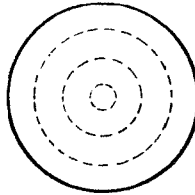


ARAMID FIBER ROPES

**TYPE I-B (Single Strand)**

Type I-B is torque balanced line which consists of concentric layers of "Kevlar 29" (1) or "Spectra" (2) and an overall polyester or nylon braided jacket. Such lines are designed for applications where long length, small diameter and light weight are important. Typical applications include subsurface oceanographic moorings, balloon tethers and center strength members for electromechanical cables.

Outside Diameter (3) (Inches)	Break Strength (4) (Pounds)	Weight In Air (5) (6) (Lbs./1000 ft.)
3/16	3,500	16
1/4	7,500	28
5/16	12,000	40
3/8	17,800	62
7/16	23,500	74
1/2	28,750	89
9/16	37,500	102
5/8	46,000	128
3/4	63,000	180
7/8	89,000	255
1	125,000	360



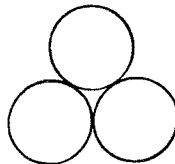
"Kevlar 29" is the trademark for DuPont's aramid fiber.

**TYPE II-A (Three Strand)**

Type II-A is a three-strand rope made of "Kevlar 29" (1) or "Spectra" (2). Each strand is protected by a braided polyester jacket. This construction is designed for slings, working ropes, dock moorings and other applications where light weight, flexibility, ease of handling and ease of termination are important.

Eye splices can be either the "lock tuck" or "sail maker" type. Minimum of five full tucks plus two tapered tucks is required. A heavy-duty steel wire rope thimble is recommended in each eye. Soft eyes should have adequate chafing protection.

Outside Diameter (3) (Inches)	Break Strength (4) (Pounds)	Weight In Air (5) (6) (Lbs./1000 ft.)
3/8	10,500	50
1/2	20,000	90
5/8	30,000	140
3/4	42,000	190
7/8	56,000	260
1	73,000	350
1-1/8	90,000	440
1-1/4	112,000	540

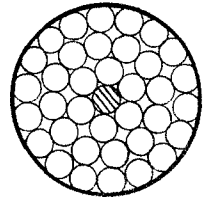


- (1) "Kevlar 29" is the trademark for DuPont's aramid fiber.
- (2) "Spectra" is a trademark of Allied Corporation.
- (3) Outside diameter as measured over a braided polyester jacket. Other jackets will increase diameter and weight.
- (4) Calculated minimum break strength; actual break strength is up to 10% higher.
- (5) Weight of Kevlar rope in sea water is approximately 28% of weight in air.
- (6) Spectra rope is neutrally buoyant.

**TYPE V (Thirty Six Strand)**

Type V is thirty-six strand double jacketed "Kevlar 29" (1) or "Spectra" (2) rope with an elastic core. These are special purpose working ropes for applications such as mooring lines where flexibility, strength to weight, ease of handling and torque balance are important.

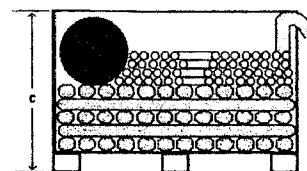
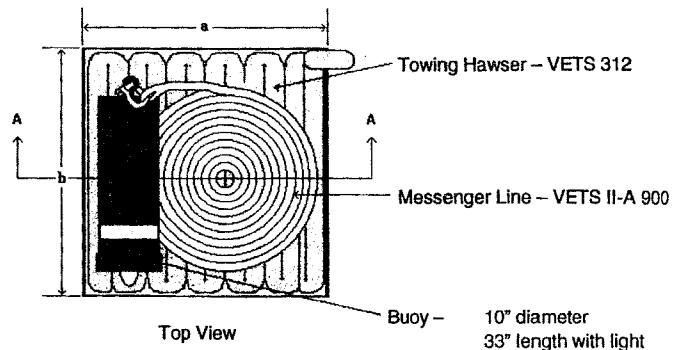
Outside Diameter (3) (Inches)	Break Strength (4) (Pounds)	Weight In Air (5) (6) (Lbs./Ft.)
1-3/4	215,000	0.9
2	290,000	1.2
2-1/4	375,000	1.5
2-1/2	450,000	1.8
2-3/4	600,000	2.4
3	775,000	3.1
3-1/4	925,000	3.7
3-1/2	1,050,000	4.0



"Spectra" is a trademark of Allied Corporation.

**EMERGENCY TOWING HAWSER PACKAGE**

- Pick-up line coiled inside and shackled to Towing Pendant.
- End terminations not shown.
- Pick-up line to be Spectra® floating line, 120 meters long.
- Towing Pendant to be VETS 312-1 or 312-2 (depending on requirements) up to 100 meters long.



Section A-A

Box Dimensions - in. (cm)			
Hawser	a	b	c
VETS 312-1	48 (122)	44 (112)	30 (77)
VETS 312-2	48 (122)	45 (114)	67 (170)