

Rope Specifications

Detailed information and
specifications for braided
rope constructions

Rope Specifications

The information contained in this book includes specifications for the following braided rope constructions:

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Rope Specifications

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Minimum Tensile Strength Minimum tensile strengths shown are for new (unused) rope and will decrease after use. All tests are performed in accordance with Cordage Institute Standard CI 1500-2. The rope strength will be reduced after use due to heat, abrasion, ultraviolet or chemical exposure. The tensile strengths may be further reduced by up to 50% as a result of knots or kinks. Minimum tensile strengths are defined as two standard deviations (typical about 10%) below the average.

Maximum Working Loads Maximum working loads are determined by dividing the tensile strength by the safety factor. The safety factor is a function of the physical properties of the rope, the age and history of the rope, the type of service it will be subjected to and the risks involved if failure occurs. For a rope manufacturer to give blanket working load recommendations would be like a car manufacturer giving the “safe driving speed” of their cars. Obviously the conditions of use far outweigh the design characteristics of the rope. Typically safety factors vary from 3:1 (for new rope used in applications with uniform loading and where failure would cause little or no risk to equipment or personnel) to 20:1 (for conditions involving moderate shock loading, possibility of snags or kinks or where failure could cause severe risk to equipment or personnel).

Rope Weights Rope weights shown are average and may vary plus or minus 5%.

Working Elongation Working elongation is shown from a preload tension of 200 times the diameter squared per the Cordage Institute Standard.

Special Requirements

Factory Splicing Various types are available for all of our ropes. Splices can be provided with various types of chafe protection or coatings.

Custom Lengths Special constructions are available on request.

Rope Terminations Cortland can provide custom terminations such as thimbles, links, rings and custom hardware. Terminations are available in plastic, bronze, stainless steel and galvanized steel. Please call, or email your requirements to cortland@cortlandcompany.com for a quotation.

Special Coatings Coatings such as polyurethane, polyethylene and vinylesters may be applied to any of the synthetic ropes to improve snag resistance, sunlight resistance or for color coding. Cortland can provide ropes with a variety of finishes to meet your needs.

Commercial and Military Specifications Certificates of compliance are supplied at no charge if requested when placing the order. Certified test reports can be provided at an additional charge when requested at the time of the order.

Plasma® is a Trademark of Cortland.

Plasma® 12-Strand

Cortland's Plasma® 12-Strand and 12x12 ropes are the culmination of 25 years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Plasma 12-Strand is delivered standard with a polyurethane finish and is easily spliced using a simple lockstitch type splice, 5-4-3 tuck splice. Its soft, torque free braided construction provides easy handling.

Features & Benefits

- Highest strength
- Lowest stretch
- Low creep
- Soft hand
- Torque-free
- Easy splicing
- Floats

Applications

- Replacement for wire rope
- Vessel mooring lines
- Inland river barge lines
- Lifting slings
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|------|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 0.04 | 1 | 0.12 | 0.05 | 0.1 | 270 | 0.1 | 300 | 0.13 |
| 0.05 | 1.25 | 0.15 | 0.07 | 0.1 | 390 | 0.2 | 430 | 0.20 |
| 0.06 | 1.5 | 0.18 | 0.1 | 0.1 | 475 | 0.2 | 525 | 0.23 |
| 0.07 | 1.75 | 0.21 | 0.14 | 0.2 | 750 | 0.3 | 830 | 0.38 |
| 0.1 | 2.5 | 0.3 | 0.27 | 0.4 | 1,400 | 0.6 | 1,550 | 0.7 |
| 1/8 | 3 | 3/8 | 0.54 | 0.8 | 2,800 | 1.3 | 3,100 | 1.4 |
| 3/16 | 5 | 9/16 | 1.12 | 1.7 | 5,500 | 2.5 | 6,100 | 2.8 |
| 1/4 | 6 | 3/4 | 1.6 | 2.4 | 8,000 | 3.6 | 8,890 | 4.0 |
| 5/16 | 8 | 15/16 | 2.5 | 3.7 | 11,700 | 5.3 | 13,000 | 5.9 |
| 3/8 | 9 | 1-1/8 | 3.7 | 5.5 | 17,500 | 7.9 | 19,400 | 8.8 |

ABS and DNV Type Approved Sizes

| | | | | | | | | |
|--------|----|-------|------|------|---------|-------|---------|-------|
| 7/16 | 11 | 1-1/4 | 4.2 | 6.3 | 21,000 | 9.5 | 23,400 | 10.6 |
| 1/2 | 12 | 1-1/2 | 6.4 | 9.5 | 31,300 | 14.2 | 34,800 | 15.8 |
| 9/16 | 14 | 1-3/4 | 7.9 | 11.8 | 37,900 | 17.2 | 42,100 | 19.1 |
| 5/8 | 16 | 2 | 10.6 | 15.8 | 51,400 | 23.3 | 57,100 | 25.9 |
| 3/4 | 18 | 2-1/4 | 13.3 | 19.8 | 68,500 | 31.1 | 76,300 | 34.6 |
| 13/16 | 20 | 2-1/2 | 15.9 | 23.7 | 74,000 | 33.6 | 82,200 | 37.2 |
| 7/8 | 22 | 2-3/4 | 19.6 | 29.2 | 92,600 | 42.0 | 102,900 | 46.7 |
| 1 | 24 | 3 | 23.4 | 34.8 | 110,000 | 49.9 | 122,100 | 55.4 |
| 1-1/16 | 26 | 3-1/4 | 27.5 | 40.9 | 129,200 | 58.6 | 143,500 | 65.1 |
| 1-1/8 | 28 | 3-1/2 | 31.9 | 47.5 | 147,000 | 66.7 | 163,300 | 74.1 |
| 1-1/4 | 30 | 3-3/4 | 36.2 | 53.9 | 165,000 | 74.9 | 183,100 | 83.1 |
| 1-5/16 | 32 | 4 | 41.7 | 62.1 | 196,000 | 88.9 | 217,800 | 98.8 |
| 1-1/2 | 36 | 4-1/2 | 51.7 | 76.9 | 221,000 | 100.3 | 245,500 | 111.3 |

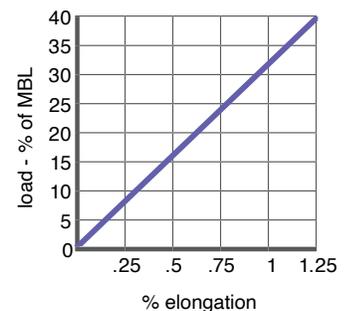
Tensile strengths are determined in accordance with Cordage Institute 1500.2. Test Methods for Fiber Rope. Minimum Tensile Strength (MTS) published assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published is nominal and reflects rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.09–0.12* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Plasma® 12-Strand Elongation (%)



Plasma® 12x12

Plasma® 12x12 is a 12-strand braided rope in which each of the 12 strands is, in turn, a 12-strand rope, or braided primary strand. This construction addresses the most critical properties of the fibers to provide a very high strength translation efficiency for larger ropes. The design also provides superior snag resistance compared to other 12x12 designs which is important when dragging the rope. Plasma 12x12 is supplied with our standard polyurethane finish, although other coatings can be applied to suit specific applications.

Cortland's Plasma® 12x12 ropes are the culmination of 25+ years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Features & Benefits

- World's strongest rope for its weight
- Long lengths available
- High flex fatigue and abrasion resistance
- Easy to splice, inspect, and repair
- Neutrally buoyant in water
- Select sizes are ABS & DNV type approved

Applications

- Replacement for wire rope heavy lift slings
- Tug vessel assist lines
- Vessel mooring lines
- Offshore working ropes
- Lashings

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| ABS and DNV type approved sizes – up to 4" diameter (96 mm) | | | | | | | | |
| 1-5/8 | 40 | 5 | 66 | 98 | 291,000 | 132 | 323,300 | 147 |
| 1-3/4 | 44 | 5-1/2 | 78 | 117 | 314,000 | 142 | 348,900 | 158 |
| 2 | 48 | 6 | 91 | 136 | 355,000 | 161 | 392,450 | 178 |
| 2-1/8 | 52 | 6-1/2 | 109 | 162 | 428,000 | 194 | 475,600 | 216 |
| 2-1/4 | 56 | 7 | 122 | 182 | 481,000 | 218 | 534,400 | 242 |
| 2-1/2 | 60 | 7-1/2 | 148 | 220 | 530,000 | 240 | 588,900 | 267 |
| 2-5/8 | 64 | 8 | 167 | 249 | 596,000 | 270 | 662,200 | 300 |
| 2-3/4 | 68 | 8-1/2 | 187 | 278 | 660,000 | 299 | 733,300 | 333 |
| 3 | 72 | 9 | 214 | 319 | 780,000 | 354 | 866,700 | 393 |
| 3-1/8 | 76 | 9-1/2 | 235 | 350 | 850,000 | 386 | 944,400 | 428 |
| 3-1/4 | 80 | 10 | 261 | 388 | 940,000 | 426 | 1,045,400 | 474 |
| 3-1/2 | 84 | 10-1/2 | 298 | 443 | 1,108,000 | 503 | 1,231,000 | 559 |
| 3-5/8 | 88 | 11 | 324 | 482 | 1,250,000 | 567 | 1,388,900 | 630 |
| 3-3/4 | 92 | 11-1/2 | 343 | 510 | 1,317,000 | 598 | 1,463,000 | 664 |
| 4 | 96 | 12 | 394 | 586 | 1,520,000 | 690 | 1,689,000 | 766 |
| 4-1/8 | 100 | 12-1/2 | 457 | 679 | 1,622,000 | 736 | 1,802,000 | 818 |
| 4-1/4 | 104 | 13 | 514 | 765 | 1,697,000 | 770 | 1,886,000 | 856 |
| 4-1/2 | 108 | 13-1/2 | 530 | 789 | 1,827,000 | 829 | 2,030,000 | 921 |
| 4-5/8 | 112 | 14 | 546 | 812 | 1,880,000 | 853 | 2,089,000 | 948 |
| 4-3/4 | 116 | 14-1/2 | 587 | 873 | 1,927,000 | 874 | 2,141,000 | 971 |
| 5 | 120 | 15 | 606 | 902 | 2,069,500 | 939 | 2,299,000 | 1043 |
| 5-1/8 | 124 | 15-1/2 | 657 | 978 | 2,212,000 | 1004 | 2,458,000 | 1115 |
| 5-1/4 | 128 | 16 | 703 | 1046 | 2,355,000 | 1069 | 2,617,000 | 1187 |
| 5-1/2 | 132 | 16-1/2 | 749 | 1114 | 2,497,500 | 1133 | 2,775,000 | 1259 |
| 5-5/8 | 136 | 17 | 813 | 1210 | 2,640,000 | 1198 | 2,933,000 | 1331 |
| 5-3/4 | 140 | 17-1/2 | 871 | 1296 | 2,782,500 | 1262 | 3,092,000 | 1403 |
| 6 | 144 | 18 | 932 | 1386 | 2,925,000 | 1327 | 3,250,000 | 1475 |
| 6-1/8 | 148 | 18-1/2 | 985 | 1465 | 3,068,000 | 1392 | 3,409,000 | 1547 |
| 6-1/4 | 152 | 19 | 1038 | 1545 | 3,210,500 | 1457 | 3,567,000 | 1618 |
| 6-1/2 | 156 | 19-1/2 | 1103 | 1642 | 3,353,000 | 1521 | 3,726,000 | 1691 |
| 6-5/8 | 160 | 20 | 1159 | 1725 | 3,496,000 | 1586 | 3,884,000 | 1762 |
| 6-3/4 | 164 | 20-1/2 | 1227 | 1827 | 3,638,500 | 1651 | 4,043,000 | 1834 |
| 7 | 168 | 21 | 1284 | 1911 | 3,781,000 | 1716 | 4,201,000 | 1906 |
| 7-1/8 | 172 | 21-1/2 | 1334 | 1986 | 3,963,500 | 1798 | 4,404,000 | 1998 |
| 7-1/4 | 176 | 22 | 1392 | 2072 | 4,066,000 | 1845 | 4,518,000 | 2050 |
| 7-1/2 | 180 | 22-1/2 | 1452 | 2161 | 4,209,000 | 1910 | 4,677,000 | 2122 |
| 7-5/8 | 184 | 23 | 1527 | 2272 | 4,351,500 | 1974 | 4,835,000 | 2194 |
| 7-3/4 | 188 | 23-1/2 | 1589 | 2365 | 4,494,000 | 2039 | 4,993,000 | 2265 |
| 8 | 192 | 24 | 1653 | 2459 | 4,637,000 | 2104 | 5,152,000 | 2338 |
| 8-1/8 | 196 | 24-1/2 | 1732 | 2578 | 4,779,000 | 2168 | 5,310,000 | 2409 |
| 8-1/4 | 200 | 25 | 1798 | 2677 | 4,922,000 | 2233 | 5,469,000 | 2481 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size.

Weights: Published weights of sizes 1-5/8"– 4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"–8-1/4" diameter represent un-cycled, (non-stabilized) weights.

Tensile Strengths: Tensile strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.

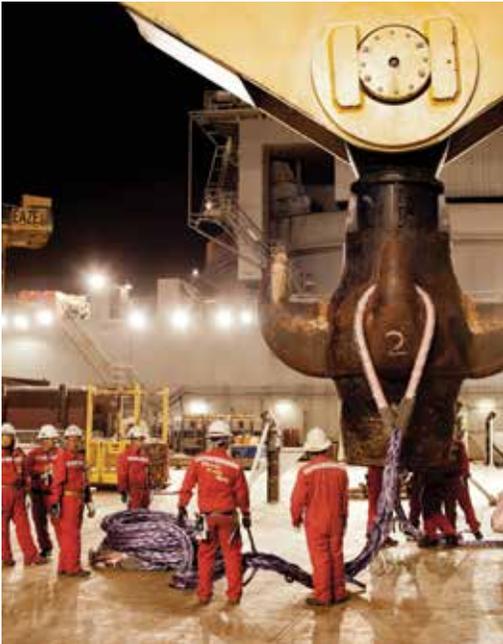
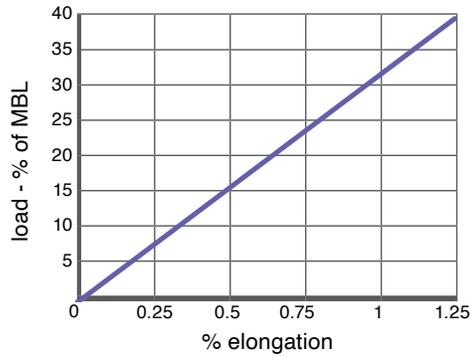
Plasma® 12x12

Technical Information

| | |
|-------------------------|----------------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.09–0.12* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Plasma® 12x12 Elongation (%)



Plasma[®] LoCo 12-Strand

Plasma[®] LoCo 12-Strand retains all of the features and benefits of standard Plasma ropes with the added characteristic of a reduced coefficient of friction coating. The enhanced coating provides improved UV resistance and reduces internal heat build-up and abrasion associated with constant tension-tension fatigue, relative movement between the rope and fixed surfaces, and during cyclical bending.

Cortland's proprietary LoCo coating process ensures superior adherence to the braided Plasma rope, providing an effective bond for increased service life and wear especially in wet environments. The LoCo design can be quickly spliced using Cortland's recommended splicing techniques for low coefficient of friction ropes.

Cortland's Plasma 12-Strand ropes are the culmination of 25+ years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Features & Benefits

- Highest strength
- Lowest stretch
- Lightweight
- Soft hand
- Torque free
- Easy to splice and inspect
- Floats
- Long lengths available
- Excellent UV resistance
- High flex fatigue and abrasion resistance
- Neutrally buoyant in water
- Select sizes are ABS and DNV approved

Applications

- Face and wing wires for push boats
- Replacement for wire rope
- Vessel mooring lines
- Inland river barge lines
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|------|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 0.04 | 1 | 0.12 | 0.05 | 0.1 | 270 | 0.1 | 300 | 0.13 |
| 0.05 | 1.25 | 0.15 | 0.07 | 0.1 | 390 | 0.2 | 430 | 0.20 |
| 0.06 | 1.5 | 0.18 | 0.1 | 0.1 | 475 | 0.2 | 525 | 0.23 |
| 0.07 | 1.75 | 0.21 | 0.14 | 0.2 | 750 | 0.3 | 830 | 0.38 |
| 0.1 | 2.5 | 0.3 | 0.27 | 0.4 | 1,400 | 0.6 | 1,550 | 0.7 |
| 1/8 | 3 | 3/8 | 0.54 | 0.8 | 2,800 | 1.3 | 3,100 | 1.4 |
| 3/16 | 5 | 9/16 | 1.12 | 1.7 | 5,500 | 2.5 | 6,100 | 2.8 |
| 1/4 | 6 | 3/4 | 1.6 | 2.4 | 8,000 | 3.6 | 8,890 | 4.0 |
| 5/16 | 8 | 15/16 | 2.5 | 3.7 | 11,700 | 5.3 | 13,000 | 5.9 |
| 3/8 | 9 | 1-1/8 | 3.7 | 5.5 | 17,500 | 7.9 | 19,400 | 8.8 |

ABS and DNV Type Approved Sizes

| Nominal Diameter | mm | Size (circ in.) | lbs/100ft | kg/100m | Minimum Tensile Strength Spliced Rope (lbs) | Minimum Tensile Strength Spliced Rope (MT) | Minimum Tensile Strength ISO Unspliced Rope (lbs) | Minimum Tensile Strength ISO Unspliced Rope (MT) |
|------------------|----|-----------------|-----------|---------|---|--|---|--|
| 7/16 | 11 | 1-1/4 | 4.2 | 6.3 | 21,000 | 9.5 | 23,400 | 10.6 |
| 1/2 | 12 | 1-1/2 | 6.4 | 9.5 | 31,300 | 14.2 | 34,800 | 15.8 |
| 9/16 | 14 | 1-3/4 | 7.9 | 11.8 | 37,900 | 17.2 | 42,100 | 19.1 |
| 5/8 | 16 | 2 | 10.6 | 15.8 | 51,400 | 23.3 | 57,100 | 25.9 |
| 3/4 | 18 | 2-1/4 | 13.3 | 19.8 | 68,500 | 31.1 | 76,300 | 34.6 |
| 13/16 | 20 | 2-1/2 | 15.9 | 23.7 | 74,000 | 33.6 | 82,200 | 37.2 |
| 7/8 | 22 | 2-3/4 | 19.6 | 29.2 | 92,600 | 42.0 | 102,900 | 46.7 |
| 1 | 24 | 3 | 23.4 | 34.8 | 110,000 | 49.9 | 122,100 | 55.4 |
| 1-1/16 | 26 | 3-1/4 | 27.5 | 40.9 | 129,200 | 58.6 | 143,500 | 65.1 |
| 1-1/8 | 28 | 3-1/2 | 31.9 | 47.5 | 147,000 | 66.7 | 163,300 | 74.1 |
| 1-1/4 | 30 | 3-3/4 | 36.2 | 53.9 | 165,000 | 74.9 | 183,100 | 83.1 |
| 1-5/16 | 32 | 4 | 41.7 | 62.1 | 196,000 | 88.9 | 217,800 | 98.8 |
| 1-1/2 | 36 | 4-1/2 | 51.7 | 76.9 | 221,000 | 100.3 | 245,500 | 111.3 |

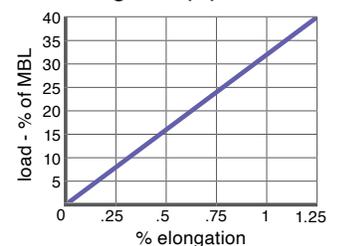
Tensile Strengths are determined in accordance with Cordage Institute 1500.2. Test Methods for Fiber Rope. Minimum Tensile Strength (MTS) published assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published is nominal and reflects rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Plasma[®] LoCo 12-Strand Elongation (%)



Plasma® LoCo 12x12

Plasma® LoCo 12x12 retains all of the features & benefits of standard Plasma® ropes with the added characteristic of a reduced coefficient of friction coating. The enhanced coating provides improved UV resistance and reduces internal heat build-up and abrasion associated with constant tension-tension fatigue, relative movement between the rope and fixed surfaces, and during cyclical bending. Cortland's proprietary LoCo coating process ensures superior adherence to the braided Plasma rope, providing an effective bond for increased service life and wear especially in wet environments.

Plasma® LoCo 12x12 is a 12-strand braided rope in which each of the 12 strands is, in turn, a 12-strand rope, or braided primary strand. This construction addresses the most critical properties of the fibers to provide very high strength translation efficiency for larger ropes. This design provides superior snag resistance compared to other 12-Strand designs which is important when dragging the rope.

Features & Benefits

- Long lengths available
- High flex fatigue and abrasion resistance
- Easy to splice, inspect, and repair
- Neutrally buoyant in water
- Select sizes are ABS & DNV type approved

Applications

- Tractor tug winch mainlines/pendants
- Replacement for wire rope
- Offshore working ropes

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| ABS and DNV type approved sizes—up to 4" diameter (96 mm) | | | | | | | | |
| 1-5/8 | 40 | 5 | 66 | 98 | 291,000 | 132 | 323,300 | 147 |
| 1-3/4 | 44 | 5-1/2 | 78 | 117 | 314,000 | 142 | 348,900 | 158 |
| 2 | 48 | 6 | 91 | 136 | 355,000 | 161 | 392,450 | 178 |
| 2-1/8 | 52 | 6-1/2 | 109 | 162 | 428,000 | 194 | 475,600 | 216 |
| 2-1/4 | 56 | 7 | 122 | 182 | 481,000 | 218 | 534,400 | 242 |
| 2-1/2 | 60 | 7-1/2 | 148 | 220 | 530,000 | 240 | 588,900 | 267 |
| 2-5/8 | 64 | 8 | 167 | 249 | 596,000 | 270 | 662,200 | 300 |
| 2-3/4 | 68 | 8-1/2 | 187 | 278 | 660,000 | 299 | 733,300 | 333 |
| 3 | 72 | 9 | 214 | 319 | 780,000 | 354 | 866,700 | 393 |
| 3-1/8 | 76 | 9-1/2 | 235 | 350 | 850,000 | 386 | 944,400 | 428 |
| 3-1/4 | 80 | 10 | 261 | 388 | 940,000 | 426 | 1,045,400 | 474 |
| 3-1/2 | 84 | 10-1/2 | 298 | 443 | 1,108,000 | 503 | 1,231,000 | 559 |
| 3-5/8 | 88 | 11 | 324 | 482 | 1,250,000 | 567 | 1,388,900 | 630 |
| 3-3/4 | 92 | 11-1/2 | 343 | 510 | 1,317,000 | 598 | 1,463,000 | 664 |
| 4 | 96 | 12 | 394 | 586 | 1,520,000 | 690 | 1,689,000 | 766 |
| 4-1/8 | 100 | 12-1/2 | 457 | 679 | 1,622,000 | 736 | 1,802,000 | 818 |
| 4-1/4 | 104 | 13 | 514 | 765 | 1,697,000 | 770 | 1,886,000 | 856 |
| 4-1/2 | 108 | 13-1/2 | 530 | 789 | 1,827,000 | 829 | 2,030,000 | 921 |
| 4-5/8 | 112 | 14 | 546 | 812 | 1,880,000 | 853 | 2,089,000 | 948 |
| 4-3/4 | 116 | 14-1/2 | 587 | 873 | 1,927,000 | 874 | 2,141,000 | 971 |
| 5 | 120 | 15 | 606 | 902 | 2,069,500 | 939 | 2,299,000 | 1043 |
| 5-1/8 | 124 | 15-1/2 | 657 | 978 | 2,212,000 | 1004 | 2,458,000 | 1115 |
| 5-1/4 | 128 | 16 | 703 | 1046 | 2,355,000 | 1069 | 2,617,000 | 1187 |
| 5-1/2 | 132 | 16-1/2 | 749 | 1114 | 2,497,500 | 1133 | 2,775,000 | 1259 |
| 5-5/8 | 136 | 17 | 813 | 1210 | 2,640,000 | 1198 | 2,933,000 | 1331 |
| 5-3/4 | 140 | 17-1/2 | 871 | 1296 | 2,782,500 | 1262 | 3,092,000 | 1403 |
| 6 | 144 | 18 | 932 | 1386 | 2,925,000 | 1327 | 3,250,000 | 1475 |
| 6-1/8 | 148 | 18-1/2 | 985 | 1465 | 3,068,000 | 1392 | 3,409,000 | 1547 |
| 6-1/4 | 152 | 19 | 1038 | 1545 | 3,210,500 | 1457 | 3,567,000 | 1618 |
| 6-1/2 | 156 | 19-1/2 | 1103 | 1642 | 3,353,000 | 1521 | 3,726,000 | 1691 |
| 6-5/8 | 160 | 20 | 1159 | 1725 | 3,496,000 | 1586 | 3,884,000 | 1762 |
| 6-3/4 | 164 | 20-1/2 | 1227 | 1827 | 3,638,500 | 1651 | 4,043,000 | 1834 |
| 7 | 168 | 21 | 1284 | 1911 | 3,781,000 | 1716 | 4,201,000 | 1906 |
| 7-1/8 | 172 | 21-1/2 | 1334 | 1986 | 3,963,500 | 1798 | 4,404,000 | 1998 |
| 7-1/4 | 176 | 22 | 1392 | 2072 | 4,066,000 | 1845 | 4,518,000 | 2050 |
| 7-1/2 | 180 | 22-1/2 | 1452 | 2161 | 4,209,000 | 1910 | 4,677,000 | 2122 |
| 7-5/8 | 184 | 23 | 1527 | 2272 | 4,351,500 | 1974 | 4,835,000 | 2194 |
| 7-3/4 | 188 | 23-1/2 | 1589 | 2365 | 4,494,000 | 2039 | 4,993,000 | 2265 |
| 8 | 192 | 24 | 1653 | 2459 | 4,637,000 | 2104 | 5,152,000 | 2338 |
| 8-1/8 | 196 | 24-1/2 | 1732 | 2578 | 4,779,000 | 2168 | 5,310,000 | 2409 |
| 8-1/4 | 200 | 25 | 1798 | 2677 | 4,922,000 | 2233 | 5,469,000 | 2481 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size. **Weights:** Published weights of sizes 1-5/8"—4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"—8-1/4" diameter represent un-cycled, (non-stabilized) weights.

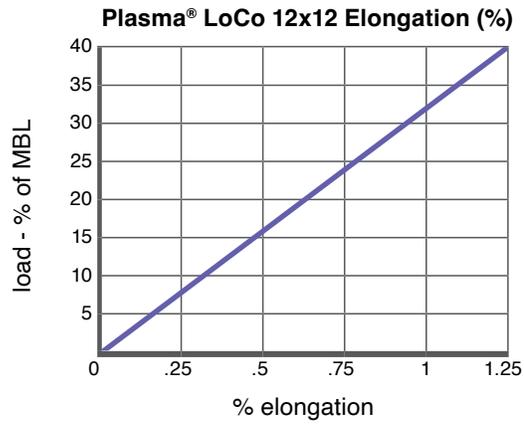
Tensile Strengths: Tensile Strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.

Plasma® LoCo 12x12

Technical Information

| | |
|------------------------|----------------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber



Plasma® HiCo 12-Strand

Plasma® HiCo 12-Strand retains all of the features and benefits of standard Plasma ropes with the added characteristic of an increased coefficient of friction coating to allow for better gripping in applications such as H-Bitt or capstan rendering, and traction winch systems.

Cortland's Plasma 12-Strand ropes are the culmination of 25+ years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Features & Benefits

- Highest strength
- Lowest stretch
- Low creep
- Soft hand
- Torque-free
- Easy splicing
- Floats

Applications

- Replacement for wire rope
- Vessel mooring lines
- Inland river barge lines
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging
- For use on H-bitts, capstans and traction winch systems

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|------|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 0.04 | 1 | 0.12 | 0.05 | 0.1 | 270 | 0.1 | 300 | 0.13 |
| 0.05 | 1.25 | 0.15 | 0.07 | 0.1 | 390 | 0.2 | 430 | 0.20 |
| 0.06 | 1.5 | 0.18 | 0.1 | 0.1 | 475 | 0.2 | 525 | 0.23 |
| 0.07 | 1.75 | 0.21 | 0.14 | 0.2 | 750 | 0.3 | 830 | 0.38 |
| 0.1 | 2.5 | 0.3 | 0.27 | 0.4 | 1,400 | 0.6 | 1,550 | 0.7 |
| 1/8 | 3 | 3/8 | 0.54 | 0.8 | 2,800 | 1.3 | 3,100 | 1.4 |
| 3/16 | 5 | 9/16 | 1.12 | 1.7 | 5,500 | 2.5 | 6,100 | 2.8 |
| 1/4 | 6 | 3/4 | 1.6 | 2.4 | 8,000 | 3.6 | 8,890 | 4.0 |
| 5/16 | 8 | 15/16 | 2.5 | 3.7 | 11,700 | 5.3 | 13,000 | 5.9 |
| 3/8 | 9 | 1-1/8 | 3.7 | 5.5 | 17,500 | 7.9 | 19,400 | 8.8 |

ABS and DNV Type Approved Sizes

| | | | | | | | | |
|--------|----|-------|------|------|---------|-------|---------|-------|
| 7/16 | 11 | 1-1/4 | 4.2 | 6.3 | 21,000 | 9.5 | 23,400 | 10.6 |
| 1/2 | 12 | 1-1/2 | 6.4 | 9.5 | 31,300 | 14.2 | 34,800 | 15.8 |
| 9/16 | 14 | 1-3/4 | 7.9 | 11.8 | 37,900 | 17.2 | 42,100 | 19.1 |
| 5/8 | 16 | 2 | 10.6 | 15.8 | 51,400 | 23.3 | 57,100 | 25.9 |
| 3/4 | 18 | 2-1/4 | 13.3 | 19.8 | 68,500 | 31.1 | 76,300 | 34.6 |
| 13/16 | 20 | 2-1/2 | 15.9 | 23.7 | 74,000 | 33.6 | 82,200 | 37.2 |
| 7/8 | 22 | 2-3/4 | 19.6 | 29.2 | 92,600 | 42.0 | 102,900 | 46.7 |
| 1 | 24 | 3 | 23.4 | 34.8 | 110,000 | 49.9 | 122,100 | 55.4 |
| 1-1/16 | 26 | 3-1/4 | 27.5 | 40.9 | 129,200 | 58.6 | 143,500 | 65.1 |
| 1-1/8 | 28 | 3-1/2 | 31.9 | 47.5 | 147,000 | 66.7 | 163,300 | 74.1 |
| 1-1/4 | 30 | 3-3/4 | 36.2 | 53.9 | 165,000 | 74.9 | 183,100 | 83.1 |
| 1-5/16 | 32 | 4 | 41.7 | 62.1 | 196,000 | 88.9 | 217,800 | 98.8 |
| 1-1/2 | 36 | 4-1/2 | 51.7 | 76.9 | 221,000 | 100.3 | 245,500 | 111.3 |

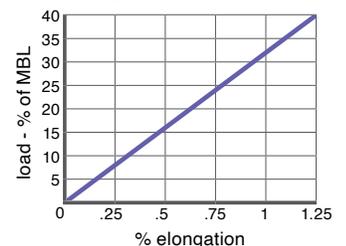
Tensile Strengths are determined in accordance with Cordage Institute 1500.2. Test Methods for Fiber Rope. Minimum Tensile Strength (MTS) published assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published is nominal and reflects rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Plasma® HiCo 12-Strand Elongation (%)



Plasma® HiCo 12x12

Plasma® HiCo 12x12 retains all the features and benefits of standard Plasma 12x12 ropes with the added characteristic of an increased coefficient of friction coating to allow for better gripping in applications such as H-Bitt or capstan rendering, and traction winch systems.

Plasma® HiCo 12x12 is a 12-strand braided rope in which each of the 12 strands is, in turn, a 12-strand rope, or braided primary strand. This construction addresses the most critical properties of the fibers to provide very high strength translation efficiency for larger ropes. This design provides superior snag resistance compared to other 12x12 strand designs which is important when dragging the rope.

Cortland's Plasma® 12x12 ropes are the culmination of 25+ years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Features & Benefits

- World's strongest rope for its weight
- Long lengths available
- High flex fatigue and abrasion resistance
- Easy to splice, inspect, and repair
- Neutrally buoyant in water
- Select sizes are ABS & DNV type approved

Applications

- Replacement for wire rope
- Tug vessel assist lines
- Vessel mooring lines
- Offshore working ropes
- Lashings
- For use on H-bitts, capstans and traction winch systems

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| ABS and DNV type approved sizes—up to 4" diameter (96 mm) | | | | | | | | |
| 1-5/8 | 40 | 5 | 66 | 98 | 291,000 | 132 | 323,300 | 147 |
| 1-3/4 | 44 | 5-1/2 | 78 | 117 | 314,000 | 142 | 348,900 | 158 |
| 2 | 48 | 6 | 91 | 136 | 355,000 | 161 | 392,450 | 178 |
| 2-1/8 | 52 | 6-1/2 | 109 | 162 | 428,000 | 194 | 475,600 | 216 |
| 2-1/4 | 56 | 7 | 122 | 182 | 481,000 | 218 | 534,400 | 242 |
| 2-1/2 | 60 | 7-1/2 | 148 | 220 | 530,000 | 240 | 588,900 | 267 |
| 2-5/8 | 64 | 8 | 167 | 249 | 596,000 | 270 | 662,200 | 300 |
| 2-3/4 | 68 | 8-1/2 | 187 | 278 | 660,000 | 299 | 733,300 | 333 |
| 3 | 72 | 9 | 214 | 319 | 780,000 | 354 | 866,700 | 393 |
| 3-1/8 | 76 | 9-1/2 | 235 | 350 | 850,000 | 386 | 944,400 | 428 |
| 3-1/4 | 80 | 10 | 261 | 388 | 940,000 | 426 | 1,045,400 | 474 |
| 3-1/2 | 84 | 10-1/2 | 298 | 443 | 1,108,000 | 503 | 1,231,000 | 559 |
| 3-5/8 | 88 | 11 | 324 | 482 | 1,250,000 | 567 | 1,388,900 | 630 |
| 3-3/4 | 92 | 11-1/2 | 343 | 510 | 1,317,000 | 598 | 1,463,000 | 664 |
| 4 | 96 | 12 | 394 | 586 | 1,520,000 | 690 | 1,689,000 | 766 |
| 4-1/8 | 100 | 12-1/2 | 457 | 679 | 1,622,000 | 736 | 1,802,000 | 818 |
| 4-1/4 | 104 | 13 | 514 | 765 | 1,697,000 | 770 | 1,886,000 | 856 |
| 4-1/2 | 108 | 13-1/2 | 530 | 789 | 1,827,000 | 829 | 2,030,000 | 921 |
| 4-5/8 | 112 | 14 | 546 | 812 | 1,880,000 | 853 | 2,089,000 | 948 |
| 4-3/4 | 116 | 14-1/2 | 587 | 873 | 1,927,000 | 874 | 2,141,000 | 971 |
| 5 | 120 | 15 | 606 | 902 | 2,069,500 | 939 | 2,299,000 | 1043 |
| 5-1/8 | 124 | 15-1/2 | 657 | 978 | 2,212,000 | 1004 | 2,458,000 | 1115 |
| 5-1/4 | 128 | 16 | 703 | 1046 | 2,355,000 | 1069 | 2,617,000 | 1187 |
| 5-1/2 | 132 | 16-1/2 | 749 | 1114 | 2,497,500 | 1133 | 2,775,000 | 1259 |
| 5-5/8 | 136 | 17 | 813 | 1210 | 2,640,000 | 1198 | 2,933,000 | 1331 |
| 5-3/4 | 140 | 17-1/2 | 871 | 1296 | 2,782,500 | 1262 | 3,092,000 | 1403 |
| 6 | 144 | 18 | 932 | 1386 | 2,925,000 | 1327 | 3,250,000 | 1475 |
| 6-1/8 | 148 | 18-1/2 | 985 | 1465 | 3,068,000 | 1392 | 3,409,000 | 1547 |
| 6-1/4 | 152 | 19 | 1038 | 1545 | 3,210,500 | 1457 | 3,567,000 | 1618 |
| 6-1/2 | 156 | 19-1/2 | 1103 | 1642 | 3,353,000 | 1521 | 3,726,000 | 1691 |
| 6-5/8 | 160 | 20 | 1159 | 1725 | 3,496,000 | 1586 | 3,884,000 | 1762 |
| 6-3/4 | 164 | 20-1/2 | 1227 | 1827 | 3,638,500 | 1651 | 4,043,000 | 1834 |
| 7 | 168 | 21 | 1284 | 1911 | 3,781,000 | 1716 | 4,201,000 | 1906 |
| 7-1/8 | 172 | 21-1/2 | 1334 | 1986 | 3,963,500 | 1798 | 4,404,000 | 1998 |
| 7-1/4 | 176 | 22 | 1392 | 2072 | 4,066,000 | 1845 | 4,518,000 | 2050 |
| 7-1/2 | 180 | 22-1/2 | 1452 | 2161 | 4,209,000 | 1910 | 4,677,000 | 2122 |
| 7-5/8 | 184 | 23 | 1527 | 2272 | 4,351,500 | 1974 | 4,835,000 | 2194 |
| 7-3/4 | 188 | 23-1/2 | 1589 | 2365 | 4,494,000 | 2039 | 4,993,000 | 2265 |
| 8 | 192 | 24 | 1653 | 2459 | 4,637,000 | 2104 | 5,152,000 | 2338 |
| 8-1/8 | 196 | 24-1/2 | 1732 | 2578 | 4,779,000 | 2168 | 5,310,000 | 2409 |
| 8-1/4 | 200 | 25 | 1798 | 2677 | 4,922,000 | 2233 | 5,469,000 | 2481 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size. **Weights:** Published weights of sizes 1-5/8"—4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"—8-1/4" diameter represent un-cycled, (non-stabilized) weights.

Tensile Strengths: Tensile Strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.

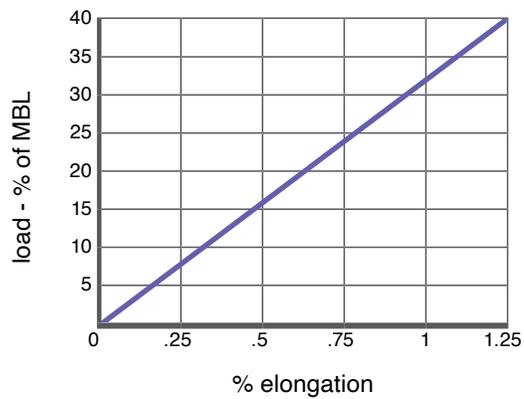
Plasma® HiCo 12x12

Technical Information

| | |
|-------------------------|----------------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | good |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Plasma® HiCo 12x12 Elongation (%)



Toro® 12 Strand

Toro® is a 12 Strand braided rope with high strength-to-weight ratio and, size-for-size, offers the same strength as steel. Toro 12 strand is manufactured from High Modulus Polyethylene (HMPE) and is an excellent wire rope replacement with low stretch, superior flex fatigue and wear resistance.

Toro 12 strand is delivered standard with a polyurethane finish and is easily spliced using a simple lockstitch bury splice, or tuck splice. Its soft, torque free braided construction provides easy handling and inspection.

Features & Benefits

- High strength
- Lowest stretch
- Low creep
- Soft hand
- Torque-free
- Easy splicing
- Floats

Applications

- Replacement for wire rope
- Vessel mooring lines
- Tug vessel assist lines
- Offshore working ropes
- Inland river barge lines
- Lifting slings
- Recreational vehicle winch lines
- Utility winch and pulling lines

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1/8 | 3 | 3/8 | 0.69 | 1.03 | 2,800 | 1.27 | 3,110 | 1.41 |
| 3/16 | 5 | 9/16 | 1.20 | 1.79 | 5,500 | 2.49 | 6,110 | 2.77 |
| 1/4 | 6 | 3/4 | 1.7 | 2.6 | 8,000 | 3.63 | 8,880 | 4.0 |
| 5/16 | 8 | 15/16 | 2.6 | 3.8 | 11,700 | 5.31 | 12,990 | 5.9 |
| 3/8 | 9 | 1-1/8 | 3.6 | 5.3 | 17,500 | 7.94 | 19,440 | 8.8 |
| 7/16 | 11 | 1-1/4 | 4.8 | 7.1 | 22,000 | 10.0 | 24,400 | 11.1 |
| 1/2 | 12 | 1-1/2 | 6.1 | 9.1 | 30,500 | 13.8 | 33,800 | 15.4 |
| 9/16 | 14 | 1-3/4 | 7.6 | 11.3 | 36,500 | 16.6 | 40,500 | 18.4 |
| 5/8 | 16 | 2 | 9.4 | 14.1 | 47,800 | 21.7 | 53,100 | 24.1 |
| 3/4 | 18 | 2-1/4 | 13.5 | 20.1 | 61,800 | 28.0 | 68,600 | 31.1 |
| 13/16 | 20 | 2-1/2 | 15.8 | 23.5 | 74,000 | 33.6 | 82,200 | 37.3 |
| 7/8 | 22 | 2-3/4 | 18.5 | 27.5 | 84,300 | 38.2 | 93,600 | 42.5 |
| 1 | 24 | 3 | 23.7 | 35.3 | 105,000 | 47.6 | 116,600 | 52.9 |
| 1-1/16 | 26 | 3-1/4 | 26.9 | 40.0 | 121,600 | 55.1 | 135,000 | 61.3 |
| 1-1/8 | 28 | 3-1/2 | 30.3 | 45.1 | 137,000 | 62.1 | 152,200 | 69.0 |
| 1-1/4 | 30 | 3-3/4 | 37.2 | 55.4 | 157,000 | 71.2 | 174,400 | 79.1 |
| 1-5/16 | 32 | 4 | 41.1 | 61.2 | 176,400 | 80.0 | 195,900 | 88.9 |
| 1-1/2 | 36 | 4-1/2 | 53.8 | 80.1 | 215,000 | 97.5 | 238,800 | 108.3 |

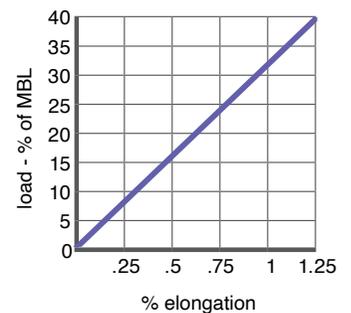
Tensile Strengths are determined in accordance with Cordage Institute CI 1500-02. Test Methods for Fiber Rope. Minimum Tensile Strength (MTS) published assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published is nominal and reflects rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.09–0.12* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | moderate |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Toro® 12 Strand Elongation (%)



Toro® 12x12

Toro® 12x12 is a 12-strand braided rope in which each of the 12 strands is, in turn, a 12-strand rope, or braided primary strand. Toro is manufactured from high tenacity High Modulus Polyethylene (HMPE).

This construction addresses the most critical properties of the fibers to provide a very high strength translation efficiency for larger ropes. This design allows for long lay lengths, making rope that is more flexible for bending applications, easy to inspect, and can be quickly spliced using standard 12 strand splicing techniques. Toro 12x12 is supplied with our standard polyurethane finish, although other coatings can be applied to suit specific applications.

Features & Benefits

- Highest strength
- Very low stretch
- Lightweight
- Soft hand
- Torque free
- Easy splicing
- Floats
- Long lengths available
- High flex fatigue and abrasion resistance
- Moderate UV resistance
- Easy to inspect and repair
- Neutrally buoyant in water

Applications

- Replacement for wire rope heavy lift slings
- Tug vessel assist lines
- Vessel mooring lines
- Offshore working ropes
- Lashings

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1-5/8 | 40 | 5 | 62.0 | 92.2 | 245,000 | 111 | 272,100 | 123 |
| 1-3/4 | 44 | 5-1/2 | 72.3 | 107.6 | 284,300 | 129 | 315,800 | 143 |
| 2 | 48 | 6 | 94.9 | 141.3 | 369,900 | 168 | 410,900 | 186 |
| 2-1/8 | 52 | 6-1/2 | 108.9 | 162.0 | 423,900 | 192 | 470,900 | 214 |
| 2-1/4 | 56 | 7 | 121.3 | 180.5 | 470,100 | 213 | 522,200 | 237 |
| 2-1/2 | 60 | 7-1/2 | 147.9 | 220.2 | 569,400 | 258 | 632,600 | 287 |
| 2-5/8 | 64 | 8 | 163.8 | 243.8 | 630,300 | 286 | 700,200 | 318 |
| 2-3/4 | 68 | 8-1/2 | 182.4 | 271.5 | 698,400 | 317 | 775,900 | 352 |
| 3 | 72 | 9 | 215.4 | 320.6 | 819,000 | 371 | 909,900 | 413 |
| 3-1/8 | 76 | 9-1/2 | 233.2 | 347.0 | 886,500 | 402 | 984,900 | 447 |
| 3-1/4 | 80 | 10 | 253.5 | 377.4 | 961,300 | 436 | 1,068,000 | 484 |
| 3-1/2 | 84 | 10-1/2 | 290.7 | 432.7 | 1,095,300 | 497 | 1,216,800 | 552 |
| 3-5/8 | 88 | 11 | 314.1 | 467.6 | 1,184,300 | 537 | 1,315,700 | 597 |
| 3-3/4 | 92 | 11-1/2 | 338.7 | 504.1 | 1,273,100 | 577 | 1,414,400 | 641 |
| 4 | 96 | 12 | 383.5 | 570.8 | 1,435,200 | 651 | 1,594,500 | 723 |
| 4-1/8 | 100 | 12-1/2 | 407.0 | 605.8 | 1,523,400 | 691 | 1,692,400 | 768 |
| 4-1/4 | 104 | 13 | 433.4 | 645.0 | 1,618,600 | 734 | 1,798,200 | 816 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size.

Weights: Published weights of sizes 1-5/8"– 4-1/4" diameter are calculated at linear density under stated preload (200d²) plus 4%.

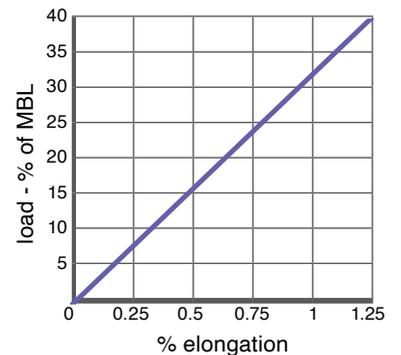
Tensile Strengths: Tensile strength determined in accordance with Cordage Institute 1500-02 Test Methods for Fiber Ropes and ISO 2307.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.09–0.12* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0% |
| UV resistance | moderate |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Toro® 12x12 Elongation (%)



Reduced Recoil Plasma®

Cortland's Plasma® 12-Strand and 12x12 ropes are the culmination of 25 years of engineering expertise in the HMPE industry. Our dedication to providing customers with industry-leading synthetic line is and always has been the goal. Our continued innovation and unwavering desire are to provide the strongest and most reliable product available.

Cortland's Reduced Recoil Plasma is manufactured utilizing a combination of Plasma HMPE and Polyester fiber in either a conventional 12 Strand, or a 12x12 Strand, construction and is tested in accordance with the requirements of the latest version of Cordage Institute CI 1502, Test Methods for Reduced Recoil Risk Rope. In addition it meets or exceeds the requirements of the latest draft of CGSB-40.20-2008, Standard for Reduced Recoil Rope.

Features

- Lightweight
- Very low stretch
- Very high strength
- Soft on hands
- Torque free
- Easy to splice
- Easy to inspect
- Repairable (12x12)

Applications

- Mooring line

| | Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--------------|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| | inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 12 Strand | 5/8 | 16 | 2 | 12 | 15.8 | 34,400 | 15.6 | 38,200 | 17.3 |
| | 3/4 | 18 | 2-1/4 | 15.1 | 19.8 | 45,900 | 20.8 | 50,900 | 23.1 |
| | 13/16 | 20 | 2-1/2 | 18.1 | 26.9 | 49,600 | 22.5 | 55,100 | 25.0 |
| | 7/8 | 22 | 2-3/4 | 22.3 | 33.2 | 62,000 | 28.1 | 68,800 | 31.2 |
| | 1 | 24 | 3 | 26.6 | 39.5 | 73,700 | 33.4 | 81,800 | 37.1 |
| | 1-1/8 | 28 | 3-1/2 | 36.2 | 54.0 | 98,400 | 44.6 | 109,200 | 49.5 |
| | 1-1/4 | 30 | 3-3/4 | 41.1 | 61.2 | 110,500 | 50.1 | 122,700 | 55.6 |
| 12x12 Strand | 1-5/16 | 32 | 4 | 47.4 | 70.6 | 131,300 | 59.5 | 145,700 | 66.0 |
| | 1-1/2 | 36 | 4-1/2 | 58.7 | 87.4 | 148,000 | 67.1 | 164,300 | 74.5 |
| | 1-5/8 | 40 | 5 | 74.6 | 111.1 | 195,000 | 88.4 | 216,500 | 98.1 |
| | 1-3/4 | 44 | 5-1/2 | 89.1 | 132.6 | 210,300 | 95.4 | 233,400 | 106.0 |
| | 2 | 48 | 6 | 103.8 | 154.5 | 237,800 | 108.0 | 264,000 | 120.0 |
| | 2-1/8 | 52 | 6-1/2 | 123.8 | 184.3 | 286,700 | 130.0 | 318,200 | 144.0 |
| | 2-1/4 | 56 | 7 | 138.6 | 206.3 | 322,200 | 146.0 | 357,600 | 162.0 |
| | 2-1/2 | 60 | 7-1/2 | 168.1 | 250.2 | 355,100 | 161.0 | 394,200 | 179.0 |
| | 2-5/8 | 64 | 8 | 189.7 | 282.3 | 399,300 | 181.0 | 443,200 | 201.0 |
| | 2-3/4 | 68 | 8-1/2 | 212.4 | 316.2 | 442,200 | 201.0 | 490,800 | 223.0 |
| | 3 | 72 | 9 | 243.1 | 361.8 | 522,600 | 237.0 | 580,100 | 263.0 |

Tensile strengths are determined in accordance with Cordage Institute 1502, Test Methods for Reduced Recoil Risk Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.11* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.09–0.15* |
| Elongation at break | 3–4% |
| Fiber water absorption | <1% |
| UV resistance | very good |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Vectran® 12 Strand & 12x12

Vectran® 12 strand and 12x12 is a high strength very low stretch braided rope manufactured using Vectran LCP (Liquid Crystal Polymer) high modulus synthetic fiber yarns. This torque-free rope is popular in applications when strength, low stretch, heat resistance and zero creep in fiber are required. Vectran 12 strand and 12x12 has excellent bend and flex fatigue resistance and is easily spliced using the lock-stitch type splice, 4-3-2 or 5-4-3 tuck splice.

Vectran 12 strand and 12x12 rope is typically provided with a clear polyurethane coating. Cortland's 12x12 construction is available on Vectran braided rope from 1-1/2" (36 mm) diameter through 8-1/4" (200 mm) diameter; for strengths and weights above 4" diameter please contact Cortland.

Features & Benefits

- High strength
- Low stretch
- No creep
- Soft hand
- Torque free
- Easy splicing

Applications

- Replacement for wire rope
- Theatrical rigging
- Lifting slings
- Utility winch and pulling lines
- Recreational vehicle winch lines
- Subsea lifting and mooring lines
- Seismic

| | Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--------------|------------------|-------|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| | inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 12 Strand | 0.0165 | 0.419 | 0.05 | 0.01 | 0.01 | 50 | 0.02 | 56 | 0.03 |
| | 0.023 | 0.584 | 0.07 | 0.02 | 0.03 | 115 | 0.05 | 128 | 0.06 |
| | 0.045 | 1.143 | 0.14 | 0.08 | 0.12 | 300 | 0.14 | 333 | 0.15 |
| | 0.055 | 1.397 | 0.17 | 0.10 | 0.15 | 415 | 0.2 | 460 | 0.2 |
| | 1/16 | 1.588 | 3/16 | 0.15 | 0.22 | 870 | 0.4 | 970 | 0.4 |
| | 0.1 | 2.540 | 0.30 | 0.30 | 0.45 | 1,500 | 0.7 | 1,670 | 0.8 |
| | 7/64 | 2.778 | 21/64 | 0.46 | 0.69 | 2,250 | 1.0 | 2,500 | 1.1 |
| | 1/8 | 3 | 3/8 | .64 | 0.9 | 2,800 | 1.3 | 3,100 | 1.4 |
| | 3/16 | 5 | 9/16 | 1.3 | 1.9 | 5,500 | 2.5 | 6,100 | 2.8 |
| | 1/4 | 6 | 3/4 | 2.1 | 3.1 | 8,000 | 3.6 | 8,900 | 4 |
| | 5/16 | 8 | 15/16 | 3.2 | 4.8 | 11,700 | 5.3 | 13,000 | 5.9 |
| | 3/8 | 9 | 1-1/8 | 5.3 | 7.9 | 17,500 | 7.9 | 19,400 | 8.8 |
| | 7/16 | 11 | 1-1/4 | 6.1 | 9.1 | 21,000 | 9.5 | 23,300 | 10.6 |
| | 1/2 | 12 | 1-1/2 | 9.2 | 13.7 | 31,300 | 14.2 | 34,800 | 15.8 |
| | 9/16 | 14 | 1-3/4 | 11.4 | 17.0 | 37,900 | 17.2 | 42,100 | 19.1 |
| | 5/8 | 16 | 2 | 15.3 | 22.8 | 51,400 | 23.3 | 57,100 | 25.9 |
| | 3/4 | 18 | 2-1/4 | 19.2 | 28.6 | 68,500 | 31.1 | 76,100 | 34.5 |
| | 7/8 | 22 | 2-3/4 | 28.3 | 41.6 | 92,600 | 42 | 102,900 | 46.7 |
| | 1 | 24 | 3 | 33.8 | 50.4 | 110,000 | 49.9 | 122,000 | 55.4 |
| | 1-1/8 | 28 | 3-1/2 | 46.0 | 68.7 | 147,000 | 66.7 | 163,000 | 74 |
| 1-1/4 | 30 | 3-3/4 | 52.2 | 77.9 | 165,000 | 74.9 | 183,000 | 83 | |
| 1-5/16 | 32 | 4 | 60.2 | 89.8 | 196,000 | 88.9 | 218,000 | 98.9 | |
| 12x12 Strand | 1-1/2 | 36 | 4-1/2 | 74.6 | 111.3 | 221,000 | 100 | 246,000 | 112 |
| | 1-5/8 | 40 | 5 | 94.8 | 141.4 | 291,000 | 132 | 323,000 | 147 |
| | 1-3/4 | 44 | 5-1/2 | 113.2 | 168.9 | 314,000 | 142 | 349,000 | 158 |
| | 2 | 48 | 6 | 132 | 196 | 355,000 | 161 | 394,000 | 179 |
| | 2-1/8 | 52 | 6-1/2 | 157 | 235 | 428,000 | 194 | 476,000 | 216 |
| | 2-1/4 | 56 | 7 | 176 | 263 | 481,000 | 218 | 534,000 | 242 |
| | 2-5/8 | 64 | 8 | 241 | 359 | 596,000 | 270 | 662,000 | 300 |
| | 2-3/4 | 68 | 8-1/2 | 270 | 398 | 660,000 | 299 | 733,000 | 333 |
| | 3 | 72 | 9 | 309 | 443 | 780,000 | 354 | 867,000 | 393 |
| | 3-1/4 | 80 | 10 | 377 | 561 | 940,000 | 426 | 1,044,000 | 474 |
| | 3-5/8 | 88 | 11 | 468 | 697 | 1,250,000 | 567 | 1,389,000 | 630 |
| | 4 | 96 | 12 | 569 | 847 | 1,520,000 | 690 | 1,689,000 | 766 |

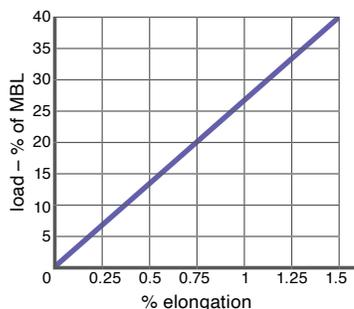
Sizes available up to 8-1/4" diameter (200 mm) and 4,900,000 lbs strength. Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.40* |
| Melting point | 625°F (329°C) |
| Critical temp. | 300°F (149°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | <0.1% |
| UV resistance | moderate |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Vectran® 12 Strand & 12x12 Elongation (%)



BOB® 12 Strand

BOB® 12 strand is a high strength, low elongating single braided patented rope construction with excellent long term creep resistance and superior cyclic fatigue performance, especially in bend-over-sheave applications. BOB® 12 Strand comes standard with a specially formulated coating that is designed to maximize the rope's durability in bending situations.

BOB® 12 Strand is easily spliced using a simple lockstitch type splice, brummel splice, 4-3-2 or 5-4-3 tuck splice. The soft, torque free braided construction provides ease of handling.

Features & Benefits

- High strength
- Low stretch
- Ultra low creep
- Soft hand
- Torque free
- Easy splicing

Applications

- Replacement for wire rope deep water lifting
- Use on drum and traction winches
- Active heave compensation systems
- Heavy lift slings
- High fatigue applications
- Seismic tow cables
- Tether applications
- Theatrical rigging

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 0.1 | 2.5 | 0.3 | 0.3 | 0.5 | 1,260 | 0.6 | 1,400 | 0.6 |
| 1/8 | 3 | 3/8 | 0.6 | 0.9 | 1,900 | 0.9 | 2,100 | 1.0 |
| 3/16 | 5 | 9/16 | 1.3 | 1.9 | 5,400 | 2.5 | 6,000 | 2.7 |
| 1/4 | 6 | 3/4 | 2.2 | 3.2 | 7,700 | 3.5 | 8,600 | 3.9 |
| 5/16 | 8 | 15/16 | 3.1 | 4.7 | 13,900 | 6.3 | 15,400 | 7.0 |
| 3/8 | 9 | 1-1/8 | 4.5 | 6.7 | 17,300 | 7.8 | 19,200 | 8.7 |
| 7/16 | 11 | 1-1/4 | 5.9 | 8.9 | 23,900 | 10.8 | 26,600 | 12.1 |
| 1/2 | 12 | 1-1/2 | 8.4 | 12.6 | 28,100 | 12.7 | 31,200 | 14.2 |
| 9/16 | 14 | 1-3/4 | 10.3 | 15.4 | 40,100 | 18.2 | 44,600 | 20.2 |
| 5/8 | 16 | 2 | 12.9 | 19.3 | 51,400 | 23.3 | 57,100 | 25.9 |
| 3/4 | 18 | 2-1/4 | 16.9 | 25.1 | 68,500 | 31.1 | 76,100 | 34.5 |
| 13/16 | 20 | 2-1/2 | 19.6 | 29.2 | 74,000 | 33.6 | 82,200 | 37.2 |
| 7/8 | 22 | 2-3/4 | 24.9 | 37.0 | 92,600 | 42 | 102,900 | 46.7 |
| 1 | 24 | 3 | 30.0 | 44.7 | 110,000 | 49.9 | 122,200 | 55.4 |
| 1-1/8 | 28 | 3-1/2 | 40.7 | 60.5 | 147,000 | 66.7 | 163,300 | 74.1 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size.

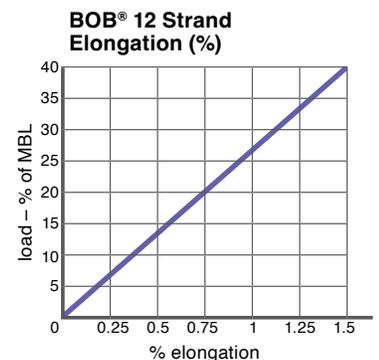
Weights: Published weights of sizes 1-5/8"– 4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"–8-1/4" diameter represent un-cycled, (non-stabilized) weights.

Tensile Strengths: Tensile strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.18* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | <0.1% |
| UV resistance | moderate |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber



BOB® 12x12 Strand

BOB® 12x12 Strand is a high strength, low elongating single braided patented rope construction with excellent long term creep resistance and superior cyclic fatigue performance, especially in bend-over-sheave applications. In the 12x12 strand construction, each strand consists of a smaller 12 strand rope produced using a proprietary blend of fibers. This design maximizes the strength of the fiber while allowing damaged rope strands to be removed and replaced if necessary. BOB® 12x12 Strand comes standard with a specially formulated coating that is designed to maximize the rope's durability in bending situations.

BOB 12x12 Strand is easily spliced using a lockstitch type splice, Brummel splice, 4-3-2 or 5-4-3 Tuck splice. The soft, torque free braided construction provides easy handling.

Features & Benefits

- High strength
- Low stretch
- Ultra low creep
- Soft hand
- Torque free
- Easy splicing

Applications

- Replacement for wire rope deep water lifting
- Use on drum and traction winches
- Active heave compensation systems
- Heavy lift slings
- High fatigue applications
- Seismic tow cables
- Tether applications

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1-1/4 | 30 | 3-3/4 | 43.4 | 64.6 | 165,000 | 75 | 183,300 | 83 |
| 1-5/16 | 32 | 4 | 53.2 | 79.2 | 196,000 | 89 | 217,800 | 99 |
| 1-1/2 | 36 | 4-1/2 | 66.6 | 99.1 | 221,000 | 100 | 245,600 | 111 |
| 1-5/8 | 40 | 5 | 81.8 | 121.8 | 291,000 | 132 | 323,300 | 147 |
| 1-3/4 | 44 | 5-1/2 | 95.9 | 142.7 | 314,000 | 142 | 348,900 | 158 |
| 2 | 48 | 6 | 120.6 | 179.4 | 355,000 | 161 | 394,400 | 179 |
| 2-1/8 | 52 | 6-1/2 | 141.6 | 210.8 | 428,000 | 194 | 475,600 | 216 |
| 2-1/4 | 56 | 7 | 158.2 | 235.4 | 481,000 | 218 | 534,400 | 242 |
| 2-1/2 | 60 | 7-1/2 | 191.3 | 284.7 | 530,000 | 240 | 588,900 | 267 |
| 2-5/8 | 64 | 8 | 210.9 | 313.8 | 596,000 | 270 | 662,200 | 300 |
| 2-3/4 | 68 | 8-1/2 | 227.9 | 339.3 | 660,000 | 299 | 733,300 | 333 |
| 3 | 72 | 9 | 269.9 | 401.7 | 780,000 | 354 | 866,700 | 393 |
| 3-1/4 | 80 | 10 | 314.5 | 468.0 | 940,000 | 426 | 1,044,000 | 474 |
| 3-1/2 | 84 | 10-1/2 | 375 | 588.06 | 1,108,000 | 503 | 1,231,000 | 559 |
| 3-5/8 | 88 | 11 | 403.3 | 600.2 | 1,250,000 | 567 | 1,389,000 | 630 |
| 4 | 96 | 12 | 531.9 | 791.6 | 1,520,000 | 690 | 1,689,000 | 766 |
| 4-1/8 | 100 | 12-1/2 | 620 | 923 | 1,622,000 | 736 | 1,802,000 | 818 |
| 4-1/4 | 104 | 13 | 697 | 1037 | 1,697,000 | 770 | 1,886,000 | 856 |
| 4-1/2 | 108 | 13-1/2 | 719 | 1070 | 1,827,000 | 829 | 2,030,000 | 921 |
| 4-5/8 | 112 | 14 | 740 | 1101 | 1,880,000 | 853 | 2,089,000 | 948 |
| 4-3/4 | 116 | 14-1/2 | 796 | 1185 | 1,927,000 | 874 | 2,141,000 | 971 |
| 5 | 120 | 15 | 822 | 1223 | 2,069,500 | 939 | 2,299,000 | 1043 |
| 5-1/8 | 124 | 15-1/2 | 891 | 1326 | 2,212,000 | 1004 | 2,458,000 | 1115 |
| 5-1/4 | 128 | 16 | 953 | 1418 | 2,355,000 | 1069 | 2,617,000 | 1187 |
| 5-1/2 | 132 | 16-1/2 | 1015 | 1511 | 2,497,500 | 1133 | 2,775,000 | 1259 |
| 5-5/8 | 136 | 17 | 1102 | 1640 | 2,640,000 | 1198 | 2,933,000 | 1331 |
| 5-3/4 | 140 | 17-1/2 | 1181 | 1758 | 2,782,500 | 1262 | 3,092,000 | 1403 |
| 6 | 144 | 18 | 1264 | 1881 | 2,925,000 | 1327 | 3,250,000 | 1475 |
| 6-1/8 | 148 | 18-1/2 | 1335 | 1987 | 3,068,000 | 1392 | 3,409,000 | 1547 |
| 6-1/4 | 152 | 19 | 1407 | 2094 | 3,210,500 | 1457 | 3,567,000 | 1618 |
| 6-1/2 | 156 | 19-1/2 | 1495 | 2225 | 3,353,000 | 1521 | 3,726,000 | 1691 |
| 6-5/8 | 160 | 20 | 1571 | 2338 | 3,496,000 | 1586 | 3,884,000 | 1762 |
| 6-3/4 | 164 | 20-1/2 | 1663 | 2475 | 3,638,500 | 1651 | 4,043,000 | 1834 |
| 7 | 168 | 21 | 1741 | 2591 | 3,781,000 | 1716 | 4,201,000 | 1906 |
| 7-1/8 | 172 | 21-1/2 | 1809 | 2692 | 3,963,500 | 1798 | 4,404,000 | 1998 |
| 7-1/4 | 176 | 22 | 1887 | 2808 | 4,066,000 | 1845 | 4,518,000 | 2050 |
| 7-1/2 | 180 | 22-1/2 | 1969 | 2930 | 4,209,000 | 1910 | 4,677,000 | 2122 |
| 7-5/8 | 184 | 23 | 2070 | 3081 | 4,351,500 | 1974 | 4,835,000 | 2194 |
| 7-3/4 | 188 | 23-1/2 | 2154 | 3206 | 4,494,000 | 2039 | 4,993,000 | 2265 |
| 8 | 192 | 24 | 2241 | 3335 | 4,637,000 | 2104 | 5,152,000 | 2338 |
| 8-1/8 | 196 | 24-1/2 | 2348 | 3494 | 4,779,000 | 2168 | 5,310,000 | 2409 |
| 8-1/4 | 200 | 25 | 2438 | 3628 | 4,922,000 | 2233 | 5,469,000 | 2481 |

Size: Diameter and circumference are nominal. A new unused rope in relaxed state will measure larger; loading and use compacts ropes, sets splices and lessens rope size. This is especially prevalent in sizes above 4" diameter. Published nominal sizes from 4-1/8" and larger represent stabilized or preloaded size. **Weights:** Published weights of sizes 1-5/8"–4" diameter are calculated at linear density under stated preload (200d²) plus 4%. For this chart, sizes 4-1/8"–8-1/4" diameter represent un-cycled, (non-stabilized) weights.

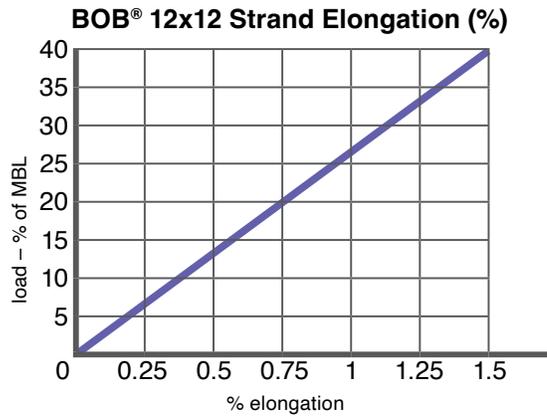
Tensile Strengths: Tensile Strength determined in accordance with Cordage Institute 1500 Test Methods for Fiber Ropes and ISO 2307.

BOB® 12x12 Strand

Technical Information

| | |
|-------------------------|----------------------|
| Specific gravity | 1.18* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | <0.1% |
| UV resistance | moderate |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber





Technora® 12 Strand

Technora® 12 Strand is made with high strength light weight Technora fiber. The 12 strand braided construction is torque free, and easy to splice. Technora 12 is extremely heat and flex fatigue resistant. It has no creep making it a good choice for applications with high static loads including mooring cables, hoisting cables, and tower guy wires. Technora 12 Strand is delivered standard with a black polyurethane coating.

Features & Benefits

- Very high heat resistance
- Zero creep
- Very low stretch
- Very high strength
- Soft hand
- Torque free
- Easy splicing

Applications

- Theatrical rigging lines
- Utility winch and pulling lines
- Recreational vehicle winch lines
- Tower guy wires

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1/8 | 3 | 3/8 | 0.6 | 0.9 | 2,520 | 1.1 | 2,800 | 1.3 |
| 3/16 | 5 | 9/16 | 1.3 | 1.9 | 5,040 | 2.3 | 5,600 | 2.5 |
| 1/4 | 6 | 3/4 | 1.9 | 2.8 | 7,335 | 3.3 | 8,200 | 3.7 |
| 5/16 | 8 | 15/16 | 3.2 | 4.8 | 11,700 | 5.3 | 13,000 | 5.9 |
| 3/8 | 9 | 1-1/8 | 4.3 | 6.4 | 16,200 | 7.4 | 18,000 | 8.2 |
| 7/16 | 11 | 1-1/4 | 6.7 | 10 | 21,000 | 9.5 | 23,300 | 10.6 |
| 1/2 | 12 | 1-1/2 | 8.3 | 12.4 | 29,700 | 13.5 | 33,000 | 15.0 |
| 5/8 | 16 | 1-3/4 | 13.5 | 20.1 | 45,000 | 20.4 | 50,000 | 22.7 |
| 3/4 | 18 | 2-1/4 | 19.3 | 28.7 | 59,000 | 26.8 | 65,600 | 29.8 |
| 7/8 | 22 | 2-3/4 | 25.3 | 37.7 | 76,000 | 34.5 | 84,400 | 38.3 |
| 1 | 24 | 3 | 31.1 | 46.3 | 92,000 | 41.7 | 102,200 | 46.4 |
| 1-1/8 | 28 | 3-1/2 | 42.3 | 63 | 123,000 | 55.8 | 136,700 | 62.0 |
| 1-1/4 | 30 | 3-3/4 | 48.1 | 71.6 | 139,400 | 63.2 | 154,900 | 70.3 |

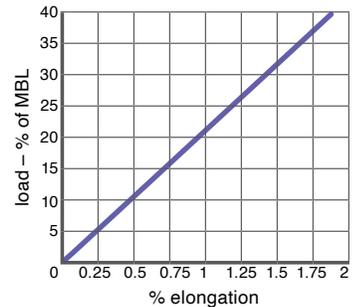
Sizes available up to 8-1/4" diameter (200 mm) and 4,900,000 lbs strength. Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

Technical Information

Specific gravity **1.39***
 Thermal decomposition **932°F (500°C)**
 Elongation at break **4-5%**
 Fiber water absorption **0%**
 UV resistance **moderate**
 Abrasion resistance **good**

* value based on data supplied by the fiber manufacturer for new, dry fiber

Technora® 12 Strand Elongation (%)



Polyester 12 Strand

Polyester 12 Strand has the lowest stretch and highest strength of all polyester constructions.

Its torque free braided construction provides easy handling and prevents kinks and hockles. Polyester 12 Strand is delivered standard with a clear polyurethane finish and is easily spliced using a simple lockstitch type splice. The largest market for this rope, transmission stringing lines, typically consists of sets of ropes in four different colors.

Features & Benefits

- Low stretch
- High strength
- Soft hand
- Torque free
- Easy splicing

Applications

- Transmission stringing lines
- Underground pulling lines
- Lifting slings
- Adjustable transformer slings

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 3/8 | 9 | 1-1/8 | 4.2 | 6.3 | 6,100 | 2.8 | 6,800 | 3.1 |
| 7/16 | 11 | 1-1/4 | 6.3 | 9.4 | 9,000 | 4.1 | 10,000 | 4.5 |
| 1/2 | 12 | 1-1/2 | 8.5 | 12.6 | 10,900 | 4.9 | 12,100 | 5.5 |
| 9/16 | 14 | 1-3/4 | 10.1 | 15 | 13,600 | 6.2 | 15,100 | 6.9 |
| 5/8 | 16 | 2 | 13.1 | 19.5 | 17,500 | 7.9 | 19,400 | 8.8 |
| 3/4 | 18 | 2-1/4 | 17.2 | 25.6 | 21,900 | 9.9 | 24,300 | 11.0 |
| 7/8 | 22 | 2-3/4 | 25.8 | 38.4 | 28,500 | 12.9 | 31,700 | 14.4 |
| 1 | 24 | 3 | 34.5 | 51.3 | 41,000 | 18.6 | 45,600 | 20.7 |
| 1-1/8 | 28 | 3-1/2 | 40 | 59.5 | 47,500 | 21.6 | 52,800 | 24.0 |
| 1-1/4 | 30 | 3-3/4 | 44.5 | 66.2 | 56,700 | 25.7 | 63,000 | 28.6 |
| 1-5/16 | 32 | 4 | 53.1 | 79 | 59,800 | 27.1 | 66,400 | 30.1 |
| 1-1/2 | 36 | 4-1/2 | 69 | 102.7 | 69,800 | 31.7 | 77,600 | 35.2 |
| 1-5/8 | 40 | 5 | 82.5 | 122.8 | 83,000 | 37.7 | 92,200 | 41.8 |
| 1-3/4 | 44 | 5-1/2 | 96.1 | 143 | 98,000 | 44.5 | 108,900 | 49.4 |
| 2 | 48 | 6 | 117 | 174.1 | 120,000 | 54.4 | 133,300 | 60.5 |

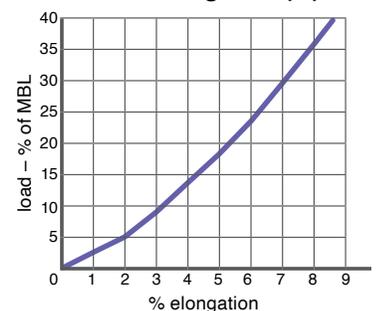
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 5%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.38* |
| Melting point | 482°F (250°C) |
| Critical temp. | 350°F (177°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 15–20% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Polyester 12 Strand Elongation (%)



Co-polymer 12 Plait

Co-polymer Olefin 12 Plait provides high strength, light weight and excellent abrasion resistance in a single braid construction.

Co-polymer Olefin 12 Plait is easily spliced using a standard tuck splice and is 40% stronger than three strand or 8 plait polypropylene. Its torque free braided construction provides easy handling and prevents kinks and hockles.

Features & Benefits

- Floats
- High strength
- Excellent abrasion resistance
- Torque free
- Easy splicing
- Excellent UV resistance

Applications

- Floating mooring lines for barges/vessels
- Floating winch lines
- Subsea buoy moorings
- Lashings

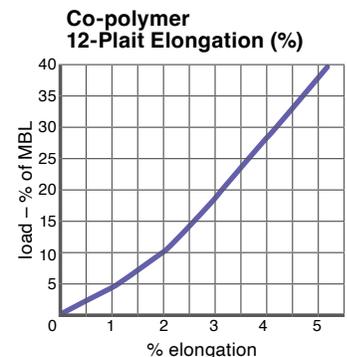
| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 5/8 | 16 | 2 | 8.6 | 12.8 | 9,500 | 4.3 | 10,600 | 4.8 |
| 3/4 | 18 | 2-1/4 | 10.8 | 16.1 | 11,900 | 5.4 | 13,200 | 6.0 |
| 7/8 | 22 | 2-3/4 | 14 | 20.8 | 15,400 | 7.0 | 17,100 | 7.8 |
| 1 | 24 | 3 | 20.3 | 30.2 | 22,300 | 10.1 | 24,800 | 11.3 |
| 1-1/8 | 28 | 3-1/2 | 24.5 | 36.5 | 26,900 | 12.2 | 29,900 | 13.6 |
| 1-1/4 | 30 | 3-3/4 | 27 | 40.2 | 29,700 | 13.5 | 33,000 | 15.0 |
| 1-5/16 | 32 | 4 | 31.9 | 47.5 | 34,000 | 15.4 | 38,000 | 17.2 |
| 1-1/2 | 36 | 4-1/2 | 39.2 | 58.3 | 41,000 | 18.6 | 46,000 | 20.9 |
| 1-5/8 | 40 | 5 | 50.4 | 75 | 54,000 | 24.5 | 60,000 | 27.2 |
| 1-3/4 | 44 | 5-1/2 | 58.8 | 87.5 | 62,000 | 28.1 | 69,000 | 31.3 |
| 2 | 48 | 6 | 71.4 | 106.3 | 76,000 | 34.5 | 84,000 | 38.1 |
| 2-1/8 | 52 | 6-1/2 | 84 | 125 | 90,000 | 40.8 | 100,000 | 45.4 |
| 2-1/4 | 56 | 7 | 96.6 | 143.8 | 103,000 | 46.7 | 114,000 | 51.7 |
| 2-1/2 | 60 | 7-1/2 | 109 | 162.2 | 115,000 | 52.2 | 128,000 | 58.1 |
| 2-5/8 | 64 | 8 | 126 | 187.5 | 132,000 | 59.9 | 147,000 | 66.7 |
| 2-3/4 | 68 | 8-1/2 | 132 | 196.4 | 141,000 | 64.0 | 157,000 | 71.2 |
| 3 | 72 | 9 | 160 | 238.1 | 170,000 | 77.1 | 189,000 | 85.8 |
| 3-1/4 | 80 | 10 | 193 | 287.2 | 210,000 | 95.3 | 233,000 | 105.7 |
| 3-5/8 | 88 | 11 | 238 | 354.2 | 250,000 | 113.4 | 278,000 | 126.1 |
| 4 | 96 | 12 | 280 | 416.7 | 295,000 | 133.8 | 328,000 | 148.8 |

Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.94* |
| Melting point | 279°F (137°C) |
| Critical temp. | 140°F (60°C) |
| Coefficient of friction | 0.16–0.018* |
| Elongation at break | 20–25% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | very good |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber



PSR 2000 12 Strand

PSR 2000 12 Strand offers a high strength to weight ratio and is an excellent replacement for heavier polyester lines. It's unique blend of polyester and olefin co-polymer in each strand makes for a highly efficient construction. PSR 2000 12 Strand is torque balanced, has excellent wear resistance, and is one of the quickest ropes to splice.

PSR 2000 12 Strand is an excellent choice as mooring, tie-up and pendant lines, tug assist lines and for general purpose heavy marine applications.

Features & Benefits

- Low stretch
- High strength
- Torque free
- Easy splicing
- Soft hand
- Excellent abrasion resistance
- Lighter than 100% polyester ropes

Applications

- Vessel mooring lines
- Tug assist lines
- General purpose heavy marine applications

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1 | 24 | 3 | 30 | 44.6 | 25,000 | 11.3 | 27,800 | 12.6 |
| 1-1/8 | 28 | 3-1/2 | 35 | 52.1 | 32,000 | 14.5 | 35,600 | 16.2 |
| 1-1/4 | 30 | 3-3/4 | 39 | 58 | 38,000 | 17.2 | 42,200 | 19.1 |
| 1-5/16 | 32 | 4 | 47 | 69.9 | 43,000 | 19.5 | 47,800 | 21.7 |
| 1-1/2 | 36 | 4-1/2 | 60 | 89.3 | 54,000 | 24.5 | 60,000 | 27.2 |
| 1-5/8 | 40 | 5 | 72 | 107.2 | 65,000 | 29.5 | 72,200 | 32.8 |
| 1-3/4 | 44 | 5-1/2 | 84 | 125 | 75,000 | 34.0 | 83,300 | 37.8 |
| 2 | 48 | 6 | 102 | 151.8 | 92,000 | 41.7 | 102,200 | 46.4 |
| 2-1/8 | 52 | 6-1/2 | 120 | 178.6 | 108,000 | 49.0 | 120,000 | 54.4 |
| 2-1/4 | 56 | 7 | 136 | 202.4 | 125,000 | 56.7 | 138,900 | 63.0 |
| 2-1/2 | 60 | 7-1/2 | 160 | 238.1 | 147,000 | 66.7 | 163,300 | 74.1 |
| 2-5/8 | 64 | 8 | 176 | 261.9 | 158,000 | 71.7 | 175,600 | 79.7 |
| 2-3/4 | 68 | 8-1/2 | 199 | 296.2 | 184,000 | 83.5 | 204,400 | 92.7 |
| 3 | 72 | 9 | 231 | 343.8 | 207,000 | 93.9 | 230,000 | 104.4 |
| 3-1/4 | 80 | 10 | 286 | 425.6 | 252,000 | 114.3 | 280,000 | 127.0 |
| 3-5/8 | 88 | 11 | 342 | 509 | 306,000 | 138.8 | 340,000 | 154.3 |
| 4 | 96 | 12 | 413 | 614.6 | 369,000 | 167.4 | 410,000 | 186.0 |

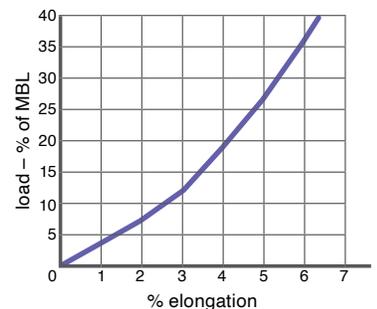
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 5%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.22* |
| Melting point | 279°F (137°C) |
| Critical temp. | 140°F (60°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 15–20% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

PSR 2000 12 Strand Elongation (%)



Polyester 12 Plait

Polyester 12 Plait provides high strength, low stretch and excellent abrasion resistance in a unique single braid construction. Polyester 12 Plait is easily spliced using a standard tuck splice and is 30% stronger than three strand or 8 plait polyester. Its torque free braided construction provides easy handling and prevents kinks and hockles.

Polyester 12 Plait is delivered standard with an overlay marine finish and is available on special order with a spliceable polyurethane finish in clear or any of six colors.

Features & Benefits

- Low stretch
- High strength
- Soft hand
- Torque free
- Easy splicing
- Meets MIL-R-24750

Applications

- Tug working lines
- Mooring pendants
- Shock lines

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 5/8 | 16 | 2 | 14.1 | 21 | 12,100 | 5.5 | 13,400 | 6.1 |
| 3/4 | 18 | 2-1/4 | 18.7 | 27.8 | 15,800 | 7.2 | 17,600 | 8.0 |
| 7/8 | 22 | 2-3/4 | 28.2 | 42 | 24,200 | 11.0 | 26,900 | 12.2 |
| 1 | 24 | 3 | 35.1 | 52.2 | 27,500 | 12.5 | 30,600 | 13.9 |
| 1-1/8 | 28 | 3-1/2 | 41.2 | 61.3 | 35,500 | 16.1 | 39,400 | 17.9 |
| 1-1/4 | 30 | 3-3/4 | 45.9 | 68.3 | 42,100 | 19.1 | 46,800 | 21.2 |
| 1-5/16 | 32 | 4 | 55 | 81.9 | 48,200 | 21.9 | 53,600 | 24.3 |
| 1-1/2 | 36 | 4-1/2 | 71.1 | 105.8 | 59,600 | 27.0 | 66,200 | 30.0 |
| 1-5/8 | 40 | 5 | 84.8 | 126.2 | 72,200 | 32.8 | 80,200 | 36.4 |
| 1-3/4 | 44 | 5-1/2 | 98.6 | 147.7 | 84,400 | 38.3 | 93,800 | 42.6 |
| 2 | 48 | 6 | 120 | 178.6 | 101,000 | 45.8 | 112,200 | 50.9 |
| 2-1/8 | 52 | 6-1/2 | 141 | 209.8 | 119,000 | 54.0 | 132,200 | 60.0 |
| 2-1/4 | 56 | 7 | 160 | 238.1 | 137,000 | 62.2 | 152,200 | 69.1 |
| 2-1/2 | 60 | 7-1/2 | 189 | 281.3 | 163,000 | 74.0 | 181,100 | 82.2 |
| 2-5/8 | 64 | 8 | 208 | 309.5 | 179,000 | 81.2 | 198,900 | 90.2 |
| 2-3/4 | 68 | 8-1/2 | 234 | 348.2 | 202,000 | 91.7 | 224,400 | 101.8 |
| 3 | 72 | 9 | 273 | 406.3 | 233,000 | 105.7 | 258,900 | 117.5 |
| 3-1/4 | 80 | 10 | 338 | 503 | 282,000 | 127.9 | 313,300 | 142.2 |
| 3-1/2 | 84 | 10.5 | 394 | 587 | 322,000 | 146.0 | 357,800 | 162.0 |
| 3-5/8 | 88 | 11 | 402 | 598.3 | 340,000 | 154.3 | 377,800 | 171.4 |
| 4 | 96 | 12 | 486 | 723.3 | 409,000 | 185.6 | 454,400 | 206.2 |
| 4-1/8 | 104 | 12.5 | 547 | 815 | 444,000 | 201.0 | 493,300 | 224.0 |
| 4-1/4 | 108 | 13 | 582 | 867 | 467,000 | 212.0 | 518,900 | 235.0 |

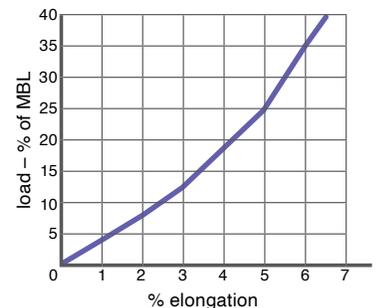
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 5%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.38* |
| Melting point | 482°F (250°C) |
| Critical temp. | 350°F (177°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 15–20% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Polyester 12 Plait Elongation (%)



Nylon 12 Plait

Nylon 12 Plait provides high strength, high elongation and excellent abrasion resistance in a single braid construction. Nylon 12 Plait is easily spliced using a standard tuck splice and is 25% stronger than three strand or 8 plait nylon. Its torque free braided construction provides easy handling and prevents kinks and hockles.

Nylon 12 Plait is available standard with an overlay marine finish.

Features & Benefits

- High stretch
- High strength
- Excellent shock absorption
- Soft hand
- Torque free
- Easy splicing

Applications

- Mooring lines
- Anchor lines
- KERR towing Lines
- Tug hawsers and stretchers
- Commercial fishing nets
- Security barriers

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 5/8 | 16 | 2 | 11 | 16.4 | 13,900 | 6.3 | 15,400 | 7.0 |
| 3/4 | 18 | 2-1/4 | 15 | 22.3 | 17,900 | 8.1 | 19,900 | 9.0 |
| 7/8 | 22 | 2-3/4 | 22.6 | 33.6 | 26,200 | 11.9 | 29,100 | 13.2 |
| 1 | 24 | 3 | 26.3 | 39.1 | 30,100 | 13.7 | 33,400 | 15.2 |
| 1-1/8 | 28 | 3-1/2 | 33.8 | 50.3 | 39,400 | 17.9 | 43,800 | 19.9 |
| 1-1/4 | 30 | 3-3/4 | 39.5 | 58.8 | 45,400 | 20.6 | 50,400 | 22.9 |
| 1-5/16 | 32 | 4 | 45.1 | 67.1 | 51,200 | 23.2 | 56,900 | 25.8 |
| 1-1/2 | 36 | 4-1/2 | 56.4 | 83.9 | 64,800 | 29.4 | 72,000 | 32.7 |
| 1-5/8 | 40 | 5 | 67.7 | 100.8 | 76,300 | 34.6 | 84,800 | 38.5 |
| 1-3/4 | 44 | 5-1/2 | 79 | 117.6 | 92,100 | 41.8 | 102,300 | 46.4 |
| 2 | 48 | 6 | 95.9 | 142.7 | 106,500 | 48.3 | 118,300 | 53.7 |
| 2-1/8 | 52 | 6-1/2 | 113 | 168.2 | 128,000 | 58.1 | 142,200 | 64.5 |
| 2-1/4 | 56 | 7 | 135 | 200.9 | 152,000 | 69.0 | 168,900 | 76.6 |
| 2-1/2 | 60 | 7-1/2 | 152 | 226.2 | 170,000 | 77.1 | 188,900 | 85.7 |
| 2-5/8 | 64 | 8 | 169 | 251.5 | 189,000 | 85.8 | 210,000 | 95.3 |
| 2-3/4 | 68 | 8-1/2 | 192 | 285.7 | 214,000 | 97.1 | 237,800 | 107.9 |
| 3 | 72 | 9 | 222 | 330.4 | 245,000 | 111.2 | 272,200 | 123.5 |
| 3-1/4 | 80 | 10 | 271 | 403.3 | 288,000 | 130.7 | 320,000 | 145.2 |
| 3-5/8 | 88 | 11 | 321 | 477.7 | 338,000 | 153.4 | 375,600 | 170.4 |
| 4 | 96 | 12 | 389 | 578.9 | 418,000 | 189.7 | 464,400 | 210.7 |

Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. With extended immersion in water, all nylon ropes will lose up to 10% of their strength. Weights are calculated at linear density under standard preload (200d²) plus 7%. See reverse side for application and safety information.

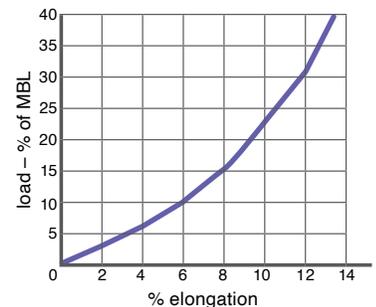
Please note that the Minimum Tensile Strengths of Black Nylon 12 Plait products are normally 15% below published specifications. Type approval of Nylon 12 Plait does not apply to Black Nylon 12 Plait.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.14* |
| Melting point | 414°F (212°C) |
| Critical temp. | 300°F (149°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 30–35% |
| Fiber water absorption | 3–5% |
| UV resistance | good |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Nylon 12 Plait Elongation (%)





D/Z Composite Double Braid

D/Z Composite is a double braided rope with the inner core made of UHMWPE and the outer sleeve of polyester. D/Z Composite has very low elongation, high strength and the feel and handling of polyester double braid. It is identified with four external black markers.

D/Z Composite is delivered standard with an overlay marine finish. Special-order D/Z Composite is available with a spliceable polyurethane finish in clear or any of six colors.

Features & Benefits

- High strength
- Low stretch
- Soft hand
- Torque free
- Easy splicing

Applications

- Winch lines
- Crane lines
- Theatrical rigging
- Utility pulling lines

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 3/16 | 5 | 9/16 | 1.3 | 1.9 | 3,400 | 1.5 | 3,800 | 1.7 |
| 1/4 | 6 | 3/4 | 2.1 | 3.1 | 5,800 | 2.6 | 6,400 | 2.9 |
| 5/16 | 8 | 15/16 | 4.0 | 5.9 | 10,700 | 4.9 | 11,900 | 5.4 |
| 3/8 | 9 | 1-1/8 | 4.4 | 6.5 | 12,300 | 5.6 | 13,700 | 6.2 |
| 7/16 | 11 | 1-1/4 | 6.0 | 9.0 | 17,000 | 7.7 | 18,900 | 8.6 |
| 1/2 | 12 | 1-1/2 | 8.1 | 12.0 | 20,900 | 9.5 | 23,200 | 10.5 |
| 9/16 | 14 | 1-3/4 | 10.3 | 15.4 | 27,100 | 12.3 | 30,100 | 13.6 |
| 5/8 | 16 | 2 | 12.3 | 18.3 | 37,100 | 16.8 | 41,200 | 18.7 |
| 3/4 | 18 | 2-1/4 | 15.5 | 23.1 | 43,100 | 19.5 | 47,800 | 21.7 |
| 7/8 | 22 | 2-3/4 | 23.6 | 35.1 | 64,000 | 29.0 | 71,000 | 32.2 |
| 1 | 24 | 3 | 29.4 | 43.7 | 76,800 | 34.8 | 85,200 | 38.7 |
| 1-1/8 | 28 | 3-1/2 | 33.8 | 50.3 | 88,400 | 40.1 | 98,100 | 44.5 |
| 1-1/4 | 30 | 3-3/4 | 40.9 | 60.8 | 104,900 | 47.6 | 116,400 | 52.8 |
| 1-5/16 | 32 | 4 | 48.3 | 71.9 | 116,800 | 53.0 | 129,600 | 58.8 |
| 1-1/2 | 36 | 4-1/2 | 59.9 | 89.1 | 138,500 | 62.8 | 153,700 | 69.7 |
| 1-5/8 | 40 | 5 | 69.1 | 102.8 | 156,400 | 70.9 | 173,600 | 78.7 |
| 1-3/4 | 44 | 5-1/2 | 83.8 | 124.8 | 185,100 | 83.9 | 205,500 | 93.2 |
| 2 | 48 | 6 | 102.9 | 153.1 | 223,900 | 101.5 | 248,500 | 112.7 |

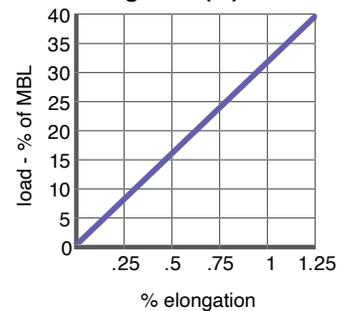
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.13* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

D/Z Composite Double Braid Elongation (%)





D/V Composite Double Braid

D/V Composite is a double braided rope with the inner braided core made of Vectran® high modulus fiber and the outer sleeve of filament polyester. Available in white or black, the resultant finished braid has very low elongation and creep, high strength and the feel and handling of a polyester double braid.

D/V Composite double braid with a black polyester cover is very popular in the theatrical rigging industry and provides excellent service as a winch line.

Standard D/V Composite is delivered with a clear-color overlay marine finish and is available on special order with a splice-able polyurethane finish in black or other colors.

Features & Benefits

- High strength
- Low stretch and creep
- Soft hand
- Torque-balanced construction
- Easy to splice –
Class II Core-Dependent Eye Splice

Applications

- Theatrical winch and rigging lines
- Utility winch lines
- Utility pulling lines
- Crane lines
- Vessel mooring lines
- Lifting slings

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 3/16 | 5 | 9/16 | 0.002 | 0.0239 | 3,600 | 1.6 | 4,000 | 1.8 |
| 1/4 | 6 | 3/4 | 0.025 | 0.0373 | 4,900 | 2.2 | 5,400 | 2.5 |
| 5/16 | 8 | 15/16 | 0.040 | 0.0597 | 9,200 | 4.2 | 10,200 | 4.6 |
| 3/8 | 9 | 1-1/8 | 0.077 | 0.1149 | 13,400 | 6.1 | 14,900 | 6.8 |
| 1/2 | 12 | 1-1/2 | 0.100 | 0.1492 | 16,200 | 7.4 | 18,000 | 8.2 |
| 3/4 | 19 | 2-1/4 | 0.148 | 0.2208 | 27,400 | 13 | 30,100 | 14.0 |

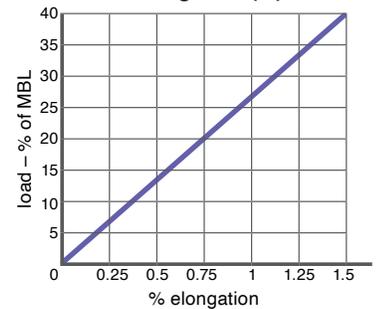
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.39* |
| Melting point | 482°F (250°C) |
| Critical temp. | 350°F (177°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

D/V Composite Double Braid Elongation (%)



G/T Composite Double Braid

G/T Composite ropes provide high strength, low stretch and superior abrasion resistance in a firm round jacketed construction. The ropes are constructed with a braided Plasma[®] core. This core is encased in a tightly braided jacket of a new generation HMPE fiber that offers the highest abrasion resistance and durability.*

G/T Composite ropes can be used in mooring applications where a very high strength, firm and round torque free rope is desired. G/T Composite can also be used in commercial fishing as wire rope replacement and helicopter longlines. These ropes are available with a polyurethane finish in clear or any of six colors, and are designed to withstand drum compression on mooring winches.

Features & Benefits

- Highest strength
- Lowest stretch
- Low creep
- Firm hand
- Torque free

Applications

- Commercial fishing lines
- Helicopter longlines
- Vessel mooring lines

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|--|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| ABS and DNV Type Approved Sizes | | | | | | | | |
| 3/4 | 18 | 2-1/4 | 16.3 | 24.3 | 53,000 | 24.0 | 58,900 | 26.7 |
| 7/8 | 22 | 2-3/4 | 20.4 | 30.4 | 70,900 | 32.2 | 78,600 | 35.7 |
| 1 | 24 | 3 | 24.5 | 36.5 | 75,600 | 34.3 | 83,900 | 38.1 |
| 1-1/8 | 28 | 3-1/2 | 33.1 | 49.3 | 95,000 | 43.1 | 105,500 | 47.9 |
| 1-1/4 | 30 | 3-3/4 | 36.0 | 53.6 | 113,000 | 51.3 | 125,600 | 57.0 |
| 1-5/16 | 32 | 4 | 49.1 | 73.1 | 157,900 | 71.6 | 175,400 | 79.6 |
| 1-1/2 | 36 | 4-1/2 | 55.7 | 82.9 | 183,400 | 83.2 | 203,800 | 92.5 |
| 1-5/8 | 40 | 5 | 64.2 | 95.5 | 201,000 | 91.2 | 223,200 | 101.3 |
| 1-3/4 | 44 | 5-1/2 | 79.5 | 118.3 | 228,800 | 103.8 | 253,900 | 115.2 |
| 2 | 48 | 6 | 88.9 | 132.3 | 242,400 | 110.0 | 269,300 | 122.2 |

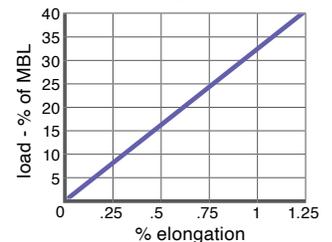
Tensile Strengths are determined in accordance with Cordage Institute CI-1500, Test Methods for Fiber Rope and ISO 2307. Published Minimum Tensile Strength (MTS) assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published are nominal and reflect rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|----------------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 3%–4% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

G/T Composite Double Braid Elongation (%)



* GT Composite ropes can also be designed with materials other than HMPE for jacketing depending on application. Linear density & external fiber properties will change depending on jacketing material but the strength will remain the same on a per size basis. Please contact Cortland for further information.

GTM Composite Double Braid

GTM Composite Double Braid ropes have very high strength, are firm with a round profile, and have extremely low stretch. These durable, torque-free synthetic ropes are excellent for replacing steel wire rope in winch applications and are designed to withstand drum compression. GTM ropes can be used in multiple applications such as vessel mooring lines for Articulated Tug & Barges (ATB's), Gilson winch lines used in commercial fishing, as well as helicopter long lines.

GTM Double Braid ropes are constructed with a braided Plasma[®] HMPE fiber core. This core is encased in a tightly braided jacket of a new generation HMPE fiber that offers the highest abrasion and cut resistance durability.* The final construction of core and cover work in balance to provide excellent service life.

GTM braided rope standard color is orange, but is available with a polyurethane finish in clear or any of five additional colors; black, yellow, red, blue or green.

Features & Benefits

- Highest strength
- Lowest stretch
- Low creep
- Firm hand
- Torque free

Applications

- Vessel mooring lines
- Winch lines
- Tug mainlines
- Tug pendants
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging

Type approved product



| Nominal Diameter | | Size (circ. in) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1 | 24 | 3 | 25.3 | 37.7 | 97,000 | 44 | 107,700 | 48.8 |
| 1-1/8 | 28 | 3-1/2 | 30.9 | 46.0 | 120,000 | 54.4 | 133,200 | 60.4 |
| 1-1/4 | 30 | 3-3/4 | 38.7 | 57.6 | 145,000 | 65.8 | 161,000 | 73.0 |
| 1-5/16 | 32 | 4 | 43.2 | 64.3 | 159,000 | 72.1 | 176,500 | 80.0 |
| 1-3/8 | 34 | 4-1/8 | 47.1 | 70.1 | 175,000 | 79.4 | 194,300 | 88.1 |
| 1-1/2 | 36 | 4-1/2 | 58.0 | 86.3 | 202,000 | 91.6 | 224,300 | 101.7 |
| 1-5/8 | 40 | 5 | 65.3 | 97.2 | 228,000 | 103 | 253,100 | 114.3 |
| 1-3/4 | 44 | 5-1/2 | 75.3 | 112.1 | 250,000 | 113 | 277,500 | 125.4 |
| 1-7/8 | 46 | 5-5/8 | 87.3 | 129.8 | 297,000 | 135 | 329,700 | 149.9 |
| 2 | 48 | 6 | 98.5 | 146.5 | 332,000 | 151 | 368,600 | 167.6 |
| 2-1/8 | 52 | 6-1/2 | 110.5 | 164.4 | 360,000 | 163 | 399,600 | 180.9 |
| 2-1/4 | 56 | 7 | 128.0 | 190.5 | 408,000 | 185 | 452,900 | 205.4 |

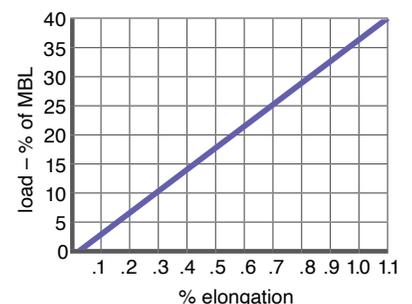
Tensile strengths are determined in accordance with Cordage Institute CI-1500, Test Methods for Fiber Rope and ISO 2307. Published Minimum Tensile Strength (MTS) assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d²) plus 4%. Diameter and circumference size published are nominal and reflect rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 0.98* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15 |
| Elongation at break | 2.5–3.5% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | superior |
| Dry abrasion | superior |

* value based on data supplied by the fiber manufacturer for new, dry fiber

GTM Composite Double Braid Elongation (%)



* GTM Composite ropes can also be designed with materials other than HMPE for jacketing depending on application. Linear density & external fiber properties will change depending on jacketing material but the strength will remain the same on a per size basis. Please contact Cortland for further information.

DTM Composite Double Braid

DTM Composite Double Braid ropes have very high strength, are firm with a round profile, and have extremely low stretch. These durable, torque free synthetic ropes are excellent for replacing steel wire rope in winch applications and are designed to withstand drum compression. DTM ropes can be used in multiple applications such as vessel mooring lines for Articulated Tug & Barges (ATB's), Gilson winch lines used in commercial fishing, as well as helicopter long lines.

DTM Double Braid ropes are constructed with a braided Plasma[®] HMPE fiber core. This core is encased in a tightly braided jacket of a Polyester fiber that offers high abrasion and durability. The final construction of core and cover work in balance to provide excellent service life.

Features & Benefits

- High strength
- Low stretch
- Soft hand
- Torque-free
- Easy splicing

Applications

- Vessel mooring lines
- Winch lines
- Tug mainline
- Tug pendant
- Recreational vehicle winch lines
- Utility winch and pulling lines
- Theatrical rigging

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1 | 24 | 3 | 28.1 | 41.9 | 97,000 | 44 | 107,700 | 48.8 |
| 1-1/8 | 28 | 3-1/2 | 36.2 | 53.8 | 120,000 | 54.4 | 133,200 | 60.4 |
| 1-1/4 | 30 | 3-3/4 | 44.1 | 65.6 | 145,000 | 65.8 | 161,000 | 73.0 |
| 1-5/16 | 32 | 4 | 48.6 | 72.4 | 159,000 | 72.1 | 176,500 | 80.0 |
| 1-3/8 | 34 | 4-1/8 | 52.8 | 78.5 | 175,000 | 79.4 | 194,300 | 88.1 |
| 1-1/2 | 36 | 4-1/2 | 65.1 | 96.9 | 202,000 | 91.6 | 224,300 | 101.7 |
| 1-5/8 | 40 | 5 | 75.5 | 112.3 | 228,000 | 103 | 253,100 | 114.3 |
| 1-3/4 | 44 | 5-1/2 | 85.4 | 127.1 | 250,000 | 113 | 277,500 | 125.4 |
| 1-7/8 | 46 | 5-5/8 | 96.5 | 143.5 | 297,000 | 135 | 329,700 | 149.9 |
| 2 | 48 | 6 | 109.9 | 163.6 | 332,000 | 151 | 368,600 | 167.6 |
| 2-1/8 | 52 | 6-1/2 | 123.2 | 183.4 | 360,000 | 163 | 399,600 | 180.9 |
| 2-1/4 | 56 | 7 | 142.0 | 211.3 | 408,000 | 185 | 452,900 | 205.4 |

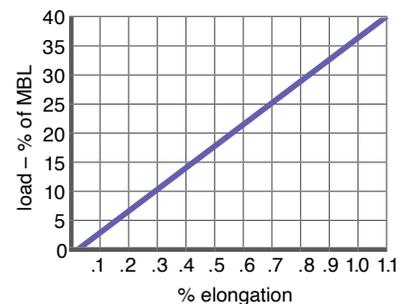
Tensile strengths are determined in accordance with Cordage Institute CI-1500, Test Methods for Fiber Rope and ISO 2307. Published Minimum Tensile Strength (MTS) assumes spliced eye terminations at each end of the rope. Weights actually calculated at linear density under stated preload (200d2) plus 4%. Diameter and circumference size published are nominal and reflect rope size after loading (10 cycles) to 50% of MTS. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.08* |
| Melting point | 284°F (140°C) |
| Critical temp. | 150°F (65°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 4%–5% |
| Fiber water absorption | 0%–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

DTM Composite Double Braid Elongation (%)



* DTM Composite ropes can also be designed with materials other than HMPE for jacketing depending on application. Linear density & external fiber properties will change depending on jacketing material but the strength will remain the same on a per size basis. Please contact Cortland for further information.

N/P Composite Double Braid

N/P Composite is a double braided rope with the inner core made of multifilament polypropylene and the outer sleeve of nylon.

N/P Composite combines the excellent sunlight and abrasion resistance of nylon with the flotation of polypropylene. It has a standard specific gravity of 1.01 and is available on special order with a specific gravity of 0.99.

N/P Composite Double Braid is delivered standard with an overlay marine finish.

Features & Benefits

- Moderate stretch
- High strength
- Soft hand
- Torque free
- Floats in sea water

Applications

- Vessel mooring lines (floating)
- Buoy lines
- Anchor lines

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|-----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 5/8 | 16 | 2 | 10.5 | 15.6 | 9,800 | 4.4 | 10,900 | 4.9 |
| 3/4 | 18 | 2-1/4 | 13.8 | 20.5 | 12,900 | 5.9 | 14,300 | 6.5 |
| 7/8 | 22 | 2-3/4 | 19.4 | 28.9 | 18,100 | 8.2 | 20,100 | 9.1 |
| 1 | 24 | 3 | 23.6 | 35.1 | 21,800 | 9.9 | 24,200 | 11.0 |
| 1-1/8 | 28 | 3-1/2 | 31.9 | 47.5 | 29,400 | 13.3 | 32,700 | 14.8 |
| 1-1/4 | 30 | 3-3/4 | 37.9 | 56.4 | 34,700 | 15.7 | 38,600 | 17.5 |
| 1-5/16 | 32 | 4 | 42.8 | 63.7 | 39,000 | 17.7 | 43,000 | 19.5 |
| 1-1/2 | 36 | 4-1/2 | 53.6 | 79.8 | 48,000 | 21.8 | 53,000 | 24.0 |
| 1-5/8 | 40 | 5 | 63.8 | 94.9 | 57,800 | 26.2 | 64,000 | 29.0 |
| 1-3/4 | 44 | 5-1/2 | 80.6 | 119.9 | 72,000 | 32.7 | 80,000 | 36.3 |
| 2 | 48 | 6 | 92.6 | 137.8 | 83,200 | 37.7 | 92,000 | 41.7 |
| 2-1/8 | 52 | 6-1/2 | 111 | 165.2 | 98,400 | 44.6 | 109,000 | 49.5 |
| 2-1/4 | 56 | 7 | 129 | 192 | 113,000 | 51.3 | 126,000 | 57.2 |
| 2-1/2 | 60 | 7-1/2 | 145 | 215.8 | 129,000 | 58.5 | 143,000 | 64.9 |
| 2-5/8 | 64 | 8 | 169 | 251 | 146,000 | 66.2 | 162,000 | 73.5 |
| 2-3/4 | 68 | 8-1/2 | 186 | 276.8 | 163,000 | 74.0 | 181,000 | 82.1 |
| 3 | 72 | 9 | 210 | 312.5 | 182,000 | 82.6 | 202,000 | 91.7 |
| 3-1/4 | 80 | 10 | 259 | 385.4 | 221,000 | 100.3 | 246,000 | 111.6 |
| 3-5/8 | 88 | 11 | 314 | 467.3 | 263,000 | 119.3 | 292,000 | 132.5 |
| 4 | 96 | 12 | 371 | 552.1 | 310,000 | 140.7 | 344,000 | 156.1 |
| 4-1/4 | 104 | 13 | 443 | 659.3 | 363,000 | 164.7 | 403,000 | 182.8 |

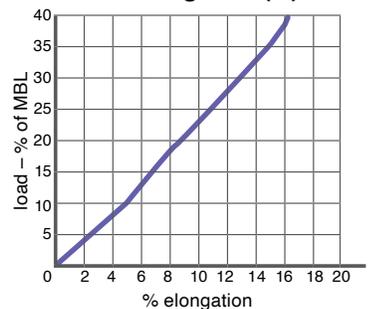
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.01* |
| Melting point | 284°F (140°C) |
| Critical temp. | 200°F (93°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 30–35% |
| Fiber water absorption | 3–4% |
| UV resistance | good |
| Wet abrasion | good |
| Dry abrasion | good |

* value based on data supplied by the fiber manufacturer for new, dry fiber

N/P Composite Double Braid Elongation (%)



Nylon Double Braid

Nylon Double Braid is the preferred choice for applications requiring high strength with excellent shock absorbing properties. Double Braid has good resistance to abrasion, sunlight and chemicals. Due to its high elongation, nylon is almost always used in applications involving shock loading such as anchor lines and mooring lines.

Nylon Double Braid is delivered standard with an overlay marine finish.

Features & Benefits

- High stretch
- High strength
- Excellent shock absorption
- Soft hand
- Torque free
- Meets MIL-DTL-24050

Applications

- Anchor lines
- Mooring lines
- Shock absorbers
- Pendants
- Towlines
- Towed array stretchers

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1/4 | 6 | 3/4 | 1.7 | 2.5 | 1,900 | 0.9 | 2,100 | 1.0 |
| 5/16 | 8 | 1 | 2.6 | 3.9 | 2,900 | 1.3 | 3,200 | 1.5 |
| 3/8 | 9 | 1-1/8 | 3.7 | 5.5 | 4,200 | 1.9 | 4,700 | 2.1 |
| 7/16 | 11 | 1-1/4 | 5.1 | 7.6 | 5,700 | 2.6 | 6,300 | 2.9 |
| 1/2 | 12 | 1-1/2 | 6.6 | 9.8 | 7,400 | 3.4 | 8,200 | 3.7 |
| 9/16 | 14 | 1-3/4 | 9 | 13.4 | 10,200 | 4.6 | 11,300 | 5.1 |

ABS and DNV Type Approved Sizes

| | | | | | | | | |
|--------|-----|-------|-------|-------|---------|-------|---------|-------|
| 5/8 | 16 | 2 | 11.6 | 17.2 | 14,800 | 6.7 | 16,400 | 7.4 |
| 3/4 | 18 | 2-1/4 | 14.7 | 21.9 | 19,000 | 8.6 | 21,100 | 9.6 |
| 7/8 | 22 | 2-3/4 | 21.8 | 32.4 | 28,300 | 12.8 | 31,400 | 14.2 |
| 1 | 24 | 3 | 26 | 38.7 | 33,500 | 15.2 | 37,200 | 16.9 |
| 1-1/16 | 26 | 3-1/4 | 31 | 46.1 | 39,000 | 17.7 | 43,300 | 19.6 |
| 1-1/8 | 28 | 3-1/2 | 35.4 | 52.7 | 44,900 | 20.4 | 49,900 | 22.6 |
| 1-1/4 | 30 | 3-3/4 | 40.7 | 60.6 | 52,300 | 23.7 | 58,100 | 26.4 |
| 1-5/16 | 32 | 4 | 46.3 | 68.9 | 58,800 | 26.7 | 65,300 | 29.6 |
| 1-1/2 | 36 | 4-1/2 | 58.4 | 86.9 | 74,000 | 33.6 | 82,200 | 37.3 |
| 1-5/8 | 40 | 5 | 72.3 | 107.6 | 92,400 | 41.9 | 102,700 | 46.6 |
| 1-3/4 | 44 | 5-1/2 | 87.7 | 130.5 | 110,900 | 50.3 | 123,200 | 55.9 |
| 2 | 48 | 6 | 103.9 | 154.6 | 131,500 | 59.7 | 146,100 | 66.3 |
| 2-1/8 | 52 | 6-1/2 | 122 | 181.6 | 152,800 | 69.3 | 169,800 | 77.0 |
| 2-1/4 | 56 | 7 | 141.2 | 210.1 | 181,000 | 82.1 | 201,100 | 91.2 |
| 2-1/2 | 60 | 7-1/2 | 162.6 | 242 | 201,000 | 91.2 | 223,300 | 101.3 |
| 2-5/8 | 64 | 8 | 185.1 | 275.5 | 222,000 | 100.7 | 246,700 | 111.9 |
| 2-3/4 | 68 | 8-1/2 | 201.2 | 299.4 | 248,000 | 112.5 | 275,600 | 125.0 |
| 3 | 72 | 9 | 234.3 | 348.7 | 277,000 | 125.7 | 307,800 | 139.7 |
| 3-1/4 | 80 | 10 | 288.9 | 430 | 341,000 | 154.7 | 378,900 | 171.9 |
| 3-5/8 | 88 | 11 | 349.9 | 520.7 | 409,000 | 185.6 | 454,400 | 206.2 |
| 4 | 96 | 12 | 416.2 | 619.4 | 475,000 | 215.5 | 527,800 | 239.5 |
| 4-1/4 | 104 | 13 | 481.5 | 716.6 | 549,000 | 249.1 | 610,000 | 276.8 |

Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

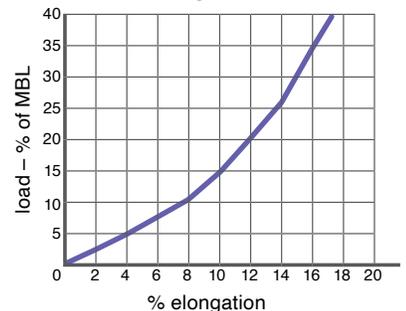
Please note that the Minimum Tensile Strengths of Black Nylon Double Braid products are normally 10% below published specifications. Type Approval of Nylon Double Braid does not apply to Black Nylon Double Braid.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.14* |
| Melting point | 414°F (212°C) |
| Critical temp. | 300°F (149°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 30–35% |
| Fiber water absorption | 3–4% |
| UV resistance | good |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Nylon Double Braid Elongation (%)





Polyester Double Braid

Polyester Double Braid provides an excellent combination of high strength, low stretch, excellent weathering and easy handling. Of all the popular fibers polyester has the best weathering characteristics and the best wet abrasion resistance. Polyester Double Braid is identified with one external black marker.

Polyester Double Braid is delivered standard with an overlay marine finish and is available on special order with a spliceable polyurethane finish in clear or any of six colors.

Features & Benefits

- Low stretch
- High strength
- Soft hand
- Torque free
- Excellent wet strength
- Meets MIL-DTL-24677

Applications

- Winch lines
- Utility pulling lines
- Towing lines
- Offshore anchor and lifting lines
- Arborist bull ropes
- Theatrical rigging lines

Type approved product



| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 1/4 | 6 | 3/4 | 2.4 | 3.6 | 2,400 | 1.1 | 2,700 | 1.2 |
| 5/16 | 8 | 1 | 3.6 | 5.4 | 3,600 | 1.6 | 4,000 | 1.8 |
| 3/8 | 9 | 1-1/8 | 4.8 | 7.1 | 4,800 | 2.2 | 5,300 | 2.4 |
| 7/16 | 11 | 1-1/4 | 6.3 | 9.4 | 6,300 | 2.9 | 7,000 | 3.2 |
| 1/2 | 12 | 1-1/2 | 8.6 | 12.8 | 8,400 | 3.8 | 9,300 | 4.2 |
| 9/16 | 14 | 1-3/4 | 11.1 | 16.5 | 10,750 | 4.9 | 11,900 | 5.4 |

ABS and DNV Type Approved Sizes

| | | | | | | | | |
|--------|-----|-------|-------|-------|---------|------|---------|------|
| 5/8 | 16 | 2 | 13.1 | 19.5 | 12,300 | 5.6 | 13,700 | 6.2 |
| 3/4 | 18 | 2-1/4 | 18.8 | 28.0 | 17,400 | 7.9 | 19,300 | 8.8 |
| 7/8 | 22 | 2-3/4 | 25.6 | 38.1 | 24,000 | 10.9 | 26,700 | 12.1 |
| 1 | 24 | 3 | 33.5 | 49.9 | 31,200 | 14.2 | 34,700 | 15.7 |
| 1-1/8 | 28 | 3-1/2 | 42.4 | 63.1 | 39,500 | 17.9 | 43,900 | 19.9 |
| 1-1/4 | 30 | 3-3/4 | 52.3 | 77.8 | 48,100 | 21.8 | 53,400 | 24.2 |
| 1-5/16 | 32 | 4 | 57.8 | 86.0 | 53,100 | 24.1 | 59,000 | 26.8 |
| 1-1/2 | 36 | 4-1/2 | 75.4 | 112.2 | 64,300 | 29.2 | 71,400 | 32.4 |
| 1-5/8 | 40 | 5 | 88.2 | 131.3 | 77,800 | 35.3 | 86,400 | 39.2 |
| 1-3/4 | 44 | 5-1/2 | 103.0 | 153.3 | 89,200 | 40.5 | 99,100 | 45 |
| 2 | 48 | 6 | 134.0 | 199.4 | 110,000 | 50 | 122,200 | 55 |
| 2-1/8 | 52 | 6-1/2 | 151.0 | 224.7 | 124,000 | 56 | 137,800 | 63 |
| 2-1/4 | 56 | 7 | 169.0 | 251.5 | 141,000 | 64 | 156,700 | 71 |
| 2-1/2 | 60 | 7-1/2 | 209.0 | 311.0 | 170,000 | 77 | 188,900 | 86 |
| 2-5/8 | 64 | 8 | 231.0 | 343.8 | 186,000 | 84 | 206,700 | 94 |
| 2-3/4 | 68 | 8-1/2 | 265.0 | 394.4 | 206,000 | 94 | 228,900 | 104 |
| 3 | 72 | 9 | 301.0 | 447.9 | 237,000 | 108 | 263,300 | 120 |
| 3-1/4 | 80 | 10 | 354.0 | 526.8 | 292,000 | 133 | 324,400 | 147 |
| 3-5/8 | 88 | 11 | 440.0 | 654.8 | 348,000 | 158 | 386,700 | 176 |
| 4 | 96 | 12 | 536.0 | 797.7 | 401,000 | 182 | 445,600 | 202 |
| 4-1/4 | 104 | 13 | 605.0 | 900.4 | 454,000 | 206 | 504,400 | 229 |

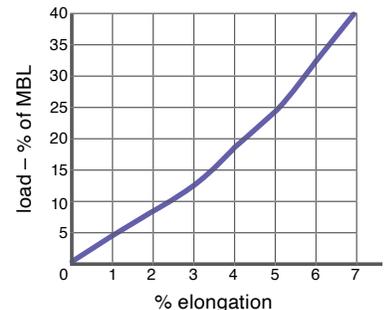
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d²) plus 4%. See reverse side for application and safety information.

Technical Information

| | |
|-------------------------|---------------|
| Specific gravity | 1.38* |
| Melting point | 482°F (250°C) |
| Critical temp. | 350°F (177°C) |
| Coefficient of friction | 0.12–0.15* |
| Elongation at break | 15–20% |
| Fiber water absorption | 0–1% |
| UV resistance | excellent |
| Wet abrasion | excellent |
| Dry abrasion | excellent |

* value based on data supplied by the fiber manufacturer for new, dry fiber

Polyester Double Braid Elongation (%)



Spun Polyester Double Braid

Spun Polyester is a double braided rope with the inner core made of polyester continuous filament and the outer sleeve of DuPont type 77 Dacron® to give a soft easy grip surface yet the strength of continuous filament polyester. Spun polyester is easily spliced and has excellent weathering characteristics and abrasion resistance.

Features & Benefits

- Low stretch
- High strength
- Very soft hand
- Torque free
- Excellent wet strength
- Meets MIL-R-24536

Applications

- Military applications per MIL-R-24536

| Nominal Diameter | | Size (circ in.) | Approximate Weight | | Minimum Tensile Strength Spliced Rope | | Minimum Tensile Strength ISO Unspliced Rope | |
|------------------|----|-----------------|--------------------|---------|---------------------------------------|-------------|---|-------------|
| inch | mm | | lbs/100ft | kg/100m | lbs | MT (tonnes) | lbs | MT (tonnes) |
| 5/8 | 16 | 2 | 13 | 19.3 | 10,200 | 4.6 | 11,300 | 5.1 |
| 3/4 | 18 | 2-1/4 | 16.2 | 24.1 | 12,700 | 5.8 | 14,100 | 6.4 |
| 7/8 | 22 | 2-3/4 | 24.3 | 36.2 | 17,700 | 8.0 | 19,700 | 8.9 |
| 1 | 24 | 3 | 29.3 | 43.6 | 20,300 | 9.2 | 22,600 | 10.3 |
| 1-1/8 | 28 | 3-1/2 | 40 | 59.5 | 27,000 | 12.3 | 30,000 | 13.6 |
| 1-1/4 | 30 | 3-3/4 | 45.8 | 68.2 | 30,200 | 13.7 | 33,600 | 15.2 |
| 1-5/16 | 32 | 4 | 52.4 | 78 | 33,900 | 15.4 | 37,700 | 17.1 |
| 1-1/2 | 36 | 4-1/2 | 65 | 96.7 | 45,300 | 20.6 | 50,300 | 22.8 |
| 1-5/8 | 40 | 5 | 81.5 | 121.3 | 50,400 | 22.9 | 56,000 | 25.4 |

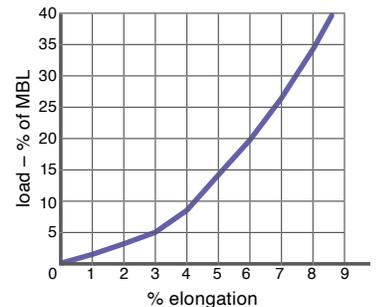
Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fibre Rope. Weights are calculated at linear density under standard preload (200d²) plus 6%. See reverse side for application and safety information.

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| | |
|-------------------------|---------------|
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Spun Polyester Double Braid Elongation (%)





Wear Protection

for extended service life of fiber ropes and slings

Cortland's high performance ropes are manufactured using some of the most cut and abrasion resistant fibers available in the world today. Many users benefit from the ability to inspect a non-jacketed rope, such as Plasma®. However, when extra defense from heat, the elements, cutting, abrasion, or ingress of dirt, mud or particulates is needed, added wear protection can provide the solution. Cortland offers several wear protection options as a sacrificial layer of protection, increasing the service life of a rope or sling and ensuring a safe and successful operation.

Each application has its own characteristic requirements. To address the various issues, Cortland offers several different wear protection options which range in protective quality, weight, and cost. Contact your local Cortland technical sales representative or distributor for the proper wear protection for your specific application.

Wear gear protection types:

- SX
- Cortland Cage
- Asgard
- DXC
- XT
- PNW tubular
- PNW with hook-and-clasp securement

SX

SX wear protection is designed to offer the highest cut and abrasion resistance protection to your rope. Manufactured with HMPE (High Modulus Polyethylene), the SX wear protection is a braided tubular structure offering 100% protection to the rope. The HMPE fiber is lightweight, floats and has excellent cut resistance. SX wear protection does not absorb water and can be splice-terminated into Cortland braided ropes.



Key benefits of SX wear protection:

- Superior wet & dry protection
- Lightweight
- Flexible
- Cut resistant
- HMPE fiber
- Low coefficient of friction
- UV resistant
- Easy to handle

| Rope Size (diameter) | | Part Number | |
|----------------------|----------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 1/4–3/8 | 6–9 mm | — | SX10 |
| 1/2–5/8 | 12–16 mm | SX10 | SX14 |
| 3/4–7/8 | 18–22 mm | SX14 | SX16 |
| 1–1-1/16 | 24–26 mm | SX16 | SX18 |
| 1-1/8–1-1/4 | 28–30 mm | SX18 | SX21 |
| 1-5/16–1-1/2 | 32–36 mm | SX21 | SX32 |
| 1-5/8 | 40 mm | SX21 | SX42 |
| 1-3/4–2-1/8 | 44–52 mm | SX32 | SX42 |

| Rope Size (diameter) | | Part Number | |
|----------------------|------------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 2-1/4–2-3/4 | 56–68 mm | SX32 | SX52 |
| 3 | 72 mm | SX42 | SX64 |
| 3-1/8–3-1/2 | 76–84 mm | SX52 | SX64 |
| 3-5/8–4 | 88–96 mm | SX64 | SX72 |
| 4-1/8–4-1/4 | 100–104 mm | SX72 | SX72 |

Wear Protection Options

Cortland Cage

The **Cortland Cage** solution combines the lightweight, abrasion resistant, and non-water-absorbing properties of HMPE fiber in a braided cover sleeve. Cortland Cage can be secured in place by splice-termination or heavy duty whipping. The open braid pattern allows inspection of Plasma® 12x12 and reduces the total weight of the wear protection. Cortland Cage offers excellent cut and abrasion resistance of all braided wear protection. In addition a proprietary polyurethane coating provides added protection in challenging marine environments.



Key benefits of Cortland Cage:

- Extra protection against cutting and abrasion
- Open braid pattern allows inspection of rope
- Proprietary polyurethane coating
- Lightweight and floats

| Rope Size (diameter) | | Part Number | |
|----------------------|----------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 3/4–1-1/2 | 18–36 mm | SCAGE18 | — |
| 1–1-3/4 | 24–44 mm | SCAGE26 | — |

| Rope Size (diameter) | | Part Number | |
|----------------------|----------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 1-1/2–2-3/4 | 36–68 mm | SCAGE34 | — |
| 2-1/4–3-1/2 | 56–84 mm | SCAGE48 | — |

Asgard

Asgard wear protection is typically used for protection of lifting or mooring ropes and provides outstanding durability and resistance towards harsh operating conditions. The design features a strong, lightweight construction which is easy to install and retrofit on existing items. Asgard wear protection is designed according to a given diameter of the item to be protected and is provided in lengths according to client specifications.



Asgard wear protection is made from HMPE (High Modulus Polyethylene) and PNW (polyester and/or nylon) fibers in a woven, laminated and PU-coated construction and built in a layered design. The fibers utilized are the toughest of the traditional synthetic fibers. HMPE, for example, is used in personal armor products and PNW is used by the military for belts and webbing. Asgard wear protection can be delivered in a flat construction for protection of webbing, or in a circular construction, for use on mooring ropes for instance.

Asgard wear protection can be custom fabricated to other dimensions and configurations per customer requirements.

Key benefits of Asgard:

- Available with hook-and-clasp, or lace-on closures
- Custom fabricated to fit rope diameter and length requirements

| Rope Size (diameter) | | Part Number | | |
|----------------------|----------|-------------|-------------|--------------|
| inches | mm | In Eye | Over Splice | Over Grommet |
| 1/4–3/8 | 6–9 mm | AS-1.0 | AS-1.0 | AS-1.5 |
| 1/2–5/8 | 12–16 mm | AS-1.0 | AS-1.5 | AS-2.0 |
| 3/4–7/8 | 18–22 mm | AS-1.0 | AS-1.5 | AS-2.5 |
| 1 | 24 mm | AS-1.5 | AS-2.0 | AS-3.0 |
| 1-1/4 | 30 mm | AS-2.0 | AS-2.0 | AS-3.5 |
| 1-5/16–1-1/2 | 32–36 mm | AS-2.0 | AS-2.5 | AS-4.0 |

| Rope Size (diameter) | | Part Number | | |
|----------------------|------------|-------------|-------------|--------------|
| inches | mm | In Eye | Over Splice | Over Grommet |
| 1-5/8–1-3/4 | 40–44 mm | AS-2.5 | AS-3.0 | AS-4.5 |
| 1-3/4–6 | 44–152 mm | AS-2.5 | AS-3.5 | AS-5.0 |
| 7 | 177 mm | AS-2.5 | AS-3.5 | AS-6.0 |
| 8 | 203 mm | AS-3.0 | AS-4.5 | AS-7.0 |
| 9–10 | 228–254 mm | AS-3.5 | AS-5.0 | AS-9.0 |
| 11–13 | 279–330 mm | AS-5.0 | AS-7.0 | — |

Wear Protection Options

DXC

The **DXC wear protection** is a tightly braided tubular polyester sleeve with proprietary marine polyurethane coating for use in extreme applications. Excellent choice for placement in the eye or body of sling; DXC sleeves can be fabricated to be free-floating or fixed in place. The DXC sleeve covers rope sling sizes from 1/4" (6 mm) diameter through 4-1/4" (104 mm) diameter. Other sizes and colors available upon request.



| Rope Size (diameter) | | Part Number | |
|----------------------|------------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 1/4-3/8 | 6-9 mm | — | DX10 |
| 1/2-5/8 | 12-16 mm | DX10 | DX14 |
| 3/4-7/8 | 18-22 mm | DX14 | DX16 |
| 1-1-1/16 | 24-26 mm | DX16 | DX18 |
| 1-1/8-1-1/4 | 28-30 mm | DX18 | DX21 |
| 1-5/16-1-1/2 | 32-36 mm | DX21 | DX32 |
| 1-5/8 | 40 mm | DX21 | DX42 |
| 1-3/4-2-1/8 | 44-52 mm | DX32 | DX42 |
| 2-1/4-2-3/4 | 56-68 mm | DX32 | DX52 |
| 3 | 72 mm | DX42 | DX64 |
| 3-1/8-3-1/2 | 76-84 mm | DX52 | DX64 |
| 3-5/8-4 | 88-96 mm | DX64 | DX72 |
| 4-1/8-4-1/4 | 100-104 mm | DX72 | DX72 |

XT

XT wear protection is a tightly braided tubular polyester wear protection sleeve with proprietary heavy marine polyurethane coating for use in extreme applications. XT sleeves can be fabricated to be free-floating, or fixed in place. It is an excellent choice for eye terminations or selected area body placement, braid-spliced or seized in place. This wear protection option is not as flexible as SX or PNW.



| Rope Size (diameter) | | Part Number | |
|----------------------|------------|-------------|-------------|
| inches | mm | In Eye | Over Splice |
| 1/4-3/8 | 6-9 mm | — | XT10 |
| 1/2-5/8 | 12-16 mm | XT14 | XT14 |
| 3/4-7/8 | 18-22 mm | XT14 | XT16 |
| 1-1-1/16 | 24-26 mm | XT16 | XT18 |
| 1-1/8-1-1/4 | 28-30 mm | XT18 | XT21 |
| 1-5/16-1-1/2 | 32-36 mm | XT21 | XT32 |
| 1-5/8 | 40 mm | XT21 | XT42 |
| 1-3/4-2-1/8 | 44-52 mm | XT32 | XT42 |
| 2-1/4-2-3/4 | 56-68 mm | XT32 | XT52 |
| 3 | 72 mm | XT42 | XT64 |
| 3-1/8-3-1/2 | 76-84 mm | XT52 | XT64 |
| 3-5/8-4 | 88-96 mm | XT64 | XT72 |
| 4-1/8-4-1/4 | 100-104 mm | XT72 | XT72 |

Wear Protection Options

PNW tubular

PNW is a woven fiber material and is the most commonly used protection for abrasion. This wear protection is a permanent installation. PNW wear protection can be customized to meet the needs of any application. Standard colors are black or orange.



| Rope Size (diameter) | | Part Number | | |
|----------------------|------------|-------------|-------------|--------------|
| inches | mm | In Eye | Over Splice | Over Grommet |
| 1/4–3/8 | 6–9 mm | 51650 | 51623 | 51623 |
| 1/2–5/8 | 12–16 mm | 51623 | 51570 | 51570 |
| 3/4–7/8 | 18–22 mm | 51231 | 51232 | 51232 |
| 1–1-1/16 | 24–26 mm | 51232 | 51234 | 51234 |
| 1-1/8–1-1/4 | 28–30 mm | 51233 | 51477 | 51477 |
| 1-5/16–1-1/2 | 32–36 mm | 51446 | 51235 | 51235 |
| 1-5/8 | 40 mm | 51234 | 51236 | 51236 |
| 1-3/4–2-1/8 | 44–52 mm | 51477 | 51237 | 51237 |
| 2-1/4–2-3/4 | 56–68 mm | 51236 | 51692 | 51692 |
| 3 | 72 mm | 50403 | — | — |
| 3-1/8–3-1/2 | 76–84 mm | 51692 | — | — |
| 3-5/8–4 | 88–96 mm | — | — | — |
| 4-1/8–4-1/4 | 100–104 mm | — | — | — |

PNW with hook-and-clasp securement

PNW is a woven fiber material and is the most commonly used protection for abrasion. PNW protection can be customized to meet the needs of any application. This is a removable or replaceable wear protection and is available in black or orange.



| Rope Size (diameter) | | Part Number | | |
|----------------------|------------|-------------|-------------|--------------|
| inches | mm | In Eye | Over Splice | Over Grommet |
| 1/4–3/8 | 6–9 mm | custom | SL-1.0 | SL-1.5 |
| 1/2–5/8 | 12–16 mm | SL-1.0 | SL-1.5 | SL-2.0 |
| 3/4–7/8 | 18–22 mm | SL-1.5 | SL-1.75 | SL-2.5 |
| 1–1-1/16 | 24–26 mm | SL-1.75 | SL-2.5 | SL-3.5 |
| 1-1/8–1-1/4 | 28–30 mm | SL-2.5 | SL-3.0 | SL-3.5 |
| 1-5/16–1-1/2 | 32–36 mm | SL-2.5 | SL-3.0 | SL-4.0 |
| 1-5/8 | 40 mm | SL-3.0 | SL-4.0 | SL-5.0 |
| 1-3/4–2-1/8 | 44–52 mm | SL-3.5 | SL-4.5 | SL-6.0 |
| 2-1/4–2-3/4 | 56–68 mm | SL-4.5 | SL-6.0 | SL-8.0 |
| 3 | 72 mm | SL-5.0 | SL-7.0 | custom |
| 3-1/8–3-1/2 | 76–84 mm | SL-6.5 | SL-8.0 | custom |
| 3-5/8–4 | 88–96 mm | SL-8.0 | custom | custom |
| 4-1/8–4-1/4 | 100–104 mm | custom | custom | custom |

Please email cortland@cortlandcompany.com for an initial discussion, or visit us online at cortlandcompany.com.

Cortland is a global designer, manufacturer, and supplier of technologically advanced ropes, slings, and strength members. Collaborating with customers, our team uses its experience in high performance materials and market knowledge to transform ideas into proven products.

For more than 35 years, our custom-built solutions have been developed for work in the toughest environments and to overcome some of the world's greatest challenges. They consistently enable our customers to meet the demands of the aerospace, defense, research, subsea, marine, and energy industries.

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