SECTION 9

Cordage

NOTES

Cordage Information

Rope Specifications

Circumferences and Diameter Values

Size is determined by linear density; diameter and circumference values given are nominal values. If a specific diameter (or circumference) value is specified, linear density and minimum breaking strength values may be different from those given in tables.

Working Loads

Minimum breaking strength is based on data from a number of manufacturers and represents a value of 2 standard deviations below the mean, as established by regression analysis. The working load of a rope shall be determined by dividing the minimum breaking strength by the design factor. Design factors range from 5 to 12 for non-critical applications.

Because of the wide range of rope use, rope conditions, exposure to the several factors affecting rope behavior, and the degree of risk to life and property involved, it is not realistic to make standard recommendations as to design factors of working loads. However, to provide guidelines, a range of design factors and working loads are provided for rope in good condition with appropriate splices, in non-critical applications and under normal service conditions. Normal service is generally considered to be use under static or very modest dynamic load conditions.

Design factors at the low end of the suggested range should only be selected with expert knowledge of conditions and a professional estimate of risk, based on the critical conditions of use listed below.

Critical Conditions of Use

Design factors at the high end of the range or larger shall be used when:

1. Small ropes are used (because they can be more severely damaged by cutting, abrasion and sunlight).
2. Loads are not accurately known.
3. Operators are poorly trained.
4. Operation/use procedures are not well defined and/or controlled.
5. Inspection is infrequent.
6. Abrasion, cutting or dirt are present.
7. Shock loads or extreme dynamic loadings are likely.
8. High temperatures are present.
9. Chemicals are present.
10. Ropes are kept in service indefinitely.
11. Tensions on the rope are maintained continuously for long periods.
12. Rope can be subject to sharp bends or is used over pulleys or surfaces with too small a radius.
13. If knots are used (because strength is reduced by up to 50%).
14. Death, injury or loss of valuable property may result from failure.

For critical applications, a design factor greater than 12 may be necessary. Users must determine the design factor as they are the only ones who can assess service conditions and establish operating procedures. The load applied to the rope shall not exceed the working load. If uncertain, contact the rope manufacturer or a qualified engineering consultant for assistance.

IN ALL CASES WHERE ANY SUCH CONDITIONS ARE PRESENT, OR THERE IS ANY QUESTION ABOUT THE LOADS INVOLVED OR THE RISKS OF USE, THE WORKING LOAD SHOULD BE SUBSTANTIALLY REDUCED AND THE ROPE INSPECTED FREQUENTLY.

Dynamic Loading

Whenever a load is picked up, stopped, moved or swung, there is an increased force due to dynamic loading. The more rapidly or suddenly such actions occur, the greater this increase will be. In extreme cases, the force put on the rope may be two, three, or even more times the normal load involved. (For instance, when picking up a tow on a slack line or using a rope to stop a falling object.) Therefore, in all such applications as towing lines, life-line, safety lines, climbing ropes, etc., design factors must reflect the added risks involved.

Users should be aware that dynamic effects are greater on a low elongation rope such as manila than on a high-elongation rope such as nylon and greater on a shorter rope than on a longer one. The range of design factors given contains provisions for very modest dynamic loads. This means that the load must be handled slowly and smoothly to minimize dynamic effects.

Special Applications

The design factor ranges are not necessarily intended to apply in those applications where a thorough engineering analysis of all conditions of use has been made by qualified professionals. In such cases, breaking strength, elongation, energy absorption, behavior under long-term or cyclic loading, and other pertinent properties and operating procedures may be evaluated to allow the selection of a design factor best suited to the requirements.

New Rope Tensile Strengths

Standard tensiles are based on actual and calculated results With minimum tensile approximately 10% below standard. RWL based on minimum tensiles.

Caution

Never allow anyone to stand in line with or within 45° on either side of a rope under tension. Should the rope fail or other parts of the assembly fail, the recoil force could cause serious injury or damage, especially if the rope is nylon.

FAILURE OF A TENSIONED ROPE AND/OR CONNECTIONS IS A SERIOUS HAZARD. SUDDEN LOSS RELEASE FROM A TENSIONED ROPE CAN CAUSE SNAPBACK WHICH CAN RESULT IN PERSONAL INJURY OR DEATH.

Recoiling rope may oscillate violently in an unpredictable path, away from the failure point, hitting anything in its way with a great impact.

Individuals in the path of the recoiling rope may be seriously hurt or even killed. Rope and its connecting hardware must be selected with sufficient safety factors for the specific dynamic use conditions; and the rope and/or connector must be inspected before each use and replaced if worn, frayed or cut.

Care & Handling of Rope

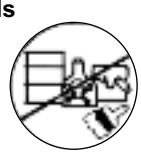
Select the Correct Size

A rope too small may fail quickly, one too large will prove expensive. Don't work any rope above one-fifth of its breaking strength.

Avoid Overloads

Safe working load ranges for any new rope is between 1/5 and 1/12 of its minimum tensile. Make enough allowances for safety if your rope is old or worn. Ignoring this safety factor causes early rope replacement and is dangerous to men and materials.

Keep Away from Chemicals



Acids and Alkalis are injurious to rope. If exposed, wash thoroughly and inspect before using. Watch for battery and building cleaning acids, caustic soda and paint. Keep rats away.

Stop Unnecessary Wear

Outer and inner rope fibers contribute equally to the strength of your rope. If worn out, the rope is naturally weakened. Eliminate rubbing, dragging or working over rough surfaces. Protect its surface with chafing gear, such as canvas wrapped and tied around the rope. Pad corners of sharp objects when lifting, and avoid strain on sharp bends. Remove kinks if they form.

To Uncoil Rope

A new coil of rope should be placed flat on its side with the "tag" inside end down. Remove the outside lashings and unfasten the inside bands. Leave burlap around the coil to keep rope clean.

Reach down through the eye of coil and pull out the inside end, where tag is attached, through the eye of the coil.

Store it Properly

Keep in dry, cool place with good air circulation. Use wooden grating on concrete or steel floors, and keep away from steam pipes and metal walls. Protect from prolonged exposure to sunlight. Store only clean, dry rope.

Use Right Sheaves

Block sizes or sheaves should be eight times the diameter of the rope. For power transmission or for use with continuous load, sheaves should be at least forty times the diameter of the rope. Small sheaves cause added friction and rope wear. Keep sheaves smooth.

Watch Rope Condition

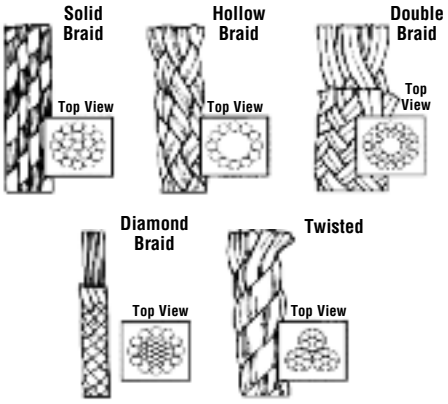
Inspect rope frequently, whether working or in storage. Occasionally reverse your rope, end-to-end, to distribute the wear more evenly.

Use worn rope only where strength failure will not cause injury or damage.

***All ropes will last longer if given proper care and handling, storage and use. These are the more important points to keep in mind to assure greatest service and safety.**

Cordage Information (cont.)

Synthetic Cordage Types



Though initially more expensive than natural fiber ropes, synthetic ropes have proven to be more efficient and cost effective long term for most end uses. Man made fiber ropes are stronger and more durable. They are generally not affected by rot or mildew, or most chemicals, and may be stored wet or dry. As a result, the service life of synthetics exceeds that of natural fiber ropes.

Each of the various types of synthetic fibers described below possesses different characteristics and properties. All of these fibers are continuous filaments of long molecular-chain polymers that extend the length of the rope. These filaments may be either extruded or spun, and are normally either termed as monofilament (larger single filaments) or multifilament (multiple smaller fibers).

Nylon

Nylon is a very strong fiber. Due to its elasticity, nylon can absorb sudden shock loads that would break ropes of other fibers. It has very good resistance to abrasion and Will last many times longer than natural fiber ropes. Nylon rope is resistant to rot, oils, gasoline, grease, marine growth or most chemicals.

Polyester

Polyester is very strong, but not quite as strong as nylon rope. The difference between the two ropes is that polyester does not have the stretch and elasticity of nylon, but has better resistance to ultraviolet degradation from sunlight. Polyester is superior to nylon on wet abrasion.

Polypropylene*

A lightweight, strong rope that is extensively used in many different applications. It is a floating rope and is resistant to rot, oils, gasoline or most chemicals. Polypropylene rope is available in monofilament fiber, which is smooth surfaced, multifilament fiber, which has a somewhat velvety appearance and feel, and slit film fiber, which is produced in varying textures.

Polyethylene*

One of the best known synthetic fiber ropes. A floating rope somewhat like polypropylene except slightly heavier. Also, polyethylene's handling characteristics are a little different than polypropylene. It is not as strong as polypropylene, size for size.

Synthetic Fiber Types

Multifilament - Soft, flexible, small diameter, continuous filaments. Available in nylon, polyester and polypropylene ropes.

Monofilament - Extruded in round fibers. Not as soft or flexible as multifilament. Available in polypropylene and polyethylene ropes only.

Slit Film - Polypropylene or polyethylene is extruded in sheet film form, then slit to make flat fibers.

Spun - Very fine fibers with lengths of 1/2 to 1-1/2 inches are twisted into string then into rope. Available in cotton and polyester ropes only.

Textured - Fibers are crimped to give loft to the fiber. Available in polyester, nylon and polypropylene.

Definitions

Bonding - A liquid coating to increase resistance to abrasion and prevent water absorption.

Natural - Natural color, unbleached cotton.

White - In cotton, a specified color not to be confused with natural.

Polished (Glazed) - Cotton cordage that has been run through a gum and pigment polish to give it a high gloss.

* Special notice concerning Polypropylene & Polyethylene: Polypropylene and Polyethylene or subject to deterioration when exposed to direct sunlight. These products are designed to give you many hours of use; however, the life of the product will be extended when stored away from sunlight. The product should be replaced when signs of excessive deterioration is indicated by discoloration, broken filaments, raveling, etc.

Specifications & Technical Data

Knots Can Cut Your Strength!

Whenever possible lines should be spliced and not tied in knots.

Percent of Strength Loss

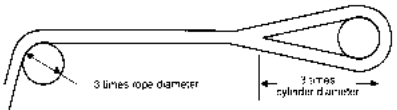
Eye Splice	10%
In Line Splice	10%
Bowline	35-40%
Square Knot	45-50%
Two Half Hitches	30%

Lines should not be subject to bending radius less than 3x diameter of line. Preferably 8x diameter will extend life of line.

Bends/Sheave Sizes

Sharp bends significantly reduce rope strength. A working rope should never be subjected to a bend of less than 3 times rope diameter. A bend ratio of 4 times, or more, will prolong rope life. Eye-splice length should be at least 3 times the diameter of the cylinder (bitt, etc.) over which the eye is used. A length of 5 times diameter is even better.

Sheave diameter should be 8 times braided rope diameter and 10 times twisted rope diameter. Sheave groove must be Wider than rope diameter. Never use Wire rope or V-belt sheaves because they pinch fiber ropes and cause excessive friction and damage.



Never allow anyone to stand in line with or within 45° on either side of a rope under tension. Should the rope fail or other parts of the assembly fail, the recoil force could cause serious injury or damage, especially if the rope is nylon.

How Much Line Can be Stored in Box or Bin?

(Assuming line is to be dropped into and not carefully laid in)

V = Cubic footage required

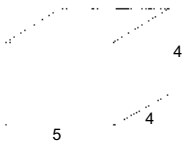
C = Rope circumference in inches

L = Length of rope in feet

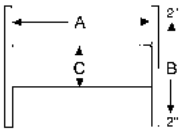
Example:

$2" \text{ circ.}^2 = 4 \times 15{,}000 = \frac{60{,}000}{830} = 72 \text{ Cu. Ft. Required}$

Box will hold entire length. $V = \frac{C^2 \times L}{830}$



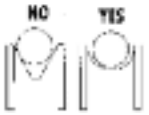
How Much Line on a Drum or Reel?



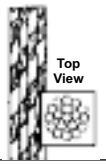
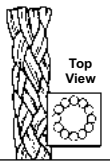
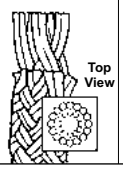
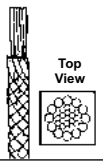
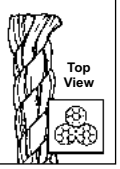
$$\frac{A\,(B^2 - C^2)}{15.3 \times \text{rope dia.}^2} = L$$

Caution: Do not put line on reel under tension. To do so can cause extreme contract forces to crush drum.

DO NOT use wire rope or V-belt sheaves for synthetic rope as rope is pinched inside.



Rope Construction Selection Guide*

Characteristics	Solid Braid	Hollow Braid	Double Braid	Diamond Braid	Twisted
No. of Strands or Carriers	9, 12 or 18	8, 12 or 16	16, 24 or 32	8 or 16	3
Spliceable	No	Yes	Yes	No	Yes
Strength to Weight	5	2	1	4	3
Flexibility	3	1	2	4	5
Flattens Under Load	No	Yes	No	Yes	No
Rotates Under Load	No	No	No	No	Yes
Mechanical Elongation	1	4	5	3	2
Cost Per Size	2	4	1	3	5
Working Load (as a % of Tensile)	15-20%	15-20%	15-20%	15-20%	8-14%
Abrasion Resistance	1	5	2	3	4
WARNING: This guide is designed for general reference only. The construction comparisons assume using the same rope fiber & size. Expert advice should be sought when choosing a rope where protection of life or property is involved.					

Cordage Information & Ropes

Rope Fiber Selection Guide: Fiber Properties - Typical Values

	Manila	Sisal	Cotton	Nylon	Polyester	Polypropylene	Polyethene	Kevlar[1]	Spectra[2]
STRENGTH:									
Breaking Tenacity – Dry (grams/denier)	5.0 - 6.0	4.0 - 5.0	2.0 - 3.0	7.0 - 9.5	7.0 - 9.5	6.5	6.0	18 - 26.5	30.0
Wet Strength vs. Dry Strength	Up to 120%	Up to 120%	Up to 120%	85-90%	100%	100%	100%	95%	100%
Shock-load Absorption Ability	Poor	Poor	Very Poor	Excellent	Good	Very Good	Fair	Poor	Fair
WEIGHT:									
Specific Gravity	1.38	1.38	1.54	1.14	1.38	0.91	0.95	1.44	0.97
Floats	No	No	No	No	No	Yes	Yes	No	No
ELONGATION:									
Percent of Break	10 - 12%	10 - 12%	5 - 12%	18 - 25%	12 - 15%	15 - 25%	15 - 25%	1.5 - 3.6%	3.5%
Creep (extension under sustained load)	Very Low	Very Low	Very Low	Moderate	Low	High	High	Very Low	Moderate
EFFECTS OF MOISTURE:									
Water Absorp. of Indiv. Fibers	Up to 100%	Up to 100%	Up up to 100%	2 - 8%	<1%	None	None	3.5 - 7.0%	None
Dielectric Properties	Very Poor	Very Poor	Very Poor	Poor	Good	Excellent	Excellent	Poor	Excellent
DEGRADATION:									
Resistance to UV Sunlight	Good	Good	Good	Good	Excellent	Poor*	Fair*	Fair	Fair
Resistance to Rot Mildew	Poor	Poor	Poor	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Storage Requirements	Dry Only	Dry Only	Dry Only	Wet or Dry	Wet or Dry	Wet or Dry	Wet or Dry	Wet or Dry	Wet or Dry
ROPE ABRASION RESISTANCE:									
Surface	Good	Fair	Poor	Very Good	Excellent	Good	Good	Fair	Very Good
Internal	Fair	Fair	Fair	Excellent	Excellent	Good	Good	Fair	Excellent
THERMAL PROPERTIES:									
Melts at	Does Not Melt Chars at 350°	Does Not Melt Chars at 350°	Does Not Melt Chars at 300°	420 - 480°	490 - 500°	330°	275°	800°-Begins to Decompose	297°
RESISTANCE [3]:									
Resistance to Acids	Poor	Poor	Poor	Fair	Good	Excellent	Excellent	Fair	Excellent
Resistance to Alkalis	Poor	Poor	Fair	Very Good	Fair	Excellent	Excellent	Fair	Excellent
Resistance to Oils & Gas	Poor	Fair	Poor	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good

* Black is best 1 - Based on Dupont Kevlar® Data 2 - Based on Allied/Signa; Spectra® Data - Type 990
3 - Resistance is relative to the length of exposure, percent of concentration & temperature.

TWISTED ROPES

Nylon Rope

- Four stage construction
- Medium-Soft Lay
- High strength and elasticity
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/4	3/4	0.250	1,650	1,490	600	298 - 124	1.5
5/16	1	0.313	2,550	2,300	"	460 - 192	2.5
3/8	1-1/8	0.375	3,750	3,340	"	668 - 278	3.5
1/2	1-1/2	0.500	6,400	5,750	"	1,150 - 479	6.5
5/8	2	0.625	10,000	9,000	"	1,800 - 750	10.0
3/4	2-1/2	0.75	14,200	12,800	"	2,560 - 1,067	14.5
7/8	2-3/4	0.875	20,000	18,000	"	3,600 - 1,500	20.0
1	3	1.000	25,000	22,600	"	4,520 - 1,883	26.0
1-1/8	3-1/2	1.125	32,000	28,800	"	5,760 - 2,400	32.5
1-1/4	3-3/4	1.250	37,500	33,800	"	6,760 - 2,817	40.0
1-1/2	4-1/2	1.500	53,000	47,800	"	9,560 - 3,983	55.0
1-5/8	5	1.625	65,000	58,500	"	11,700 - 4,875	66.5
2	6	2.000	92,000	83,000	"	16,600 - 6,917	95.0
2-1/4	7	2.250	125,000	113,000	"	22,600 - 9,417	129.0
2-1/2	7-1/2	2.500	140,000	126,000	"	25,200 - 10,500	149.0
2-5/8	8	2.625	162,000	146,000	"	29,200 - 12,167	168.0
3	9	3.000	200,000	180,000	"	36,000 - 15,000	210.0
4	12	4.000	360,000	324,000	"	64,800 - 27,000	379.0

*RWL = Recommended Work Load

Cotton

- Pioneer™ Brand
- Cotton and synthetic blend
- Soft, easy to handle
- Knots easily
- Color: Natural White

Dia. (in)	Nominal Size No.	Std. Dia. Dec. Equiv.	Min. Tensile (lbs)	Units Tensile (lbs)	RWL -Spool- (ft)	Approx. 5:1 - 12:1 (lbs)	Density (lbs/100')
3/16	5/8	0.188	280	252	600	50 - 21	1.1
1/4	3/4	0.250	470	423	"	85 - 35	1.8
3/8	1-1/8	0.375	990	891	"	178 - 74	4.1
1/2	1-1/2	0.500	1,615	1,454	"	291 - 121	7.0
5/8	2	0.625	2,450	2,205	"	441 - 184	11.0
3/4	2-1/4	0.750	3,445	3,101	"	620 - 258	15.9

TWISTED ROPES

Polyester

- Continuous multifilament yarn
- Low stretch
- Good abrasion resistance
- Excellent UV resistance
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/8	1-1/8	0.375	3,700	3,340	600	668 - 278	4.5
7/16	1-1/4	0.438	5,000	4,500	"	900 - 375	6.2
1/2	1-1/2	0.500	6,400	5,750	"	1,150 - 479	8.0
5/8	2	0.625	9,550	8,600	"	1,720 - 717	12.3
3/4	2-1/4	0.750	12,500	11,300	"	2,260 - 942	17.5
7/8	2-3/4	0.875	17,000	15,250	"	3,050 - 1,271	23.4
1	3	1.000	22,000	19,800	"	3,960 - 1,650	30.4
1-1/8	3-1/2	1.125	27,550	24,800	"	4,960 - 2,067	38.2
1-1/4	3-3/4	1.250	33,200	29,800	"	5,960 - 2,483	46.5
1-1/2	4-1/2	1.500	46,800	42,200	"	8,440 - 3,517	67.0
1-5/8	5	1.625	55,500	50,000	"	10,000 - 4,167	79.0
2	6	2.000	80,000	72,000	"	14,400 - 6,000	118.0
2-1/4	7	2.250	100,500	90,500	"	18,100 - 7,542	148.0
2-1/2	7-1/2	2.500	122,000	110,000	"	22,000 - 9,167	181.0
2-5/8	8	2.625	137,000	123,000	"	24,600 - 10,250	204.0
3	9	3.000	174,000	157,000	"	31,400 - 13,083	258.0

Multiplex Polyester

- DuPont T77 Multiplex™
- High stretch, low stretch
- Good abrasion & UV resistance
- Soft/fuzzy surface for ease of handling
- Excellent grip
- Eye splice is factory installed
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
3/8	1-1/8	0.375	3,350	3,015	600	603 - 251	4.2
1/2	1-1/2	0.500	5,750	5,175	"	1,035 - 431	7.4
5/8	2	0.625	9,000	8,100	"	1,620 - 675	11.6
3/4	2-1/4	0.750	14,000	12,600	"	2,520 - 1,050	18.1

Ropes

TWISTED ROPES

Combination Lockline

- Superlock™ Brand. Specifically designed for river boat traffic
- Made from blend of polyolefin and DuPont® Dacron® Mulflplex™ polyester yarns
- Strong, yet light weight rope
- Good handling
- Excellent heat, abrasion and friction resistance
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1-1/2	4-1/2	1.500	36,000	32,400	600	6,480 - 2,700	45
1-5/8	5	1.625	43,500	39,150	"	7,830 - 3,263	54
1-3/4	5-1/2	1.750	50,000	45,000	"	9,000 - 3,750	62
2	6	2.000	64,000	57,600	"	11,520 - 4,800	80
2-1/4	7	2.250	82,000	73,800	"	14,760 - 6,150	102
2-1/2	7-1/2	2.500	95,000	85,500	"	17,100 - 7,125	125
2-5/8	8	2.625	104,000	93,600	"	18,720 - 7,800	139

Combination Rope

- Hi-Power™ Brand
- Polyester & copolymer yarn combination for added strength
- Holds knots well
- Good dielectric properties
- Color: White rope with marker

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
3/8	1-1/8	0.375	3,250	2,925	600	585 - 244	3.6
1/2	1-1/2	0.500	5,200	4,680	"	936 - 390	6.5
5/8	2	0.625	7,400	6,660	"	1,332 - 555	9.5
3/4	2-1/4	0.750	9,700	8,730	"	1,746 - 728	12.5
7/8	2-3/4	0.875	11,450	10,300	"	2,060 - 858	17.0
1	3	1.000	14,550	13,100	"	2,620 - 1,092	21.8
1-1/8	3-1/2	1.125	18,150	16,350	"	3,270 - 1,363	27.5
1-1/4	3-3/4	1.250	22,000	19,800	"	3,960 - 1,650	33.4
1-1/2	4-1/2	1.500	29,800	26,800	"	5,360 - 2,233	45.0
1-5/8	5	1.625	36,000	32,400	"	6,480 - 2,700	55.5
2	6	2.000	52,000	46,800	"	9,360 - 3,900	78.0
2-1/4	7	2.250	68,900	62,000	"	12,400 - 5,167	105.0
2-1/2	7-1/2	2.500	80,000	72,000	"	14,400 - 6,000	122.0
2-5/8	8	2.625	90,000	81,000	"	16,200 - 6,750	138.0
3	9	3.000	114,400	103,000	"	20,600 - 8,583	174.0

Monofilament Polypropylene

- Premium grade 100% monofilament
- Versatile and economical
- Moderate elongation
- Floats

* Longer lengths available upon request

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
3/16	5/8	0.188	800	720	600	144 - 600	.7
1/4	3/4	0.250	1,250	1,130	"	226 - 94	1.2
5/16	1	0.313	1,900	1,710	"	342 - 143	1.8
3/8	1-1/8	0.375	2,700	2,440	"	488 - 203	2.7
7/16	1-1/4	0.438	3,500	3,160	"	632 - 263	3.8
1/2	1-1/2	0.500	4,200	3,780	"	756 - 315	4.7
5/8	2	0.625	6,200	5,600	"	1,120 - 467	7.5
3/4	2-1/4	0.750	8,500	7,650	"	1,530 - 638	10.7
7/8	2-3/4	0.875	11,500	10,400	"	2,080 - 867	15.0
1	3	1.000	14,000	12,600	"	2,520 - 1,050	18.0
1-1/4	3-3/4	1.250	21,000	18,900	"	3,780 - 1,575	27.0
1-1/2	4-1/2	1.500	29,700	26,800	"	5,360 - 2,233	38.4
2	6	2.000	52,000	46,800	"	9,360 - 3,900	69.0
2-1/4	7	2.250	69,000	62,000	"	12,400 - 5,167	92.0
2-1/2	7-1/2	2.500	80,000	72,000	"	14,400 - 6,000	107.0
3	9	3.000	114,000	103,000	"	20,600 - 8,583	153.0

TWISTED ROPES

Unmanila™

- Stronger, lighter and less expensive than natural fiber manila rope
- Film polypropylene
- Holds knots well
- Good handling
- Color: Tan

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/4	3/4	0.250	900	810	600	162 - 68	1.1
5/16	1	0.313	1,350	1,215	"	243 - 101	1.6
3/8	1-1/8	0.375	2,100	1,890	"	378 - 158	2.6
1/2	1-1/2	0.500	3,350	3,015	"	603 - 251	4.2
5/8	2	0.625	5,000	4,500	"	900 - 375	6.3
3/4	2-1/4	0.750	7,500	6,750	"	1,350 - 563	10.1
1	3	1.000	11,650	10,485	"	2,097 - 874	16.3

Sisal

- Economical rope
- Natural fiber
- For use in non-critical applications
- Color: Tan

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/4	3/4	0.250	530	480	1200	96 - 40	1.9
3/8	1-1/8	0.375	1,200	1,080	600	216 - 90	3.9
1/2	1-1/2	0.500	2,350	2,120	"	424 - 177	7.2
5/8	2	0.625	3,900	3,520	"	704 - 293	12.7
3/4	2-1/4	0.750	4,800	4,320	"	864 - 360	15.9

Manila

- Traditional three-strand rope
- Holds knots well
- Absorbs water
- Subject to rot
- Color: Tan

Nominal Dia. (in)	Units -Spool- (ft)	Tensile Strength. (lbs)	RWL (lbs)	Approx. Wt. per coil (lbs
3/16	1600	405	81	25
1/4	1200	540	108	25
1/4	2400	540	108	50
5/16	850	900	180	25
5/16	1700	900	180	50
3/8	600	1,215	243	25
3/8	1200	1,215	243	50
7/16	600	1,575	315	32
1/2	600	2,385	477	45
1/2	1200	2,385	477	90
5/8	600	3,960	792	82
5/8	1200	3,960	792	164
3/4	600	4,860	972	104
3/4	1200	4,860	972	208
13/16	600	5,850	1170	117
7/8	600	6,930	1386	139
1	300	8,100	1620	81
1	600	8,100	1620	162
1	1200	8,100	1620	324
1-1/4	600	12,150	2430	251
1-1/2	600	16,650	3330	364
2	600	27,900	5580	624

SOLID BRAID ROPES

Solid braid ropes are constructed of various bundles of fiber interlocked together in a circular braiding pattern.

Polyester

- Excellent UV resistance
- Low Stretch
- Works well in pulleys
- Good abrasion resistance
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/8	4	0.125	385	347	1000	69 - 29	0.4
3/16	6	0.188	900	810	"	162 - 68	1.1
1/4	8	0.250	1,425	1,283	"	257 - 107	1.8
3/8	12	0.375	3,000	2,700	500	540 - 225	4.0
1/2	16	0.500	5,000	4,500	"	900 - 375	7.1

Ropes

SOLID BRAID ROPES

Solid braid ropes are constructed of various bundles of fiber interlocked together in a circular braiding pattern.

Proline® Multifilament Poly

- Inexpensive
- Holds knots well
- Floats
- Flexible
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
1/8	4	0.125	175	158	1000	32 - 13	0.2
3/16	6	0.188	450	405	"	81 - 34	0.6
1/4	8	0.250	725	653	"	131 - 54	1.1
3/8	12	0.375	1,400	1,260	500	252 - 105	2.4
1/2	16	0.500	2,200	1,980	"	396 -165	4.0

Nylon

- Strong
- Good UV resistance
- Works well in pulleys
- Good general purpose cord
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/32	3	0.094	275	248	1000	50 - 21	0.2
7/64	3-1/2	0.109	325	293	"	59 - 24	0.3
1/8	4	0.125	400	360	"	72 - 30	0.4
5/32	5	0.156	600	540	"	108 - 45	0.6
3/16	6	0.188	850	765	"	153 - 64	0.8
1/4	8	0.250	1,300	1,170	"	234 - 98	1.3
5/16	10	0.313	1,950	1,755	500	351 - 146	2.0
3/8	12	0.375	2,750	2,475	"	495 - 206	2.9
1/2	16	0.500	4,200	3,780	"	756 - 315	5.1

SASH BRAID ROPES

Twirl® Sash Cord

- Premium blend quality
- Cotton blend
- Nylon core for added strength
- Polished for better abrasion resistance
- Color: Natural White with blue striker

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Hank- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
1/4	8	0.250	1,075	968	100	194 - 81	1.8
5/16	10	0.313	1,600	1,440	"	288 - 120	2.7
3/8	12	0.375	2,150	1,935	"	387 - 161	3.8

Southgate® Sash Cord

- Cotton blend cover
- Top selling sash cord
- Moderate price
- Synthetic care for added strength
- Color: Natural White

Dia. (in.)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Hank- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/16	6	0.188	275	248	100	50 - 21	0.7
7/32	7	0.219	400	360	"	72 - 30	1.0
1/4	8	0.250	495	446	"	89 - 37	1.2
5/16	10	0.313	750	675	"	135 - 56	2.0
3/8	12	0.375	1,050	945	"	189 - 79	2.8
1/2	16	0.500	1,925	1,733	"	347 - 144	5.2

Mangolia® Sash Cord

- Cotton blend cover
- Stays round under load
- Economical
- Color: Natural White

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Hank- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/16	6	0.188	160	144	100	29 - 12	0.7
7/32	7	0.219	210	189	"	38 - 16	0.9
1/4	8	0.250	275	248	"	50 - 21	1.1
5/16	10	0.313	375	338	"	68 - 28	1.7
3/8	12	0.375	475	428	"	86 - 36	2.4

DOUBLE BRAID ROPES

Double braid ropes are actually two ropes in one and are sometimes called braid on braid ropes. The jacket is braided over a braided core.

Nylon

- Gold Braid® Brand
- Resists abrasion and snagging
- Excellent shock absorbing elasticity
- Torque-free
- Spliceable
- Color: White and Gold

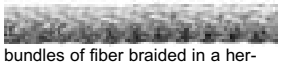
Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/4	3/4	0.250	1,850	1,665	600	330 - 138	1.6
5/16	1	0.313	2,850	2,570	"	514 - 214	2.4
3/8	1-1/8	0.375	4,100	3,700	"	740 - 308	3.5
1/2	1-1/2	0.500	7,275	6,550	"	1,310 - 546	6.3
5/8	2	0.625	11,300	10,200	"	2,040 - 850	9.8
3/4	2-1/4	0.750	16,300	14,700	"	2,940 - 1,225	14.1
7/8	2-3/4	0.875	22,100	19,900	"	3,980 - 1,658	19.1
1	3	1.00	28,900	26,000	"	5,200 - 2,167	25.0

Polyester

- Rhino Flex™ Brand
- Torque-free
- Low stretch, high stretch
- Resistant to ultraviolet degradation
- Good dielectric properties
- Color: White with gold Tracer

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std Tensile (lbs)	Min. Tensile (lbs)	Units -Spool- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs./100')
1/4	3/4	0.250	2,500	2,250	600	450 - 188	2.1
3/8	1-1/8	0.375	5,650	5,085	"	1,017 - 424	4.5
1/2	1-1/2	0.500	9,900	8,910	"	1,782 - 743	8.0
5/8	2	0.625	15,000	13,500	"	2,700 - 1,125	12.5
3/4	2-1/4	0.750	21,000	18,900	"	3,780 - 1,575	17.9
7/8	2-3/4	0.875	28,000	25,200	"	5,040 - 2,100	24.4
1	3	1.000	37,200	33,480	"	6,696 - 2,790	33.3
1-1/8	3-1/2	1.125	46,400	41,760	"	8,352 - 3,480	42.2
1-1/4	3-3/4	1.250	54,000	48,600	"	9,720 - 4,050	49.8
1-1/2	4-1/2	1.500	76,000	68,400	"	13,680 - 5,700	71.8
1-5/8	5	1.625	88,000	79,200	"	15,840 - 6,600	84.0

DIAMOND BRAID ROPES



Diamond braid ropes are constructed from various bundles of fiber braided in a herringbone pattern to form a jacket over a parallel fiber center core. These are also referred to as maypole braids.

Nilo™ Nylon

- High stretch, low abrasion
- Resistant to most chemicals, including gas and oils
- Chemically treated to increase abrasion resistance
- Color: N73 - Natural White/N74 - Bonded

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
7/64	3-1/2	0.109	325	293	1000	59 - 24	0.3
1/8	4	0.125	410	369	"	74 - 31	0.4
9/64	4-1/2	0.141	525	473	"	95 - 39	0.5
5/32	5	0.156	625	563	"	113 - 47	0.6
3/16	6	0.188	875	788	"	158 - 66	0.9
1/4	8	0.250	1,400	1,260	"	252 -105	1.7

Zenith™ Brand Polyester

- Diamond braid polyester jacket with a strong synthetic core
- Strong, durable, economically priced.
- Low stretch
- Excellent resistance to ultraviolet degradation.
- Color: Natural White Bonded Zenith™ is chemically coated to increase abrasion resistance. Black bonded coating is available on request

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
1/8	4	0.125	425	383	1000	77 - 32	0.4
5/32	5	0.156	615	554	"	111 - 46	0.7
3/16	6	0.188	800	720	"	144 - 60	1.0
7/32	7	0.219	950	855	"	171 - 71	1.3
1/4	8	0.250	1,100	990	"	198 - 83	1.7
5/16	10	0.313	1,600	1,440	500	288 - 120	2.6
3/8	12	0.375	2,000	1,800	"	360 - 150	3.6

Ropes & Twines

DIAMOND BRAID ROPES

Diamond braid ropes are constructed from various bundles of fiber braided in a herringbone pattern to form a jacket over a parallel fiber center core. These are also referred to as maypole braids.

Multifilament Polypropylene

- Angola™ Brand
- Color: White
- Flexible, light weight
- Excellent handling and knot holding ability
- Resistant to rot, mildew, petroleum products, and most chemicals

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
1/8	4	0.125	185	167	1000	33 - 14	0.3
5/32	5	0.156	285	257	”	51 - 21	0.5
3/16	6	0.188	405	365	”	73 - 30	0.6
7/32	7	0.219	540	486	”	97 - 41	0.9
1/4	8	0.250	700	630	”	126 - 53	1.1
5/16	10	0.313	1,075	968	500	194 - 81	1.8
3/8	12	0.375	1,275	1,148	”	230 - 96	2.2

HOLLOW/SINGLE BRAIDS

These lines are constructed of various bundles of fiber braided over and under each other in a circular direction. This rope has no core.

Polyester

- Esterplex™ Brand
- 12-Strand, 100% high tenacity polyester
- Very high mechanical efficiency
- Color: Natural White. Also available in Rhino Kote® colors
- Easily spliced

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/8	1-1/8	0.375	6,000	5,400	1000	1,080 - 450	4.3
1/2	1-1/2	0.500	11,200	10,080	”	2,016 - 840	8.0
5/8	2	0.625	17,500	15,750	”	3,150 - 1,313	12.5
3/4	2-1/4	0.750	23,000	20,700	”	4,140 - 1,725	17.0

8 Carrier Premium Polypropylene

- Versatile and easily spliced
- Resistant to rot, mildew, petroleum products and most chemicals
- Can be stored wet or dry
- Floats
- Color: Yellow. Other colors available on request

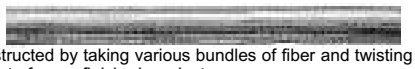
Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Standard Tensile (lbs)	Minimum Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
3/16	5/8	0.188	675	608	1000	122 - 51	0.6
1/4	3/4	0.250	1,100	990	”	198 - 83	1.0
5/16	1	0.313	1,500	1,350	”	270 - 113	1.4
3/8	1-1/8	0.375	2,050	1,845	”	369 - 154	1.9
1/2	1-1/2	0.500	3,400	3,060	”	612 - 255	3.2
5/8	2	0.625	6,400	5,760	”	1,152 - 408	5.8
3/4	2-1/4	0.750	9,200	8,280	”	1,656 - 690	8.3

8 Carrier Economy Polypropylene

- Mariner™ Brand
- Spliceable hollow braid polypropylene
- Resistant to rot, mildew, petroleum products, and most chemicals
- Can be stored wet or dry
- Color: Yellow. Other colors available on request

Dia. (in)	Nominal Size No.	Nominal Dia. Dec. Equiv.	Std. Tensile (lbs)	Min. Tensile (lbs)	Units -Reel- (ft)	RWL 5:1 - 12:1 (lbs)	Approx. Density (lbs/100')
1/8	3/8	0.125	250	225	1000	45 - 19	0.20
3/16	5/8	0.188	475	428	”	86 - 36	0.40
1/4	3/4	0.250	900	810	”	162 - 68	0.80
5/16	1	0.313	1,275	1,148	”	230 - 96	1.19
3/8	1-1/8	0.375	1,525	1,373	”	275 - 144	1.40
1/2	1-1/2	0.500	2,725	2,453	”	491 - 204	2.43

TWINES



Twines are constructed by taking various bundles of fiber and twisting or braiding in a spiral direction to form a finished product.

Cabled/Seine Twines

Cotton

General purpose mason or chalk line. Government Spec. Available. Also available with Mildew Treatment, Waxed, Dyed and Colors. Pkg: 1/8 lb. Balls - 5 lb. Tubes

Nylon or Polyester

Seine Twine - Twisted or Braided. General purpose mason or chalk line. Colors and braided available. Pkg: 1/4, 1/2, 1 or 5 lb. Tubes

Tensile Size	Cotton Seine (CT) (ft/lb)	Cotton Seine (CT) Strength	Nylon or Polyester (NY) (PE) Appro. (ft/lb)	Nylon or Polyester (NY) (PE) AV Strength
6	2150	12	4000	50
9	1434	18	2211	80
12	1440	30	1940	100
15	1152	38	1595	126
18	960	45	1195	165
21	823	53	825	200
24	720	60	685	250
30	576	75	665	275
36	480	90	585	325
42	411	105	425	370
48	360	120	385	425
54	–	–	350	520
60	288	150	310	550
72	240	180	250	635
96	180	240	–	–
120	–	–	–	–

Cotton & Polyester

American Brand twine ideal for tying machines - 8's yarn. Put up on cones tubes or balls, or many end reels. (Up to 36 Ply Available.) Also available in colors. Waxed & Tarred. Pkg: 1/8 lb. Balls - 5 lb. Tubes

Ply	Approx. (ft/lb)	AV Tensile Strength
3	6400	8
4	4800	10
6	3200	15
8	2400	20
10	1920	25
12	1600	30
16	1200	40
20	960	50
24	800	60
30	640	75
36	533	90

Polypropylene

Consistent in size and tensile strength. Foamed monofilament construction. Superior knot holding. Also Available in two and three-ply construction. Pkg: 10 lb. Cartons. Also available in Slit Film and colors.

Size	AV Tensile. Strength	Dia. (in.)
1200/1	100	.078
1060/1	120	.082
960/1	125	.086
890/1	135	.089
830/1	150	.093
750/1	170	.097
650/1	200	.104
600/1	215	.109
550/1	230	.114
500/1	250	.119
450/1	290	.122
425/1	300	.129
330/1	380	.147
270/1	500	.163

Polypropylene Twine

Bucket (Low Boy)

- Wire Pulling Twine
- Twisted film polypropylene
- Clear

Size	Avg. Break (lbs)	Case Pack Wgt./Pack
2-Ply x 6500'	200	40.00/4

Polypropylene Center Pull Box

- Wire Pulling Twine
- Twisted film polypropylene
- Clear

Size	Avg. Break (lbs.)	Case Pack Wgt./Pack
2-Ply x 6500'	200	40.00/4

Ropes

CLIMBING ROPES

Tree Pro

A perfectly balanced climbing rope of high tenacity 100% polyester in a 12-strand construction. This distinctive red polyester rope is enhanced by a gold tracer. Each strand is treated with a special finish to minimize snagging, improve wear and give excellent knot control. TREE PRO offers high strength, low stretch, flexibility, is non-rotational, maintains its round shape in use - the perfect choice for the Professional Arborist.

Size (in)	Wt. 100 (lbs)	Tensile (lbs)
1/2	8.3	7,000

Available in:
- 120' & 150' Coils
- 600' Reels

Tree Perfect

The perfect climbing rope utilizing a 16-strand construction of 100% polyester cover and a 100% nylon core. The smooth rope surface has a special finish to assure snag resistance, minimize abrasion and improve the serviceability of the line. TREE PERFECT maintains its original round shape under load, is very flexible, non rotational and will not hockle.

Size (in)	Wt. 100 (lbs)	Tensile (lbs)
1/2	7.5	7,000

Available in:
- 120' & 150' Coils
- 600' Reels

Arbor Plus

A 12-strand climbing and bull rope, each yarn made of high tenacity polyester covering a polyolefin core. The rope is white with distinctive blue and gold polyester tracers. Designed with a firm lay and special finish, ARBOR PLUS is lightweight yet strong giving good resistance to abrasive wear when running through crotcher, over limbs and against bark while under load. ARBOR PLUS maintains it shape, has good knot control, is flexible, non-hockling and non-rotational.

Size (in)	Wt. 100 (lbs)	Tensile (lbs)
1/2	7.2	5,500
5/8	12.2	10,000
3/4	16.5	13,000

Available in:
- 120' & 150' Coils
- 600' Reels

E-Z-V

The same 16-strand properties, operational control and safety of TREE PERFECT with an alternating pattern of high visibility fluorescent and with strands throughout the rope. The professionals choice in high visibility ropes.

Size (in)	Wt. 100 (lbs)	Tensile (lbs)
1/2	8.0	6,000

Available in:
- 120' & 150' Coils
- 600' Reels

Maximum-V

The ultimate high visibility rope, with alternating orange and yellow fluorescent strands. Its 16-strand construction, quality and performance are identical to TREE PERFECT and E-Z-V. MAXIMUM-V truly sets the standard in high visibility climbing ropes.

Size (in)	Wt. 100 (lbs)	Tensile (lbs)
1/2	8.5	5,500

Available in:
- 120' & 150' Coils
- 600' Reels

BLUE WATER NYLON RESCUE ROPES

Blue Water + Plus Ropes

The original static kernmantle safety and rescue ropes. Permanent solution dyed color with fluorescent color marker stripe. 100% nylon. Superior flexibility and knotability Four times more resistant to abrasion than competing kernmantle ropes. Unique double-twisted cable core construction gives superior resistance to abrasion. Designed with load absorption capabilities to provide additional safety in the event a shock-force is applied to the line. High Strength – Low Stretch – No Spin.

Size (in)	Min. Tensile Strength	Working Load Elongation	Load Absorption Capacity	Ft. per Lb.
3/8	5,500	2.0%	1,325	21
7/16	6,500	1.6%	1,450	19
1/2	9,100	1.5%	1,600	14
5/8	13,000	1.2%	2,300	11

Superline + Plus™
Orange with Fluorescent Yellow Stripe

3/8"	Dia.*	Tag Line/Emergency Escape
7/16"	Dia.*	Rappelling/Rigging
1/2"	Dia.**	Lifeline, Hauling Line
5/8"	Dia.**	Lifeline, Hauling Line

Blueline + Plus™
Blue with Fluorescent Yellow Stripe

3/8"	Dia.*	Tag Line/Emergency Escape
7/16"	Dia.*	Rappelling/Rigging
1/2"	Dia.**	Lifeline, Hauling Line
5/8"	Dia.**	Lifeline, Hauling Line

** NFPA 1983/1995 ad. 2 Person Rope
* NFPA 1983/1995 ad. 1 Person Rope.

SPECIALTY PRODUCTS

These products and accessories are designed for specific markets or applications.

Wire Center Cord

- Puritan™ Brand
- Cotton solid braid jacket
- Galvanized Wire Center
- Color: Natural or Mahogany

Nominal Dia. (in)	Approx. Yield (in)	Approx. Tensile (ft./lb)	RWL (lbs)
3/16	49.1	300	45
1/4	39.1	370	55
5/16	29.5	675	100
3/8	13.9	900	135

Conduit Measuring Tape

- Waterproof
- Polyester construction
- Foot measurements printed every foot from 0 to 3,000 ft.

Length (ft)	Min. Break	Case Pack Wgt./Pack
3000	130	13.52/4

Shock Cord

High quality rubber core with Cotton, Nylon, Polyester or Polypropylene single or double cover jacket. Colors and Military Specifications available. General purpose and Cargo Tie Down. Sizes up to 1" dia.

Cotton - CT
Polyester - PE
Nylon - NY
Polypropylene - MF

Dia.	Std. Spool Lengths (ft)	Approx. Spool Weight (lbs)	AV Tensile Strength (lbs)
1/8	500	5	125
3/16	500	6	200
1/4	500	10	275
5/16	300	11	325
3/8	200	11	375
1/2	150	10	450

Ropes

CARRIER ROPES

Paper Carrier Ropes - AES-Samson Designed

Each Samson-AES carrier rope is engineered to satisfy all your dryer sections varying production demands based on speed, temperature, number of dryers, and size press versus no size press. Samson-AES carrier ropes are made using a combination of the finest filament nylon, filament polyester and spun nylon fibres employing a patented Parallay™ construction that orients all the fibres parallel to the rope axis. This exclusive design produces a highly reliable and dimensionally stable rope that has excellent paper grip. Unlike 3-strand twisted ropes that concentrate wear on narrow crowns, Samson-AES ropes provide a maximum bearing, torque free surface which will not backturn, but will run free, to reduce abrading forces and extend wear life.

	Rope	Dia. (in)	Description	Wt. per 100 ft. (lbs)	Tensile (lbs)	% Elastic Elongation at 300 # Load
Coreless Type	NCR-32	3/8	Gold filament nylon/ white spun polyester	3.3	3,350	5.1
	NCR-32	1/2	Gold filament nylon/ white spun polyester	6.7	7,450	3.0
	FCR-33	3/8	Gold filament nylon/ white filament polyester	3.8	4,200	3.2
	FCR-33	1/2	Gold filament nylon/ white filament polyester	7.6	8,725	1.8
	PCR-34	3/8	White filament polyester/ white, spun nylon	3.6	3,550	3.4
	PCR-34	1/2	White filament polyester/ white spun nylon	7.3	7,000	2.2
	PCR-34C	3/8	White filament polyester/ white spun nylon with Samthane coating	3.7	3,550	3.3
	PCR-34C	1/2	White filament polyester/ white spun nylon with Samthane coating	7.5	7,000	1.6
	Superlife	3/8	Filament polyester coated yarns heat tension set	4.2	5,600	2.2
	Superlife	1/2	Filament polyester coated yarns heat tension set	8.3	9,540	2.0
Core Type	Superlife with Core	3/8	Same as above with braided core treated with Samthane coating	5.5	5,460	2.0
	Superlife with Core	1/2	Same as above with braided core treated with Samthane coating	9.6	9,360	1.9
	Superlife with Core	1/2	Same as above with braided core treated with Samthane coating	9.6	9,360	1.9
	Super Traction with Core	3/8	White filament polyester and goldspun nylon. Core treated with Samthane coating.	5.9	5,460	2.0
	Super Traction with Core	1/2	White filament polyester and goldspun nylon. Core treated with Samthane coating.	9.0	10,550	1.6

Treatments:
Samthane coatings are a family of urethanes impregnated throughout the rope. First developed for severe marine conditions and now proven in almost every aspect of rope use, these coatings will improve abrasion resistance, lower stretch and prolong rope wear life. Ropes are available in four colors, white, yellow, orange, and green.

Superlife is a premium quality rope with individual rope filaments treated with our special Samthane Type Z. The unique process of coating an heat setting the fibre filaments, provides a superior run life. Available in orange, red and blue.

Our unique “in house” coating is designed to extend the fife of synthetic fibers.