





# **DYNE K® SBF WINCHLINE**

## APPLICATIONS

## **BENEFITS / FEATURES**

Winch Line

Superior Bending Fatigue (SBF) Excellent Breaking Load (SK99)

Buoyant Durable Very Low

Very Low Stretch Lightweight Easy to Splice

Does not Kink



#### **SPECIFICATIONS**

Material : Coated: Dyneema® SK 78/99

 $\begin{tabular}{lll} Specific Gravity & : & 0,97 kg/dm^3 \\ Construction & : & 12 Strand Braided \\ \end{tabular}$ 

: Excellent **UV** Resistance Chemical Resistance : Excellent Melting Point 147°C 65°C Critical Temperature Working Stretch : <1,5% Fiber Water Absorption: None Wet Abrasion : Excellent Dry Abrasion : Excellent Standard : ISO 10325

Length : 15m, 23m, 30m, 38m or 45m

DIA (mm)	Weight (kg/ 100m)	B.Load (kgf) SK78	B.Load (kgf) SK99	DIA (inch)	Weight (lbs/ 100ft)	B.Load (lbs) SK78	B.Load (lbs) SK99
6	2,30	3.750	4.425	1/4"	1,55	8.250	9.735
8	4,00	6.600	7.788	5/16"	2,69	14.520	17.134
10	6,10	10.400	12.272	3/8"	4,10	22.880	26.998
12	8,70	15.000	17.700	1/2"	5,85	33.000	38.940
14	11,70	20.400	24.072	9/16"	7,86	44.880	52.958
16	15,10	26.520	31.294	5/8"	10,15	58.344	68.847
*Uns	pliced B	reak Load	(All Tests	are in A		ce with IS	O 2307)





# **FORCE K® SBF WINCHLINE**

## **APPLICATIONS**

Winch Line

#### **BENEFITS / FEATURES**

Superior Bending Fatigue (SBF) Buoyant

Durable

Very Low Stretch Lightweight Easy to Splice Does not Kink



#### **SPECIFICATIONS**

Material Coated UHMWPE Fiber

Specific Gravity 0,97 kg/dm<sup>3</sup> Construction : 12 Strand Braided

: Excellent **UV** Resistance Chemical Resistance : Excellent Melting Point 147°C 65°C Critical Temperature Working Stretch : <1,5% Fiber Water Absorption: None Wet Abrasion : Excellent Dry Abrasion : Excellent

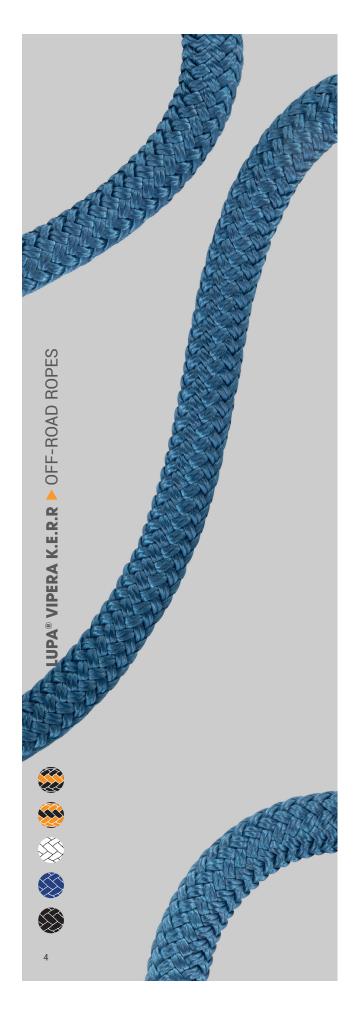
Standard

Length : 15m, 23m, 30m, 38m or 45m

DIA (mm)	Weight (kg/ 100m)	Min. B.Load (kgf) Unspliced	Min. B.Load (kgf) Spliced	DIA (inch)	Weight (lbs/ 100ft)	Min. B.Load (lbs) Unspliced	Min. B.Load (lbs) Spliced
6	2,30	3.563	3.192	1/4"	1,55	7.838	7.022
8	4,00	6.270	5.681	5/16"	2,69	13.794	12.498
10	6,10	9.880	8.911	3/8"	4,10	21.736	19.604
12	8,70	14.250	12.787	1/2"	5,85	31.350	28.131
14	11,70	19.380	17.442	9/16"	7,86	42.636	38.372
16	15,10	25.194	22.515	5/8"	10,15	55.427	49.533
*Line	nligad B	rook Lood	(All Tooto	oro in A		oo with IS	2207)







## **LUPA® VIPERA K.E.R.R**

#### **APPLICATIONS**

#### BENEFITS / FEATURES

Kinetic Energy Recovery Rope Does not Harden (KERR) Does not Kink

Does not Harden
Does not Kink
Soft Hand
Durable
Flexible Cover
High Breaking Load
Excellent Shock Absorption



#### **GUIDELINES & RECOMMENDATIONS**

12 mm Ropes for Light Weight Vehicles, Subaru (All Wheel Drive)
18 mm Ropes for Land Rover (Freelander), Rav4, Lower Weight Pick Up
24 mm Ropes for Jeep (All Models), Land Rover Defender Discovery - Range Rover, Toyota, Hummer H1-H2-H3,
Sportsmobile, Heavy Expedition Vehicles

30 mm Ropes for Mrap (Military), Heavy Motorhomes, Buses,

Coaches

36 mm Ropes for Full Size Semi Tracks

#### **SPECIFICATIONS**

Material : 100% HT Polyamide Fiber

Type :

Specific Gravity : 1,14 kg/dm³

Construction : Cover: 16-20-24 Plaited

Core: 16 Plaited

UV Resistance : Very Good
Chemical Resistance : Good
Melting Point : 218°C
Critical Temperature : 130°C
Elongation at Break : Approx. %30
Fiber Water Absorption : Approx. %3-4
Wet Abrasion : Sufficient
Dry Abrasion : Good

Standard : -

Length : 5 m, 6 m or 9 m

DIA (mm)	Weight (kg/100m)	Min. B.Load (kgf)	DIA (inch)	Weight (lbs/100ft)	Min. B.Load (lbs)
12	9,20	3.190	1/2"	6,18	7.018
18	20,40	7.120	3/4"	13,71	15.664
24	36,65	12.640	1"	24,63	27.808
30	55,60	19.700	1-1/4"	37,36	43.340
36	81,00	28.250	1-1/2"	54,43	62.150
*Unsr	oliced Break I	oad (All Tes	ts are in Acc	ordance with	ISO 2307)

# **LUPA® SQUARE K.E.R.R**

#### **APPLICATIONS**

#### **BENEFITS / FEATURES**

Kinetic Energy Recovery Rope Does not Harden (KERR) Does not Kink

Does not Kink Soft Hand Durable

High Breaking Load
Excellent Shock Absorption

Easy to Splice



#### **GUIDELINES & RECOMMENDATIONS**

12 mm Ropes for Light Weight Vehicles, Subaru (All Wheel Drive)
18 mm Ropes for Land Rover (Freelander), Rav4, Lower Weight Pick Up

24 mm Ropes for Jeep (All Models), Land Rover Defender -

Discovery - Range Rover, Toyota, Hummer H1-H2-H3, Sportsmobile, Heavy Expedition Vehicles

30 mm Ropes for Mrap (Military), Heavy Motorhomes, Buses, Coaches

36 mm Ropes for Full Size Semi Tracks

#### **SPECIFICATIONS**

Material : 100% HT Polyamide Fiber

Type : L

Specific Gravity : 1,14 kg/dm³

Construction : 8 Strand Plaited (4x2)

UV Resistance : Very Good
Chemical Resistance : Good
Melting Point : 218°C
Critical Temperature : 130°C
Elongation at Break : Approx. %3

Elongation at Break : Approx. %30-35
Fiber Water Absorption : Approx. %3-4
Wet Abrasion : Sufficient
Dry Abrasion : Good
Standard : EN ISO 1140
Length : 5 m, 6 m or 9 m

DIA (mm)	Weight (kg/100m)	Min. B.Load (kgf)	DIA (inch)	Weight (lbs/100ft)	Min. B.Load (lbs)
12	9,00	3.060	1/2"	6,05	6.732
18	20,50	6.875	3/4"	13,78	15.125
24	36,00	12.000	1"	24,19	26.400
30	56,00	19.000	1-1/4"	37,63	41.800
36	81,00	27.500	1-1/2"	54,43	60.500
+l Inci	olicad Brask	Load (All tag	te are in A	ccordance witl	150 2307)





# **LUPA® ROUND K.E.R.R**

#### **APPLICATIONS**

#### BENEFITS / FEATURES

Kinetic Energy Recovery Rope Does not Kink

Soft Hand Durable

High Breaking Load Excellent Shock Absorption

#### **GUIDELINES & RECOMMENDATIONS**

18 mm Ropes for Land Rover (Freelander), Rav4, Lower Weight Pick Up 24 mm Ropes for Jeep (All Models), Land Rover Defender - Discovery -Range Rover, Toyota, Hummer H1-H2-H3, Sportsmobile, Heavy Expedition Vehicles

30 mm Ropes for Mrap (Military), Heavy Motorhomes, Buses, Coaches 36 mm Ropes for Full Size Semi Tracks

#### **SPECIFICATIONS**

Material : 100% HT Polyamide Fiber

Type : T

Specific Gravity : 1,14 kg/dm³
Construction : 12 Strand Plaited
UV Resistance : Very Good
Chemical Resistance : Good
Melting Point : 218°C

Critical Temperature : 130°C
Elongation At Break : Approx.%30-35
Fiber Water Absorption : Approx. %3-4
Wet Abrasion : Sufficient
Dry Abrasion : Good
Standard : EN ISO 1140

Length : 5m, 6m, 9m, 12m, 14m, 16m or 20m

DIA (mm)	Weight (kg/100m)	Min. B.Load (kgf)	DIA (inch)	Weight (lbs/100ft)	Min. B.Load (lbs)
18	23,00	8.000	3/4"	15,46	17.600
24	36,00	12.030	1"	24,19	26.466
28	49,00	17.000	1-1/8"	32,93	37.400
30	56,00	19.000	1-1/4"	37,63	41.800
32	64,00	21.125	1-5/16"	43,01	46.475
36	81,00	27.500	1-1/2"	54,43	60.500
*Unsp	liced Break L	oad (All tests			SO 2307)





# **DYNE K® SBF EXTENSION**

#### **APPLICATIONS**

Winch Line

#### **BENEFITS / FEATURES**

Superior Bending Fatigue (SBF) Excellent Breaking Load (SK99) Buoyant Durable Very Low Stretch Lightweight Easy to Splice



Does not Kink

#### **SPECIFICATIONS**

Material : Coated: Dyneema® SK 78/99

Specific Gravity : 0,97 kg/dm³ Construction : 12 Strand Braided UV Resistance : Excellent

Chemical Resistance : Excellent
Melting Point : 147°C
Critical Temperature : 65°C
Working Stretch : <1%
Fiber Water Absorption : None
Wet Abrasion : Excellent
Dry Abrasion : Excellent
Standard : ISO 10325

Length : 7,5m, 12m, 15m or 30m

DIA (mm)	Weight (kg/ 100m)	B.Load (kgf) SK78	B.Load (kgf) SK99	DIA (inch)	Weight (lbs/ 100ft)	B.Load (lbs) SK78	B.Load (lbs) SK99
6	2,30	3.750	4.425	1/4"	1,55	8.250	9.735
8	4,00	6.600	7.788	5/16"	2,69	14.520	17.134
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12	8,70	15.000	17.700	1/2"	5,85	33.000	38.940
14	11,70	20.400	24.072	9/16"	7,86	44.880	52.958
16	15,10	26.520	31.294	5/8"	10,15	58.344	68.847
*Uns	pliced E	reak Load	l (All Tests	are in A			O 2307)





# **FORCE K® SBF EXTENSION**

## **APPLICATIONS**

Winch Line

#### **BENEFITS / FEATURES**

Superior Bending Fatigue (SBF)

Buoyant Durable Very Low Stretch

Lightweight
Easy to Splice
Does not Kink



#### **SPECIFICATIONS**

Material : Coated UHMWPE Fiber
Specific Gravity : 0,97 kg/dm³
Construction : 12 Strand Braided
UV Resistance : Excellent
Chemical Resistance : Excellent

Melting Point : 147°C
Critical Temperature : 65°C
Working Stretch : <1,5%
Fiber Water Absorption : None
Wet Abrasion : Excellent
Dry Abrasion : Excellent

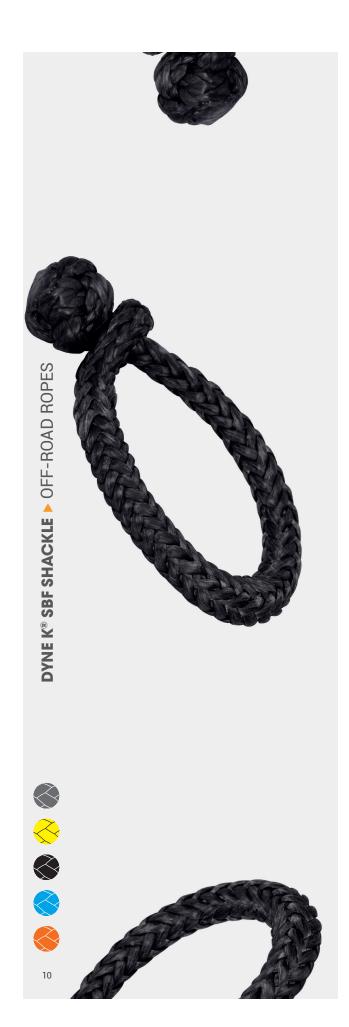
Standard : -

Length : 7,5m, 12m, 15m or 30m

DIA (mm)	Weight (kg/ 100m)	Min. B.Load (kgf) Unspliced	Min. B.Load (kgf) Spliced	DIA (inch)	Weight (lbs/ 100ft)	Min. B.Load (lbs) Unspliced	Min. B.Load (lbs) Spliced
6	2,30	3.563	3.192	1/4"	1,55	7.838	7.022
8	4,00	6.270	5.681	5/16"	2,69	13.794	12.498
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12	8,70	14.250	12.787	1/2"	5,85	31.350	28.131
14	11,70	19.380	17.442	9/16"	7,86	42.636	38.372
16	15,10	25.194	22.515	5/8"	10,15	55.427	49.533
*Hine	enliced F	Rreak Load	(All Tacto	are in A		oce with IS	O 2307)







# **DYNE K® SBF SHACKLE**

#### <u>APPLICATIONS</u>

#### **BENEFITS / FEATURES**

Connection Line

Can be Opened and Closed

Quickly Buoyant

Very Low Stretch Self-Locking Under Load

Easy to Use Extremely Durable

#### **SPECIFICATIONS**

Material : Coated Dyneema® SK 78

Specific Gravity 0,97 kg/dm<sup>3</sup> 12 Strand Plaited Construction UV Resistance Excellent Chemical Resistance : Excellent Melting Point : 147°C : 65°C Critical Temperature Working Stretch : <1,5% Wet Abrasion Excellent Dry Abrasion Excellent Standard ISO 10325

Length : -

Shackle DIA (mm)	Rope DIA (mm)	Total Length in Closed Condition (cm)	gth in Weight Speed (kg) Weight (kgf) Weight (kgf) Weight (kgf)		Weight Min. (kg) B.Load (kgf)		Weight (kg)	Min. B.Load (kgf)
			Sha	ckle -1	Shac	kle - 2	Shac	kle - 3
12	7	12,5	0,03	4.670	0,05	10.508	0,07	15.785
14	8	15,0	0,05	5.980	0,07	13.455	0,11	20.212
18	10	17,5	0,09	9.380	0,13	21.105	0,20	31.704
20	12	20,0	0,14	13.460	0,21	30.285	0,32	45.495
24	14	35,0	0,33	18.360	0,49	41.310	0,75	62.057
28	16	40,0	0,48	23.700	0,72	53.325	1,11	80.106
Splice	d Brea	k Load (A	ll tests		cordan	ce with IS	0 2307	



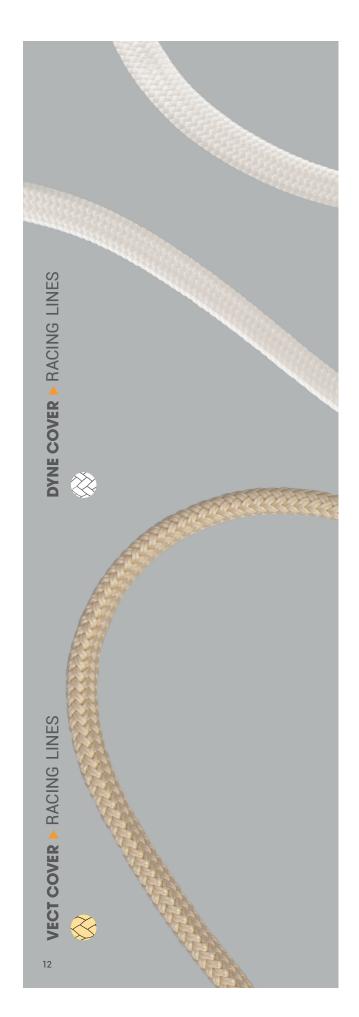












## **DYNE COVER**



#### **APPLICATIONS**

Special Cover

#### **BENEFITS / FEATURES**

Ideal for Protection Against Abrasion

Easy Handling Buoyant

#### **SPECIFICATIONS**

Material : 100% Dyneema® SK 78 Fiber

0,97 kg/dm<sup>3</sup> Specific Gravity : 24-32 Plaited Construction **UV** Resistance : Excellent Chemical Resistance : Excellent Melting Point : 147°C Critical Temperature Working Stretch : <3% Wet Abrasion : Excellent Dry Abrasion : Excellent

Standard : -

Length : 100-200 m Plastic Spool

Larger Diameters Upon Request

## **VECT COVER**

Vectran<sup>™</sup>

#### **APPLICATIONS**

#### AI I LIOATIONO

## BENEFITS / FEATURES

Special Cover Ideal for Protection Against Abrasion

Easy Handling Buoyant

#### **SPECIFICATIONS**

Material : 100% Vectran® Fiber Specific Gravity : 1,44 kg/dm<sup>3</sup> : 24-32 Plaited Construction UV Resistance : Sufficient Chemical Resistance Excellent Melting Point 500°C Critical Temperature : 350°C Working Stretch : <3%

Wet Abrasion : Excellent Dry Abrasion : Excellent

Standard : -

Length : 100-200 m Plastic Spool

#### Other Colours & Larger Diameters Upon Request

DIA (mm)	Weight (kg/100m)	B.Load (kgf)	DIA (inch)	Weight (lbs/100ft)	B.Load (lbs)
4-6			5/32"- 1/4"		
5-7			3/16"- 9/32"		
6-8			1/4"- 5/16"		
7-10			5/32"- 3/8"		
8-12			5/16"- 1/2"		
10-16			3/8"- 5/8"		
12-20			1/2"- 13/16"		
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'Unspliced Break Load (All Tests are in Accordance with ISO 2307)

# **LUPES® COVER**

#### **APPLICATIONS**

#### BENEFITS / FEATURES

Special Cover

Good Knot Retention Supple Surface Easy Handling

#### **SPECIFICATIONS**

Material : 100% HT Polyester Fiber

Specific Gravity 1,38 kg/dm<sup>3</sup> : 24-32 Plaited Construction UV Resistance : Excellent Chemical Resistance : Good : 256°C Melting Point Critical Temperature : 170°C Working Stretch : <13% Wet Abrasion : Good Dry Abrasion : Good Standard

Length : 100-200 m Plastic Spool

Other Colours & Large Diameters Upon Request

DIA (mm)	Weight (kg/100m)	B. Load (kgf)	DIA (inch)	Weight (lbs/100ft)	B. Load (lbs)					
4-6			5/32"- 1/4"							
5-7			3/16"- 9/32"							
6-8			1/4"- 5/16"							
7-10			5/32"- 3/8"							
8-12			5/16"- 1/2"							
*Unsp	liced Break I	*Unspliced Break Load (All tests are in Accordance with ISO 2307)								

# LUPA® COVER

#### **APPLICATIONS**

#### **BENEFITS / FEATURES**

Special Cover

Good Knot Retention Supple Surface Easy Handling

#### **SPECIFICATIONS**

Material : 100% HT Polyamide Fiber

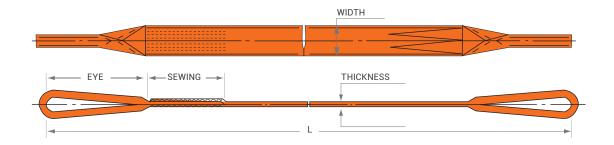
Specific Gravity : 1,14 kg/dm<sup>3</sup> 24-32 Plaited Construction **UV** Resistance : Very Good Chemical Resistance : Good Melting Point 218°C Critical Temperature : 130°C Working Stretch : <20% Wet Abrasion : Sufficient Dry Abrasion : Good Standard

Length : 100-200 m Plastic Spool

DIA (mm)	Weight (kg/100m)	B. Load (kgf)	DIA (inch)	Weight (lbs/100ft)	
4-6			5/32"- 1/4"		
5-7			3/16"- 9/32"		
6-8			1/4"- 5/16"		
7-10			5/32"- 3/8"		
8-12			5/16"- 1/2"		



# **LE-1 BAND WEBBING SLING**





#### **SPECIFICATIONS**

: 100% HT Polyester Webbing Material

: EN 1492-1+A1 Standard

Safety Factor: 7:1

#### **BENEFITS / FEATURES**

High quality product with the 7:1 safety factor Produced from the high strength polyester webbing

Various sizes available for every application

Not slippery

High resistance to chemical and oil contamination

Custom made slings for specific applications may be made to customer specifications

Various colour are available









	Width (mm)	Working Load (kgf 100%)	Working Load (kgf 80%)	Working Load (kgf 200%)	Angle (0-45°) Working Load (kfg)	Angle (45-60°) Working Load (kgf)	Breaking Load (kgf)	Working Load (kgf)	Length (m)
VIOLET	30-50	1000	800	2000	1400	1000	7000	1000	1-10
GREEN	70	2000	1600	4000	2800	2000	14000	2000	2-10
	90	3000	2400	6000	4200	3000	21000	3000	2-10
GRAY	120	4000	3200	8000	5600	4000	28000	4000	4-10
RED	150	5000	4000	10000	7000	5000	35000	5000	4-10
BROWN	180	6000	4800	12000	8400	6000	42000	6000	4-10
BLUE	250	8000	6400	16000	11200	8000	56000	8000	5-10
	300	10000	8000	20000	14000	10000	70000	10000	5-10



1. Flat eye



2. Reversed eye



3. Folded eye 1/2 width from 1 side



4. Folded eye 1/2 width from 2 sides

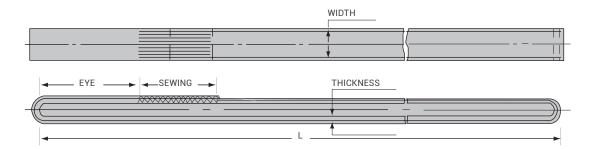


5. Folded eye 1/3 width

U	0° 100%
Δ	30° 95%
Δ	45° 90%

Δ	60° 85%
Δ	90° 75%
_	120° 50%

# **LE-2 ROUND WEBBING SLING**



#### **SPECIFICATIONS**

Material : 100% HT Polyester Webbing

Standard : EN 1492-2+A1

Safety Factor: 7:1

#### **BENEFITS / FEATURES**

High quality product with the 7:1 safety factor

Produced from the high strength polyester webbing

Various sizes available for every application

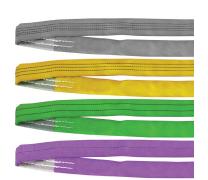
Not slipper

High resistance to chemical and oil contamination

Custom made slings for specific applications may be made to customer specifications

1

Various colour are available



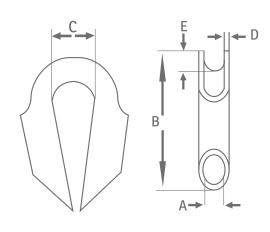
		I	$\bigcirc$	W					
	Width (mm)	Working Load (kgf 100%)	Working Load (kgf 80%)	Working Load (kgf 200%)	Angle (0-45°) Working Load (kgf)	Angle (45-60°) Working Load (kgf)	Breaking Load (kgf)	Working Load (kgf)	Length (m)
VIOLET	25	1000	800	2000	1400	1000	7000	1000	1-10
GREEN	50	2000	1600	4000	2800	2000	14000	2000	2-10
YELLOW	75	3000	2400	6000	4200	3000	21000	3000	2-10
GRAY	100	4000	3200	8000	5600	4000	28000	4000	4-10
RED	125	5000	4000	10000	7000	5000	35000	5000	4-10
BROWN	150	6000	4800	12000	8400	6000	42000	6000	4-10
BLUE	200	8000	6400	16000	11200	8000	56000	8000	5-10
ORANGE	250	10000	8000	20000	14000	10000	70000	10000	5-10

NN

U	0° 100%	Δ	60° 85%
Δ	30° 95%		90° 70%
Δ	45° 90%	_	120° 50%

# **EYE HOOK** > OFF-ROAD ROPES

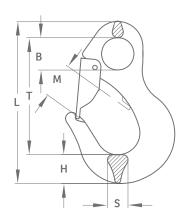
# **TUBE THIMBLE**





							Weight (kg)
TM-1.10	8-10	11,60	96	22	3,60	5	0,23
TM-1.13	12-14	13,70	96	23	4,00	5	0,24

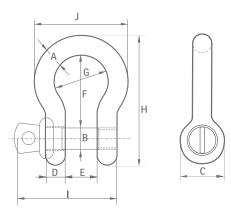
# **EYE HOOK**





Art. No	Size (mm)	Working Load (kg)	B (mm)	H (mm)	L (mm)	M (mm)	S (mm)	T (mm)	Weight (kg)
LH-1.6.8	6-8	1.120	21	20	110	20	17	78	0,30
LH-1.7.8	7-8	1.500	23	21	120	23	18	86	0,40
LH-1.8.8	8-8	2.000	27	22	130	25	19	94	0,50
LH-1.10.8	10-8	3.150	32	29	163	32	22	116	0,90
LH-1.13.8	13-8	5.300	37	35	198	40	28	141	1,60
LH-1.16.8	16-8	8.000	51	38	226	42	29	165	2,40
LH-1.18.8	18-8	10.000	57	50	281	60	40	202	4,40

# **BOW SHACKLE SC**





Art. No	Working Load (kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	l (mm)	J (mm)	Weight (kg)
SC-7-9-1	750	9,00	10	20,00	9	13,50	32,00	22	56,00	46,50	40	0,10
SC-7-10-1	1.000	10,00	11	22,50	10	17,00	36,50	26	63,50	54,00	46	0,14
SC-7-11-1	1.500	11,00	13	26,50	11	19,00	43,00	29	74,00	59,50	51	0,19
SC-7-13.5-1	2.000	13,50	16	34,00	13	22,00	51,00	32	89,00	73,00	58	0,36
SC-7-16-1	3.250	16,00	19	40,00	16	27,00	64,00	43	110,00	89,00	75	0,63
SC-7-19-1	4.750	19,00	22	46,00	19	31,00	76,00	51	129,00	103,00	89	1,01
SC-7-22-1	6.500	22,00	25	52,00	22	36,00	83,00	58	144,00	119,00	1.021	1,50

#### **SPECIFICATIONS**

Material : Bow and pin high tensile steel, grade 6, quenched and tempered

Safety Factor : MBL equals 6 x WLL

Standard : EN 13889 and meets performance requirements of US Fed. Spec. RR-C-271 Type IVA Class 2, grade A, from 2 t and

upward these shackles comply with ASME B30.26

Finish : Hot dipped galvanized
Temperature Range : -40°C up to +200°C

Certification : 2.1 2.2 3.1 MTC a DNV GL 0378 CE ABS PDA ABS MA



## OUR MATERIALS



#### **DYNEEMA® FIBER**

Dyneema® is an UHMWPE fiber. DSM invented Dyneema® more than 30 years ago and it has been in production since 1990. The fiber is incredibly versatile with virtually limitless applications. The fiber is manufactured by means of a gel-spinning process that combines extreme strength with incredible softness. Dyneema® is a super-strong fiber based on UHMWPE. It offers maximum strength combined with minimum weight.

Dyneema® SK75 is an extremely high-strength, low-stretch fiber.

Dyneema® SK78 fiber from DSM Dyneema® proved its superior performance under extreme conditions. The high modulus fiber, SK78 has a better stability under constant loads, improved creep feature than its prototype.

Dyneema® SK90 is one of the most advanced high-tech fibers with 12-13% greater strength, has same creep feature as SK-75 fiber. It is a perfect fiber for extreme sailors who are in search of outstanding performance.

Dyneema® SK99 is the newest fiber in Dyneema's SK range - 99 sailing inspirations with Dyneema® spotlights and shares the many ways the world's strongest fiber is extending performance and giving professional and recreational sailors a winning, and safety, edge. SK99 has nearly 20% higher strength than SK78 and keeps the same elongation and creep features as SK75

#### Technora<sup>®</sup>

#### **TECHNORA® FIBER**

Technora® is a para-aramid fiber made from co-polymers and produced from poly-paraphenylene terephthalamide (ppta). It was independently developed by Teijin and has been commercially available since 1987. This high performance fiber has a range of excellent properties, including high tensile strength, good fatique resistance, long-term dimensional stability and good resistance to corrosion, heat, chemicals and saltwater.

#### Vectran<sup>™</sup>

#### **VECTRAN® FIBER**

Vectran® is a high-performance multifilament yarn spun from liquid crystal polymer (LCP) produced by Kururay in Japan. Vectran® is currently the only melt spun lcp fiber in the world that is commercially available. The unique combination of characteristics of Vectran® fibers make it superior to many other materials and enable it to perform under conditions in which other materials fail.

#### **Twaron**®

#### TWARON® FIBER

Twaron® is a para-aramid, high- performance yarn. Offering well-balanced performance in terms of mechanical properties, chemical resistance and thermal stability, Twaron® is recognized across a wide range of industries as an extremely valuable material with excellent durability. Their experience in aramid production, which extends back more than 30 years, not only guarantees a technically well-established product, it is also the basis for developments, often in close cooperation with our customers, to tailor Twaron® to the specific requirements of various applications.

#### **POLYESTER** POLYESTER

First commercial polyester fiber production: 1953, Dupont company. Polyester is a category of polymers which contain the ester functional group in their main chain. Polyester is the most durable of the common materials. It has good breaking load and a low elongation. It has good resistance against sunlight, external abrasion. Polyester does not lose strength rapidly due to cyclic loading. Polyester has a low co-efficient of friction. Polyester is used as a material for the cover (protection against UV radiation) in the hig-tech ropes and is most widely used fiber in yachting ropes as well as for anchoring lines.

#### **POLYAMIDE**

#### **POLYAMIDE**

First commercial nylon fiber production: 1939, Dupont company. A manufactured fiber in which the fiber forming substance is a long-chain synthetic polyamide in which less than 85% of the amide-linkages are attached directly (-conh-) to two aliphatic groups. Polyamides-of its strength when wet. The abrasion resistance of polyamide is better in wet conditions than in dry conditions. Polyamide can be come stiff (kept in wet condition for toolong). The most important polyamides are PA6 and PA6.6.Polyamide is used for mooring lines, sport climbing ropes, safety and rescue ropes.



This special polyurethane coating known as long lasting- most efficient kind of protective coating that is being applied to each of our high-tech lines to improve abrasion resistance on the ropes and avoids slippage between cover and core. This particular process offers excellent substrate protection to get better results, which also makes the splicing much easier.



This particular thermal process increases efficiency and strength of Dyneema® ropes, which also achieves significant improvements in the break load of the rope and almost eliminates the 'creep' that helps ropes to have better performance. This procedure contracts the yarns and increases the net fiber density of the rope as well. The ropes become stronger and more durable than standard production performance ropes through these processes.



Dyneema® fiber currently has a lowest stretch among all the other synthetic fibers. However, the constructional elongation will occur during twisting and braiding processes of basic rope manufacturing procedure. Pre-Stretch method is used to minimize this constructional elongation and improve rope strength. When the heat set and Pre-Stretch process applied on the rope together, the both constructional and structural elongation will be reduced yet further increase in strength is also obtained by making the polymer to linear array. We apply this method to all of our high-tech and mid-tech lines to have an excellent product that exceeds our customer's needs.



## **STANDARDS OF ROPES**

EN ISO 9554	Fibre Ropes - General Specifications
EN ISO 1968	Fibre Ropes and Cordage - Vocabulary
EN ISO 2307	Fibre Ropes - Determination of Certain Physical and Mechanical Properties
EN ISO 1140	Fibre Ropes - Polyamide - 3, - 4 and - 8 Strand Ropes
EN ISO 1141	Fibre Ropes - Polyester - 3, - 4 and - 8 Strand Ropes
EN ISO 1346	Fiber Ropes - Polypropylene - 3, - 4 and - 8 Strand Ropes
EN ISO 1181	Fibre Ropes - Manila and Sisal - 3,- 4 and - 8 Strand Ropes
ISO 10547	Polyester Fibre Ropes - Double Braid Construction
ISO 10554	Polyamide Fibre Ropes - Double Braid Construction
ISO 10572	Mixed Polyolef in Fibre Ropes
ISO 10325	Fibres Ropes - High Modulus Polyethylene - 8 Strand Braided Ropes, 12 Strand Braided Ropes and Covered Ropes
ISO 10556	Fibres Ropes of Polyester/Polyolef in Dual Fibres
EN 1891	Personel Protective Equipment for The Prevention of Falls From A Height - Low Stretch Kernmantel Ropes
EN 892	Mountaineering Equipment - Dynamic Mountaineering Ropes - Safety Requirements and Test Methods
EN 564	Mountaineering Equipment - Accessory Cord - Safety Requirements and Test Methods

## **STANDARDS OF ROPES**

MIL-DTL 24050E Polyamide Fibre Ropes - Double Braid Construction

## **STANDARDS OF SLINGS**

EN 1492-1+A1 Textile Slings - Safety - Part 1: Flat Woven Webbing Slings, Made of Man -

Made Fibers for General Purpose Use

EN 1492-2+A1 Textile Slings - Safety - Part 2: Roundslings, Made of Man -

Made Fibers for General Purpose Use

## **QUALITY - TEST**

Kaya Ropes manufactures all kinds of ropes with technical specifications that are suitable for all kind of conditions & ropes made for a specific field with international quality certifications also offering a wide range of construction type and raw materials for every field where the safety of human life and property is of prime concern.

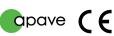
For certain type of products, Kaya Ropes has the type approval and inspection certificates from Turk Loydu. Additionally, Kaya Ropes offers inspection certificates from DNV-GL and Bureau Veritas upon special request from their clients.

































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