Heavy Duty British Standard Shock Cord

BS3F70

Developed and manufactured in full accordance with **BS3F70:1991** Specification for heavy duty braided rubber cord, which specifies a range of diameters of shock cord between 5mm and 26mm, Ibex Marina have extrapolated properties in order to extend this range to 32mm.

Shock cord manufactured to this standard is suitable for use in shock absorber cord assemblies, aeronautical purposes to BS SP 170-171, crash test equipment, and subsea applications for use with Streamers and Remotely Operated Vehicles.

The inner rubber threads are tightly encased within two outer coverings of braid, typically either cotton or polyester, and these covers are date coded.

Aramid covers are also available.

LOAD TO GIVE EXTENSION OF:						
Diameter (mm)*	10%	30%		75%		Total Extension
	(Minimum)	Min	Max	Min	Max	
5	20N	29N	38N	50N	65N	105%
6.5	40N	S8N	76N	100N	130N	105%
8	60N	88N	116N	150N	196N	105%
9.5	80N	120N	170N	210N	280N	105%
12.5	150N	210N	280N	370N	480N	105%
16	240N	350N	460N	600N	800N	105%
19	340N	500N	650N	850N	1100N	105%
22	460N	660N	880N	1150N	1500N	105%
26	640N	930N	1250N	1600N	2100N	10S%
28	740N	1080N	1425N	1850N	2425N	105%
32	970N	1410N	1875N	2425N	3200N	105%

*All Thickness must be+/- 0.5% of the nominal diameter for BS

Light Duty British Standard Shock Cord

BS3F71

Developed and manufactured in full accordance with **BS3F71:1991** Specification for light duty braided rubber cord, which specifies a range of diameters of shock cord between 3mm to 11mm, Ibex Marina have extrapolated properties in order to extend this range to 25mm.

Shock cord manufactured to this standard is suitable for use in cut lengths in parachute pack opening devices, for lightweight suspensions and other aeronautical purposes to BS SP 170-171,and in crane and tow systems where snatch loads or “elastic muscle” is needed.

The inner rubber threads are tightly encased in most diameters within two outer coverings of braid, typically either cotton or polyester, and these covers are date coded.

Aramid covers are also available.

LOAD TO GIVE EXTENSION OF :					
Diameter* (mm)	30%		100%		Total Extension
	Min	Max	Min	Max	
3	5N	7.5N	7.5N	11N	125%
4	9N	14N	14N	20N	125%
5	14N	22N	22N	31N	125%
5.5	17N	26N	26N	40N	125%
6.5	25N	36N	36N	53N	125%
8	37N	55N	55N	80N	125%
9.5	54N	78N	78N	114N	125%
11	70N	104N	104N	152N	125%

*All Thickness must be+/- 0.5% of the nominal diameter for BS

Power Springs

Designed to harness the power of the elemental materials, Power Springs are high-strength elastic tension/extension springs manufactured from a natural rubber core enclosed in braided fibre inner and outer covers.

Power Springs deliver a unique combination of power and load characteristics that offer a high performance alternative to coiled steel springs.

- Exceptional load - weight ratio
- Virtually no restriction on length
- Outstanding flexibility
- Tested beyond 5,000,000 cycles
- Non magnetic
- Chemical resistance
- Wide temperature service range
- Available in endless ring applications

Essential to the versatility of *Power Springs* is its patented termination options.

In external tests carried out by the Institute of Spring Technology, in excess of 5,000,000 load cycles had been achieved.

A range of stainless steel and aluminium end fittings are used as standard, but customised end options can be fitted to meet application demands. Additionally for special requirements, to meet British Standard 3F70:1991 for example, or when high performance is required, different fibre sheathing cover materials can be used.

POWER SPRINGS ARE AVAILABLE IN SIX DIAMETERS.

At each of these diameters length is available from 100mm to 100m with a length tolerance of -/+ 1% or 5mm. PowerSprings can be specified in a similar way to a steel extension spring. A typical specification chart is shown in the table.

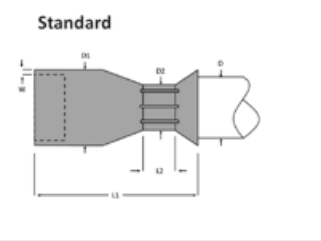
The load at any extension can be calculated using the formula:

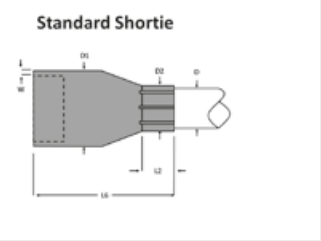
Load = S x E + F0
(where S = spring rate, E = % extension and F0 = initial tension)

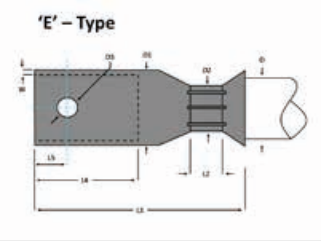
Cord diameter mm (in)	Maximum load N (lb)	Initial Tension N (lb)	Preload N (lb)	Nominal free length	Spring rate N (lb)	Maximum extension %
12.5 (0.49)	487 (109)	135 (30)	174 (39)	Any	3.91 (0.88)	90
16.0 (0.63)	826 (186)	190 (43)	261 (59)	Any	7.07 (1.59)	90
19.0 (0.75)	1152 (259)	248 (56)	348 (78)	Any	10.04 (2.26)	90
22.0 (0.87)	1565 (352)	367 (82)	500 (112)	Any	13.31 (2.99)	90
26.0 (1.02)	1957 (440)	538 (121)	696 (156)	Any	15.77 (3.54)	90
32.0 (1.26)	3326 (747)	782 (176)	1065 (239)	Any	28.27 (6.35)	90

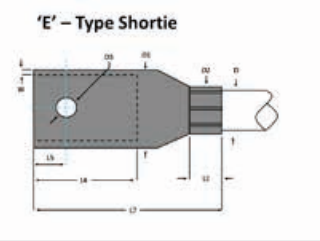
Pre-load = load at 10% extension.
Initial tension = calculated value that assumes the modulus is constant to zero extension.

POWERSPRINGS STANDARD TERMINATIONS









Cord Diameter (mm)	Aluminium											Steel										
	Dl	D2	D3	Ll	L2	L3	L4	LS	L6	L7	W	Dl	D2	D3	Ll	L2	L3	L4	LS	L6	L7	W
12.5	19	16	7	46	26	64	18	11	38	56	2.6	19	15	7	46	26	64	18	11	38	56	2.6
16	25.4	21	7	51	26	75	21	11	41	65	3.3	25.4	21	7	51	26	75	21	11	41	65	3.3
19	28.6	19	7	55	26	79	21	11	44	67	3.3	28.6	19	7	55	26	79	21	11	44	67	3.3
22	31.8	23	10	59	27	83	22	15	46	70	3.3	31.8	23	10	59	27	83	22	15	46	70	3.3
26	38.1	26	10	65	27	95	36	15	50	80	3.3	38.1	26	10	65	27	95	36	15	50	80	4
32	44.5	30	10	75	29	111	38	15	57	93	3.3	44.5	30	10	75	29	111	38	15	57	93	3.3

This information may be subject to change.

Power Bands

Power Bands are a high strength shock cord assembly. Power Bands have Stainless Steel, Galvanised Steel, Nylon or Aluminium thimble(s) and are bonded with 2 servings of whipping to ensure strength under heavy loads. We can also supply with soft eye terminations, double-whipped or crimped and covered. Power Bands are largely used in the Defence industry but are also used in leisure/adventure applications. We can make to customer specifications or drawings, or design suitable Power Bands in consultation with customers.

Heavy duty (BS3F70), light duty (BS3F71) Superstretch or commercial shock cords are used in these assemblies, depending on the application.

Soft eye terminations, double-whipped or crimped & covered

Steel, aluminium & nylon tear-shaped thimbles, double-whipped

Nylon & aluminium round thimbles, double-whipped

Dyneema Covered Shock Cord

Dyneema® is an UHMwPE (Ultra High Molecular weight Polyethylene) or HMPE (High Modulus Polyethylene) fibre developed by DSM.

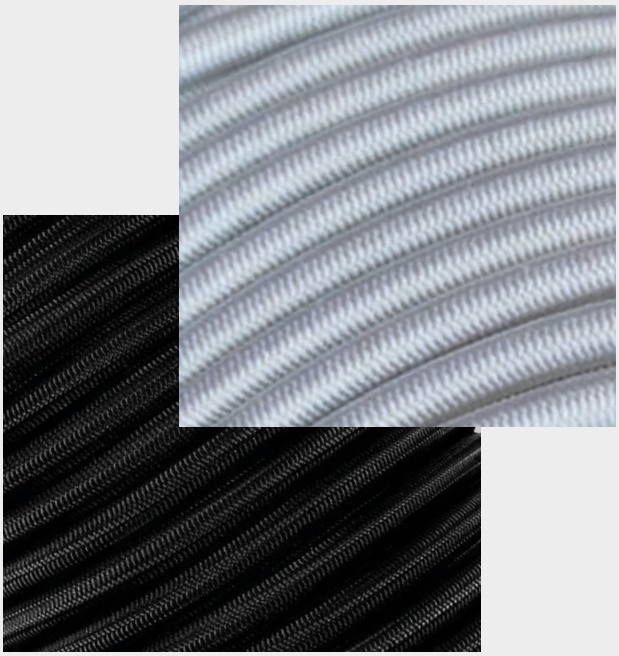
On a weight for weight basis, it is 15 times stronger than steel wire.

It is hydrophobic and does not absorb water.

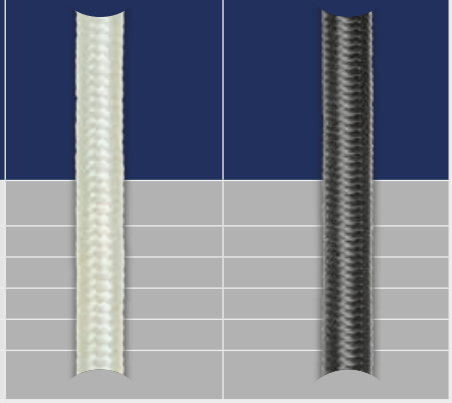
Dyneema® is chemically inert, and performs well in dry, wet, salty and humid conditions, as well as other situations where chemicals are present.

FEATURES & BENEFITS:

- Absorbs high shock loads
- Good abrasion resistance
- Good UV resistance
- High elasticity
- Excellent fatigue resistance
- Available in 6 diameters



Ref.	Dia.	50% Extension	100% Extension	Nominal MBL	Colours	Cover	Weight	White	Black
07/03	3mm	7N	10N	477N	White	12 plait	7.0g/m		
07/04	4mm	12-17N	60-70N	525N	Black, White	12 plait	12.0g/m		
07/05	5mm	25N	70-90N	635N	Black, White	16 plait	18.0g/m		
07/06	6mm	30N	70-90N	725N	Black, White	16 plait	26.0g/m		
07/08	8mm	50-60N	90-110N	1970N	Black, White	24 plait	45.0g/m		
07/10	10mm	60-75N	100-120N	2630N	Black, White	24 plait	75.0g/m		



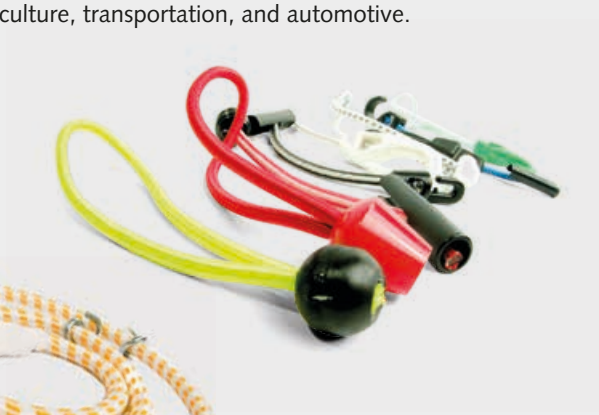
Values quoted are intended as a guide only and are issued without prejudice. Users should always satisfy themselves of the suitability for end-use and should build in sufficient safety factors in calculating load-bearing requirements.

SP Aerospace Assemblies

Available in heavy 3F70 or light duty 3F71, this technical assembly is used mainly in the Aerospace industry. The Stainless steel ferrules 'A' to 'G' comply to the British Standard 168 and 169 for this product.

Commercial Shock Cord & Assemblies

Available in diameters ranging from 3mm to 14mm, polyester, polypropylene and nylon covers, and in a range of colours (some subject to MOQ), commercial shock cord is supplied in 50 or 100 metre reel lengths, or in assemblies for use in a vast array of industries, including leisure, marine, equestrian, agriculture, transportation, and automotive.



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UK MANUFACTURED ROPES SHOCK CORDS & ASSEMBLIES SINCE 1843

UK MANUFACTURED

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SHOCK CORD

HEAVY DUTY & LIGHT DUTY BRITISH STANDARD SHOCK CORD \ POWER SPRINGS \ POWER BANDS \
DYNEEMA® COVERED SHOCK CORD \ SP AEROSPACE ASSEMBLIES \ COMMERCIAL SHOCK CORD & ASSEMBLIES

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