HI-TECH ELASTOMERS LTD.

OFFSHORE PRODUCTS

OFFSHORE RUBBER FENDERS

Where Innovation is Tradition

SHOCK CELL

Hi-Tech Shock Cell provides a cost-effective and reliable protection for offshore platforms. Building on our experience in manufacturing specialized rubber products for the marine industry, the Shock Cell can withstand the most hostile climates and operate in even the most severe weather.

It is durable, easy to install and requires no maintenance. Every unit is load tested prior to delivery and the customer can choose from a complete range of sizes to suit their needs.

FEATURES

- Provides additional energy absorption performance
- Protects substructures and berthing vessels
- Crucial supporting component to Shock Cells
- Extra load absorbing capability
- Preserves function and integrity of Shock Cell

APPLICATIONS

- Offshore Platform Jacket structure
- Wind Farm Turbine

OFFSHORE RUBBER FENDERS

SHOCK CELL

Hi-Tech Shock Cell is an engineering Marvell designed with steel for easy fitment on steel structure and high modulus Rubber to absorb loads from multi-directions. The precession made concentric pipes when bonded together with rubber by a high-pressure compression moulding process under a controlled heating-cooling cycle, resulting in to a versatile energy absorption Element for Offshore Structures.

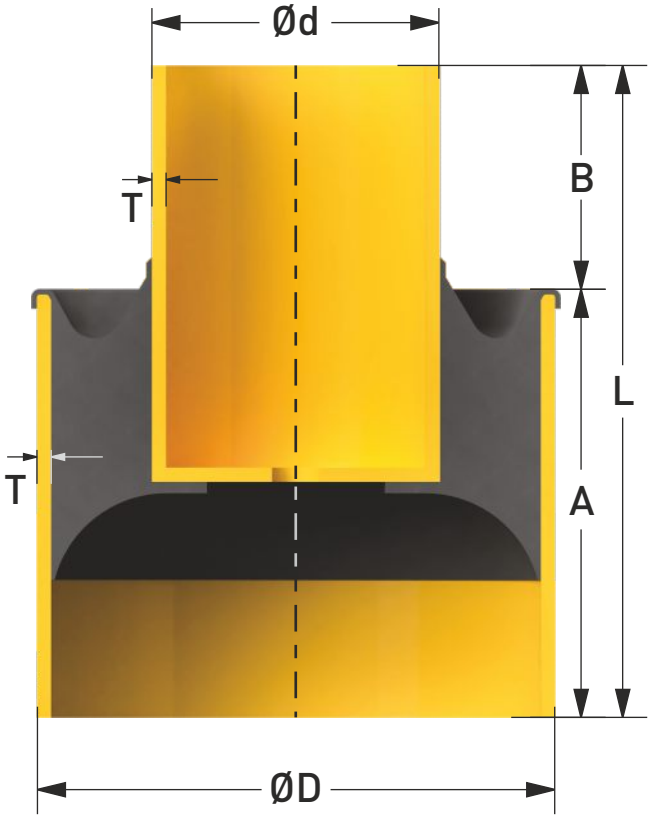
Hi-Tech Shock Cell can absorb energy both in compression and torsion It is having extremely good resistance to both axial and bending. The high tensile rubber compound ensures good mechanical strength and excellent resilience. They are suitable in the marine environment and perform well in extreme climatic conditions. Special compound design offers excellent resistance to ozone aging, ultraviolet rays and sea water. Generally employed in combination with Eccentric Rubber Ring and 9 to 12 meter long Steel fabricated Contact Post to absorb berthing energy at very high tidal variations at Platform. It absorbs and dissipates energy in every conceivable fashion and prevents damages to the structure.

A unique Dock Entry Protection System made of 2 Shock Cells is also available, which protects Structures while moving Vessel is touching to dock wall/entrance channel or Vessel coming for dry docking. The design of custom made Dock Entry Protection System can be provided on specific request.

DIMENSION CHART

MODEL	A	B	ØD	Ød	T	L	WEIGHT
HSA3560	500	225	610	356	18	725	-
HSA4076	625	425	762	406	19	1050	-
HSA4676	660	475	762	457	25	1135	-
HSA4090	665	450	914	406	25	1115	-
HSA4690	660	465	914	457	25	1125	-
HSA5090	675	475	914	508	25	1150	-

[Units: mm, kg]



PERFORMANCE CHART

MODEL	E(T-M)	R(T)
HSA3560	6.25	60.0
HSA4076	14.0	120.0
HSA4676	16.5	155.0
HSA4090	24.0	140.0
HSA4690	22.0	160.0
HSA5090	20.0	150.0

R: REACTION FORCE, **E**: ENERGY ABSORPTION TOLERANCE **±10%**

OFFSHORE RUBBER FENDERS

SHOCK CELL with EBR

DIMENSION

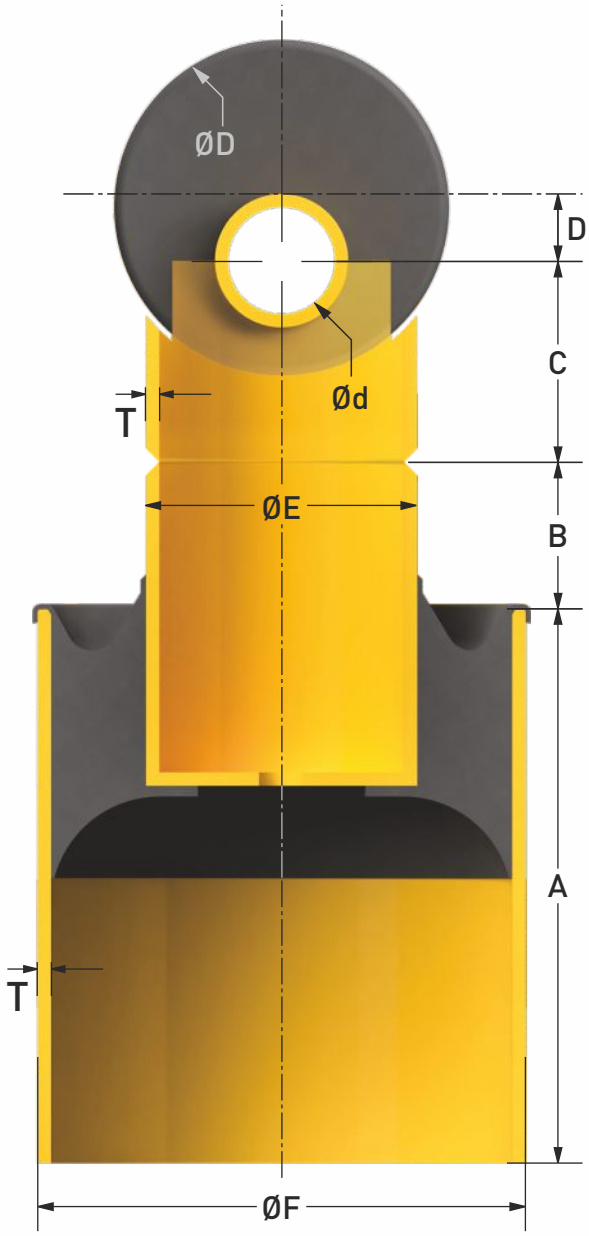
MODEL	A	B	C	D	ØE	ØF	ØD	Ød	T	WEIGHT
HSA3560	500	225	320	100	356	610	535	215	18	-
HSA4076	625	425	462	105	406	762	670	245	19	-
HSA4676	660	475	502	140	457	762	670	273	25	-
HSA4090	665	450	490	115	406	914	670	245	25	-
HSA4690	660	465	495	145	457	914	805	305	25	-
HSA5090	675	475	506	145	508	914	805	305	25	-

[Units: mm, kg]

PERFORMANCE

MODEL	E(T-M)	R(T)
HSA3560	13.25	60.0
HSA4076	21.00	120.0
HSA4676	23.05	155.0
HSA4090	31.00	140.0
HSA4690	29.00	160.0
HSA5090	27.00	150.0

R: REACTION FORCE, **E**: ENERGY ABSORPTION TOLERANCE **±10%**



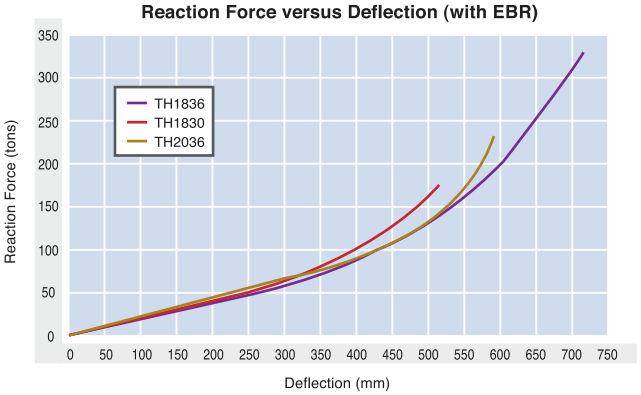
HOW IT WORKS

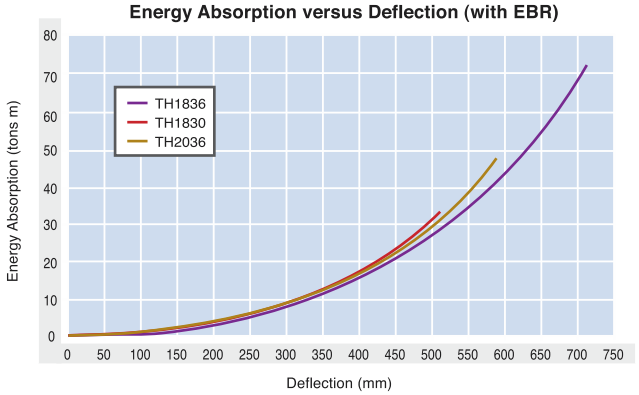
The Boat Landing System consists primarily of the Shock Cells, Eccentric Bumper Rings (EBR) and a steel contact surface. On impact by a berthing vessel, the steel surface transfers the load to the EBRs and the Shock Cells. Kinetic energy is absorbed and dissipated as heat and a smaller reaction force against the vessel by the rubber as it undergoes shear and tension. The load is therefore reduced and the vessel can berth without damaging the platform structure. The strong bonding achieved between the rubber and the steel during the manufacturing process ensures that this arrangement will safely dissipate and reduce the external load without damaging the platform.

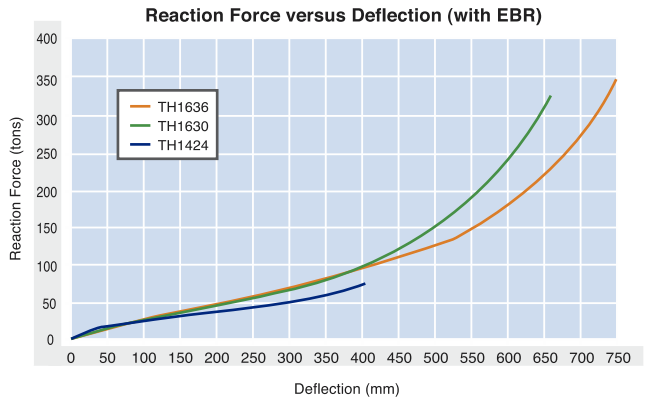
The Boat normal and lateral impact to withstand the design stresses that are imposed on a platform during barge and vessel operations. Rubber, with its internal damping effect, can resist high overloads without damage.

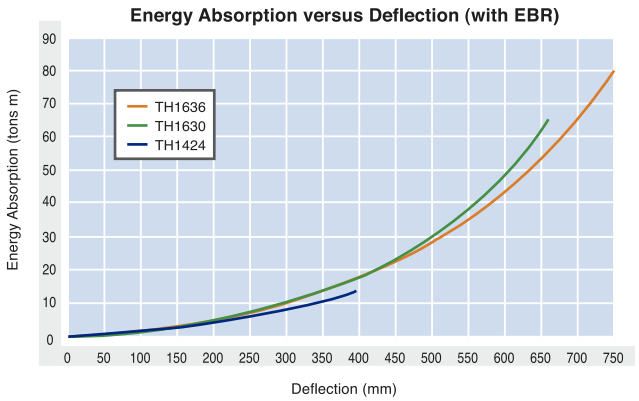
OFFSHORE RUBBER FENDERS

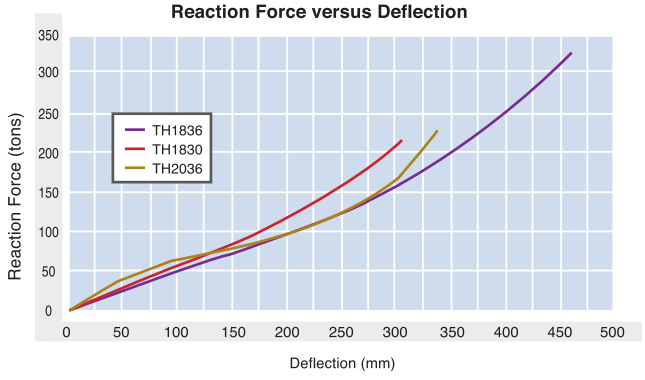
SHOCK CELL

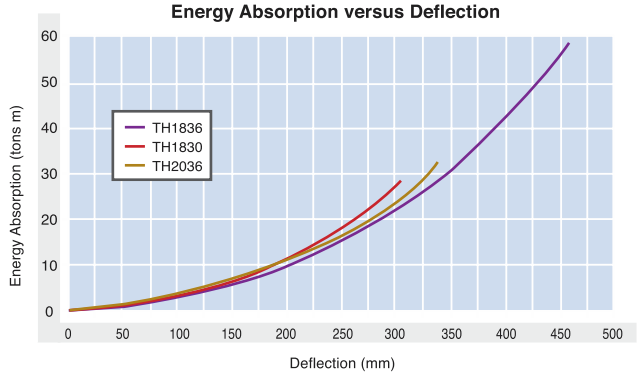


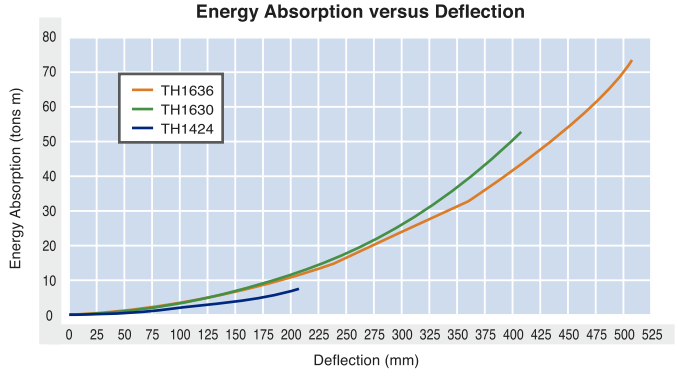






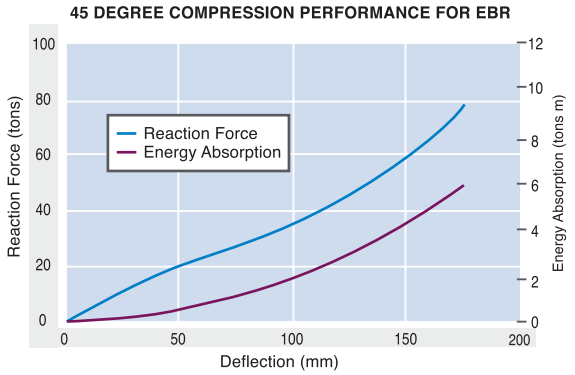


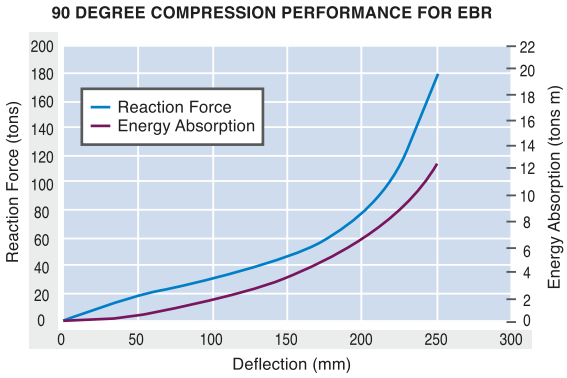


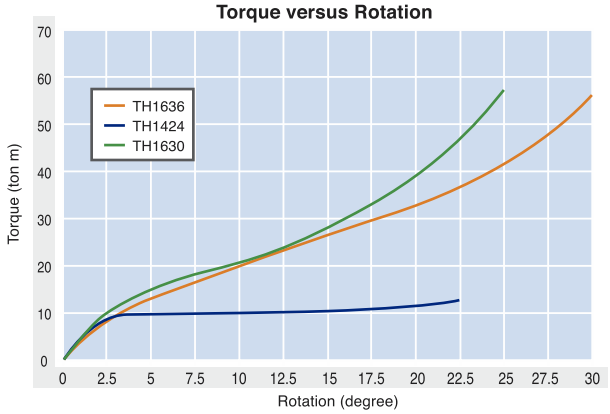


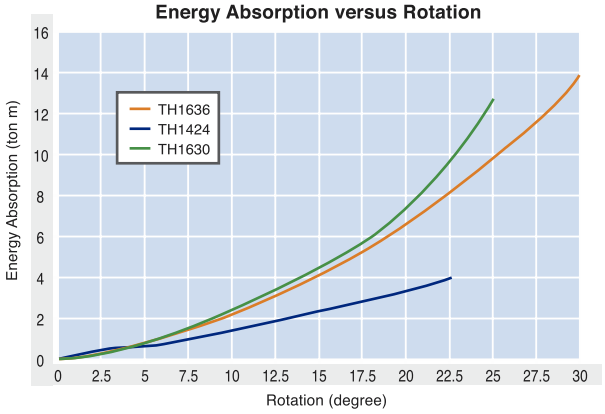
OFFSHORE RUBBER FENDERS

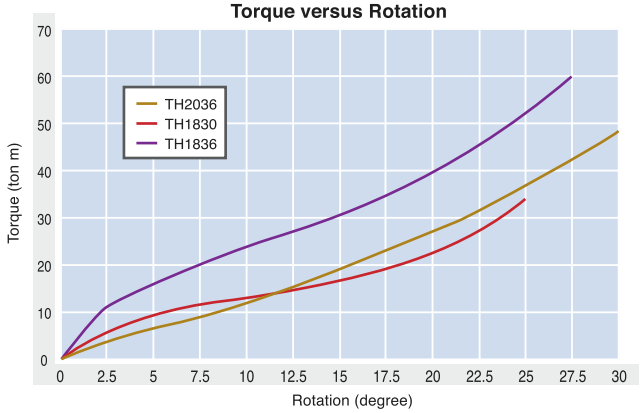
SHOCK CELL

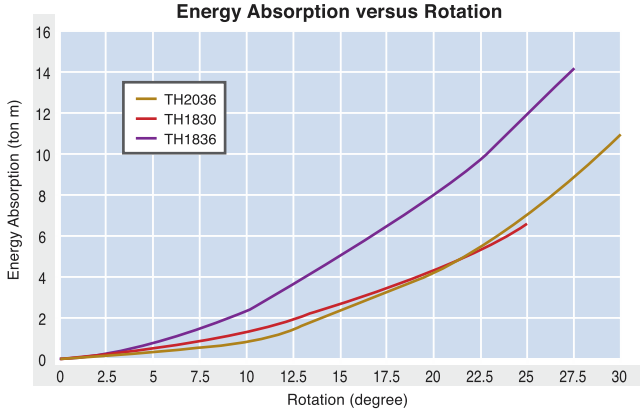






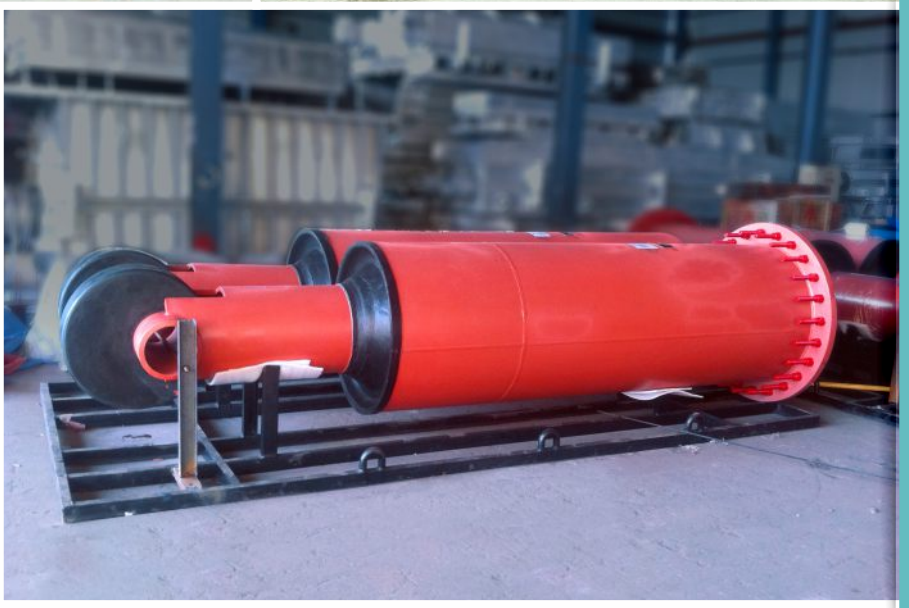






HI-TECH ELASTOMERS LTD.
WHERE INNOVATION IS A TRADITION

PRODUCT INSTALLATION PICTURES



BARGE BUMPER ASSEMBLY

Hi-Tech Barge Bumper Systems are a unique and technically superior protection system for Offshore Platforms worldwide.

They accommodate berthing for very high tidal variations. They are capable of absorbing both axial and lateral loads, thus giving a distinct edge over any other Platform Protection System. Our Hi-Tech makes Barge Bumpers are extremely rugged and virtually maintenance free.

FEATURES

- Capable to absorb both axial and lateral loads
- Traceable
- No Maintenance

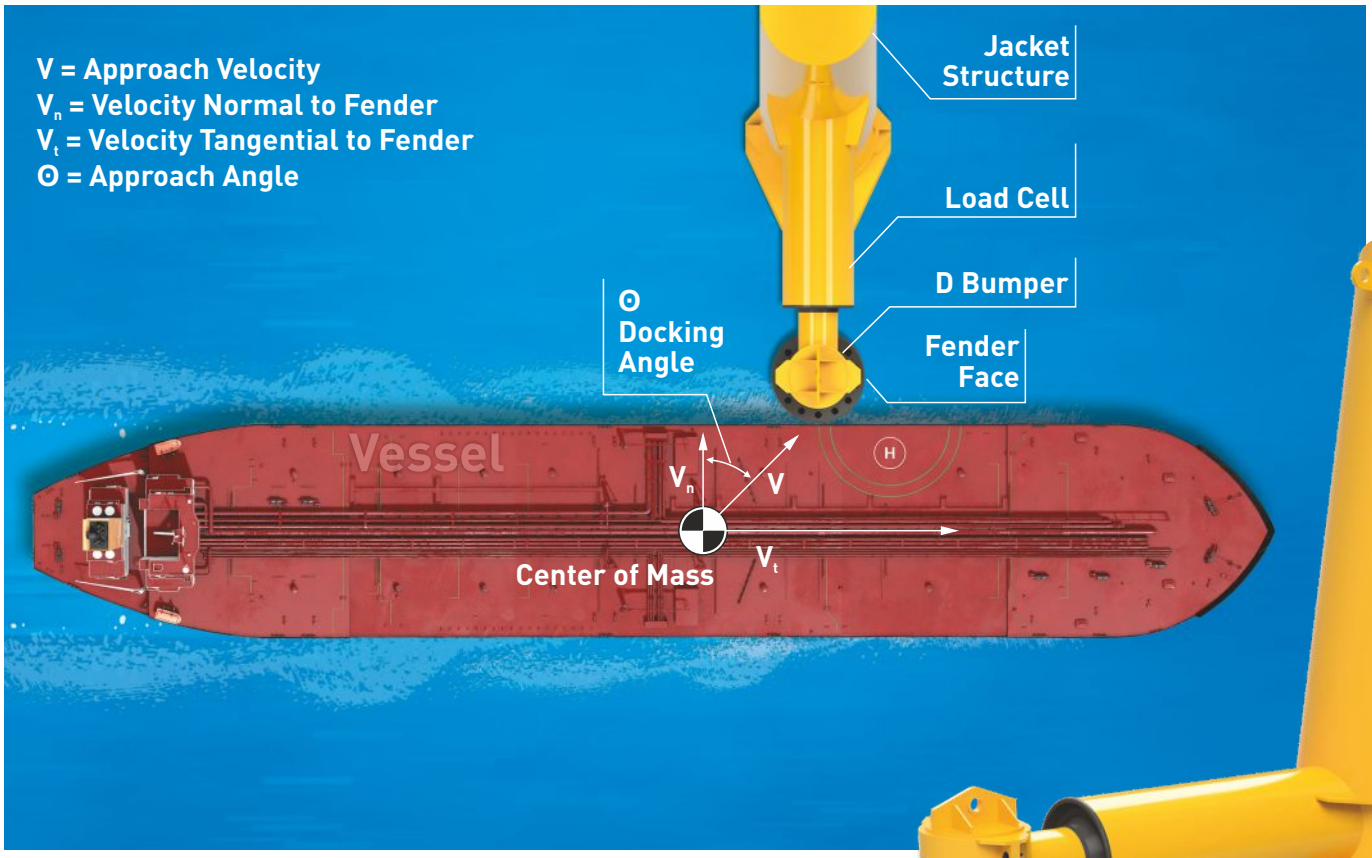
APPLICATIONS

- Offshore Platforms
- Drilling Platforms

OFFSHORE RUBBER FENDERS

BARGE BUMPER ASSEMBLY

All the components are NDT tested and Shock Cells are tested for axial as well as lateral load deflection simulating the loading conditions in house. Contact Post of Hi-Tech Barge Bumper Assembly is made of High Tensile Steel as per API 5 L Gr. X52 which do not bend in case of point impacts and protects entire Barge Bumper Assembly. Our Barge Bumpers and Shock Cells are extensively used in various platforms. The concentric tubular design of our Shock Cells ensures very high mechanical strength in lateral and angular loading conditions. It also smoothens the impact of Vessels deflecting axially giving a good cushion effect. Hi-Tech Barge Bumper Assemblies are available in two different design as shown here.



Hi-Tech fendering products are elastomeric by design and primarily function to protect offshore structures against structural damage caused by vessel impact. Because our fendering products are elastomeric, the greatest energy absorption of the fender and/or internal stress/strain relationship of the elastomer material.

Energy absorption capacities of elastomeric fendering systems can be varied by elastomer compound selection, fendering geometry and the number of fendering units and types.

OFFSHORE RUBBER FENDERS

BARGE BUMPER ASSEMBLY

L1. TO MATCH THE EXISTING FITMENT

L2. TO MATCH THE EXISTING FITMENT

1. TOP SHOCK CELL SA-5090

2. BOTTOM SHOCK CELL SA-5090

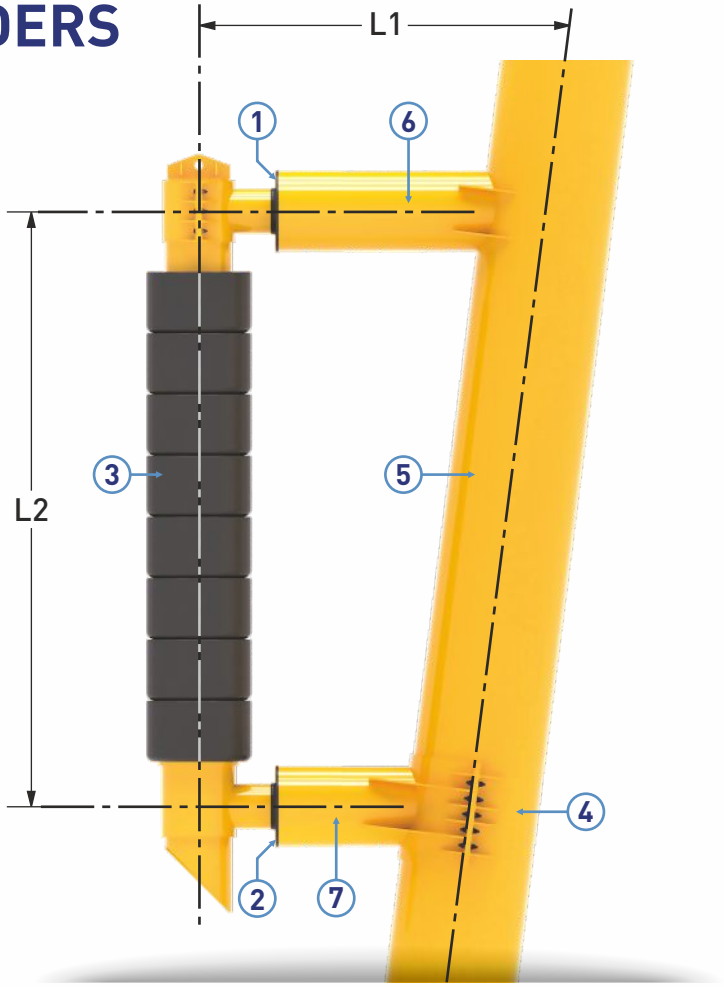
3. CONTECT POST

4. BOTTOM CLAMP

5. JACKET LEG

6. TOP EXTENSION PIPE

7. BOTTOM PIPE



BARGE BUMPER ASSEMBLY WITH ERR

L1. TO MATCH THE EXISTING FITMENT

L2. TO MATCH THE EXISTING FITMENT

1. TOP SHOCK CELL

2. BOTTOM SHOCK CELL

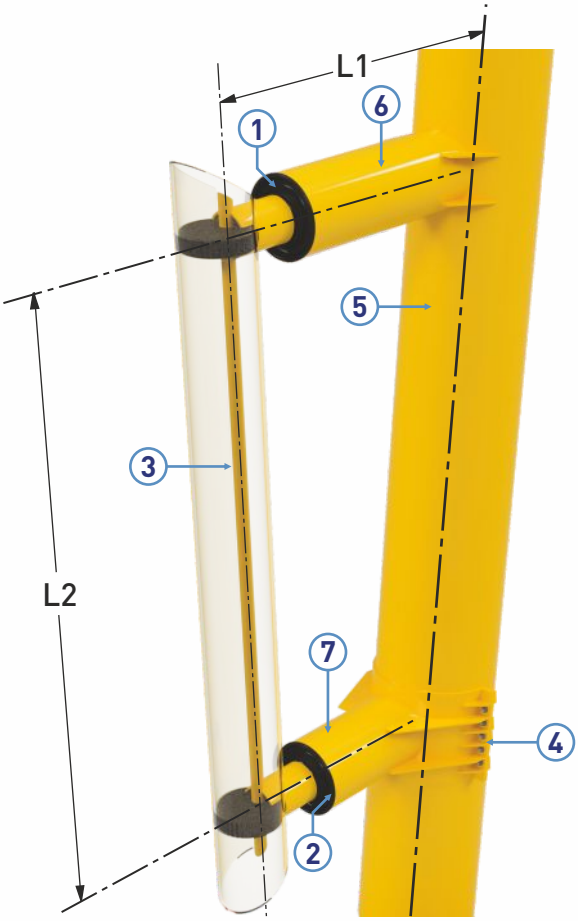
3. CONTECT POST

4. BOTTOM CLAMP

5. JACKET LEG

6. TOP EXTENSION PIPE

7. BOTTOM PIPE



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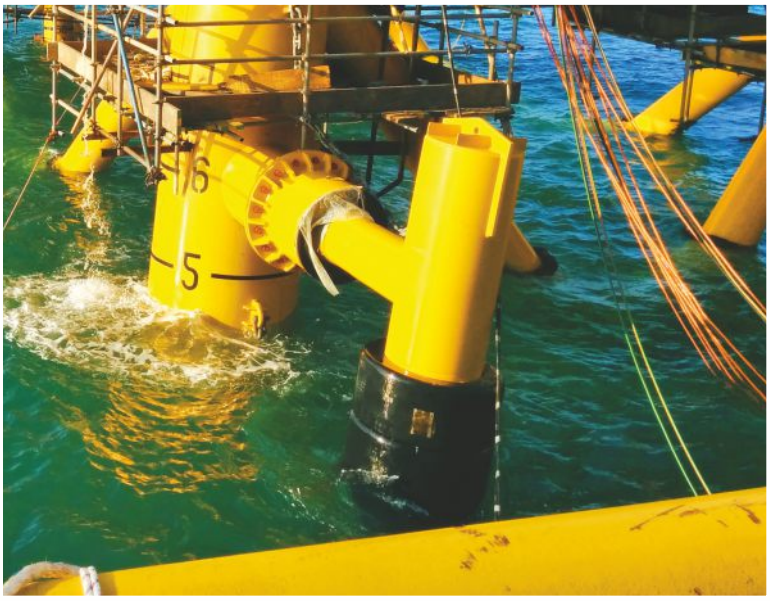
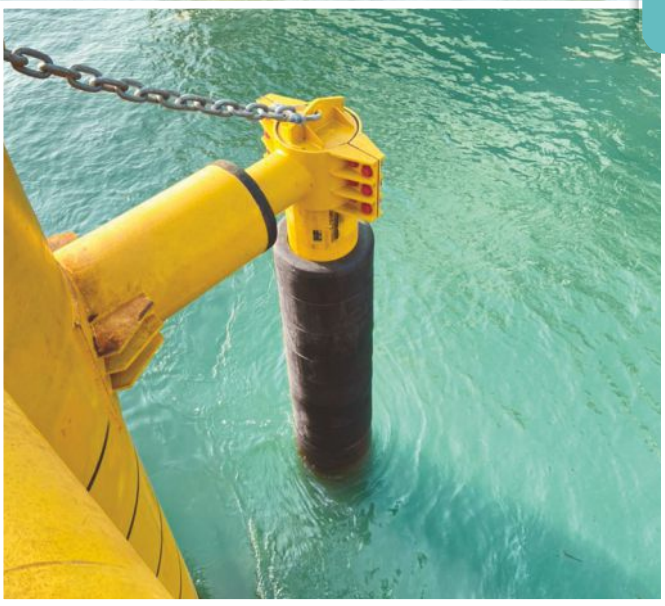
PRODUCT INSTALLATION PICTURES



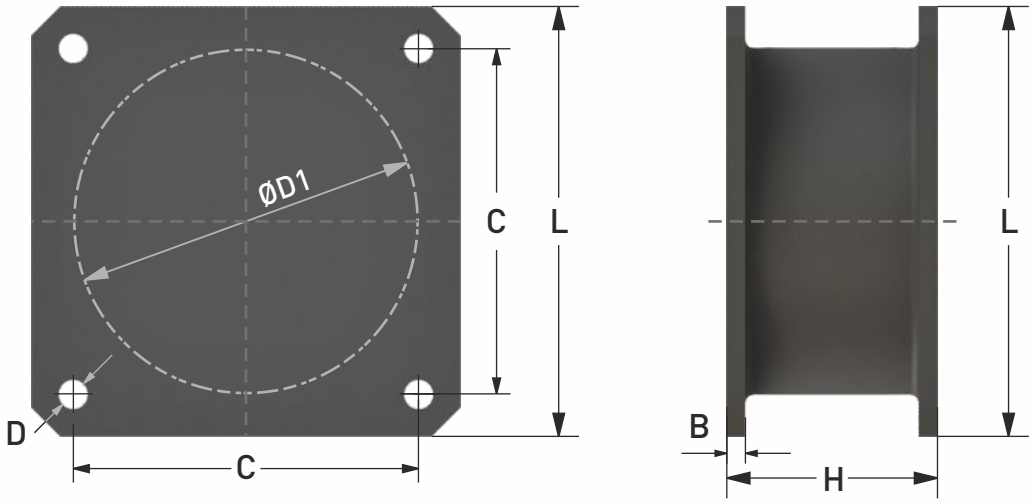


OFFSHORE RUBBER FENDERS

SHEAR FENDERS

Hi-Tech DSF series Shear Fenders are designed to take heavy loads of Barge Bumpers/Boat landing structures axially and at the same time to absorb berthing energy laterally. They are generally used in offshore installations where extreme duty conditions prevail. These Fenders deflect more than 100% in Shear and absorb energy of lateral impact. Hi-Tech Shear fenders have got excellent mechanical properties and sea water resistance rendering it virtually maintenance free. It is easy to install and got excellent load bearing capacity in axial compression too. Square and circular profiles are commonly used.

Custom made Shear Fender can also be manufactured as per clients' requirements.



DIMENSION

MODEL	L	B	C	D	ØD1	H	WEIGHT
SF 270H	680	35	510	50	510	270	240
SF 500H	1020	45	820	70	820	500	815

[Units: mm, kg]

PERFORMANCE

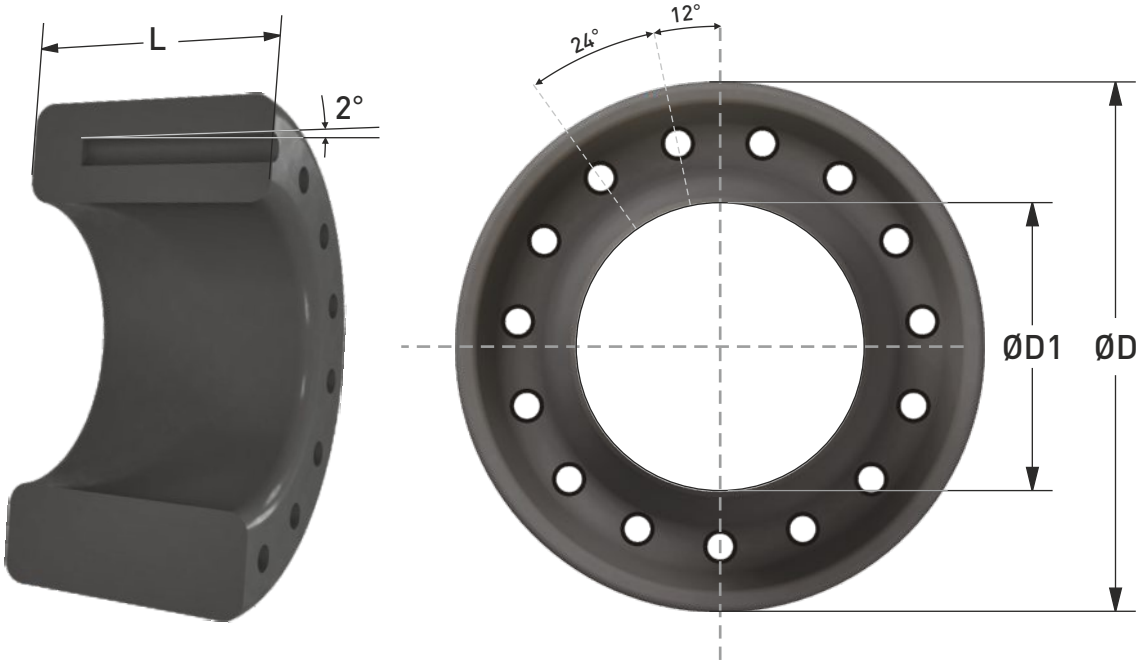
MODEL NO.	SF 270	SF 500
DEFLECTION MM.	270	500
E(I-M)	4.8	12.5
R(T)	34.5	50.5

R: REACTION FORCE, **E**: ENERGY ABSORPTION TOLERANCE **±10%**
The Performance and Weight Values mentioned are subject to change without notice.

FLOATOVER SOLUTIONS

BUMPER RINGS

Hi-Tech Bumper Rings are the part of Barge Bumpers, which absorbs and dissipate berthing energy while rotating on to the Contact Post of Barge Bumpers. Its rotating movement reduces Shear Force to be exerted by rubbing of Barges/Boats while berthing. They find extensive application in different configuration & Barge Bumper Assemblies. Hi-Tech Bumper Rings are versatile and can be used for different function & specification depending upon exact duty and working These rings can also be supplied from high abrasive resistant polyurethane rubber.



DIMENSION

MODEL	L	ØD	ØD1	WEIGHT
HBR 2036	330	914	635	240

[Units: mm, kg]

RUBBING STRIPS

Rub Strips are made of solid low friction Rubber for rough & tough use. They are manufactured from high-quality rubber.

Hi-Tech Rubbing Strips are made of solid low friction Rubber for the rough & tough use. These are used to act as a buffer between Boat Landing of Offshore Structure and the Barges and Supply Boats which are coming in contact with them. The installations of Rub-Strips are extremely rugged, reliable, and maintenance-free. They are manufactured from high-quality rubber for rough weather. Moreover, they are manufactured by the compression moulding process which further enhances the life of rubber and makes it ideal for offshore applications.

FEATURES

- Made from high-quality rubber
- Available in welded and bolted forms
- Provides valuable protection
- No maintenance
- Extreme weather resistance
- Durable & easy to install

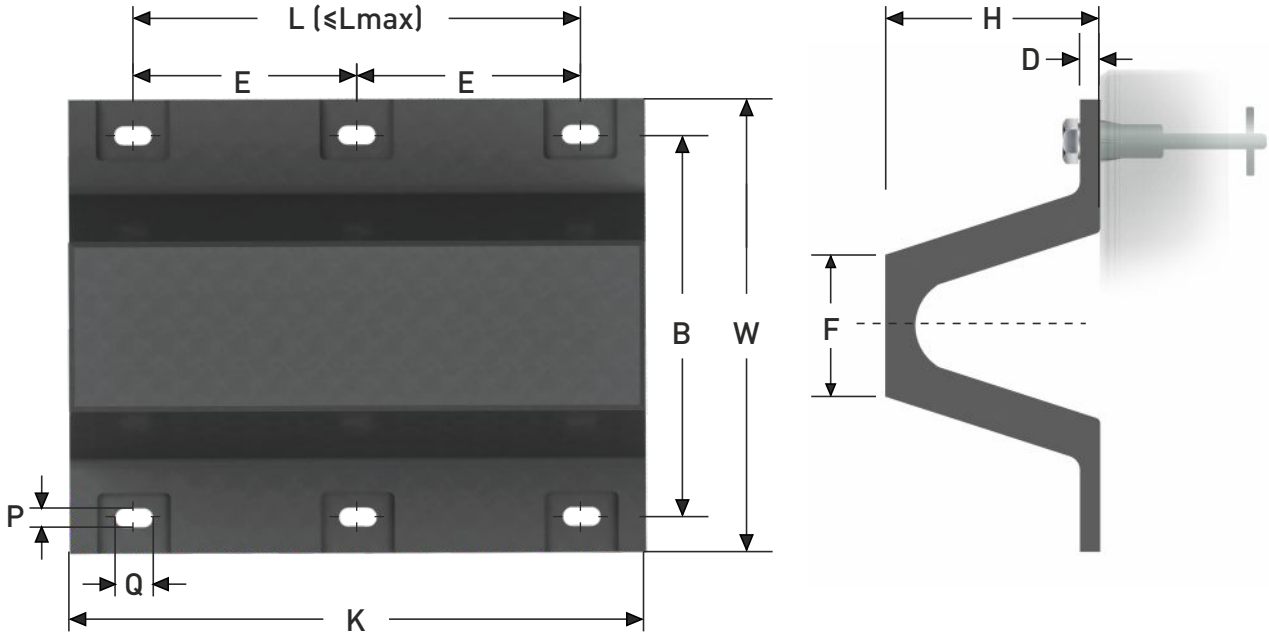
APPLICATIONS

FLOATOVER SOLUTIONS

RUBBING STRIPS

JACKET LEG RUBBING STRIPS

Hi-TechJacket Leg Rubbing Strips are custom built Arch Fender for protecting the offshore platform transportation and launching. They absorb considerable shock and protect the Offshore Jacket Legs from the Barges and Vessel while transporting/launching. They have long life and reliability and offer excellent resistance to sea water. They work effectively even on extreme climate condition without any short fall in performance. Our Hi-TechJacket Leg Rubbing Strips are available in 300mm height in different lengths as shown here. Custom made Jacket Leg Rubbing Strips can also be designed and manufactured as per requirement.



DIMENSIONS

	Lmax	H	A	B	W	F	D	K	E	PxQ	ANCHORS / HEAD BOLTS ^	WEIGHT
HAT 150	3000	150	108	240	326	98	16–20	50	500	20×40	M16	28
HAT 200	3000	200	142	320	422	130	18–25	50	500	25×50	M20	48
HAT 250	3500	250	164	400	500	163	20–30	62.5	500	28×56	M24	69
HAT 300	3500	300	194	480	595	195	25–32	75	500	28×56	M24	107
HAT 400	3500	400	266	640	808	260	25–32	100	500	35×70	M30	185
HAT 500	3500	500	318	800	981	325	25–32	125	500	42×84	M36	278
HAT 600	3000	600	373	960	1160	390	28–40	150	500	48×96	M42	411
HAT 800	3000	800	499	1300	1550	520	41–50	200	500	54×108	M48	770
HAT 1000	3000	1000	580	1550	1850	650	50–62	250	500	54×108	M48	1289

^ Fender anchors / head bolts indicated are based on fenders RDP performance using a particular grade of steel. Please contact our local office for precise size, material and type for different grades of fenders pertaining to the project requirements.

[Units: mm, kg/m]

L	1000	1500	2000	2500	3000	3500
ANCHORS	6 No	8 No	10 No	12 No	14 No	16 No

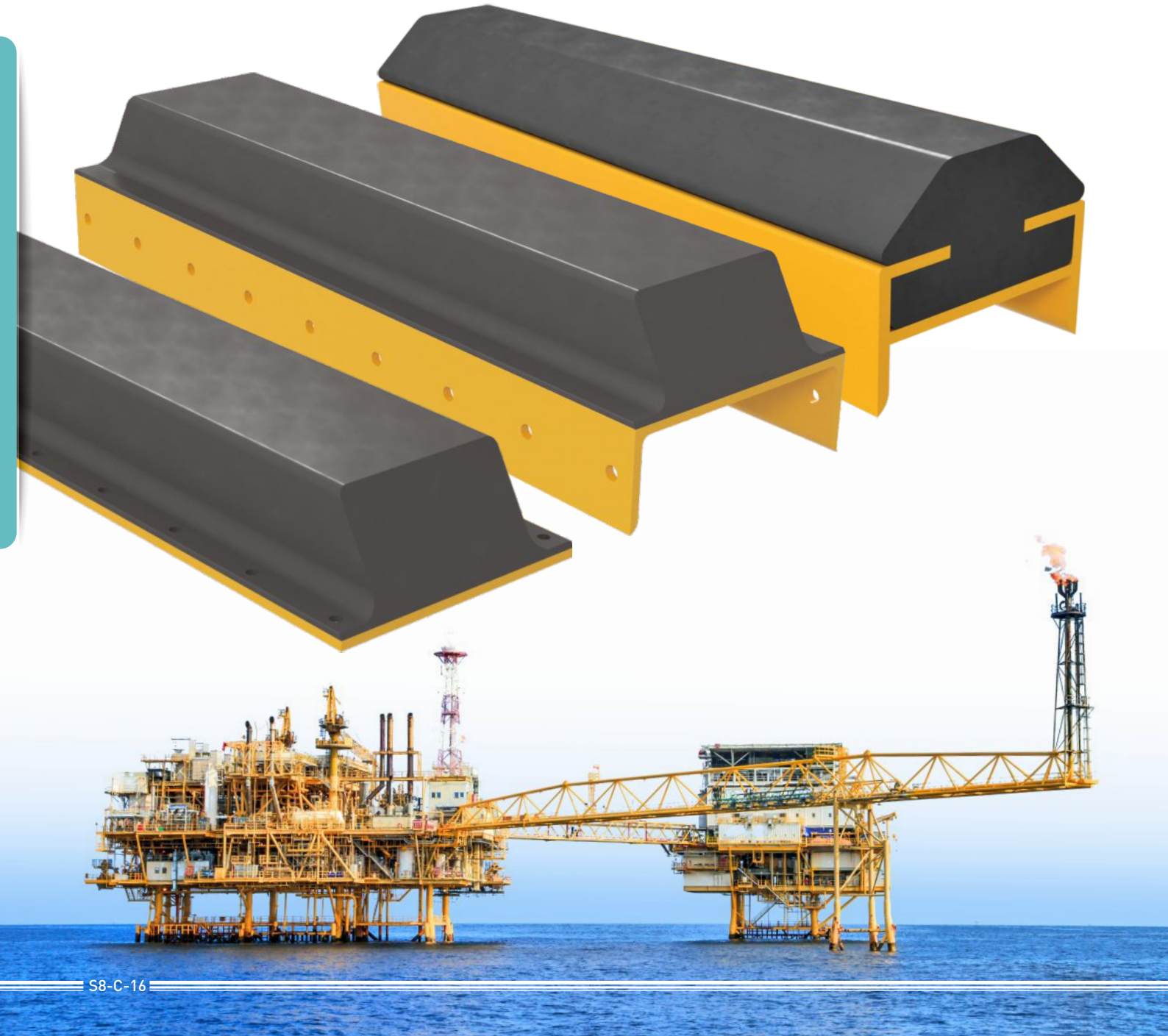
Non-standard lengths, profiles and bolting patterns are available on request.

Larger bolts are required when connecting HAT fenders to steel panels.

FLOATOVER SOLUTIONS
RUBBING STRIPS

LANDING RUBBING STRIPS

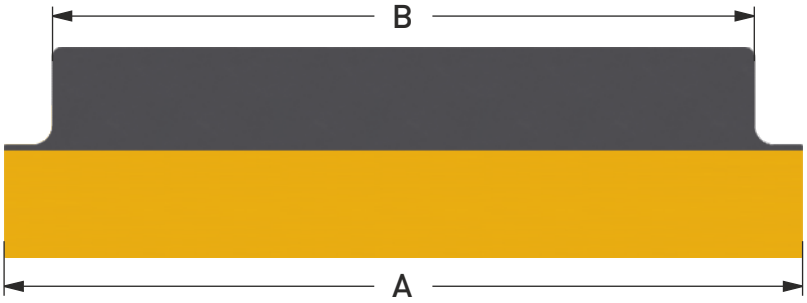
Hi-Tech DRS series Rub Strips are made of solid low friction Rubber for the rough & tough use. These are used to act as a buffer between Boat Landing of Offshore Structure and the Barges and Supply Boats which are coming in contact with them. The installations of Rub-Strips are extremely rugged, reliable and maintenance free. They are manufactured from high abrasion and low friction Poly Urethane Rubber for extreme wear and tear. These Boat Landing Rub Strips are excellent sea water resistance for long life. They are produce by superior compression moulding process at very high pressure with controlled heating and cooling cycle. They offer excellent resistance to ultra violet rays and ozone aging too.

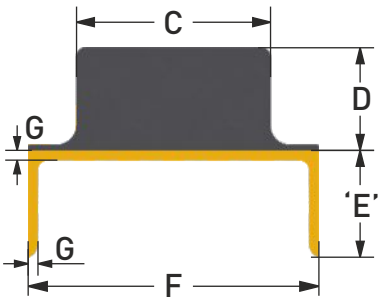


FLOATOVER SOLUTIONS

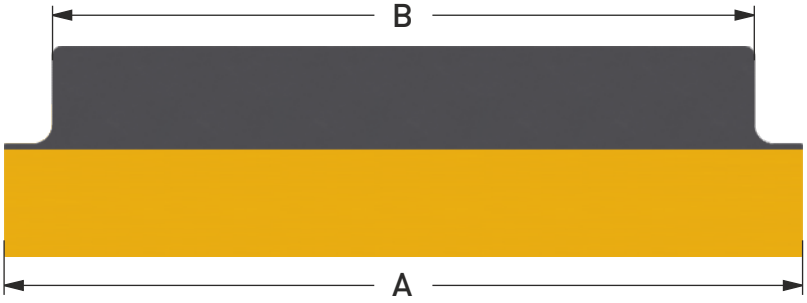
RUBBING STRIPS

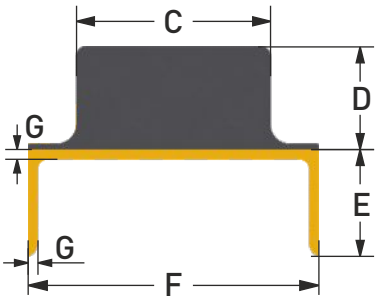
HLSR 50



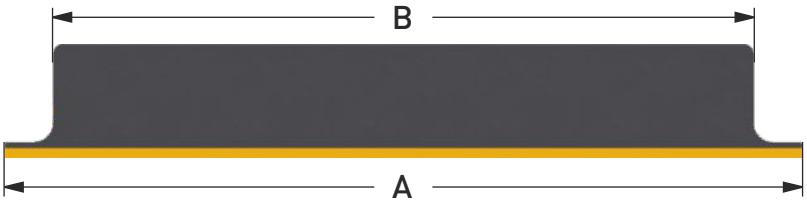


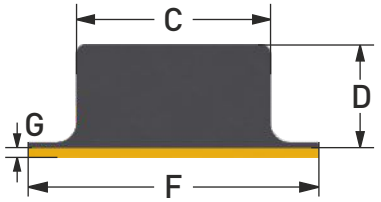
HLSR 60



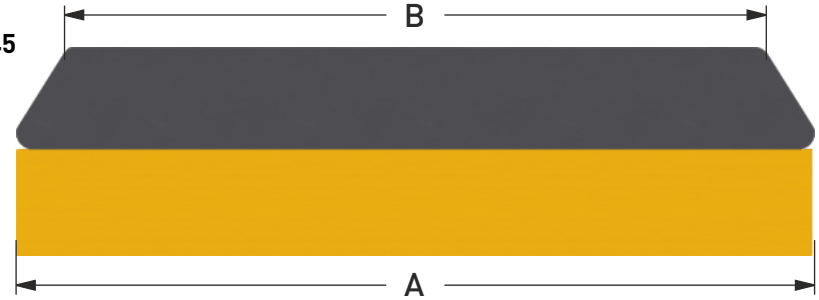


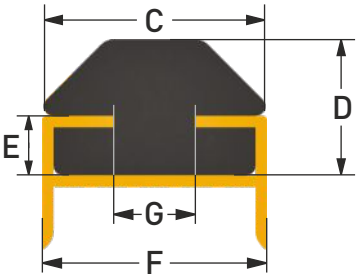
HLSR 90





HLSR 145





DIMENSION

MODEL	A	B	C	D	E	F	G	WEIGHT Kg/Mt.
HLSR 50	1500 to 9500	1400 9400	150	50	-	150	12	30
HLSR 60	1500 to 9500	1400 9400	150	60	-	250	12	40
HLSR 90	1500 to 9500	1400 9400	150	90	-	250	15	50
HLSR 145	1500 to 9500	1400 9400	200	145	58	200	90	-

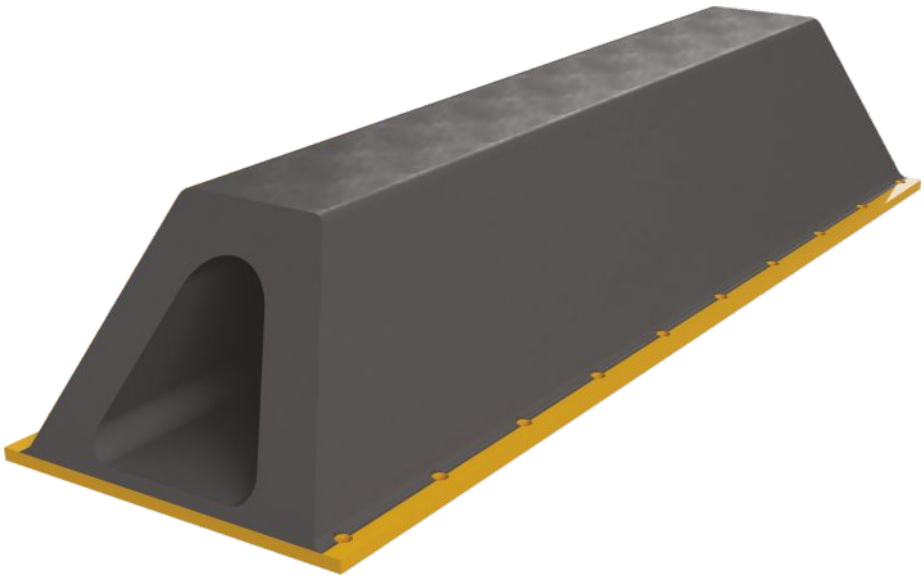
• Dimension 'E' to be arrived at depending on the pile dia
• Various lengths are available as per specific requirement

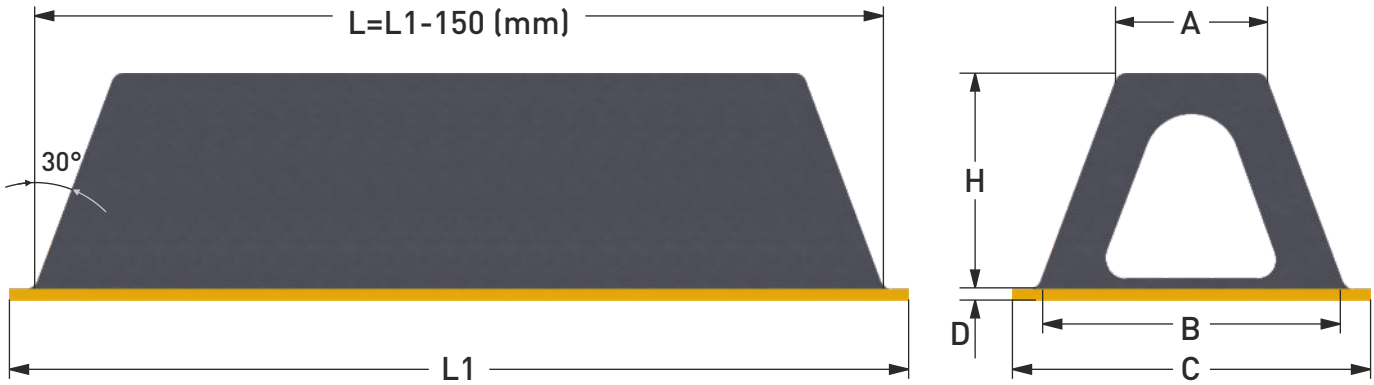
[Units: mm, kg]

FLOATOVER SOLUTIONS
RUBBING STRIPS

D-TYPE BOAT LANDING RUBBING FENDER

Hi-Tech D type Boat Landing Fenders are most popular Fenders, generally employed for Boat Landing applications of Offshore Platforms. These Fenders are made of hollow D shape low friction rubber for wear and tear application of Boat Landing. These Fenders are used to act as a buffer between Boat Landing and the Barges and Supply Vessels and transfer minimum load to Offshore Jacket Legs. These Fenders are extremely rugged, reliable and maintenance free. These Fenders are supplied in different lengths and fitting arrangements as per Boat Landing Design. Hi-Tech Boat Landing Fenders are available in two different models in required lengths as show here.





DIMENSION

DD 150H					DD 225H				
A	B	C	D	H	A	B	C	D	H
100	200	255	20	150	158	300	355	20	255

[Units: mm]

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PRODUCT INSTALLATION PICTURES

HI-TECH ELASTOMERS LTD.

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