C
Two
Shackles

Bridge Sockets



111
Closed Type



112
Open Type

These sockets are constructed throughout of steel and are suitable for attaching to the galvanized bridge cables and may also be used on the locked tramway and cableway strand or any rope that corresponds in size to the opening. They develop the full strength of the rope when properly attached.

Fittings

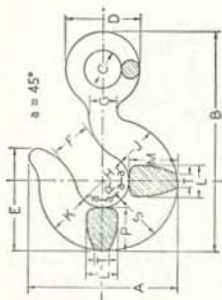
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Hooks—Plain Finish

*For list price of hooks attached add price loose, to list price of thimble or socket attached as called for. For size of hook to use with ropes of different sizes and construction, see page 114.



Hook No.	Safe Load Lbs.	DIMENSIONS OF HOOKS										Approx. Weight in Lbs.
		B	A	E	C	D	F	P				
10	1000	4 1/2	2 7/8	2 1/4	3/4	1 1/4	7/8	7/8	3/4			
15	1500	5 1/4	3 3/8	2 1/2	7/8	1 1/2	1	1	1			
20	2000	5 3/4	3 7/8	2 3/4	1	1 3/4	1 1/8	1 1/8	1 1/8			
30	3000	6 3/4	4 1/2	3 1/4	1 1/4	2 1/4	1 3/8	1 3/8	1 3/8			
40	4000	7 1/2	4 3/4	3 3/4	1 3/8	2 3/4	1 3/8	1 3/8	1 3/8			
50	5000	8 1/2	5 1/2	4	1 3/8	3	1 3/8	1 3/8	1 3/8			
60	6000	9 1/2	6	4 3/8	1 3/8	3 1/4	1 3/8	1 3/8	1 3/8			
75	7500	10 1/2	6 3/4	4 3/4	1 3/4	3 3/4	1 3/8	1 3/8	1 3/8			
90	9000	11 1/4	7 1/8	5 1/8	2	4	2	2	2			
120	12000	13	8 1/4	6	2 1/4	4 1/2	2 1/8	2 1/8	2 1/8			
150	15000	14	8 7/8	6 3/8	2 1/2	5	2 1/8	2 1/8	2 1/8			
200	20000	15 1/2	10 1/8	7 1/8	2 5/8	5 1/2	2 3/8	2 3/8	2 3/8			
240	24000	16 1/2	11	7 1/2	3	6	2 3/4	2 3/4	2 3/4			
280	28000	18	12 1/8	8 1/8	3 1/4	6 1/2	3 1/4	3 1/4	3 1/4			
340	34000	19 3/4	13 3/8	8 15/16	3 1/2	7 1/2	3 3/8	3 3/8	3 3/8			
400	40000	21 1/2	14 1/2	9 5/8	3 3/4	8	4	4	4			
440	44000	23	15 1/8	10 3/4	4	8 1/2	4 1/8	4 1/8	4 1/8			
500	50000	24 1/2	16 1/2	11	4 1/4	9	4 3/4	4 3/4	4 3/4			
600	60000	26	18 1/2	11 3/4	4 1/2	9 1/4	5	5	5			
												65
												82
												105
												130

Sizes of Hooks and Links to Be Attached to Wire Rope Constructions, Grades and Sizes of Bright Wire Ropes

Hook No.	Link No.	Safe Working Load in Pounds	All Bright Ropes of 6 Strands, and 18 x 7 Non-Spinning Ropes				All Bright Ropes of 5 and 8 Strands			
			Cast Steel	Mild Plow Steel	Plow Steel	Monitor Steel	Cast Steel	Mild Plow Steel	Plow Steel	Monitor Steel
10	1000	1/4	1/4	1/4	.....	1/4-5/16	1/4	1/4	1/4
15	1500	5/16	5/16	5/16	.....	3/8	5/16	5/16	5/16
20	2000	3/8	3/8	3/8	1/4	7/16	3/8	3/8	3/8
30	3000	7/16-1/2	7/16	7/16	3/8	1/2	7/16-1/2	7/16-1/2	7/16
40	4000	9/16	1/2	1/2	7/16	9/16-5/8	9/16	9/16	1/2
50	5000	5/8	9/16	9/16	1/2	11/16	5/8	5/8	9/16
60	6000	11/16	5/8	5/8	9/16	3/4	11/16	5/8	5/8
75	7500	3/4	11/16-3/4	11/16	5/8	7/8	3/4	3/4	11/16
90	9000	7/8	.....	3/4	11/16	7/8	7/8	3/4	3/4
120	12000	1	.....	7/8	3/4	1	11/8	1	7/8
150	15000	1 1/8	1-1 1/8	1	7/8	11/4	1 1/8	1 1/8	1
200	20000	1 1/4	1 1/4	1 1/8	1	1 3/8	1 1/4	1 1/4	1 1/8
240	24000	1 3/8	1 3/8	1 1/4	1 1/8	1 1/2	1 3/8	1 3/8	1 1/4
280	28000	1 1/2	1 1/2	1 3/8	1 1/4	1 1/2	1 3/8	1 3/8	1 3/8
340	34000	1 5/8	1 5/8	1 1/2	1 3/8	.....	1 1/2	1 1/2	1 1/2
400	40000	1 3/4	1 3/4	1 5/8	1 1/2	.....	.....	.....	.....
440	44000	1 7/8	1 7/8	1 3/4	1 5/8	.....	.....	.....	.....
500	50000	2	2	1 7/8	1 3/4	.....	.....	.....	.....
600	60000	2 1/4	2 1/4	2	1 7/8	.....	.....	.....	.....

Where there is shown no size of link corresponding to size of hook, use next larger size of link.

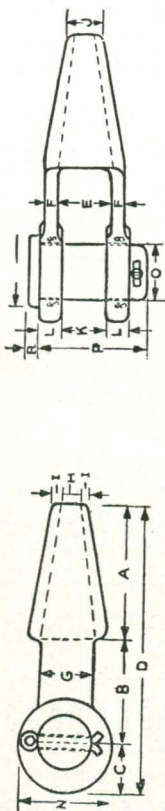
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Tiger Open Wire Rope Sockets



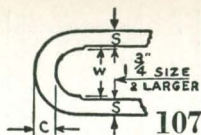
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DIMENSIONS OF SOCKETS

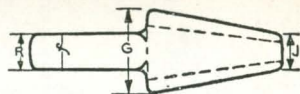
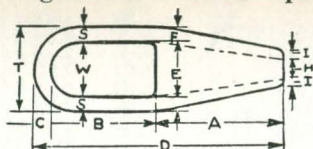
Rope Diam.	DIMENSIONS OF SOCKETS														List Price Loose Each	List Price Attached Each
	A	B	C	D	E	K	O	P	F	Appr. Wt. Lbs.	Price Loose Each	Price Attached Each				
$\frac{1}{4}$ - $\frac{5}{16}$	2	$\frac{19}{16}$	$\frac{3}{4}$	$4\frac{5}{16}$	$1\frac{5}{16}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	0.9	\$ 1.25	\$ 2.25
$\frac{3}{8}$	2	$1\frac{5}{8}$	$\frac{7}{8}$	$4\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	1.1	1.35	2.45
$\frac{1}{2}$ - $\frac{9}{16}$	3	2	$1\frac{1}{16}$	$5\frac{9}{16}$	$1\frac{3}{8}$	2	2	2	2	2	2	2	2	2.3	1.80	3.30
$\frac{5}{8}$	3	$2\frac{1}{2}$	$1\frac{1}{4}$	$6\frac{3}{4}$	$1\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	3.8	2.25	3.80
$\frac{3}{4}$	$3\frac{1}{2}$	3	$1\frac{7}{16}$	$7\frac{15}{16}$	$1\frac{5}{8}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{2}$	6.0	2.85	4.60
$\frac{7}{8}$	4	$3\frac{1}{2}$	$1\frac{3}{4}$	$9\frac{1}{4}$	$1\frac{7}{8}$	3	3	3	3	3	3	3	3	10.0	3.55	6.05
1	$4\frac{1}{2}$	4	$2\frac{1}{16}$	$10\frac{9}{16}$	$2\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{1}{4}$	15.5	4.75	7.75
$1\frac{1}{8}$	5	$4\frac{1}{2}$	$2\frac{1}{16}$	$11\frac{5}{16}$	$2\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	22.0	5.25	9.25
$1\frac{1}{4}$	$5\frac{1}{2}$	5	$2\frac{11}{16}$	$13\frac{3}{16}$	$2\frac{3}{4}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	32.0	9.00	14.25
$1\frac{3}{8}$	$5\frac{1}{2}$	5	$2\frac{11}{16}$	$13\frac{3}{16}$	$2\frac{3}{4}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	32.0	9.00	14.50
$1\frac{1}{2}$	6	6	$3\frac{1}{8}$	$15\frac{1}{8}$	$3\frac{1}{4}$	5	5	5	5	5	5	5	5	46.0	15.25	22.25
$1\frac{3}{4}$	$6\frac{1}{2}$	$6\frac{1}{2}$	$3\frac{3}{4}$	$16\frac{3}{4}$	$3\frac{3}{4}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{2}$	55.0	16.10	23.60
$1\frac{7}{8}$	$7\frac{1}{2}$	7	$3\frac{3}{4}$	$18\frac{1}{4}$	$3\frac{3}{4}$	6	6	6	6	6	6	6	6	82.0	38.00	46.00
$1\frac{1}{2}$	$7\frac{1}{2}$	7	$3\frac{3}{4}$	$18\frac{1}{4}$	$3\frac{3}{4}$	6	6	6	6	6	6	6	6	82.0	41.10	50.60
2	$8\frac{1}{2}$	9	$4\frac{1}{2}$	$21\frac{1}{2}$	$4\frac{3}{8}$	7	7	7	7	7	7	7	7	120.0	60.00	71.00
$2\frac{1}{4}$ - $2\frac{3}{8}$	9	10	$4\frac{1}{2}$	$23\frac{1}{2}$	5	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	160.0	65.00	79.00

Pins are turned. Holes are $\frac{1}{8}$ -inch larger than pin diameters.

Tiger Claw Wire Rope Sockets



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Diam. Rope	DIMENSIONS OF SOCKETS								Approx. Weight	List Price Loose, Each	List Price Attached, Each
	A	B	C	D	G	R	T	W			
1/4-5/16	2	1 13/16	7/16	4 1/4	1 5/16	1/2	1 7/16	1 11/16	0.5	\$ 0.70	\$ 1.70
3/8	2	2 1/16	9/16	4 5/8	1 9/16	5/8	1 11/16	1 15/16	0.8	.85	1.95
1/2-9/16	2 1/2	2 5/16	1 1/16	5 1/2	1 7/8	7/8	2	1 1/8	1.6	1.20	2.70
5/8	3	2 9/16	1 3/16	6 3/8	2 3/8	1	2 5/8	1 3/8	3.0	1.45	3.00
3/4	3 1/2	3 1/16	1 1/16	7 5/8	2 3/4	1 1/4	3	1 5/8	4.5	1.90	3.65
7/8	4	3 5/8	1 1/4	8 7/8	3 1/4	1 1/2	3 5/8	1 7/8	7.0	2.75	5.25
1	4 1/2	4 1/8	1 3/8	10	3 3/4	1 3/4	4 1/8	2 1/4	11.0	3.75	6.75
1 1/8	5	4 5/8	1 1/2	11 1/8	4 1/8	2	4 1/2	2 1/2	16.0	4.50	8.50
1 1/4	5 1/2	5 3/16	1 5/8	12 5/16	4 3/4	2 1/4	5	2 3/4	22.0	7.50	12.75
1 3/8	5 1/2	5 3/16	1 5/8	12 5/16	4 3/4	2 1/4	5	2 3/4	22.0	7.50	13.00
1 1/2	6	6 7/16	1 15/16	14 1/8	5 1/4	2 1/2	5 3/8	3 1/8	28.0	11.00	18.00
1 5/8	6 1/2	6 3/4	2 1/8	15 3/8	5 1/2	2 3/4	5 3/4	3 1/4	36.0	12.80	20.30
1 3/4	7 1/2	7 13/16	2 3/16	17 1/2	6 3/8	3	6 3/4	3 17/32	53.0	28.00	36.00
1 7/8	7 1/2	7 13/16	2 3/16	17 1/2	6 3/8	3	6 3/4	3 17/32	53.0	30.00	39.50
2-2 1/8	8 1/2	8 13/16	2 7/16	19 3/4	7 1/4	3 1/4	7 5/8	3 25/32	80.0	40.00	51.00
2 1/4-2 3/8	9	9 3/4	2 7/8	21 5/8	8 1/4	3 5/8	8 1/2	4 9/32	105.0	44.50	58.50

Tiger Wire Rope Clips—With the Yellow Base

(See page 123 for proper method of fastening)



Light, Durable and Convenient—Easily Applied.
Reliable because they are drop forged.

They should not be confused with the cheaper cast clip.

Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each	Size Clip Corresponding to Rope Dia.	List Price Each
3	\$35.00	1 3/4	\$5.50	1 1/8	\$0.95	1/2	\$0.45
2 3/4	25.00	1 5/8	3.50	1	.85	7/16	.45
2 1/2	11.50	1 1/2	1.50	7/8	.75	3/8	.40
2 1/4	9.50	1 3/8	1.25	3/4	.65	5/16	.35
2	7.50	1 1/4	1.10	5/8	.55	1/4	.35
						3/16	.30

Tapering and Soldering or Welding Ends of Wire Rope

Rope ends are tapered and soldered in order to facilitate the installation of ropes, particularly steam shovel ropes. The tapered end is usually attached to the drum, and at the end of the taper there is a becket loop through which another piece of rope may pass to pull the rope through the hole in the drum. Care is taken when soldering and tapering the end of the rope, to see that the diameter of the rope is not increased. This overcomes the trouble experienced when heavy seizing is used which makes it impossible to pull the rope through the hole in the drum.

List Price Per End

Diameter of Rope	List Price	Diameter of Rope	List Price	Diameter of Rope	List Price
2 1/2	\$8.00	1 1/2	\$3.50	3/4	\$0.75
2 1/4	6.50	1 3/8	3.00	5/8	.65
2 1/8	5.75	1 1/4	2.50	9/16	.65
2	5.25	1 1/8	2.00	1/2 and 7/16	.60
1 3/4	4.50	1	1.25	3/8	.50
1 5/8	4.00	7/8	1.00	5/16 and 1/4	.45

Drop Forged
Tiger **LAUGHLIN SAFETY** **Clips**
Galvanized



Easy to Tighten

Tiger Laughlin Drop Forged Safety Clips have two nuts on opposite sides, permitting a full swing with any type of wrench.



Always Put On Right

It is impossible to install this improved type of clip incorrectly. The two halves are identical, providing a bearing surface for both the live and dead ends of the rope. It cannot be installed incorrectly.

Holds Rope

"Fist" grip provides full bearing surface against the rope with an increased holding power and higher efficiency.

Saves Rope

The flat bearing surfaces do not distort the rope and thus permit its repeated use.

Size Clip Corresponding to Rope, Diameter In Inches	List Price Each	No. of Clips Recommended	Approximate Weight per 100 Clips in Lbs.
1/4	\$0.35	2	25
5/16	.35	2	29 1/4
3/8	.40	2	36
1/2	.45	2	57
5/8	.55	2	95
3/4	.65	3	134
7/8	.75	4	220
1	.85	4	260
1 1/8	.95	4	312
1 1/4	1.10	5	410
1 1/2	1.50	5	650

Fiege
Tiger-Claw
Sockets

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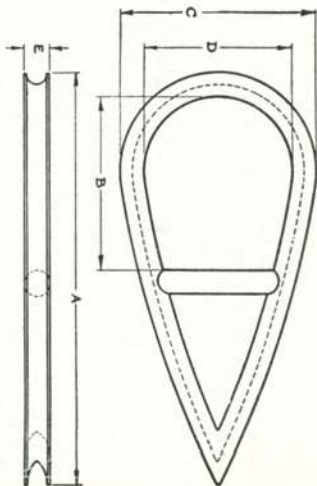
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Galvanized Steel Castings

Size of Hawser		DIMENSIONS OF THIMBLES					Weight Each Lbs.	List Price Loose	*List Price Thimble Attached	Extra Rope Used Ft.
Dia.	Cir.	A	B	C	D	E				
1 1/8	3 1/2	25	9 13/16	11 7/8	9	1 1/2	25	\$12.80	\$17.80	5
1 1/4	3 7/8	25	9 3/4	12	9	1 5/8	28	14.30	20.40	5 1/2
1 3/8	4 3/8	26	9 11/16	12 5/8	9	1 7/8	38	17.30	24.60	5 1/2
1 1/2	4 3/4	26	9 7/8	12 3/4	9	2	43	19.30	27.20	6
1 5/8	5 1/8	27	10	12 7/8	9	2 1/8	50	21.90	31.00	6
1 3/4	5 1/2	27	10	13 1/2	9	2 1/4	60	25.30	35.60	7
1 7/8	5 7/8	28	10 3/16	13 5/8	9	2 3/8	66	27.30	38.80	7
2	6 1/4	28	10 1/4	13 3/4	9	2 1/2	72	30.00	47.00	7
2 1/8	6 3/4	30	10 11/16	14 7/8	10	2 3/4	80	33.00	53.00	8
2 1/4	7 1/8	30	10 7/8	15	10	2 7/8	85	35.40	60.00	8
2 3/8	7 1/2	30	11 1/16	15 1/8	10	3 1/8	90	37.00	66.00	8

*Does not include price of extra rope used.

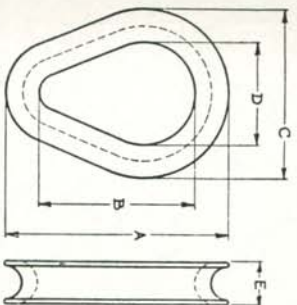


Non-Collapsible Hawser Thimbles

Galvanized Steel Castings

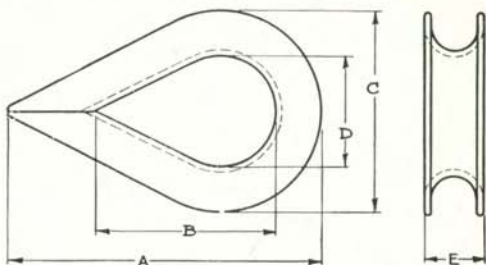
Size of Hawser		DIMENSIONS OF THIMBLES					Weight Each Lbs.	List Price Loose	*List Price Attached	Extra Rope Used Ft.
Dia.	Cir.	A	B	C	D	E				
5/8	2	6 1/2	4 1/2	5	3	1 3/16	4	\$ 2.55	\$ 4.40	2 1/2
3/4	2 3/8	6 1/2	4 1/2	5	3	1 3/16	4	2.55	4.70	3
7/8	2 3/4	8 1/4	5 3/4	6 1/4	3 3/4	1 7/16	7	3.76	6.30	3
1	3 1/8	8 1/4	5 3/4	6 1/4	3 3/4	1 7/16	7	3.76	6.90	4
1 1/8	3 1/2	9 3/4	6 3/4	7 1/4	4 1/4	1 11/16	9	4.73	9.00	4
1 1/4	3 7/8	9 3/4	6 3/4	7 1/4	4 1/4	1 11/16	9	4.73	9.60	4 1/2
1 3/8	4 3/8	10 1/2	7 1/8	7 3/4	4 1/2	1 15/16	13	6.11	12.20	4 1/2
1 1/2	4 3/4	12	8	9	5	2 3/16	20	8.05	15.30	5
1 5/8	5 1/8	12 1/4	8	9 1/4	5	2 7/16	26	11.10	19.00	5
1 3/4	5 1/2	12 1/4	8	9 1/4	5	2 7/16	26	11.10	20.20	6
1 7/8	5 7/8	14 1/4	9 1/2	10 3/4	6	2 11/16	36	15.10	25.40	6 1/2
2	6 1/4	14 1/4	9 1/2	10 3/4	6	2 11/16	36	15.10	29.50	6 1/2
2 1/8	6 3/4	16 1/2	11	12 1/2	7	3 1/8	53	20.90	37.70	7
2 1/4	7 1/8	16 1/2	11	12 1/2	7	3 1/8	53	20.90	42.50	7

*Does not include price of extra rope used.



Standard Hawser Thimbles

Galvanized Standard Wire Rope Thimbles



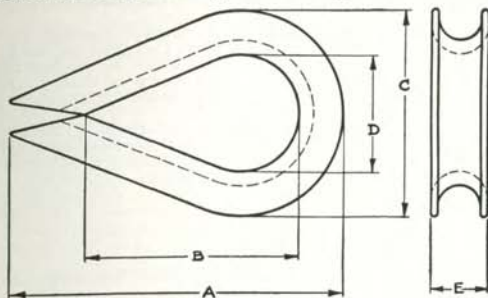
G-LARGEST DIA PIN THIMBLE WILL FIT OVER

Rope Diam.	Dimensions of Thimbles						Weight Each Lbs.	List Price Loose	List Price At'ched
	A	B	C	D	E	G			
$\frac{1}{4}$ "	$1\frac{15}{16}$	$1\frac{1}{4}$	$1\frac{1}{8}$	$\frac{3}{4}$	$1\frac{11}{32}$	$1\frac{11}{16}$	.034	\$0.035	\$ 1.26
$\frac{5}{16}$ "	$2\frac{1}{8}$	$1\frac{5}{16}$	$1\frac{3}{8}$	$1\frac{13}{16}$	$1\frac{13}{32}$	$1\frac{3}{4}$	.056	.045	1.27
$\frac{3}{8}$ "	$2\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{9}{16}$	1	$1\frac{1}{2}$	$1\frac{15}{16}$	.081	.05	1.31
$\frac{7}{16}$ "	$2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{1}{16}$	$\frac{9}{16}$	1	.103	.06	1.39
$\frac{1}{2}$ "	$2\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{11}{16}$	$1\frac{1}{8}$	$2\frac{1}{32}$	$1\frac{11}{16}$	.115	.065	1.82
$\frac{9}{16}$ "	$3\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{13}{16}$	$1\frac{1}{4}$	.356	.08	1.89
$\frac{5}{8}$ "	$3\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{13}{16}$	$1\frac{1}{4}$	.356	.09	2.35
$\frac{3}{4}$ "	$3\frac{11}{16}$	$2\frac{3}{8}$	$2\frac{3}{4}$	$1\frac{9}{16}$	1	$1\frac{1}{2}$	.494	.11	2.71
$\frac{7}{8}$ "	4	$2\frac{1}{2}$	3	$1\frac{3}{4}$	$1\frac{1}{8}$	$1\frac{5}{8}$	.58	.135	4.64
1"	$4\frac{3}{4}$	3	$3\frac{1}{4}$	2	$1\frac{3}{16}$	$1\frac{7}{8}$	.75	.175	6.57
$1\frac{1}{8}$ "	$5\frac{1}{4}$	$3\frac{3}{8}$	$3\frac{13}{16}$	$2\frac{5}{16}$	$1\frac{1}{4}$	$2\frac{1}{8}$	.96	.315	7.80
$1\frac{1}{4}$ "	6	$3\frac{3}{4}$	$4\frac{1}{4}$	$2\frac{5}{8}$	$1\frac{9}{16}$	$2\frac{1}{2}$	1.61	.365	9.12
$1\frac{3}{8}$ "	$6\frac{7}{8}$	4	$4\frac{3}{4}$	$2\frac{7}{8}$	$1\frac{3}{4}$	$2\frac{3}{4}$	2.67	.78	12.53
$1\frac{1}{2}$ "	$6\frac{7}{8}$	4	$4\frac{3}{4}$	$2\frac{7}{8}$	$1\frac{3}{4}$	$2\frac{3}{4}$	2.67	1.00	16.75
$1\frac{5}{8}$ "	$7\frac{1}{2}$	$4\frac{3}{4}$	$5\frac{1}{4}$	$3\frac{1}{8}$	$2\frac{1}{8}$	3	3.08	1.165	19.67
$1\frac{3}{4}$ "	$7\frac{1}{2}$	$4\frac{3}{4}$	$5\frac{1}{4}$	$3\frac{1}{8}$	$2\frac{1}{8}$	3	3.08	1.33	22.83
$1\frac{7}{8}$ "	$8\frac{3}{4}$	5	6	$3\frac{3}{8}$	$2\frac{7}{16}$	$3\frac{1}{4}$	5.48	1.50	26.75
2"	$8\frac{3}{4}$	5	6	$3\frac{3}{8}$	$2\frac{7}{16}$	$3\frac{1}{4}$	5.48	1.665	31.67

Galvanized Standard Wire Rope Thimbles are recommended for use with Iron and Cast Steel Ropes, Galvanized Guy Strands and Ropes, and stationary ropes.

For other ropes the Galvanized Heavy Wire Rope Thimbles shown on the following page are recommended.

Galvanized Heavy Wire Rope Thimbles



G=LARGEST DIA PIN THIMBLE WILL FIT OVER

Rope Diam.	Dimensions of Thimbles						Weight Each Lbs.	List Price Loose	List Price At'ched
	A	B	C	D	E	G			
$\frac{1}{4}$ "	$2\frac{1}{2}$	$1\frac{5}{8}$	$1\frac{9}{16}$	$\frac{7}{8}$	$1\frac{3}{32}$	$1\frac{3}{16}$	.12	\$0.08	\$ 1.30
$\frac{5}{16}$ "	3	$1\frac{7}{8}$	$1\frac{13}{16}$	1	$1\frac{5}{32}$	$1\frac{5}{16}$	.15	.08	1.30
$\frac{3}{8}$ "	$3\frac{3}{8}$	$2\frac{1}{8}$	$2\frac{1}{16}$	$1\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{1}{16}$	.22	.15	1.40
$\frac{7}{16}$ "	$3\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{1}{4}$	$\frac{5}{8}$	$1\frac{3}{16}$	.30	.20	1.50
$\frac{1}{2}$ "	$4\frac{1}{8}$	$2\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{1}{2}$	$2\frac{3}{32}$	$1\frac{7}{16}$	.50	.30	2.05
$\frac{9}{16}$ "	$4\frac{1}{8}$	$2\frac{3}{4}$	$2\frac{5}{8}$	$1\frac{1}{2}$	$2\frac{5}{32}$	$1\frac{7}{16}$	.50	.50	2.30
$\frac{5}{8}$ "	$5\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{3}{16}$	$1\frac{3}{4}$	$2\frac{9}{32}$	$1\frac{5}{8}$	.75	.50	2.75
$\frac{3}{4}$ "	$6\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{4}$	2	$1\frac{1}{16}$	$1\frac{7}{8}$	1.30	.60	3.20
$\frac{7}{8}$ "	$7\frac{1}{8}$	$4\frac{1}{4}$	$4\frac{1}{16}$	$2\frac{1}{4}$	$1\frac{3}{16}$	$2\frac{1}{8}$	1.60	.65	5.15
1	$8\frac{1}{8}$	$4\frac{1}{2}$	$4\frac{11}{16}$	$2\frac{1}{2}$	$1\frac{7}{16}$	$2\frac{3}{8}$	2.80	.80	7.20
$1\frac{1}{8}$ "	$9\frac{1}{2}$	5	$5\frac{5}{8}$	$2\frac{7}{8}$	$1\frac{5}{8}$	$2\frac{3}{4}$	4.50	1.55	9.05
$1\frac{1}{4}$ "	$9\frac{1}{2}$	$5\frac{1}{8}$	$5\frac{5}{8}$	$2\frac{7}{8}$	$1\frac{11}{16}$	$2\frac{3}{4}$	4.50	1.55	10.30
$1\frac{3}{8}$ "	$11\frac{5}{8}$	$6\frac{1}{4}$	$6\frac{7}{8}$	$3\frac{1}{2}$	$2\frac{1}{16}$	$3\frac{3}{8}$	7.50	3.25	15.00
$1\frac{1}{2}$ "	$11\frac{5}{8}$	$6\frac{3}{4}$	$6\frac{7}{8}$	$3\frac{1}{2}$	$2\frac{1}{8}$	$3\frac{3}{8}$	7.50	3.25	19.00
$1\frac{5}{8}$ "	$13\frac{3}{8}$	8	$7\frac{3}{4}$	4	$2\frac{3}{8}$	$3\frac{7}{8}$	11.75	4.50	23.00
$1\frac{3}{4}$ "	14	9	$8\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{3}{4}$	$4\frac{3}{8}$	18.00	6.25	27.75
$1\frac{7}{8}$ "	15	10	$9\frac{1}{4}$	5	$2\frac{7}{8}$	$4\frac{7}{8}$	22.00	9.50	34.75
2"	17	12	$10\frac{1}{2}$	6	$3\frac{1}{8}$	$5\frac{7}{8}$	30.00	9.50	39.50
$2\frac{1}{8}$ "	19	14	$12\frac{1}{4}$	7	$3\frac{1}{2}$	$6\frac{7}{8}$	52.00	15.25	52.75
$2\frac{1}{4}$ "	19	14	$12\frac{1}{4}$	7	$3\frac{1}{2}$	$6\frac{7}{8}$	52.00	15.25	66.75

Galvanized Heavy Wire Rope Thimbles are recommended for use with all material handling ropes, and all Plow Steel and Monitor Steel—Wire Ropes.

Fiege
Tiger-Claw
Sockets

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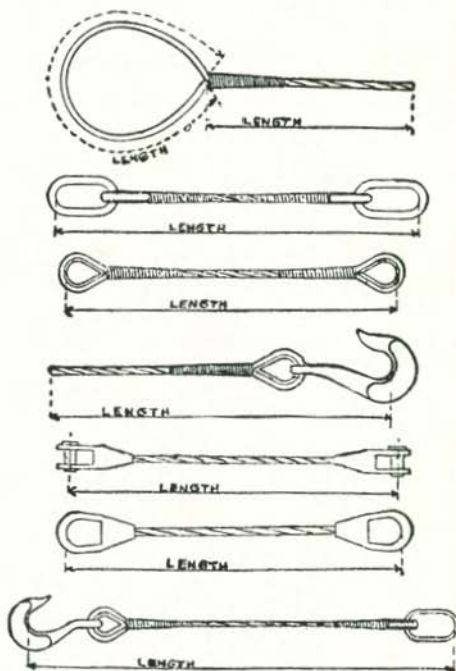
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Fittings Attached to Rope

The successful use of wire rope frequently depends upon the selection of the fitting or end-fastening. Therefore, we endeavor to carry a large stock of fittings in our various warehouses together with skilled labor for attaching them. Some of these fittings are clamped to the wire rope; some are fastened with molten metal; and others are spliced in.

Fittings may be sold either loose or attached. If sold attached, great care must be exercised in submitting specifications, lest error be made in the length of rope overall. Usually it is advisable to submit rough sketches, as per the following:



When a rope is to have a fitting attached to one end, mention the length from the end of the rope to the "pull" of the fitting. When it is to have fittings attached to both ends, state the length from "Pull to Pull" of fittings.

Splicing: In ordinary wire rope practice there are three classes of splices i. e., the "End-to-End," the "Endless," and the "Thimble" splice.

Recommended Fastenings for Wire Rope

The following figures based on actual tests, represent average values of percentage of total rope strength obtainable by various methods of rope fastenings and are listed in order of their reliability.

Method of Rope Fastening	% of Total Rope Strength Obtainable
Wire rope socket (attached with zinc per our standard method)	100
Thimble or eye splice in rope with four or five tucks	90
Thimble placed in end of rope and fastened with wire rope clips	85
Three bolt wire rope clamps	75

In the case of clips and clamps a sufficient number must be used to bring the percentage figure up to that given, our standard practice and recommendations conforming with the following tables. In the case of clips great care should be taken to see that the U-bolt bears on the short end of the rope so that the flat base of the clip rests on the tensile side of the rope, otherwise the rope will be injured by putting a crimp into the tension side.

Recommendation as to Number of Tiger Galvanized Drop Forged Wire Rope Clips Proper to Use to Obtain Maximum Percentage of Total Rope Strength

Size Clip Core responding to rope diameter in inches	No. of Clips recommended to give Maximum Strength	Size of Stock in U-Bolt	Maximum Size of Wrench to be Used	Weight of Each
3	6	1 1/4	24	22.96
2 3/4	6	1 1/4	24	20.06
2 1/2	6	1 1/8	24	15.89
2 1/4	6	1 1/8	24	13.57
2	6	1	20	10.35
1 3/4	6	1	20	7.667
1 5/8	6	7/8	16	6.907
1 1/2	6	7/8	16	5.482
1 3/8	6	7/8	16	5.023
1 1/4	5	7/8	16	4.636
1 1/8	5	3/4	16	3.354
1	4	3/4	16	2.669
7/8	4	3/4	12	2.412
3/4	3	5/8	12	1.469
5/8	3	9/16	12	1.002
1/2	2	1/2	12	.732
7/16	2	1/2	8	.732
3/8	2	3/8	8	.46
5/16	2	3/8	8	.304
1/4	2	3/8	8	.291

We recommend wire rope sockets for all permanent attachments. Clips may be used for temporary work or where the load is light. For main hoisting ropes nothing but sockets should be used.

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Fiege Tiger-Claw Wire Rope Sockets



Fiege Tiger-Claw Sockets are available in three standard types, namely—Open End, Eye End and Stud End. Special sockets according to specifications can be supplied—but quantity should be sufficiently large to warrant the extra die expense.

The Open End and Eye End types replace the old hot metal Open and Closed Sockets. The Stud End type also has much uses. It permits a substantial take-up and can also be used as a part of turnbuckles. Note particularly the neatness of this attachment. Each fitting has an inspection hole to determine if attachment has been properly made—no more guessing nor hoping that the attachment will hold.

Standard types are carried in stock for immediate shipment. Unless otherwise ordered—Fiege Tiger-Claw Sockets will be supplied with a special black finish. They can also

be supplied Cadmium Plated, a corrosion-resisting finish, at moderately higher prices. Correct plug will be supplied with each fitting. Please be sure to specify type of plug wanted, or kind of rope to which sockets are to be attached. Fiege Tiger-Claw Sockets can be re-used and extra plugs supplied at a small charge. Prices quoted upon application.

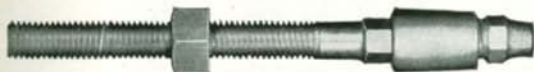
Fiege Tiger-Claw Sockets give 100% cable strength. They are made of 1040 S. A. E. Steel—drop forged, heat treated and machined to precise dimensions. A neat and compact attachment—smaller in size because the large basket for the hot metal in the old socket has been eliminated. No zinc to heat—you simply insert a plug which has been carefully and correctly designed at the factory.



OPEN END SOCKET



EYE END SOCKET



STUD END SOCKET

Fiege
Tiger-Claw
Sockets

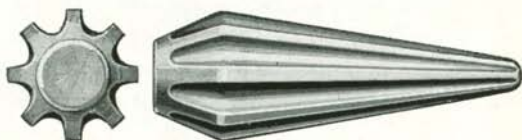
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**SIX FLUTED PLUG**

For all six strand ropes hemp core sizes $\frac{3}{8}$ " diameter and larger.

**EIGHT FLUTED PLUG**

For all eight strand ropes hemp core sizes $\frac{1}{2}$ " diameter and larger.

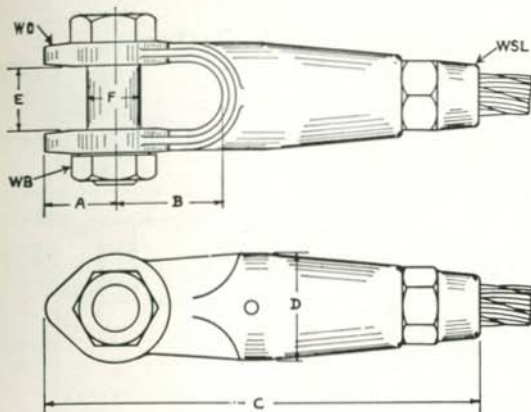
**CONE PLUG (SOLID)**

For smaller sizes of six and eight strand hemp core rope—
for all size ropes with wire core and for all sizes of flattened strand and non-spinning ropes.

**CONE PLUG (HOLLOW)**

For use in connection with all strands of seven wires.

Fiege Tiger-Claw Open End Fittings



DIMENSIONS OF FITTINGS IN INCHES

Rope Diam. Inches	From End to Center Line of Pin	From Center Line of Pin to Socket	Approx. Overall Length	Diam- eter of Socket	Opening Between Jaws	Diam- eter of Bolt	Approx. Weight Pounds, Each
	A	B	C	D	E	F	
$\frac{1}{4}$	$\frac{13}{16}$	$\frac{15}{16}$	$4\frac{5}{8}$	$\frac{7}{8}$	$\frac{9}{16}$	$\frac{1}{2}$	0.5
$\frac{3}{16}$	$\frac{7}{8}$	$\frac{17}{16}$	$5\frac{1}{8}$	1	$\frac{9}{16}$	$\frac{9}{16}$	0.8
$\frac{3}{8}$	$\frac{11}{16}$	$1\frac{1}{2}$	$5\frac{3}{4}$	$\frac{13}{16}$	$\frac{11}{16}$	$\frac{5}{8}$	1.1
$\frac{7}{16}$	$\frac{13}{16}$	$1\frac{11}{16}$	$6\frac{9}{16}$	$\frac{17}{16}$	$\frac{7}{8}$	$\frac{3}{4}$	1.9
$\frac{1}{2}$	$\frac{15}{16}$	$1\frac{7}{8}$	$7\frac{1}{4}$	$\frac{19}{16}$	$\frac{15}{16}$	$\frac{7}{8}$	2.6
$\frac{9}{16}$	$\frac{13}{8}$	$2\frac{1}{8}$	$7\frac{7}{8}$	$\frac{11}{16}$	1	$\frac{15}{16}$	3.2
$\frac{5}{8}$	$1\frac{1}{2}$	$2\frac{1}{4}$	$8\frac{1}{2}$	$\frac{113}{16}$	$\frac{11}{16}$	1	3.9
$\frac{3}{4}$	$\frac{13}{4}$	$2\frac{1}{2}$	$9\frac{5}{8}$	$2\frac{3}{8}$	$\frac{15}{16}$	$1\frac{1}{8}$	6.6
$\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{3}{4}$	$11\frac{1}{8}$	$2\frac{11}{16}$	$\frac{19}{16}$	$1\frac{1}{4}$	9.7
1	2	$3\frac{1}{8}$	$12\frac{5}{8}$	$2\frac{15}{16}$	$\frac{113}{16}$	$1\frac{1}{2}$	14.5

Reference WO means—Wire Rope Socket—Open End; WSL means—Wire Rope Socket—Sleeve; WB means—Wire Rope Socket—Bolt

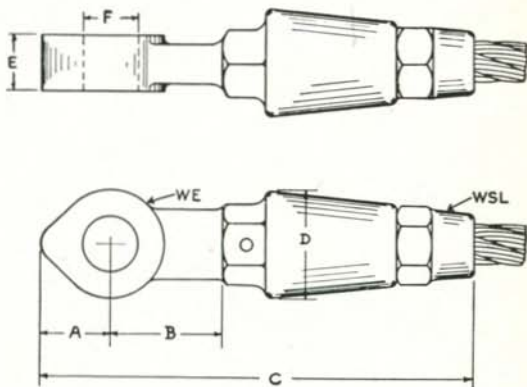
PRICES QUOTED UPON APPLICATION

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Fiege Tiger-Claw Eye End Fittings

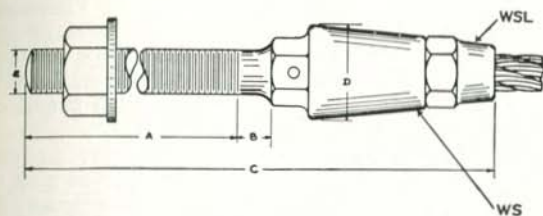


DIMENSIONS OF FITTINGS IN INCHES							Approx. Weight Pounds, Each
Rope Diam. Inches	From End to Center Line of Pin Hole	From Center Line of Pin Hole to Shoulder	Approx. Overall Length	Diam- eter of Socket	Width of Eye	Diam- eter of Pin Hole	
	A	B	C	D	E	F	
$\frac{1}{4}$	$\frac{13}{16}$	$1\frac{1}{4}$	$4\frac{3}{8}$	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{17}{32}$	0.4
$\frac{5}{16}$	$\frac{7}{8}$	$1\frac{1}{4}$	$4\frac{7}{8}$	1	$\frac{1}{2}$	$\frac{19}{32}$	0.5
$\frac{3}{8}$	$1\frac{1}{16}$	$1\frac{5}{16}$	$5\frac{1}{2}$	$1\frac{3}{16}$	$\frac{9}{16}$	$\frac{21}{32}$	0.8
$\frac{7}{16}$	$1\frac{3}{16}$	$1\frac{1}{2}$	$6\frac{1}{4}$	$1\frac{3}{8}$	$\frac{3}{4}$	$\frac{25}{32}$	1.2
$\frac{1}{2}$	$1\frac{5}{16}$	$1\frac{11}{16}$	$6\frac{7}{8}$	$1\frac{1}{2}$	$\frac{3}{4}$	$\frac{29}{32}$	1.6
$\frac{9}{16}$	$1\frac{3}{8}$	$1\frac{7}{8}$	$7\frac{5}{8}$	$1\frac{11}{16}$	$\frac{13}{16}$	$\frac{31}{32}$	2.0
$\frac{5}{8}$	$1\frac{1}{2}$	$2\frac{1}{4}$	$8\frac{1}{2}$	$1\frac{3}{4}$	$\frac{7}{8}$	$1\frac{1}{32}$	2.8
$\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{3}{8}$	$9\frac{5}{8}$	$2\frac{5}{16}$	$1\frac{1}{16}$	$1\frac{5}{32}$	4.7
$\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{3}{4}$	$11\frac{1}{8}$	$2\frac{5}{8}$	$1\frac{5}{16}$	$1\frac{9}{32}$	7.5
1	2	$3\frac{1}{8}$	$12\frac{5}{8}$	$2\frac{7}{8}$	$1\frac{9}{16}$	$1\frac{11}{32}$	11.1

Reference WE means—Wire Rope Socket-Eye End; WSL—Wire Rope Socket-Sleeve.

PRICES QUOTED UPON APPLICATION

Fiege Tiger-Claw Stud End Fittings



DIMENSIONS OF FITTINGS

Rope Diam.	DIMENSIONS OF FITTINGS					Approx. Weight Pounds Each
	Length of Stud		Approx. Overall Length	Diameter of Socket	Diameter of Stud	
	A	B					C	D	E
$\frac{1}{4}$	$4\frac{1}{4}$	$\frac{1}{2}$	$7\frac{1}{16}$	$\frac{7}{8}$	$\frac{1}{2}$	0.6
$\frac{5}{16}$	$4\frac{1}{4}$	$\frac{1}{2}$	$7\frac{1}{2}$	1	$\frac{1}{2}$	0.9
$\frac{3}{8}$	$4\frac{9}{16}$	$\frac{1}{2}$	$8\frac{3}{16}$	$1\frac{3}{16}$	$\frac{5}{8}$	1.2
$\frac{7}{16}$	$6\frac{3}{8}$	$\frac{3}{4}$	$10\frac{11}{16}$	$1\frac{3}{8}$	$\frac{3}{4}$	2.0
$\frac{1}{2}$	$6\frac{3}{8}$	$\frac{3}{4}$	11	$1\frac{1}{2}$	$\frac{3}{4}$	2.7
$\frac{9}{16}$	$8\frac{3}{16}$	$\frac{3}{4}$	$13\frac{5}{16}$	$1\frac{11}{16}$	$\frac{7}{8}$	3.8
$\frac{5}{8}$	$8\frac{3}{16}$	$\frac{3}{4}$	$13\frac{15}{16}$	$1\frac{3}{4}$	$\frac{7}{8}$	4.5
$\frac{3}{4}$	$8\frac{15}{16}$	1	$15\frac{5}{16}$	$2\frac{5}{16}$	$1\frac{1}{8}$	7.7
$\frac{7}{8}$	$9\frac{1}{8}$	1	$16\frac{5}{8}$	$2\frac{5}{8}$	$1\frac{1}{4}$	12.1
1	$12\frac{3}{4}$	1	$21\frac{1}{4}$	$2\frac{7}{8}$	$1\frac{1}{2}$	19.5

Stud End fittings are furnished complete with standard nut and washer.

Reference WS means—Wire Rope Socket—Stud End; WSL means—Wire Rope Socket—Sleeve.

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Instructions for Attaching Fiege Tiger-Claw Fittings to Wire Rope



A End of wire rope with one seizing near end and two seizings beyond, also tools to be used.

This seizing should be placed the length of the full sleeve, plus the length of thread on sleeve, plus one-half of Hexagon for six strand or plus whole of Hexagon for eight strand rope away from the end of rope. (See Figure A.)

When attaching Fiege Tiger-Claw Fittings to Preformed Wire Ropes no seizings are required. The proper distance should be marked on the rope with pencil or chalk.

For proper type of plug to use, see page 126.

1. Apply one soft wire seizing beyond the two which are on rope end.



B Sleeve being driven down correct distance.



C Strand ends projecting correct distance through sleeve.

2. Adjust second seizing far enough from end of rope so that hemp center can be cut out the distance equal to the length of twice the threaded section of the sleeve.

3. Remove seizing nearest end. When using 6 or 8 fluted plug, separate strands, cut out hemp center down to second seizing. When using solid cone plug, broom out wires in strands, and also broom out wires in center if wire center, and if hemp center, broom out wires in strands and cut out hemp center down to second seizing. (Do not cut out wire center if rope has wire center).

4. Drive second seizing up towards end of rope with hammer and pliers so as to bring strands together.

5. Slip sleeve over end of rope and screw socket end of fitting on sleeve

D Plug being placed into position.

two or three turns, driving the assembly down the rope until strands extend beyond sleeve, length of threaded section plus one-half of Hexagon for six strand rope or plus whole of Hexagon for eight strand rope, (See Figure B) then remove socket part of fitting.

6. When using 6 or 8 fluted plug, insert plug between strands (See Figure C.) See that strands fit into grooves of plug. Tap plug down gently with hammer and punch and while doing this, with one hand grip strand ends, rotating them slightly in the direction opposite to the direction of the lay of the rope, thus permitting strand ends to adjust themselves in grooves of center plug. (See Figure D.)

When using solid cone plug, place plug as nearly as possible in center of rope and tap down gently with hammer and punch. Usually it is easier to first make space for Plug with a Hammer and punch.

When using hollow cone plug, for 7 wire steel strand, in-



E Socket being screwed down.

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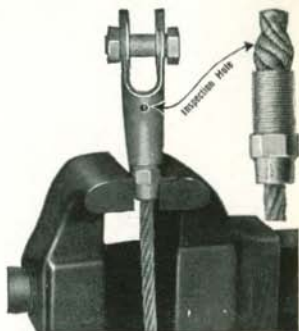
sert plug by placing center wire through hollow center in plug and tap down gently with hammer and punch.

7. Grip Hexagon section of sleeve in vise or wrench when no vise is available, drive plug down firmly with punch and hammer, making sure that it goes down as far as possible.

8. Place socket over end of rope and screw down firmly. (Do not screw together by rotating sleeve.) (See Figure E.)

9. When tightened as much as possible, if properly installed, there will be one or two threads visible on the sleeve. Remove all seizings.

10. Inspect installation by noting that the wires are fully visible in the inspection hole. If properly installed, the wires will be visible, grouped at an angle to the axis of the rope and fitting. (See Figure F.)



F Completed assembly showing Inspection Hole and Wire in diagonal position therein.



The Tiger Trade Mark—a symbol of outstanding quality in Wire Rope—also serves to identify the full measures of value and service that are a part of Fiege Tiger-Claw Wire Rope Sockets. It is your assurance of perfection in design and manufacture.

Make yourself familiar with this remarkable advance—and learn how its application to your own socketing problems will save time, labor and money.

A. S. & W. Shield Filler

This Shield Filler has been compounded to meet the demand for a first class lubricant of moderate cost, which should be suitable for as many wire rope conditions as possible. It is particularly recommended for mine hoists and haulage systems, coal dock haulage roads, dredge ropes, logging ropes, steam shovel ropes, oil well drilling ropes, quarry ropes, and, in fact, any rope where a heavy lubricant is desirable.

A. S. & W. Shield Filler adheres very tenaciously to a wire rope and may be applied without any difficulty to a rope that has already had a coating of grease. It has a high drip point and is a flexible compound at low temperatures. Tests on mine ropes subjected to bad acid mine water have proven conclusively that it will protect such ropes as completely as possible from the corrosive action of such water, and thus prolong the rope service. It does not dry up quickly and flake off, like many compounds, but retains to a marked degree the elasticity necessary for a rope lubricant.

Application of this lubricant is readily made by passing a rope slowly through a small tank which is filled with hot compound and arranging a wiper to take off any excess of compound. In order to heat the compound for application, a steam coil may be used, or for small amounts, the cans may be heated by putting into hot water until contents are warmed clear through. If heat is not available, the Shield Filler can be applied without warming, but it will flow better when hot.

A. S. & W. Co. Cam Cutters for Wire Rope



Cuts all grades and sizes of wire hoisting ropes, haulage ropes, running ropes, oil well ropes, etc., up to 1 inch and $1\frac{1}{4}$ inch, inclusive. No adjustment necessary for different sizes of rope.

The frame is made of cast steel; the handle of machine steel; the cutters of tool steel, tempered.

1" Cutter.....	{Price on
$1\frac{1}{4}$ " "	{Application

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Table of Net Discounts

Initial Discount	2½	5	7½	10	12½	15	17½	20
ADDITIONAL DISCOUNTS								
5	.97500	.95000	.92500	.90000	.87500	.85000	.82500	.80000
10	.92625	.90250	.87875	.85500	.83125	.80750	.78375	.76000
10-5	.87750	.85500	.83250	.81000	.78750	.76500	.74250	.72000
10-5-5	.83363	.81225	.79088	.76950	.74813	.72675	.70538	.68400
10-5-5-5	.79195	.77164	.75134	.73100	.71072	.69041	.67011	.64980
10-5-5-5-5	.75235	.73306	.71377	.69445	.67518	.65589	.63660	.61731
10-10	.78975	.76950	.74925	.72900	.70875	.68850	.66825	.64800
10-10-5	.75026	.73103	.71179	.69255	.67331	.65408	.63484	.61560
10-10-5-5	.71275	.69448	.67620	.65792	.63964	.62138	.60310	.58482
10-10-5-5-5	.67711	.65976	.64239	.62502	.60766	.59031	.57295	.55558
10-10-10	.71078	.69255	.67433	.65610	.63788	.61965	.60143	.58320
10-10-10-5	.67524	.65792	.64061	.62330	.60599	.58867	.57136	.55404
10-10-10-5-5	.64148	.62502	.60858	.59214	.57569	.55924	.54279	.52634
10-10-10-5-5-5	.60941	.59377	.57815	.56253	.54691	.53128	.51565	.50002

Table of Net Discounts (Continued)

Initial Discount	22½	25	27½	30	32½	35	37½	40
ADDITIONAL DISCOUNTS								
5	.77500	.75000	.72500	.70000	.67500	.65000	.62500	.60000
10	.73625	.71250	.68875	.66500	.64125	.61750	.59375	.57000
10-5	.69750	.67500	.65250	.63000	.60750	.58500	.56250	.54000
10-5-5	.66263	.64125	.61988	.59850	.57713	.55575	.53438	.51300
10-5-5-5	.62950	.60919	.58889	.56858	.54827	.52796	.50766	.48735
10-10	.59803	.57873	.55945	.54015	.52086	.50156	.48228	.46298
10-10-5	.62775	.60750	.58725	.56700	.54675	.52650	.50625	.48600
10-10-5-5	.59636	.57713	.55789	.53865	.51941	.50018	.48094	.46170
10-10-5-5-5	.56654	.54827	.53000	.51172	.49344	.47517	.45689	.43862
10-10-10	.53821	.52086	.50350	.48613	.46877	.45141	.43405	.41669
10-10-10-5	.56498	.54675	.52853	.51030	.49208	.47385	.45563	.43740
10-10-10-5-5	.53673	.51941	.50210	.48479	.46748	.45016	.43285	.41553
10-10-10-5-5-5	.50989	.49344	.47700	.46055	.44411	.42765	.41121	.39475
10-10-10-5-5-5-5	.48440	.46877	.45315	.43752	.42190	.40627	.39065	.37501

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