



## Crystalyne

**Crystalyne** is a double-braided rope constructed with an inner load-bearing core of Vectran Liquid Crystal Polymer (LCP) and has a tough polyester outer sleeve. LCP is more tolerant of bending than other high-modulus fibers and is not as affected by overloading. Crystalyne exhibits more tension cycles to higher percentages of break than all our other high-modulus offerings. Unlike ultra-high-molecular-weight polyethylene (UHMPE) ropes, LCP fiber has little or no tendency to creep and can be used to hold tight tolerances

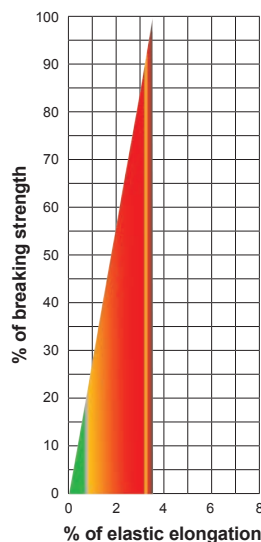
in rope assemblies. In fact, Crystalyne was one of the products selected to suspend the 40-ft.-diameter acrylic vessel filled with \$225 million of heavy water at the Sudbury Neutrino Observatory (sno.phy.queensu.ca) and has been in service over 10 years, without movement. Vectran is hydrophobic, meaning it cannot absorb water. This rope is spliced using the same technique as our Maxibraid Plus, resulting in a termination that finishes shorter than conventional splice techniques and remains supple.

### Specifications

Diameter		Average Spliced Break Strength*		Minimum Spliced Break Strength*		Maximum** Working Load 5:1		Weight	
Inches	(mm)	Lbs	Kg	Lbs	Kg	Lbs	Kg	Lbs/100ft	Kg/100m
3/16	(5)	3,000	1,360	2,700	1,224	600	272	1.4	2.1
1/4	(6)	5,000	2,270	4,500	2,043	1,000	454	2.2	3.3
5/16	(8)	7,200	3,265	6,480	2,939	1,440	653	3.0	4.5
3/8	(10)	11,500	5,220	10,350	4,698	2,300	1,044	4.4	6.6
7/16	(11)	15,200	6,900	13,680	6,210	3,040	1,380	6.1	9.1
1/2	(13)	20,000	9,080	18,000	8,172	4,000	1,816	8.5	12.7
9/16	(14)	26,000	11,800	23,400	10,620	5,200	2,360	11.1	16.5
5/8	(16)	30,000	13,620	27,000	12,258	6,000	2,724	12.0	17.9
11/16	(17)	40,000	18,160	36,000	16,344	8,000	3,632	18.8	28.0
3/4	(19)	45,000	20,430	40,500	18,387	9,000	4,086	20.0	29.8
7/8	(22)	63,000	28,600	56,700	25,740	12,600	5,720	24.4	36.3
1	(25)	80,000	36,320	72,000	32,688	16,000	7,264	33.3	49.6
1-1/8	(29)	100,000	45,400	90,000	40,860	20,000	9,080	41.6	61.9
1-1/4	(32)	120,000	54,480	108,000	49,032	24,000	10,896	46.0	68.5

\* Knots and abrupt bends significantly reduce the strength of all ropes and lower the maximum working load.

\*\* Working load is based on static or moderately dynamic lifting/pulling operations. Instantaneous changes in load, up or down, in excess of 10% of the rope's rated working load constitute hazardous shock load and would void the normal working-load recommendation. Consult Yale Cordage for guidelines for working loads and the safe use of rope.



### Energy Absorption

The colored area under the curve represents the rope's ability to do "work" and is expressed in foot-pounds per pound of rope in tension.

- Green working 187 ft. lbs./lb.
- Red ultimate 3,403 ft. lbs./lb.

**Dielectric Strength:** Crystalyne's core of LCP is hydrophobic, so its lack of core moisture gain is an advantage, as is its high melt point of 620°F (325°C). The polyester sleeve governs the leakage, which is 100 micro-amperes at 100kV per Yale Method 712-1701 Rev 1 "Routine Production Test."

Approved Splice Technique: #10015110, #10018007.

- Maximum Working Load
- Minimum Break Strength
- Average Break Strength

Specific Gravity: 1.40