



PP VIKEN AS

Fenders catalogue

By Marius Mehus



+47 906 12 345



Sales@ppviken.no

Florvågøen 215 -
5305 Florvåg



Cylinder



D Fenders



Arch



Yokohama



Sling



Foam

Pneumatic Fenders – Chart

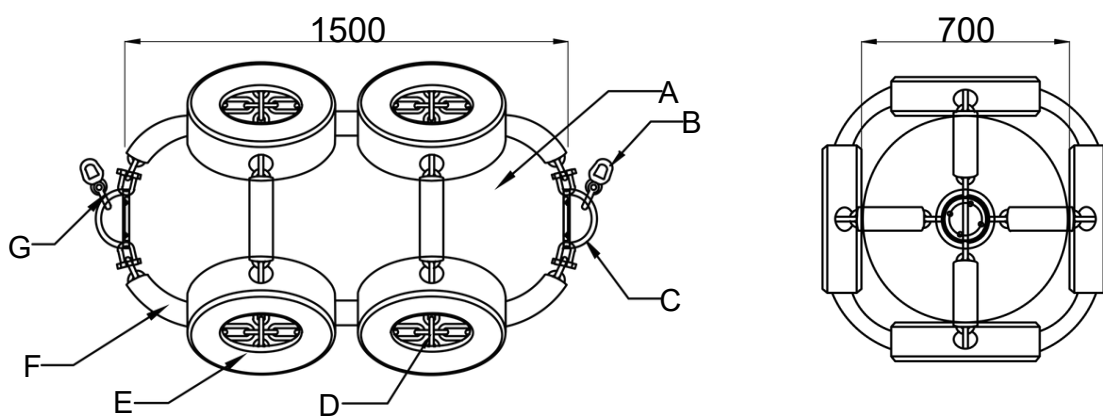
50 kPa

Size	Energy Absorption	Reaction Force	Weight
Mm	kNm	kN	kg
700 x 1500	17	137	133
1000 x 1500	32	182	210
1000 x 2000	45	257	235
1200 x 2000	63	297	285
1500 x 3000	153	579	485
2000 x 3500	308	875	885
2500 x 3500	580	1208	1287
2500 x 4000	663	1380	1380
2500 x 5500	932	2010	1865
3000 x 5000	1050	2030	2266
3000 x 6000	1315	2488	2644
3300 x 4500	1180	1885	3180
3300 x 6500	1814	3015	3780
4500 x 6500	3432	4150	4982
4500 x 9000	4752	5747	6672

80 kPa

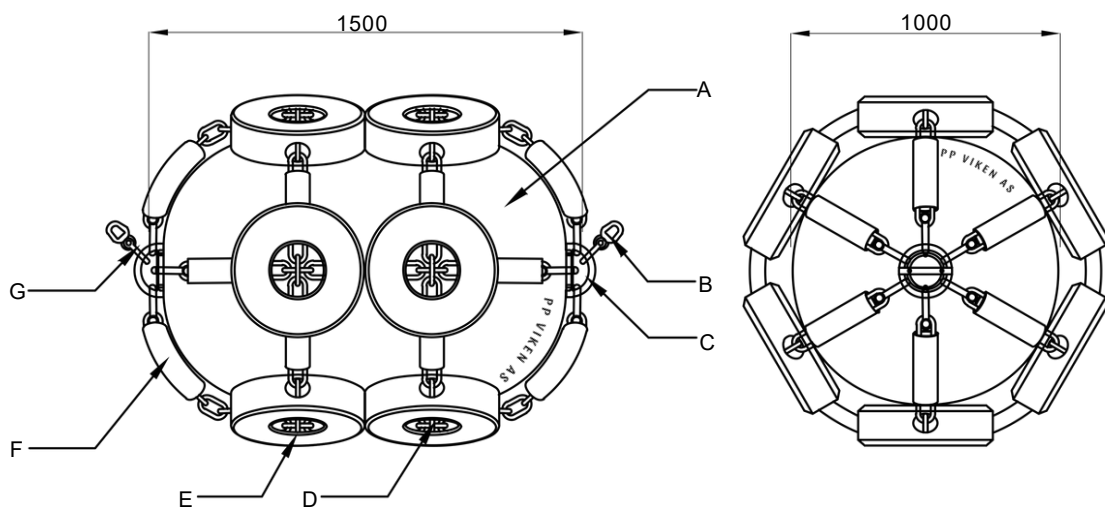
Size	Energy Absorption	Reaction Force	Weight
Mm	kNm	kN	kg
700 x 1500	21	171	143
1000 x 1500	40	266	226
1000 x 2000	56	321	255
1200 x 2000	79	371	309
1500 x 3000	191	724	549
2000 x 3500	385	1094	1003
2500 x 3500	726	1408	1405
2500 x 4000	829	1725	1580
2500 x 5500	1165	2513	2145
3000 x 5000	1313	2538	2626
3000 x 6000	1644	3110	3084
3300 x 4500	1640	2647	3560
3300 x 6500	2268	3769	4320
4500 x 6500	4518	4998	5990
4500 x 9000	6633	7551	9722

700 x 1500 – Pneumatic Fender



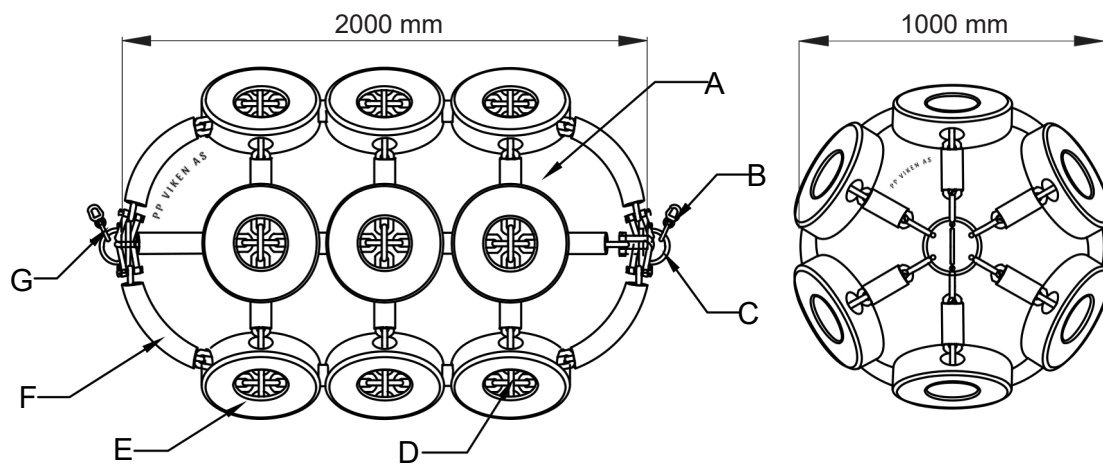
50 kPa	Value	80 kPa	Value
Energy Absorption	17 kNm	Energy Absorption	21 kNm
Reaction Force	137 kN	Reaction Force	171 kN
Weight	133 kgs	Weight	143 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Swivel	B	Swivel
C	Pull Ring	C	Pull Ring
D	Chain	D	Chain
E	Tires	E	Tires
F	Rubber Sleeves	F	Rubber Sleeves
G	Shackle	G	Shackle

Pneumatic Fender – 1000 x 1500



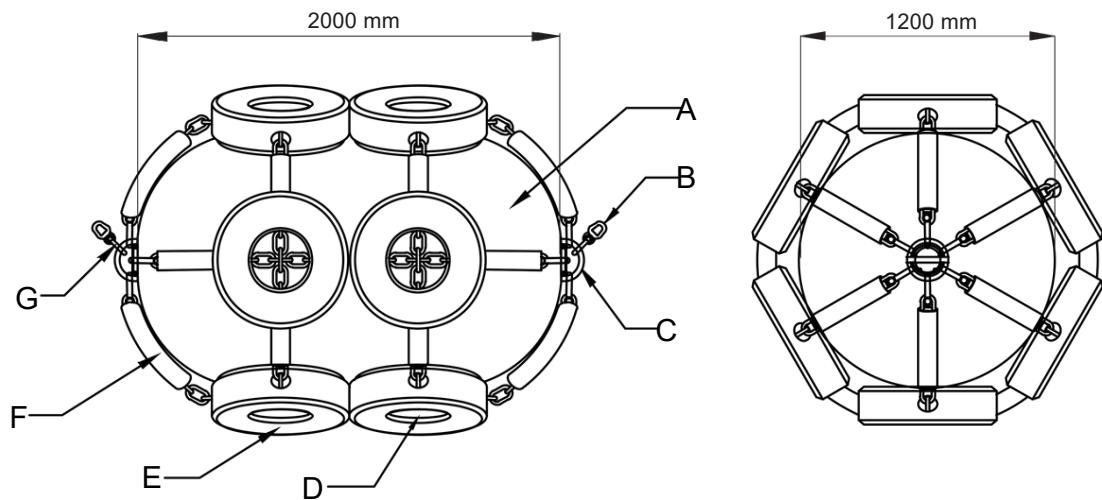
50 kPa	Value	80 kPa	Value
Energy Absorption	32 kNm	Energy Absorption	40 kNm
Reaction Force	181 kN	Reaction Force	266 kN
Weight	210 kgs	Weight	226 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Swivel	B	Swivel
C	Pull Ring	C	Pull Ring
D	Chain	D	Chain
E	Tires	E	Tires
F	Rubber Sleeves	F	Rubber Sleeves
G	Shackle	G	Shackle

1000 x 2000 – Pneumatic Fender



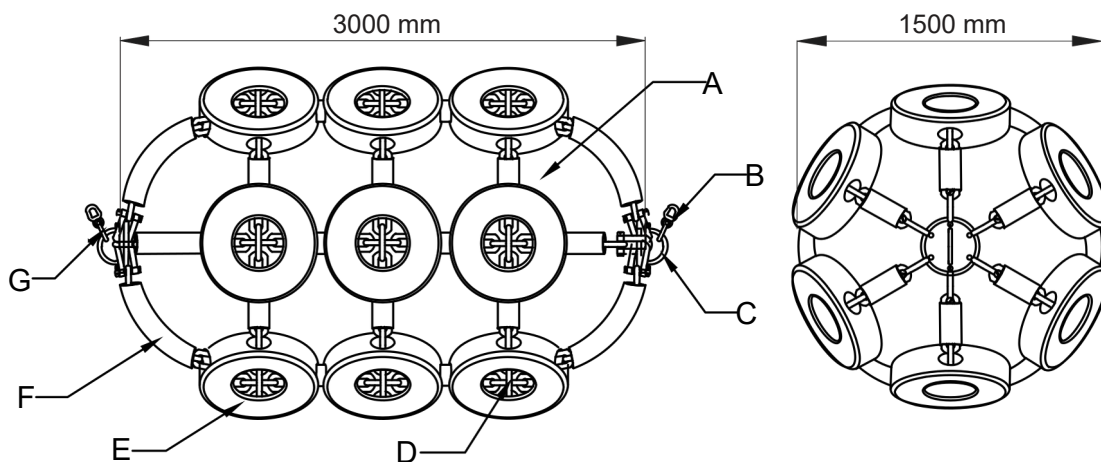
50 kPa	Value	80 kPa	Value
Energy Absorption	45 kNm	Energy Absorption	56 kNm
Reaction Force	257 kN	Reaction Force	321 kN
Weight	235 kgs	Weight	255 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Swivel	B	Swivel
C	Pull Ring	C	Pull Ring
D	Chain	D	Chain
E	Tires	E	Tires
F	Rubber Sleeves	F	Rubber Sleeves
G	Shackle	G	Shackle

Pneumatic Fender – 1200 x 2000



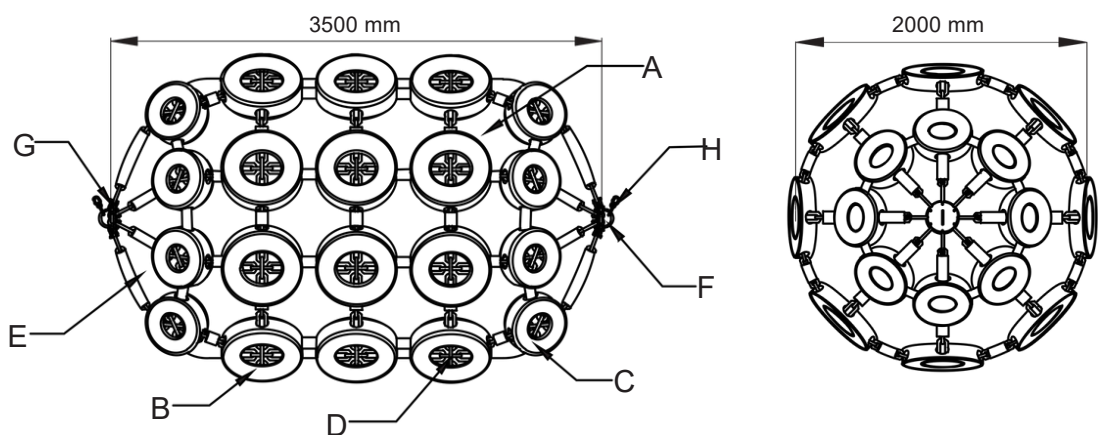
50 kPa	Value	80 kPa	Value
Energy Absorption	63 kNm	Energy Absorption	79 kNm
Reaction Force	297 kN	Reaction Force	371 kN
Weight	285 kgs	Weight	309 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Swivel	B	Swivel
C	Pull Ring	C	Pull Ring
D	Chain	D	Chain
E	Tires	E	Tires
F	Rubber Sleeves	F	Rubber Sleeves
G	Shackle	G	Shackle

1500 x 3000 – Pneumatic Fender



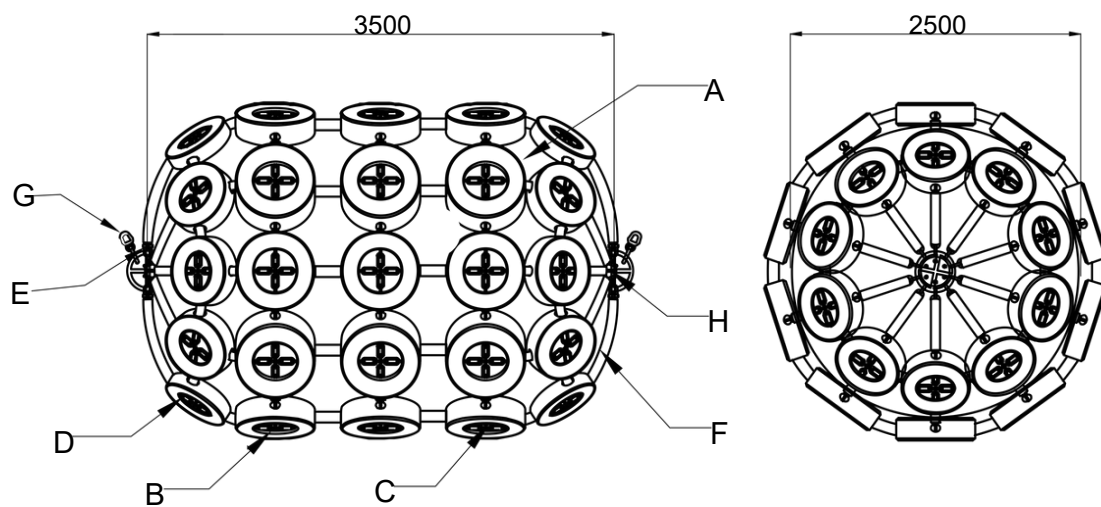
50 kPa	Value	80 kPa	Value
Energy Absorption	153 kNm	Energy Absorption	191 kNm
Reaction Force	579 kN	Reaction Force	724 kN
Weight	485 kgs	Weight	549 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Swivel	B	Swivel
C	Pull Ring	C	Pull Ring
D	Chain	D	Chain
E	Tires	E	Tires
F	Rubber Sleeves	F	Rubber Sleeves
G	Shackle	G	Shackle

Pneumatic Fender – 2000 x 3500



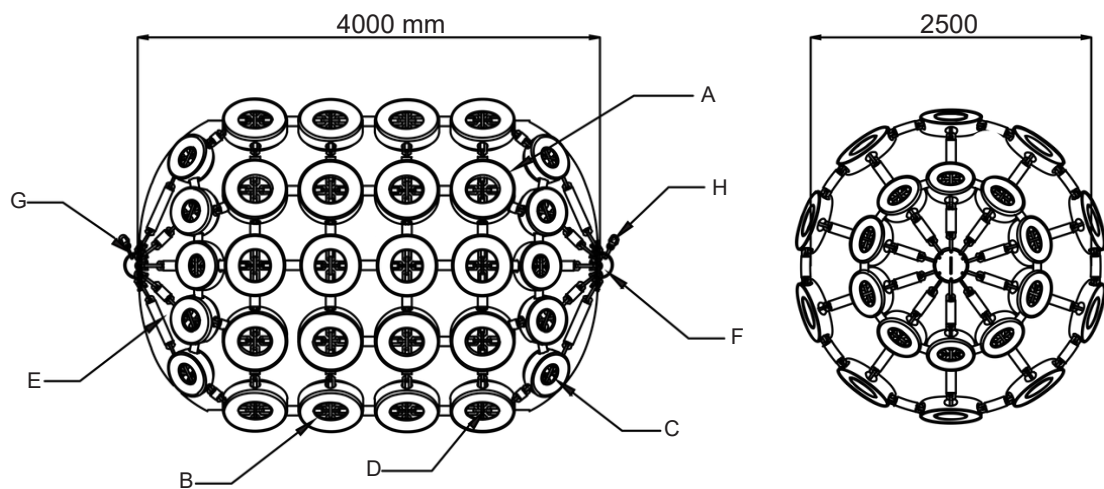
50 kPa	Value	80 kPa	Value
Energy Absorption	308 kNm	Energy Absorption	385kNm
Reaction Force	875 kN	Reaction Force	1094 kN
Weight	885 kgs	Weight	1003 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

2500 x 3500 – Pneumatic Fender



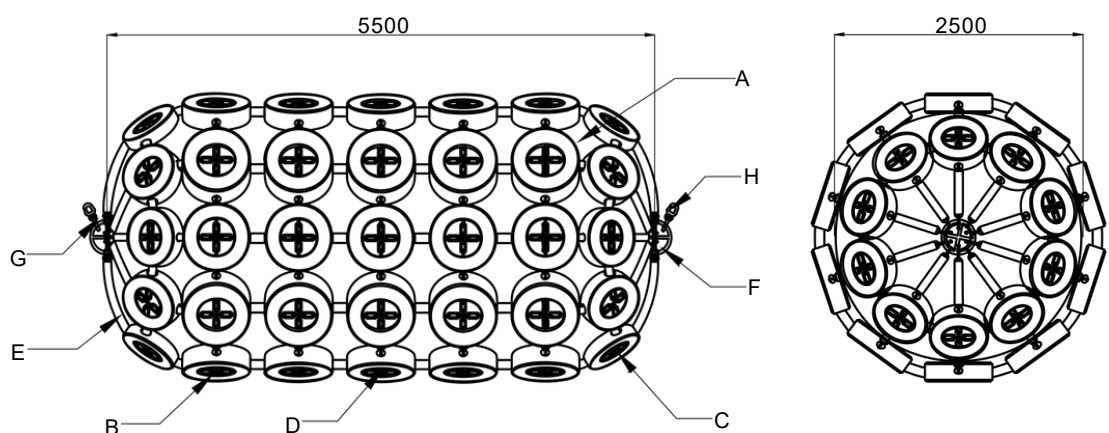
50 kPa	Value	80 kPa	Value
Energy Absorption	580 kNm	Energy Absorption	726 kNm
Reaction Force	1208 kN	Reaction Force	1408 kN
Weight	1287 kgs	Weight	1405 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Chain	C	Chain
D	Shoulder Tires	D	Shoulder Tires
E	Shackle	E	Shackle
F	Rubber Sleeves	F	Rubber Sleeves
G	Swivel	G	Swivel
H	Pull Ring	H	Pull Ring

Pneumatic Fender – 2500 x 4000



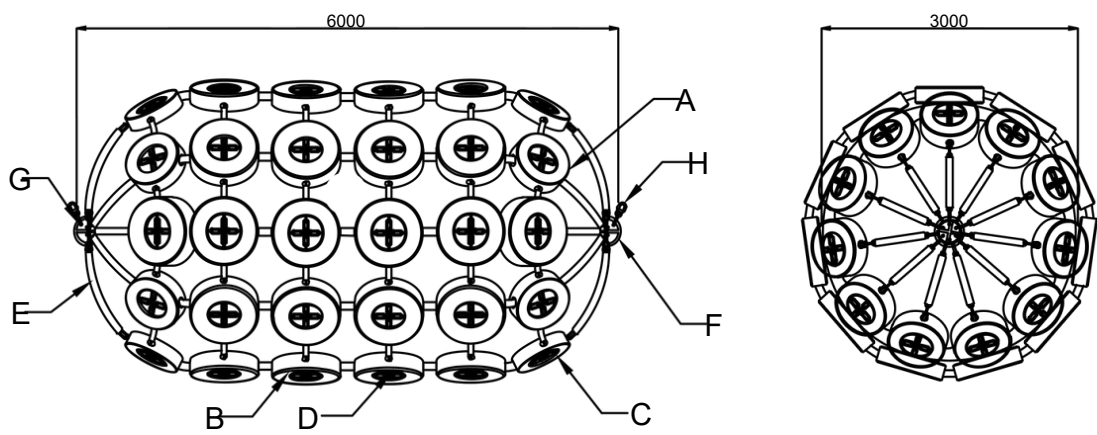
50 kPa	Value	80 kPa	Value
Energy Absorption	663kNm	Energy Absorption	829kNm
Reaction Force	1380 kN	Reaction Force	1725 kN
Weight	1380 kgs	Weight	1580 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

2500 x 5500 – Pneumatic Fender



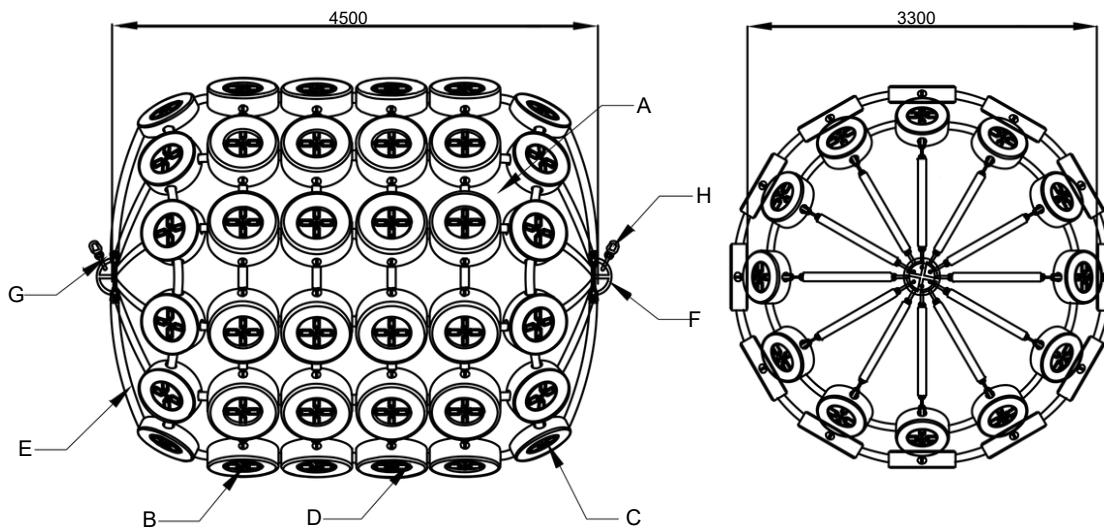
50 kPa	Value	80 kPa	Value
Energy Absorption	932 kNm	Energy Absorption	1165 kNm
Reaction Force	2010 kN	Reaction Force	2513 kN
Weight	1865 kgs	Weight	2145 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

Pneumatic Fender – 3000 x 6000



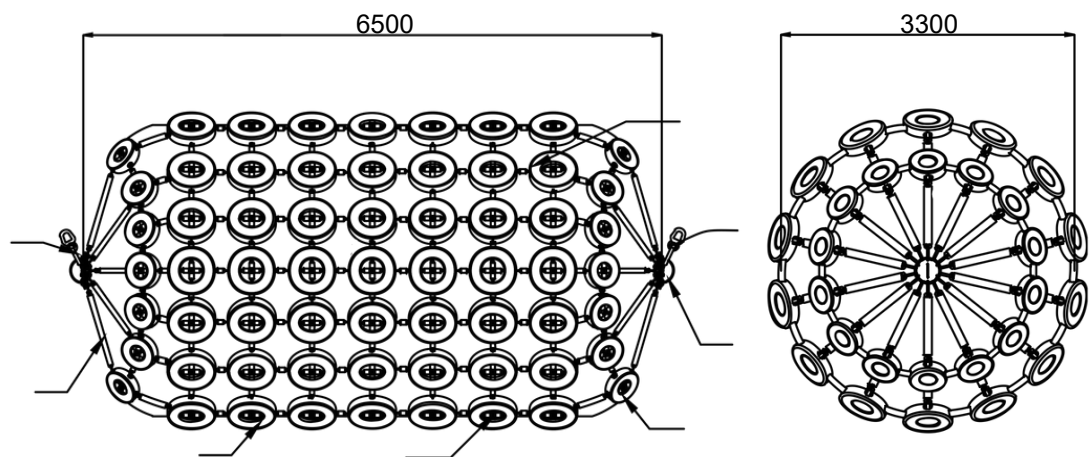
50 kPa	Value	80 kPa	Value
Energy Absorption	1315 kNm	Energy Absorption	1644 kNm
Reaction Force	2488 kN	Reaction Force	3110 kN
Weight	2644 kgs	Weight	3084 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

3300 x 4500 – Pneumatic Fender



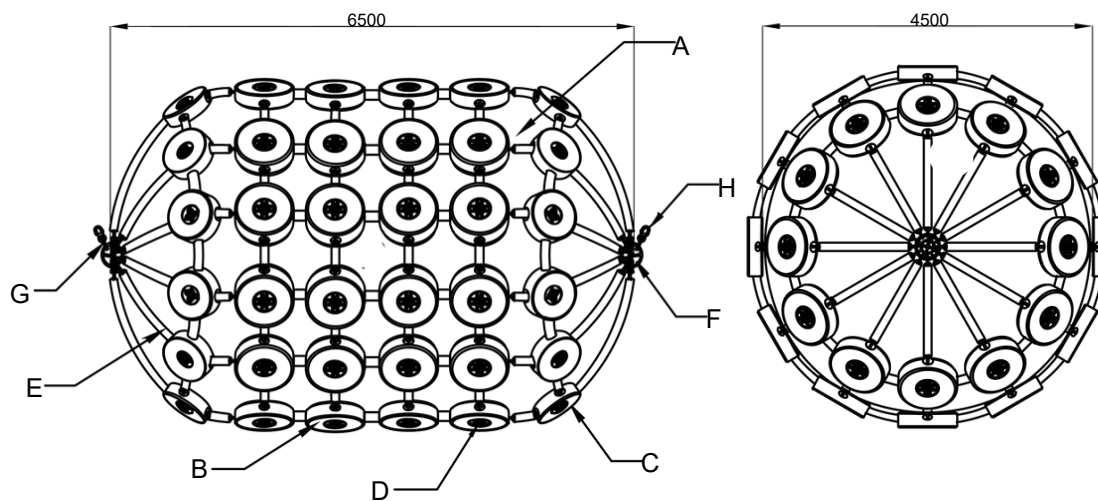
50 kPa	Value	80 kPa	Value
Energy Absorption	1175 kNm	Energy Absorption	1640 kNm
Reaction Force	1884 kN	Reaction Force	2467 kN
Weight	3180 kgs	Weight	3560 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

Pneumatic Fender – 3300 x 6500



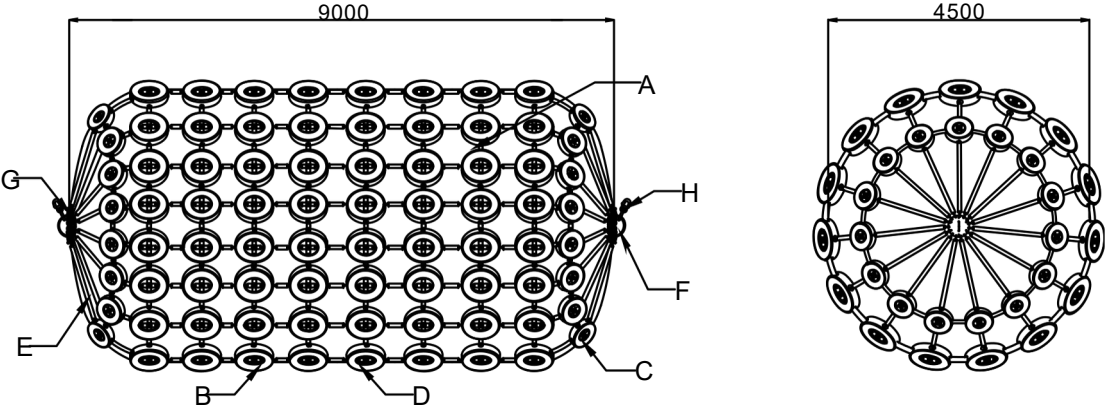
50 kPa	Value	80 kPa	Value
Energy Absorption	1814 kNm	Energy Absorption	2268 kNm
Reaction Force	3015 kN	Reaction Force	3769 kN
Weight	3780 kgs	Weight	4320 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

4500 x 6500 – Pneumatic Fender



50 kPa	Value	80 kPa	Value
Energy Absorption	3432 kNm	Energy Absorption	4518 kNm
Reaction Force	4150 kN	Reaction Force	4998 kN
Weight	4982 kgs	Weight	5990 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

Pneumatic Fender – 4500 x 9000



50 kPa	Value	80 kPa	Value
Energy Absorption	4752 kNm	Energy Absorption	6633 kNm
Reaction Force	5747 kN	Reaction Force	7551 kN
Weight	6672 kgs	Weight	9722 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Tires	B	Tires
C	Shoulder Tires	C	Shoulder Tires
D	Chain	D	Chain
E	Rubber Sleeves	E	Rubber Sleeves
F	Pull Ring	F	Pull Ring
G	Shackle	G	Shackle
H	Swivel	H	Swivel

Sling Fenders – Chart

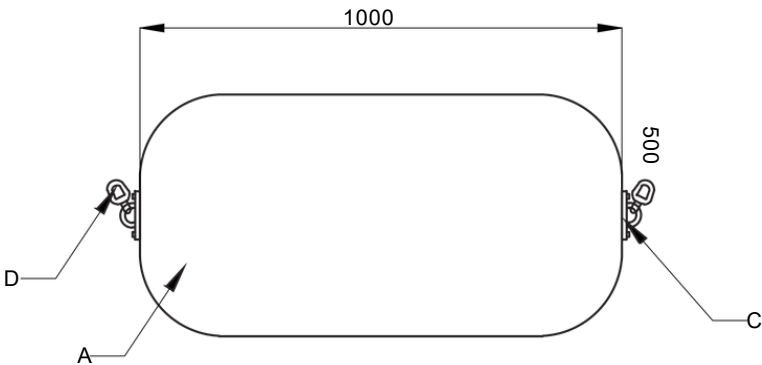
50 kPa

Size	Energy Absorption	Reaction Force	Weight
Mm	kNm	kN	kg
500 x 1000	6	24	19
700 x 1500	17	137	42
800 x 1500	19	157	48
1000 x 1500	32	182	69
1000 x 2000	45	257	82
1200 x 2000	63	297	95
1500 x 3000	153	579	185
2000 x 3500	308	875	390
2500 x 4000	663	1380	580
2500 x 5500	932	2010	725
3000 x 5000	1050	2030	989
3000 x 6000	1315	2488	1149
3300 x 4500	1180	1885	1110
3300 x 6500	1814	3015	1480
4500 x 6500	3432	4150	2050
4500 x 9000	4752	5747	3490

80 kPa

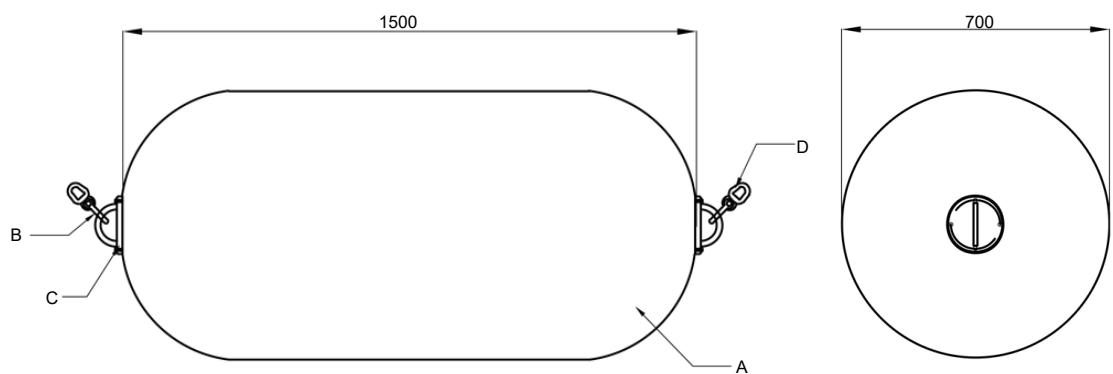
Size	Energy Absorption	Reaction Force	Weight
Mm	kNm	kN	kg
500 x 1000	8	54	24
700 x 1500	21	171	45
800 x 1500	24	196	52
1000 x 1500	40	266	74
1000 x 2000	56	321	87
1200 x 2000	79	371	114
1500 x 3000	191	724	230
2000 x 3500	385	1094	410
2500 x 4000	829	1725	893
2500 x 5500	1165	2513	1135
3000 x 5000	1313	2538	1095
3000 x 6000	1644	3110	1320
3300 x 4500	1640	2647	1538
3300 x 6500	2268	3769	2640
4500 x 6500	4518	4998	3450
4500 x 9000	6633	7551	3960

500 x 1000 – Sling Fender



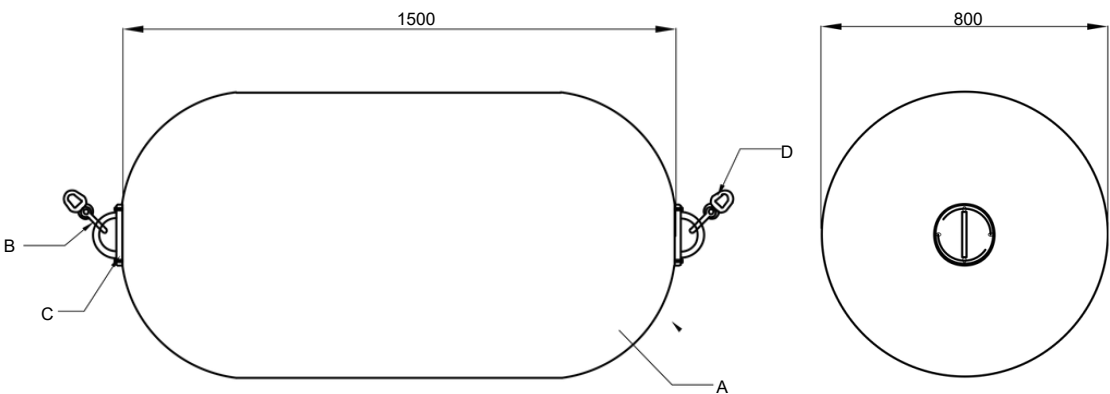
50 kPa	Value	80 kPa	Value
Energy Absorption	6 kNm	Energy Absorption	8 kNm
Reaction Force	24 kN	Reaction Force	54 kN
Weight	19 kgs	Weight	24 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 700 x 1500



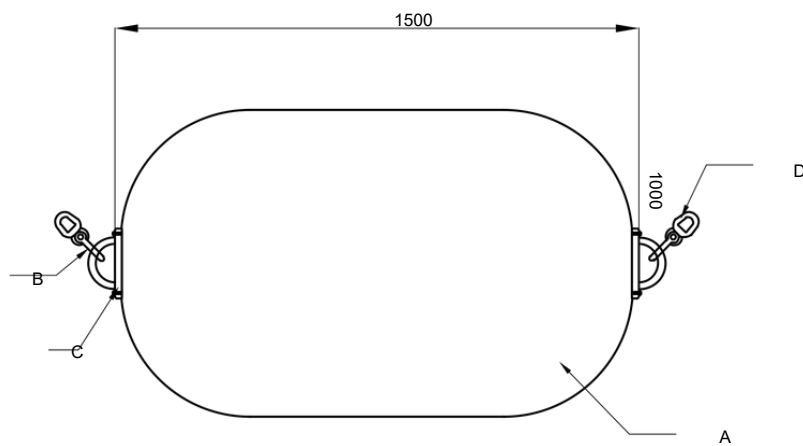
50 kPa	Value	80 kPa	Value
Energy Absorption	17 kNm	Energy Absorption	21 kNm
Reaction Force	137 kN	Reaction Force	171 kN
Weight	42 kgs	Weight	45 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

800 x 1500 – Sling Fender



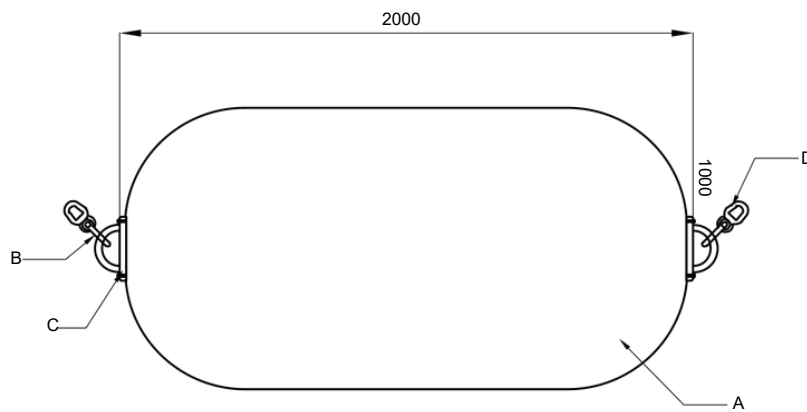
50 kPa	Value	80 kPa	Value
Energy Absorption	19 kNm	Energy Absorption	24 kNm
Reaction Force	157 kN	Reaction Force	196 kN
Weight	48 kgs	Weight	52 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 1000 x 1500



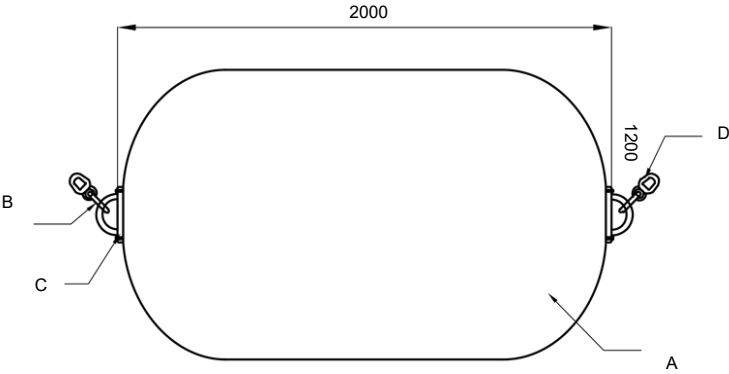
50 kPa	Value	80 kPa	Value
Energy Absorption	32 kNm	Energy Absorption	40 kNm
Reaction Force	182 kN	Reaction Force	266 kN
Weight	69 kgs	Weight	74 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

1000 x 2000 – Sling Fender



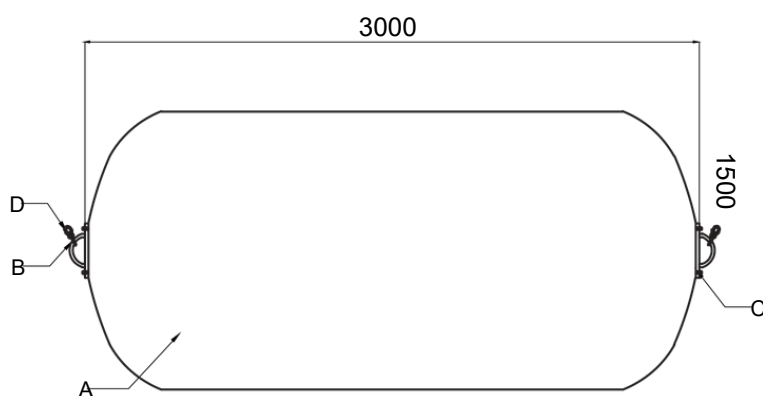
50 kPa	Value	80 kPa	Value
Energy Absorption	45 kNm	Energy Absorption	56 kNm
Reaction Force	257 kN	Reaction Force	321 kN
Weight	82 kgs	Weight	87 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 1200 x 2000



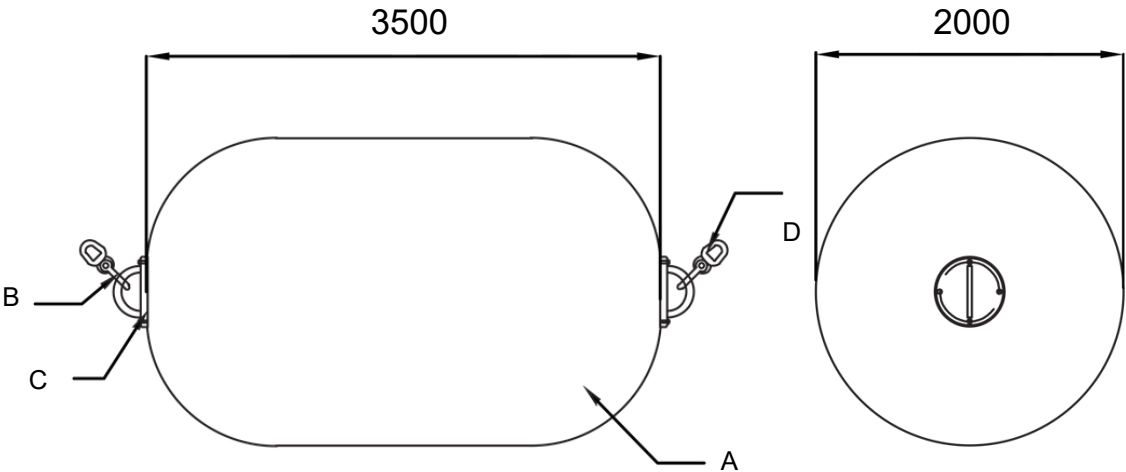
50 kPa	Value	80 kPa	Value
Energy Absorption	63 kNm	Energy Absorption	79 kNm
Reaction Force	297 kN	Reaction Force	371 kN
Weight	95 kgs	Weight	114 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

1500 x 3000 – Sling Fender



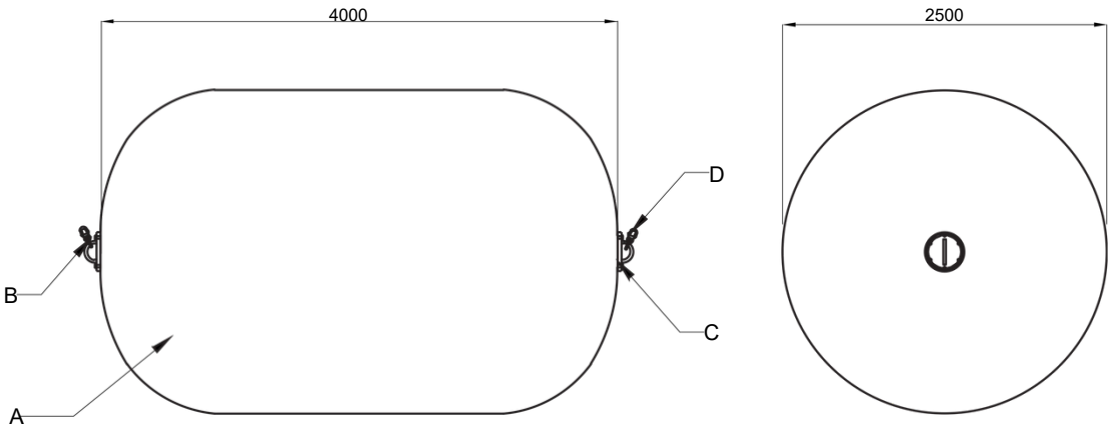
50 kPa	Value	80 kPa	Value
Energy Absorption	153 kNm	Energy Absorption	191 kNm
Reaction Force	579 kN	Reaction Force	724 kN
Weight	185 kgs	Weight	230 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 2000 x 3500



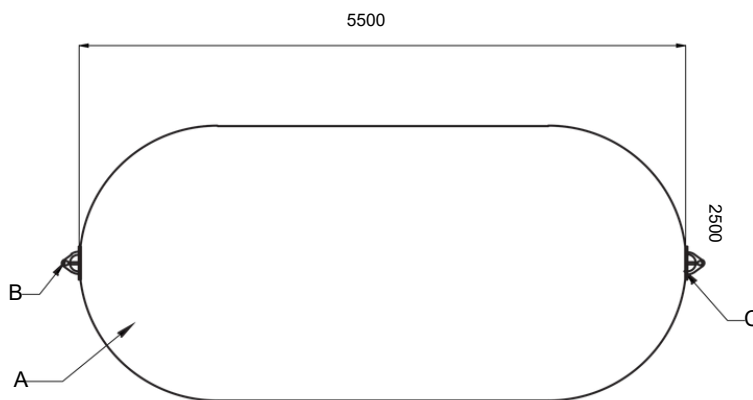
50 kPa	Value	80 kPa	Value
Energy Absorption	308 kNm	Energy Absorption	385 kNm
Reaction Force	875 kN	Reaction Force	1094 kN
Weight	390 kgs	Weight	410 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

2500 x 4000 – Sling Fender



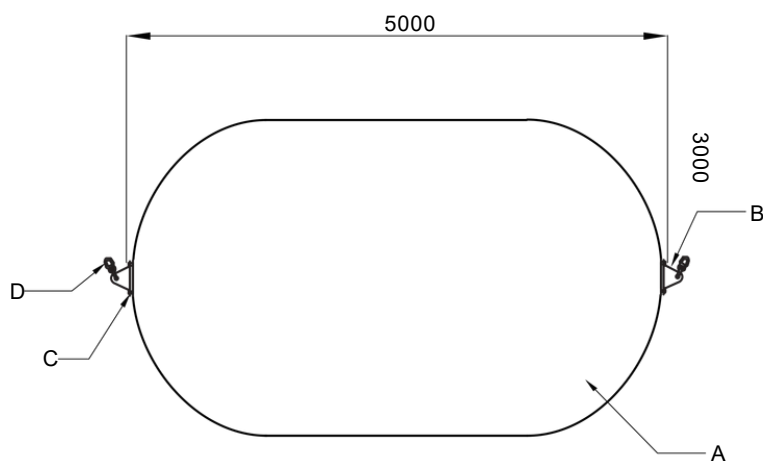
50 kPa	Value	80 kPa	Value
Energy Absorption	663 kNm	Energy Absorption	829 kNm
Reaction Force	1380 kN	Reaction Force	1725 kN
Weight	580 kgs	Weight	893 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 2500 x 5500



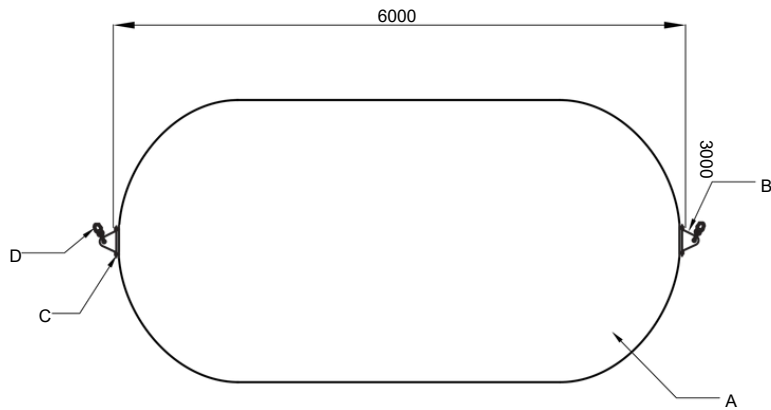
50 kPa	Value	80 kPa	Value
Energy Absorption	932 kNm	Energy Absorption	1165 kNm
Reaction Force	2010 kN	Reaction Force	2513 kN
Weight	725 kgs	Weight	1135 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Flange	B	Flange
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

3000 x 5000 – Sling Fender



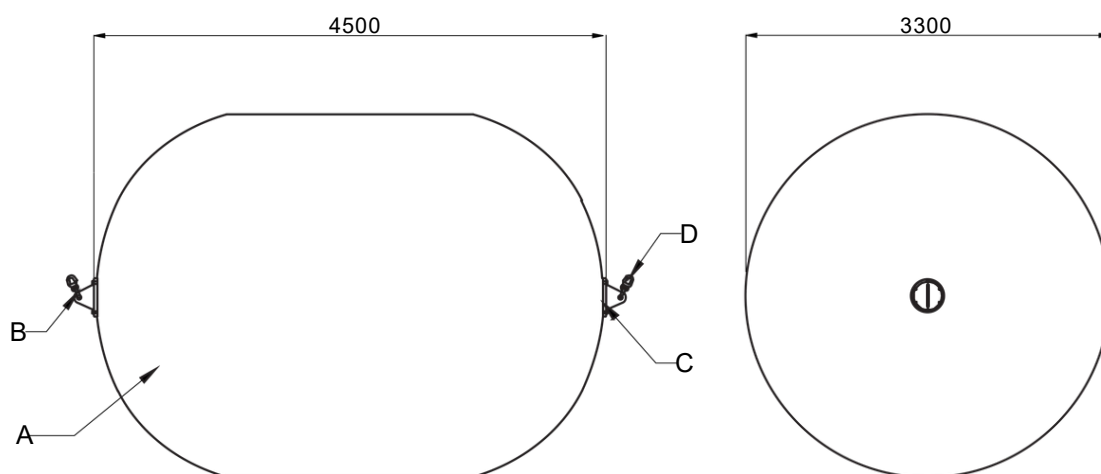
50 kPa	Value	80 kPa	Value
Energy Absorption	1050 kNm	Energy Absorption	1313 kNm
Reaction Force	2030 kN	Reaction Force	2538 kN
Weight	989 kgs	Weight	1095 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Flange	B	Flange
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 3000 x 6000



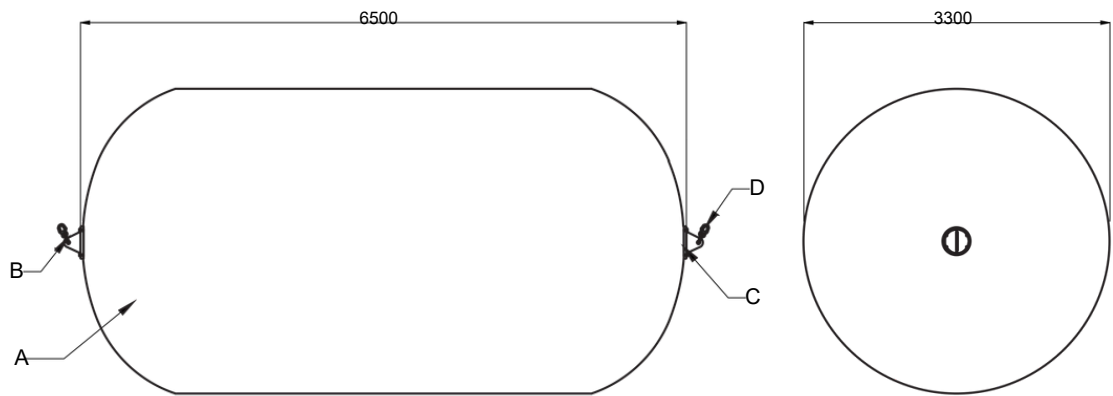
50 kPa	Value	80 kPa	Value
Energy Absorption	1315 kNm	Energy Absorption	1644 kNm
Reaction Force	2488 kN	Reaction Force	3110 kN
Weight	1149 kgs	Weight	1320 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Flange	B	Flange
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

3300 x 4500 – Sling Fender



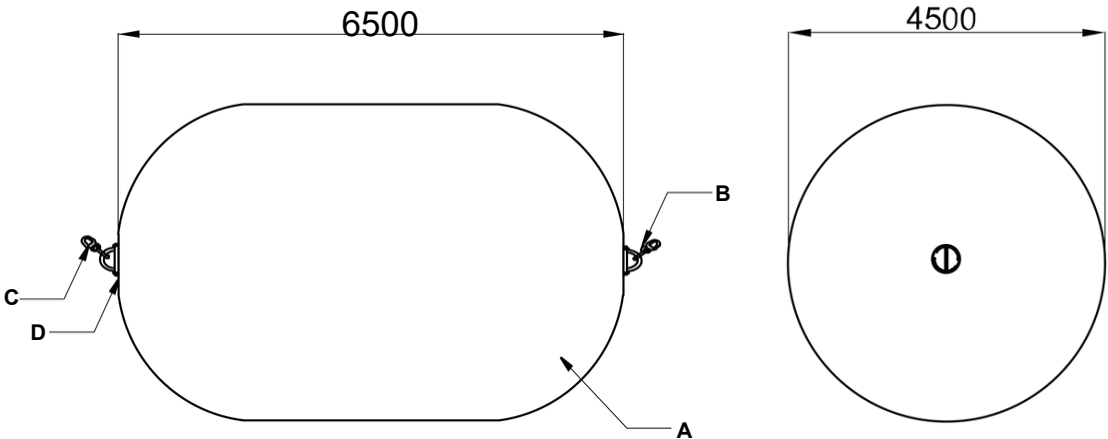
50 kPa	Value	80 kPa	Value
Energy Absorption	1180 kNm	Energy Absorption	1640 kNm
Reaction Force	1885 kN	Reaction Force	2647 kN
Weight	1110 kgs	Weight	1538 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Flange	B	Flange
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

Sling Fender – 3300 x 6500



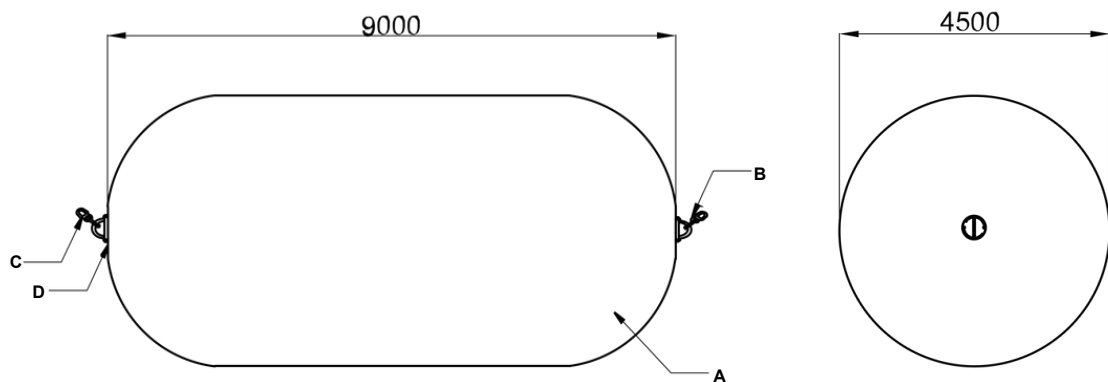
50 kPa	Value	80 kPa	Value
Energy Absorption	1814 kNm	Energy Absorption	2268 kNm
Reaction Force	3015 kN	Reaction Force	3769 kN
Weight	1480 kgs	Weight	2640 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Flange	B	Flange
C	Pull Ring	C	Pull Ring
D	Swivel	D	Swivel

4500 x 6500 – Sling Fender



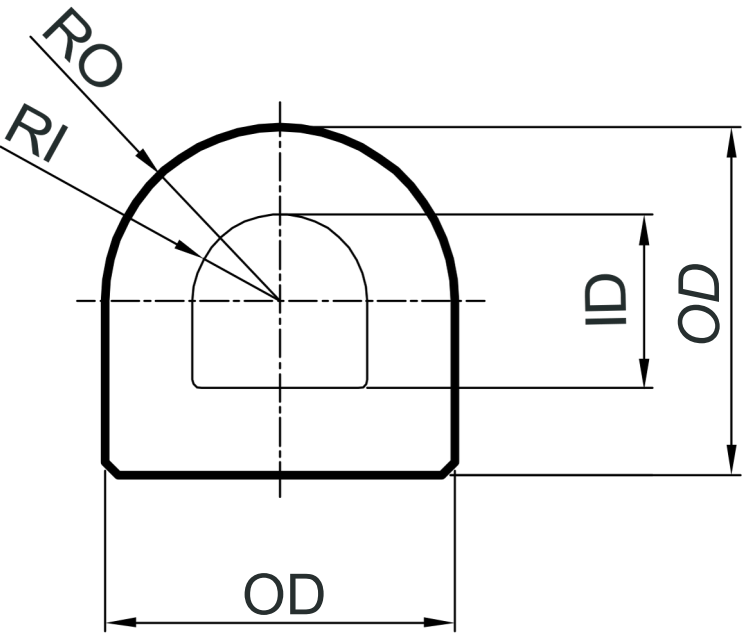
50 kPa	Value	80 kPa	Value
Energy Absorption	3432 kNm	Energy Absorption	4518 kNm
Reaction Force	4150 kN	Reaction Force	4998 kN
Weight	2050 kgs	Weight	3450 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Swivel	C	Swivel
D	Pull Ring	D	Pull Ring

Sling Fender – 4500 x 9000



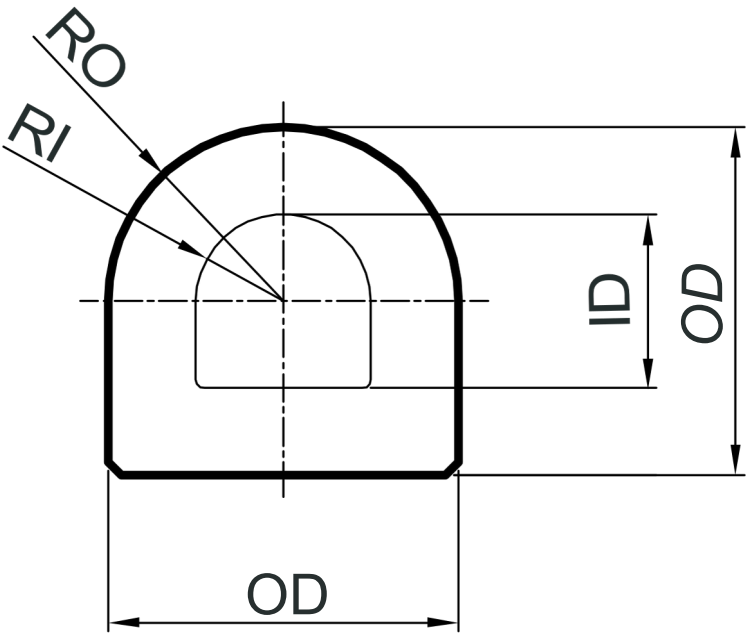
50 kPa	Value	80 kPa	Value
Energy Absorption	4752 kNm	Energy Absorption	6633 kNm
Reaction Force	5747 kN	Reaction Force	7551 kN
Weight	3490 kgs	Weight	3960 kgs
Initial Pressure	50 kPa	Initial Pressure	80 kPa
A	Fender Body (Rubber)	A	Fender Body (Rubber)
B	Shackle	B	Shackle
C	Swivel	C	Swivel
D	Pull Ring	D	Pull Ring

DD Fender – D Fenders



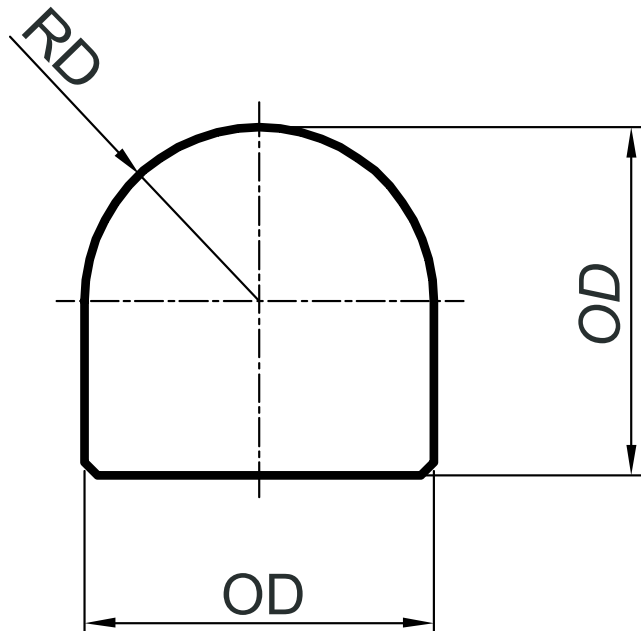
OD	ID	RO	RI	Weight	Info	Value
mm	mm	mm	mm	Kg/m	Material	Natural Rubber
100 x 100	50	50	25	8	Hardness	Max. 78 Shore A
125 x 125	62.5	62.5	31.25	13	OD Tolerance	± 5%
150 x 150	75	75	37.5	18	ID Tolerance	± 10%
200 x 200	100	100	50	32	Length Tolerance	± 30 mm
250 x 250	125	125	62.5	50	Performance Tol.	± 20%
300 x 300	150	150	75	72		
350 x 350	175	175	87.5	98		
380 x 380	190	190	95	116		
400 x 400	200	200	100	129		
500 x 500	250	250	125	201		
650 x 650	325	325	162.5	353		

DO Fender – D Fenders



OD	ID	RO	RI	Weight	Info	Value
mm 100 x	mm	mm	mm	Kg/m	Material	Natural Rubber
100 125 x	50	50	25	8.4	Hardness	Max. 78 Shore A
125 150 x	62.5	62.5	31.25	15.8	OD Tolerance	± 5%
150 200 x	75	75	37.5	19 33	ID Tolerance	± 10%
200 250 x	100	100	50	52 75	Length Tolerance	± 30 mm
250 300 x	125	125	62.5	102	Performance Tol.	± 20%
300 350 x	150	150	75	134		
350 400 x	175	175	87.5	209		
400 500 x	200	200	100			
500	250	250	125			

DS Fender – D Fenders

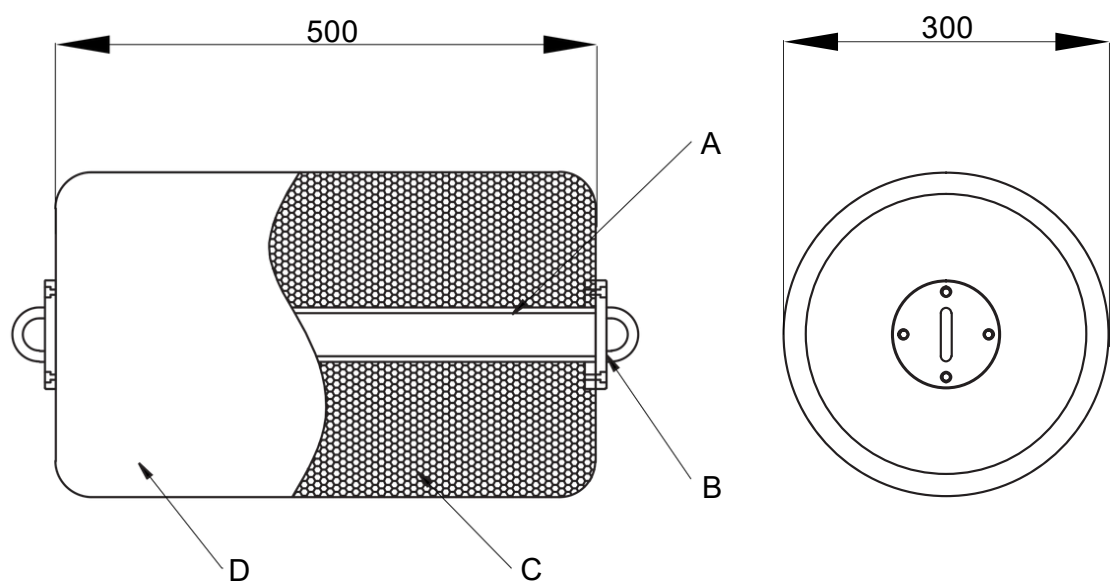


OD	RO	Weight	Info	Value
mm	mm	Kg/m	Material	Natural Rubber
100 x 100	50	11	Hardness	Max. 78 Shore A
125 x 125	62.5	19	OD Tolerance	± 5%
150 x 150	75	24.8	ID Tolerance	± 10%
200 x 200	100	44.2	Length Tolerance	± 30 mm
250 x 250	125	69	Performance Tol.	± 20%
300 x 300	150	99.4		
350 x 350	175	135.2		
400 x 400	200	176.6		
450 x 450	200	226		
500 x 500	250	280		

Foam Filled Fenders – Chart

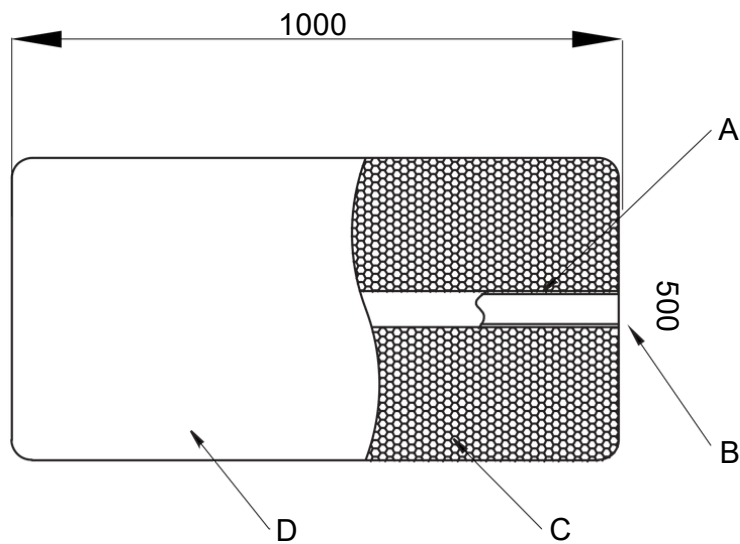
Size	Energy Absorption	Reaction Force	Weight
Mm	kNm	kN	kg
300 x 500	2	15	6
500 x 1000	8	71	26
600 x 1200	13	92	43
700 x 1500	27	161	80
1000 x 1500	49	205	146
1000 x 1500 with Tires	49	205	243
1000 x 2000	64	274	185
1200 x 2000	93	337	305
1200 x 2000 with Tires	93	337	362
1500 x 3000	216	624	727
1700 x 3000	273	696	890
2000 x 3500	456	990	1460
2500 x 4000	781	1386	2610
2500 x 4000 with Tires	781	1386	3260
3300 x 6000	3122	4239	6130
3300 x 6000 with Tires	3122	4239	7660

300 x 500 – Foam Filled Fender



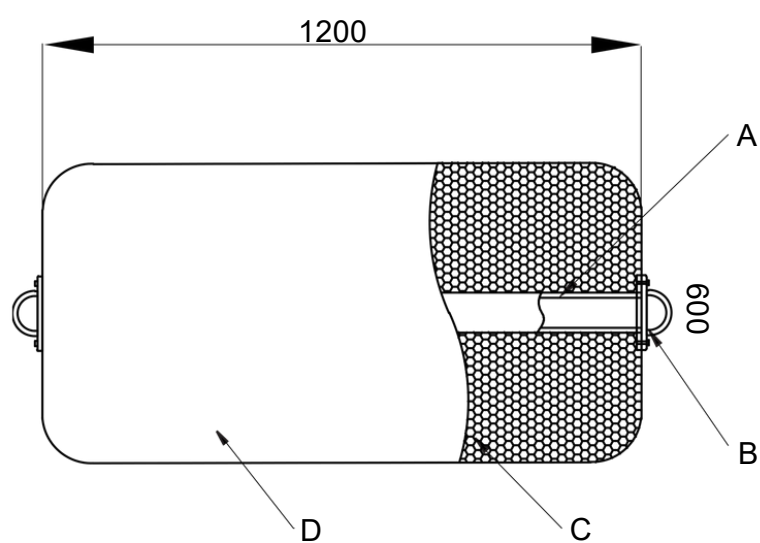
Variable	Value
Energy Absorption	2 kNm
Reaction Force	15 kN
Weight	6 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Outer Polyurethane Layer

Foam Fender – 500 x 1000



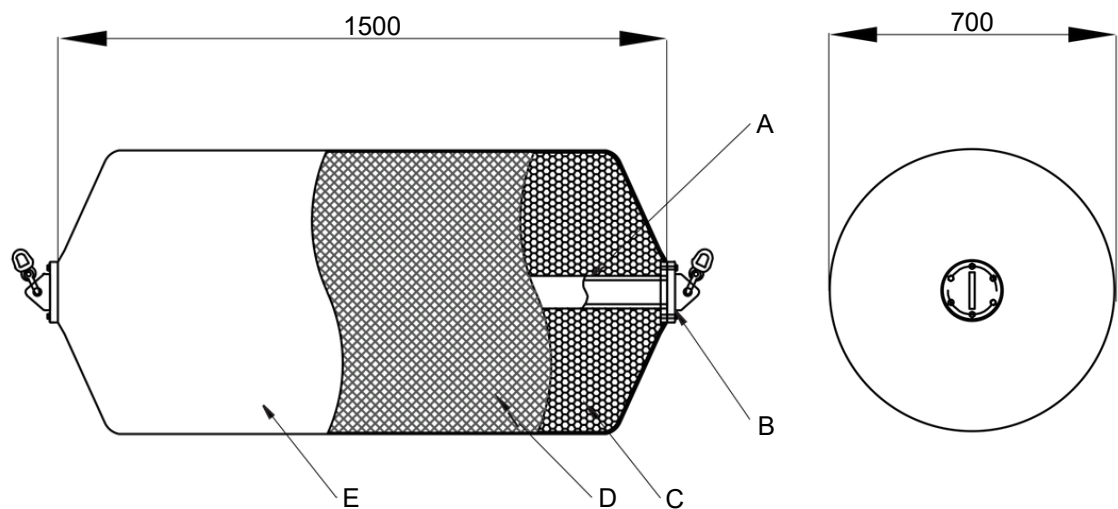
Variable	Value
Energy Absorption	8kNm
Reaction Force	71 kN
Weight	26 kgs
A	Central Pipe
B	Hole
C	EVA Foam
D	Outer Polyurethane Layer

600 x 1200 – Foam Filled Fender



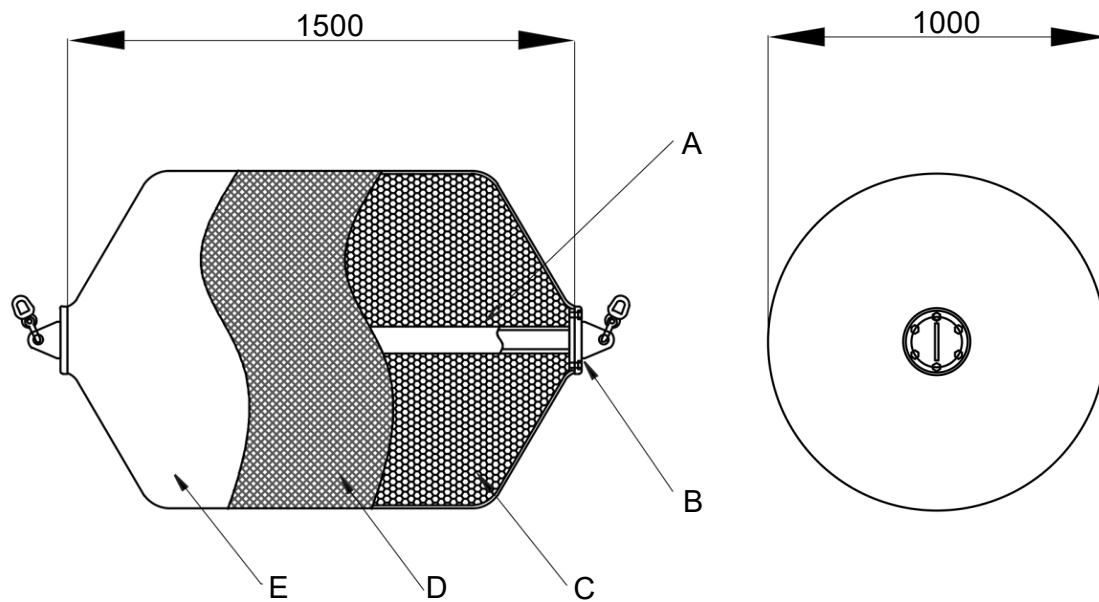
Variable	Value
Energy Absorption	13 kNm
Reaction Force	92 kN
Weight	43 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Outer Polyurethane Layer

Foam Fender – 700 x 1500



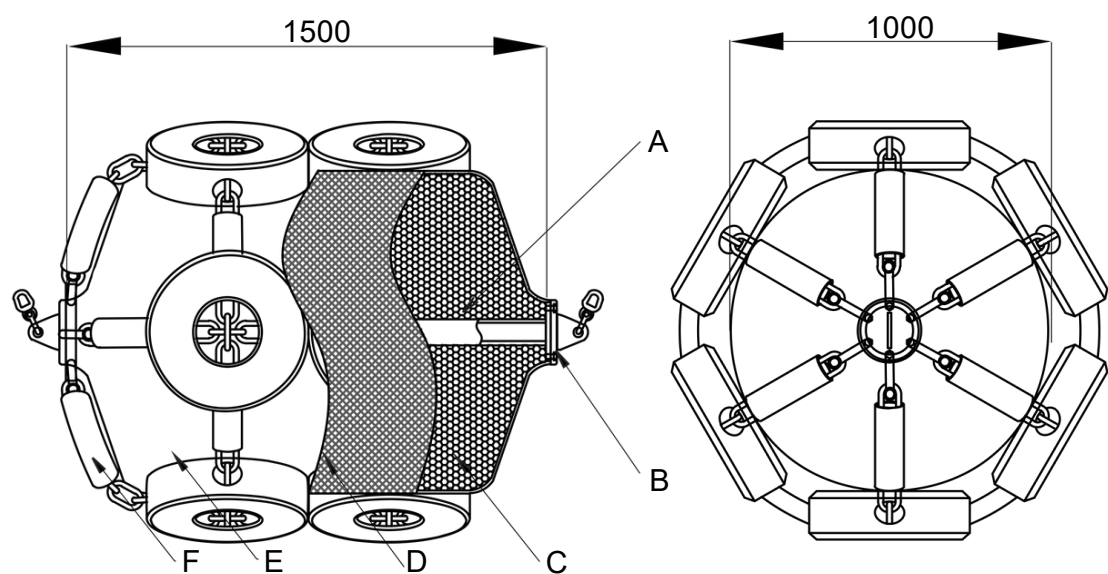
Variable	Value
Energy Absorption	27 kNm
Reaction Force	161 kN
Weight	80 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

1000 x 1500 – Foam Filled Fender



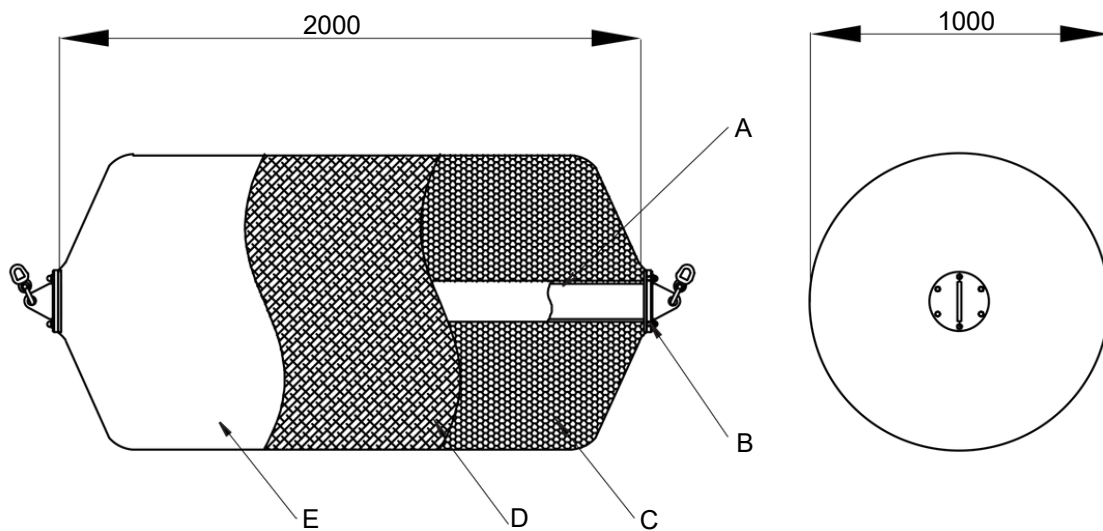
Variable	Value
Energy Absorption	49 kNm
Reaction Force	205 kN
Weight	146 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

1000 x 1500 with Tires – Foam Fender



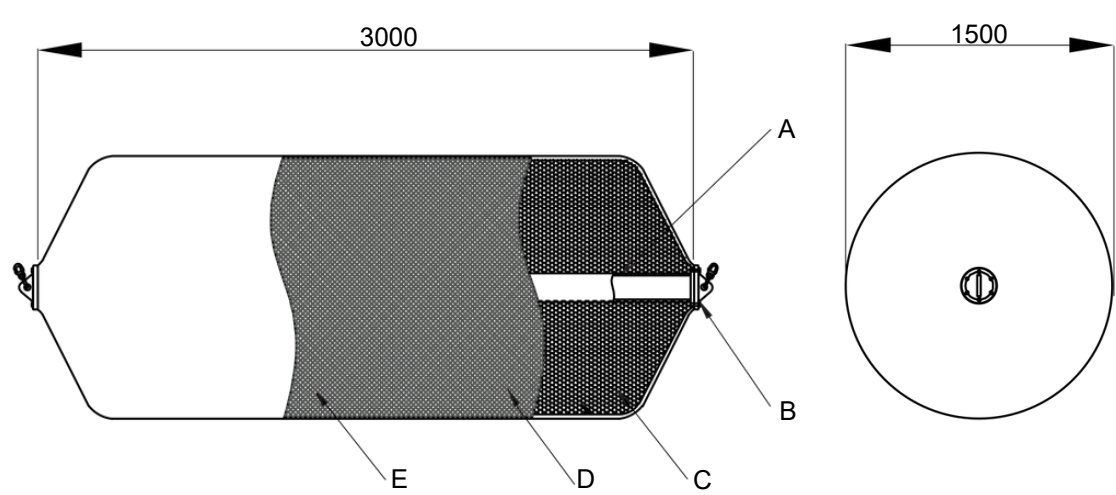
Variable	Value
Energy Absorption	49 kNm
Reaction Force	205 kN
Weight	243 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer
F	Chain & Tires Protection Layer

1000 x 2000 – Foam Filled Fender



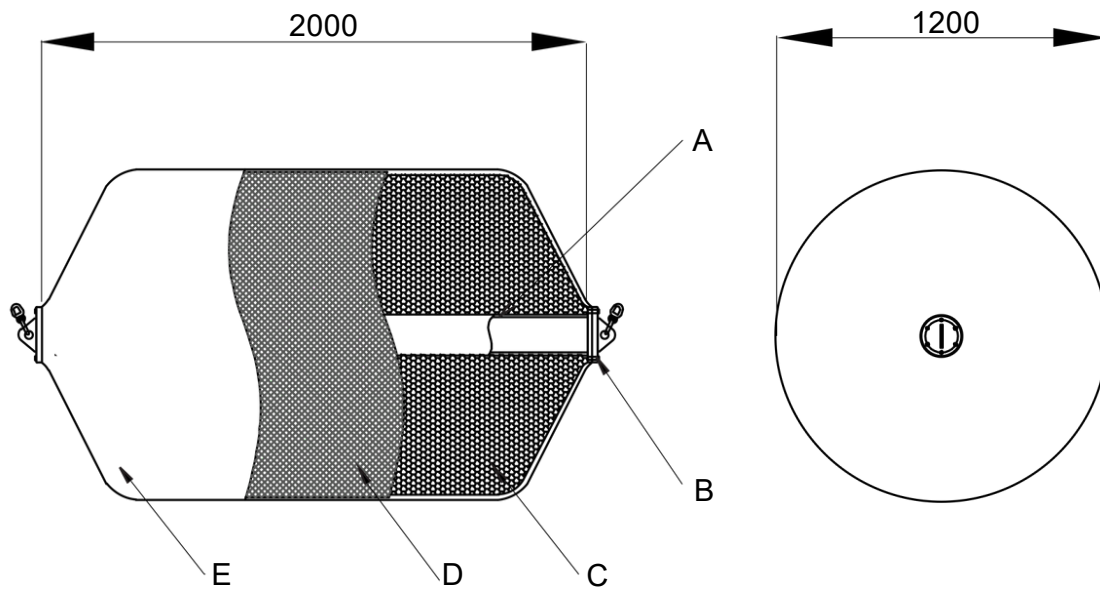
Variable	Value
Energy Absorption	64 kNm
Reaction Force	274 kN
Weight	185 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

Foam Fender – 1500 x 3000



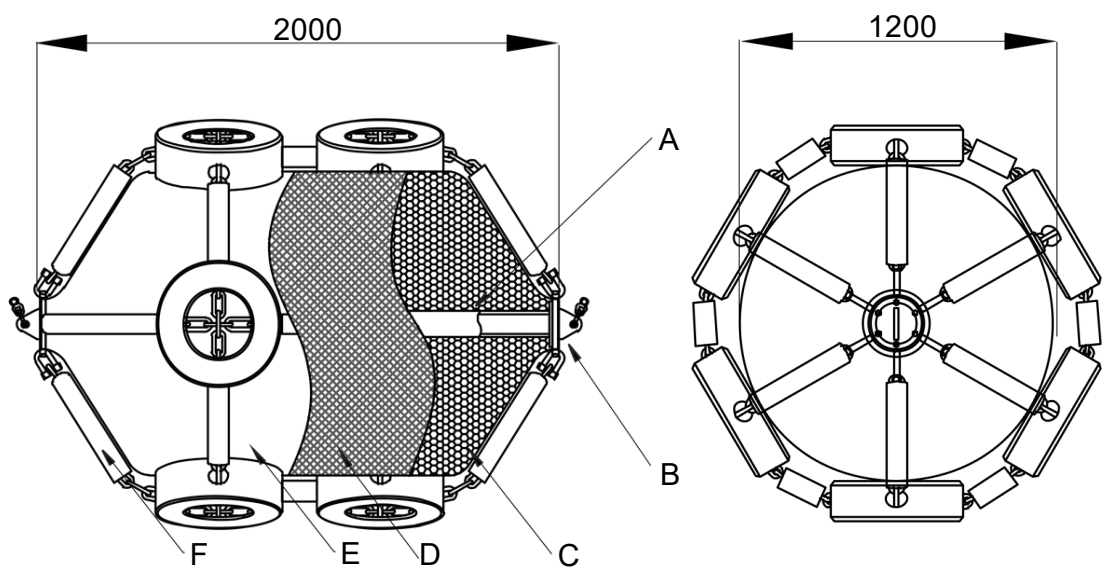
Variable	Value
Energy Absorption	216 kNm
Reaction Force	624 kN
Weight	727 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

1200 x 2000 – Foam Filled Fender



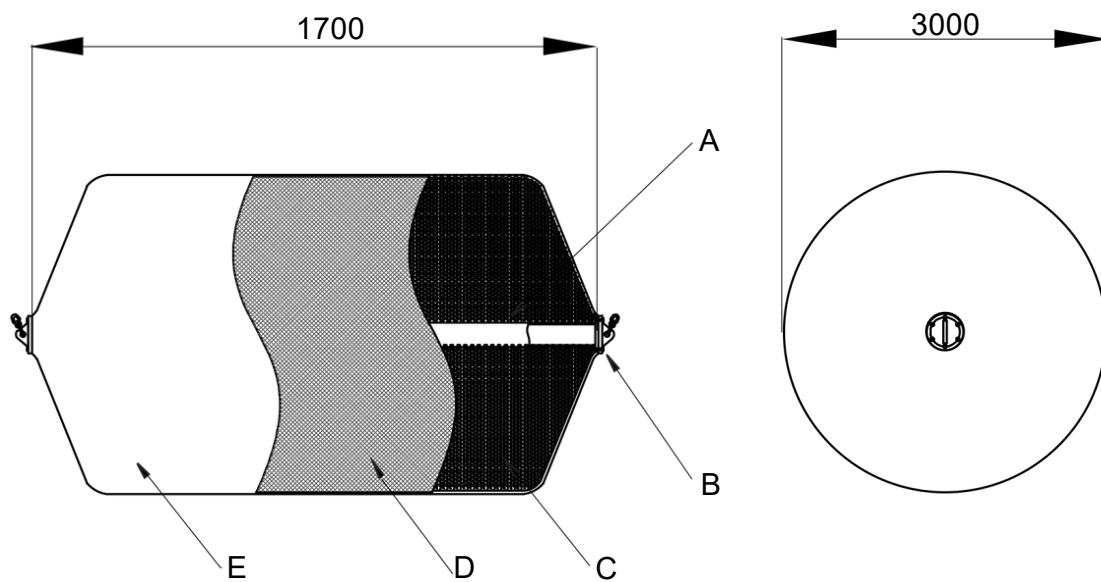
Variable	Value
Energy Absorption	93 kNm
Reaction Force	337 kN
Weight	305 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

Foam Fender – 1200 x 2000 with Tires



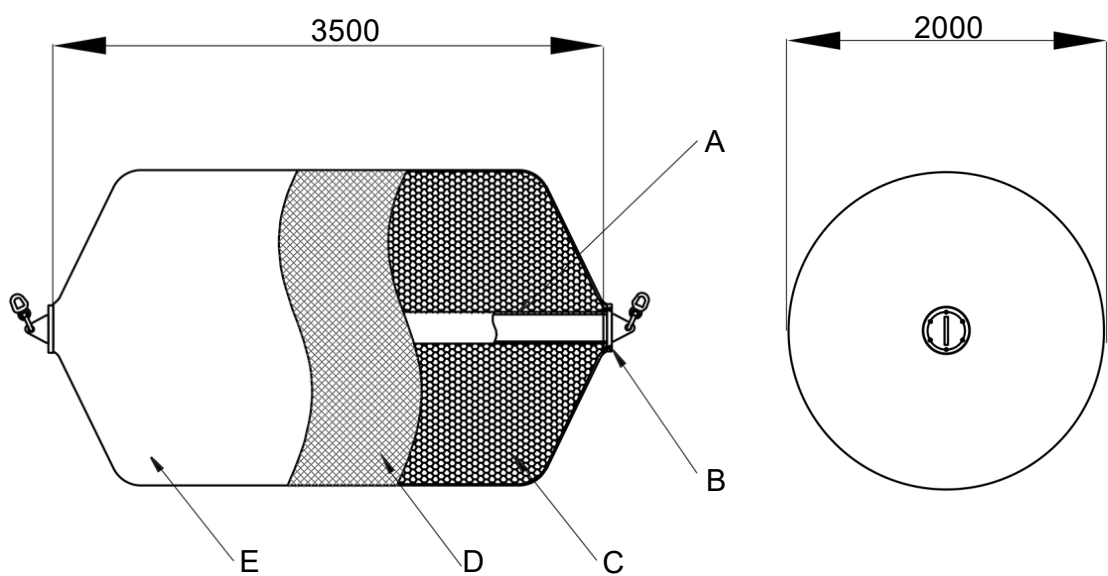
Variable	Value
Energy Absorption	93 kNm
Reaction Force	337 kN
Weight	362 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer
F	Chain & Tires Protection Layer

1700 x 3000 – Foam Filled Fender



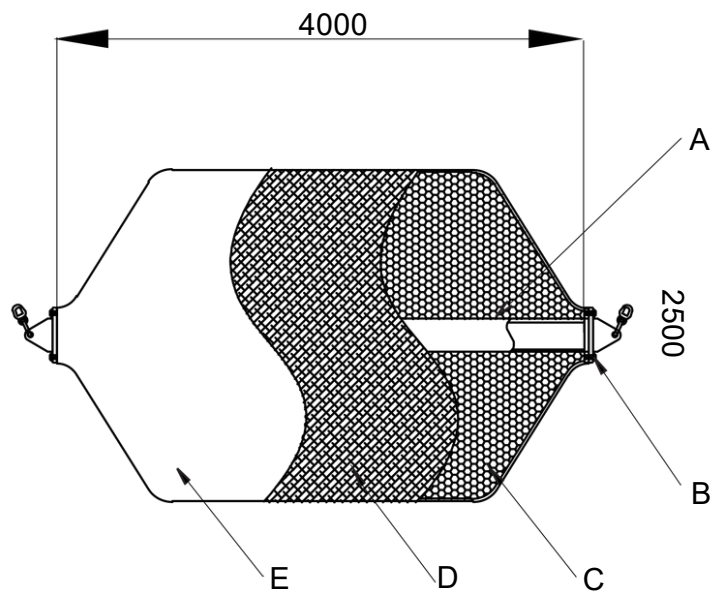
Variable	Value
Energy Absorption	273 kNm
Reaction Force	696 kN
Weight	890 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

2000 x 3500 – Foam Filled Fender



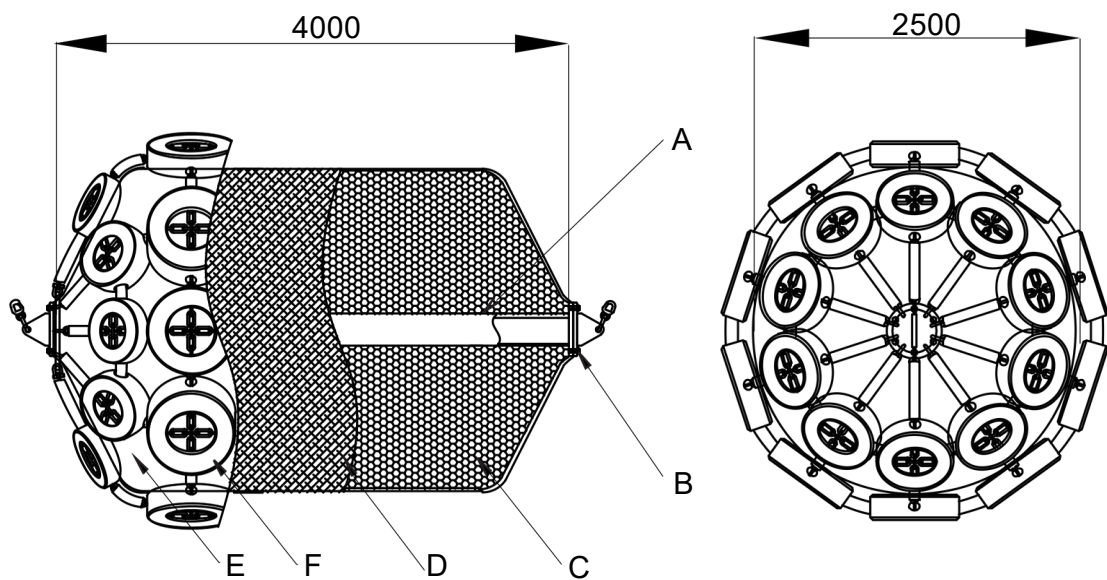
Variable	Value
Energy Absorption	456 kNm
Reaction Force	990 kN
Weight	1460 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

2500 x 4000 – Foam Filled Fender



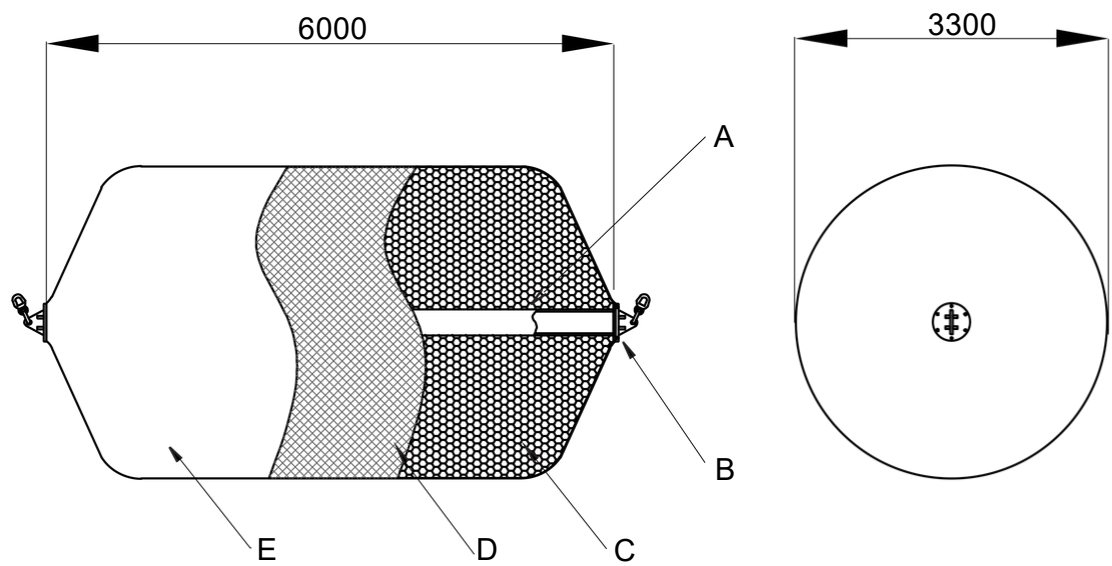
Variable	Value
Energy Absorption	781 kNm
Reaction Force	1386 kN
Weight	2610 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

Foam Fender – 2500 x 4000 with Tires



Variable	Value
Energy Absorption	781kNm
Reaction Force	1386 kN
Weight	3260 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer
F	Chain & Tires Protection Layer

3300 x 6000 – Foam Filled Fender



Variable	Value
Energy Absorption	3122 kNm
Reaction Force	4239 kN
Weight	6130 kgs
A	Central Pipe
B	Flange
C	EVA Foam
D	Cord Reinforced Layer
E	Outer Polyurethane Layer

Submarine Fenders – Chart

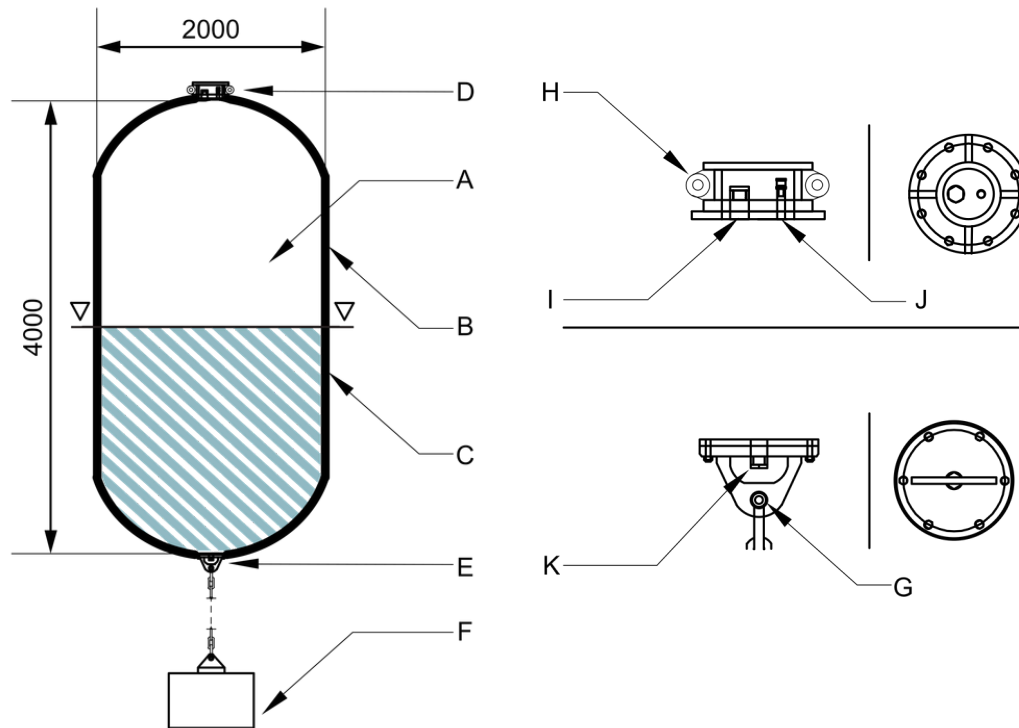
Filled With Water

Size	Energy Absorption	Reaction Force	Weight (Deflated)
Mm	kNm	kN	kg
2000 x 4000	103	399	420
2000 x 6000	155	599	725
2500 x 5500	223	687	590
3300 x 6500	589	1275	1480

Filled Without Water

Size	Energy Absorption	Reaction Force	Weight (Deflated)
Mm	kNm	kN	kg
2000 x 4000	431	1177	420
2000 x 6000	647	1766	725
2500 x 5500	928	2037	590
3300 x 6500	1913	3169	1480

2000 x 4000 – Submarine Fenders



PROPPERTIES

Variable	Value
Weight	420
WATER FILLED	
Energy Absorption	158
Reaction Force	450
AIR FILLED	
Energy Absorption	431
Reaction Force	1177

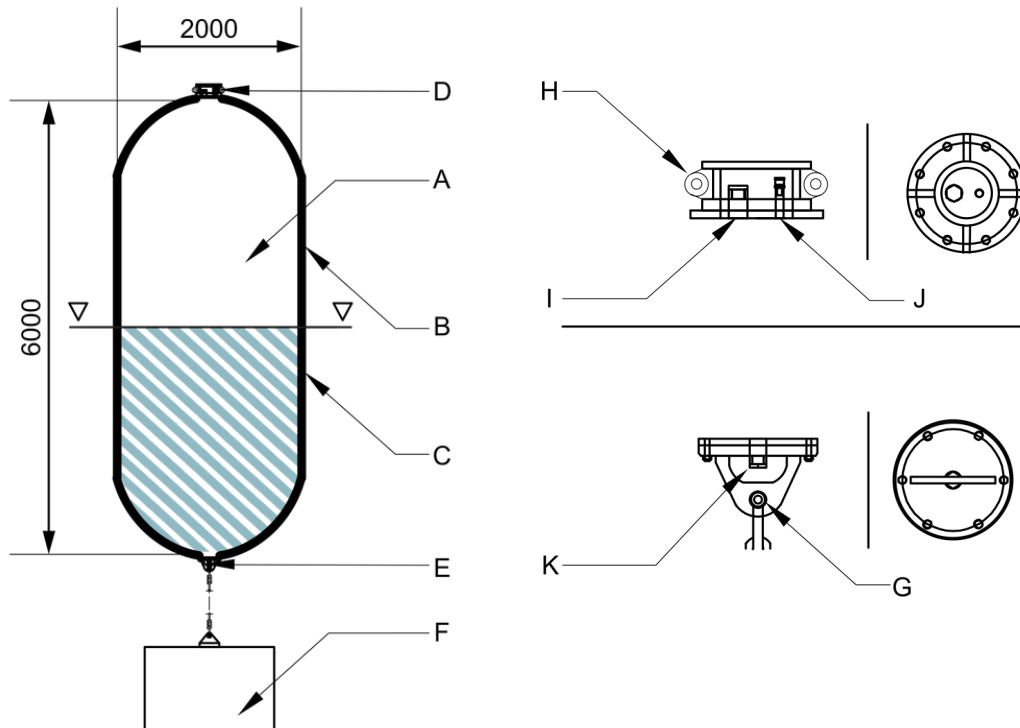
GENERAL COMPONENTS

Variable	Value
Dimensions	2000 x 4000 mm
A	Fender Body
B	Air
C	Water
D	Top Flange
E	Bottom Flange
F	Counter Weight

FLANGES

Variable	Value
H – Top	Ear for Lifting
I – Top	Water Valve
J – Top	Air Valve
K – Bottom	Water Valve
G - Bottom	Chain Hole
Dia. Water Valves	50 mm
Dia. Air Valve	20 mm

Submarine Fenders – 2000 x 6000



PROPERTIES

Variable	Value
Weight	725
WATER FILLED	
Energy Absorption	155
Reaction Force	599
AIR FILLED	
Energy Absorption	647
Reaction Force	1766

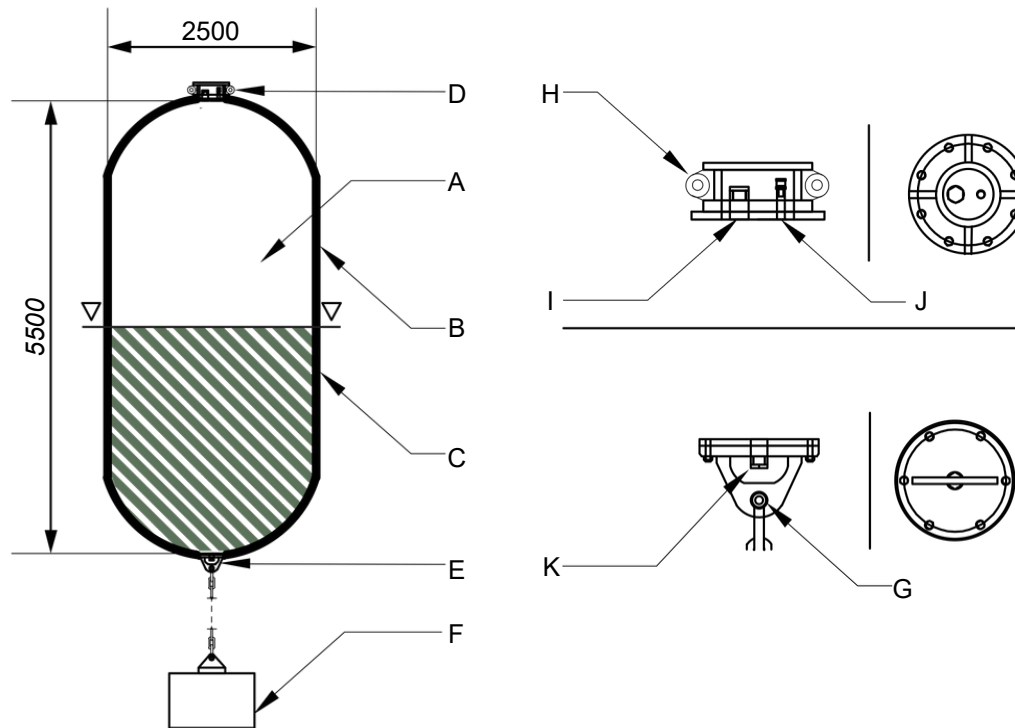
GENERAL COMPONENTS

Variable	Value
Dimensions	2000 x 6000 mm
A	Fender Body
B	Air
C	Water
D	Top Flange
E	Bottom Flange
F	Counter Weight

FLANGES

Variable	Value
H – Top	Ear for Lifting
I – Top	Water Valve
J – Top	Air Valve
K – Bottom	Water Valve
G – Bottom	Chain Hole
Dia. Water Valves	50 mm
Dia. Air Valve	20 mm

2500 x 5500 – Submarine Fenders



PROPPERTIES

Variable	Value
Weight	590 kgs
WATER FILLED	
Energy Absorption	155 kNm
Reaction Force	599 kN
AIR FILLED	
Energy Absorption	647 kNm
Reaction Force	1766 kN

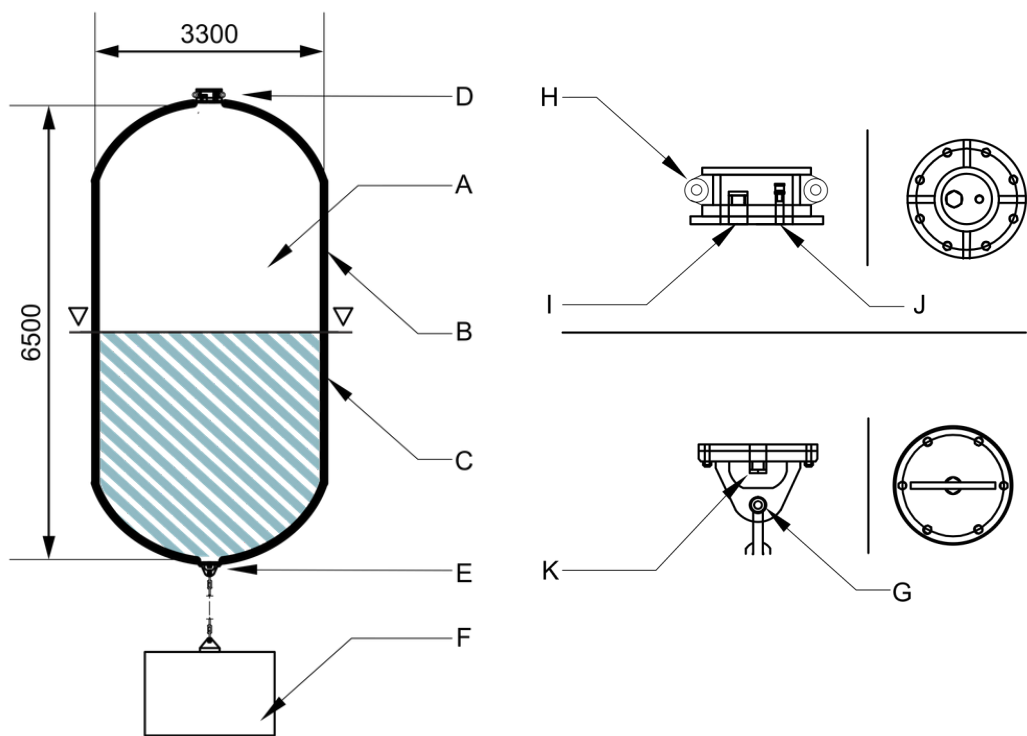
GENERAL COMPONENTS

Variable	Value
Dimensions	2500 x 5500 mm
A	Fender Body
B	Air
C	Water
D	Top Flange
E	Bottom Flange
F	Counter Weight

FLANGES

Variable	Value
H – Top	Ear for Lifting
I – Top	Water Valve
J – Top	Air Valve
K – Bottom	Water Valve
G - Bottom	Chain Hole
Dia. Water Valves	50 mm
Dia. Air Valve	20 mm

Submarine Fenders – 3300 x 6500



PROPERTIES

Variable	Value
Weight	1480
WATER FILLED	
Energy Absorption	589
Reaction Force	1275
AIR FILLED	
Energy Absorption	1913
Reaction Force	3169

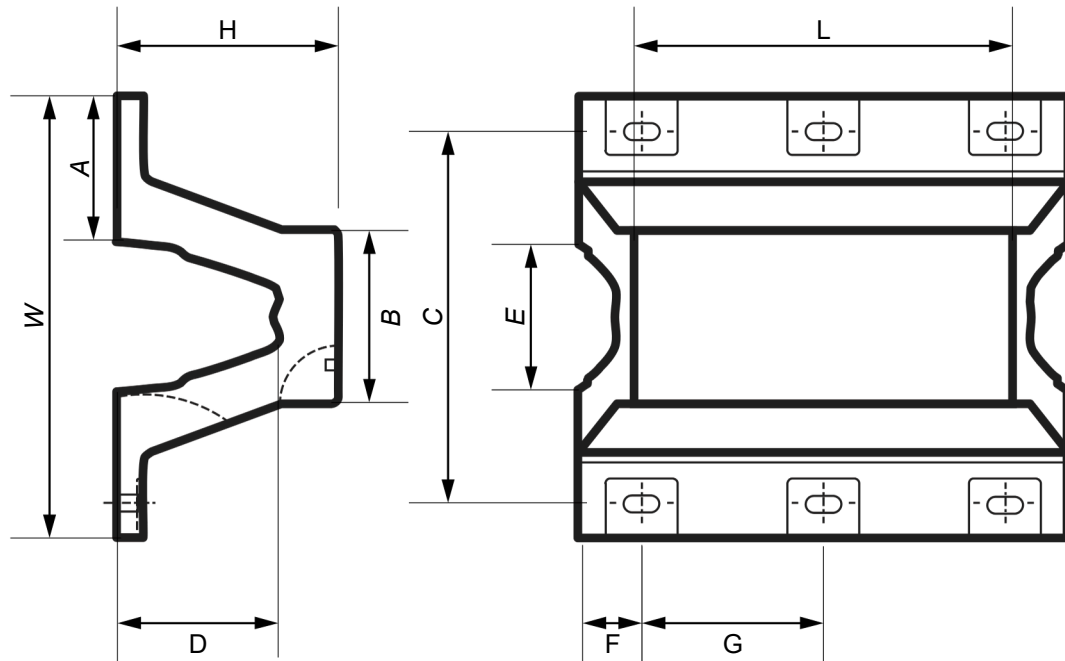
GENERAL COMPONENTS

Variable	Value
Dimensions	3300 x 6500 mm
A	Fender Body
B	Air
C	Water
D	Top Flange
E	Bottom Flange
F	Counter Weight

FLANGES

Variable	Value
H – Top	Ear for Lifting
I – Top	Water Valve
J – Top	Air Valve
K – Bottom	Water Valve
G – Bottom	Chain Hole
Dia. Water Valves	50 mm
Dia. Air Valve	20 mm

Arch Fender – Other Fenders



H x W	L	A	B	C	D x E	F / 1m	G / 1m	Weight
250 x 500	1000	178	200	400	58 x 29	113	900	88
300 x 600	1000	213	240	480	70 x 35	125	900	122
400 x 800	1000	285	320	640	82 x 41	150	900	206
500 x 1000	1000	358	400	800	82 x 41	175	900	332
600 x 1200	1000	425	480	960	94 x 47	200	900	476
800 x 1500	1000	520	640	1300	100 x 50	250	900	840
1000 x 1800	1000	610	800	1550	100 x 50	300	900	1363

Rubber Fenders – Recommendations

Storage Guidelines

1. Store Pneumatic Fenders in an Inflated Condition

Pneumatic fenders should always be stored while inflated. Storing them in a deflated state may alter the rubber's elastic properties due to fluctuations in temperature and humidity, which can accelerate material degradation. Maintaining inflation helps preserve the fender's shape and structural integrity during storage.

2. Maintain a Storage Pressure of 20 kPa

When storing pneumatic fenders, they should be inflated to a pressure of approximately 20 kPa. These fenders are designed for marine environments, where temperature and pressure variations are generally moderate. When stored on land, however, greater temperature fluctuations may negatively affect the rubber. Keeping the correct storage pressure helps protect the fender and extend its service life.

3. Store on Flat Surfaces to Prevent Deformation

During storage, installation, or handling, pneumatic fenders should always be placed on a flat and even surface. Uneven ground, such as areas with stones or protrusions, can lead to permanent deformation and reduce performance. Even minor surface irregularities may cause abrasion or scratches when the fender is moved, making a smooth and level surface essential.

Recommendations – Rubber Fenders

Usage Guidelines

4. Adjust Guide Ropes to Accommodate Seasonal Tide Variations

Seasonal changes in tidal levels must be taken into account when using guide ropes (guy ropes). Insufficient rope length may subject the fender to excessive loads or cause it to operate at an incorrect height. Regular adjustment of guide ropes in response to tidal variations is essential to prevent unnecessary stress and ensure proper fender positioning.

5. Distinguish Between Sling Type and Yokohama Style Fenders

Sling type fenders have a more delicate construction and do not feature the external chain-and-tire net commonly found on Yokohama style fenders. Due to this reduced level of external protection, Sling type fenders require increased attention during handling and operation to avoid damage or premature wear.

6. Ensure Smooth Contact Surfaces for Sling Type Fenders

Because Sling type fenders lack protective outer components, the quality of the contact surface is critical. The fender should only be used against smooth and flat surfaces to prevent surface damage or permanent deformation. Regular visual inspections are recommended to detect early signs of wear and maintain optimal performance.

7. Keep Fenders Clean and Free from Marine Growth

Pneumatic fenders, particularly Sling type fenders, should be kept clean and free from debris and marine growth. Compared to other marine equipment, Sling type fenders are more vulnerable to surface damage caused by these elements. Contact with debris or marine growth, especially during vessel impact, can significantly reduce the fender's service life.