

# Spectra® 12 Strand & 12x12

Spectra® 12 strand provides very high strength, low stretch and excellent abrasion resistance in a single braid construction. The equivalent weight rope is more than 3 times as strong as polyester and has less than one half of the elongation.

Spectra® 12 strand is delivered standard with a polyurethane finish and is easily spliced using a simple lockstitch type splice, 4-3-2 or 5-4-3 Tuck Splice. Its soft, torque free braided construction provides easy handling.

## Features & Benefits

- Very low stretch
- Very high strength
- Soft hand
- Torque free
- Easy splicing
- Floats

## Applications

- Vessel mooring lines
- Tug winch lines
- Emergency tows
- Utility winch and pulling lines
- Recreational vehicle winch lines
- 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)
12 Strand	7/64	2.5	5/16	0.33	0.5	1,125	0.51	1,300	0.57
	1/8	3	3/8	0.53	0.8	1,800	0.82	2,000	0.91
	3/16	5	9/16	1.0	1.5	3,600	1.6	4,000	1.8
	1/4	6	3/4	1.6	2.4	6,000	2.7	6,700	3.0
	5/16	8	15/16	2.6	3.9	9,000	4.1	10,000	4.5

## ABS and DNV Type Approved Sizes

12 Strand	3/8	9	1-1/8	3.7	5.5	13,900	6.3	15,400	7.0
	7/16	11	1-1/4	4.2	6.3	14,800	6.7	16,400	7.5
	1/2	12	1-1/2	6.4	9.5	22,500	10.2	25,000	11.3
	9/16	14	1-3/4	7.9	11.8	27,700	12.6	30,800	14.0
	5/8	16	2	10.6	15.8	36,600	16.6	40,700	18.5
	3/4	18	2-1/4	13.3	19.8	43,200	19.6	48,000	21.8
	7/8	22	2-3/4	19.6	29.2	61,000	27.7	67,800	30.8
	1	24	3	23.4	34.8	72,000	32.7	80,000	36.3
	1-1/16	26	3-1/4	27.6	41.1	81,000	36.8	90,000	40.8
	1-1/8	28	3-1/2	31.9	47.5	91,800	41.7	102,000	46.3
	1-1/4	30	3-3/4	36.2	53.9	102,600	46.6	114,000	51.7
	1-5/16	32	4	41.7	62.1	114,300	51.9	127,000	57.6
	1-1/2	36	4-1/2	51.7	76.9	141,300	64.1	157,000	71.2
1-5/8	40	5	65.7	97.8	167,400	76.0	186,000	84.4	
1-3/4	44	5-1/2	78.4	116.7	198,000	89.8	220,000	99.8	
12x12 Strand	2	48	6	91.4	136.0	225,000	102.1	250,000	113.4
	2-1/8	52	6-1/2	109.0	162.2	270,000	122.5	300,000	136.1
	2-1/4	56	7	122.0	181.6	317,700	144.1	353,000	160.2
	2-1/2	60	7-1/2	148.0	220.3	360,000	163.3	400,000	181.5
	2-5/8	64	8	167.0	248.5	370,800	168.2	412,000	186.9
	2-3/4	68	8-1/2	187.0	278.3	405,000	183.8	450,000	204.2
	3	72	9	214.0	318.5	508,500	230.7	565,000	256.4
	3-1/4	80	10	261.0	388.4	616,500	279.7	685,000	310.8
3-5/8	88	11	324.0	482.2	765,000	347.1	850,000	385.7	
	4	96	12	394.0	586.4	900,000	408.3	1,000,000	453.7

Sizes available up to 8-1/4" diameter (200 mm). Tensile Strengths are determined in accordance with Cordage Institute 1500, Test Methods for Fiber Rope. Weights are calculated at linear density under standard preload (200d<sup>2</sup>) plus 4%. See reverse side for application and safety information.

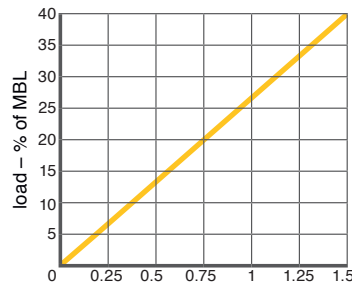
# Spectra® 12 Strand & 12x12

## 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	moderate
Wet abrasion	superior
Dry abrasion	superior

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

## Spectra® 12 Strand & 12x12 Elongation (%)



## Rope Specifications

**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.

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## 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](mailto:cortland@cortlandcompany.com) for a quotation.

**Special Coatings** Coatings such as polyurethane, polyethylene and vinyl esters 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.

