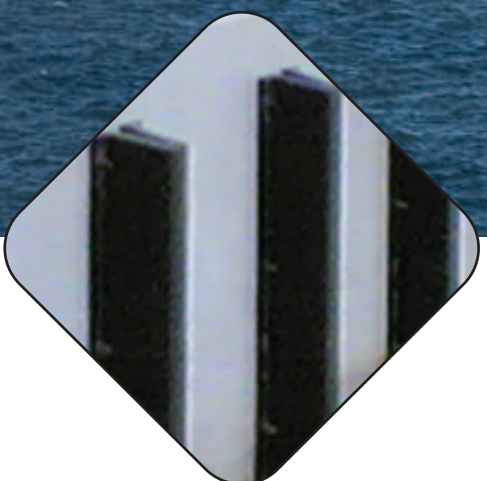
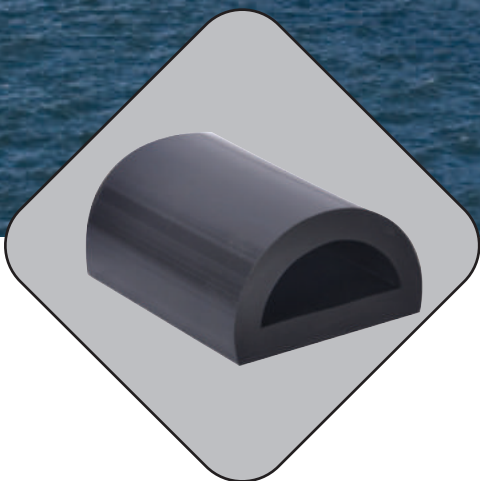
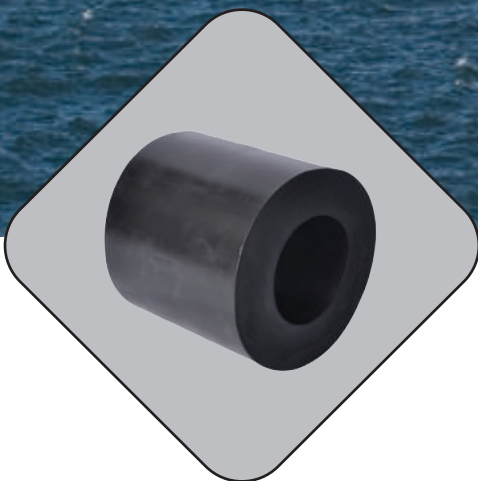
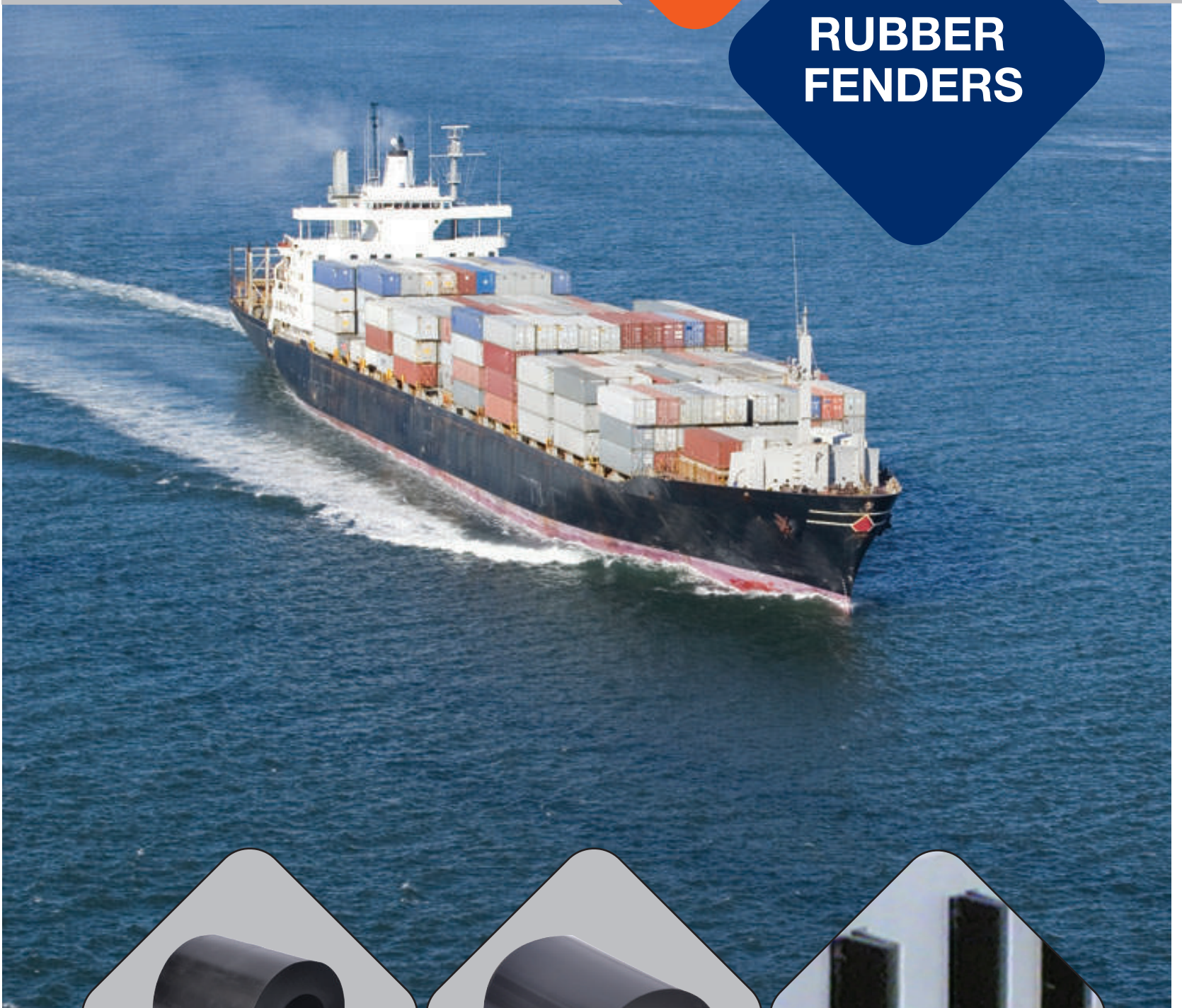


RUBBER FENDERS



WHERE RELIABILITY IS ON PRIORITY

Rubber Products from HIRA

www.hiraqatar.com

RUBBER FENDERS

RUBBER FENDERS : WHERE RELIABILITY IS ON PRIORITY

DESCRIPTION:

Fenders are designed to prevent boats/ships and the dock from being damaged during the mooring process or during berthing process.

MATERIALS:

The Fenders are made of high impact resistant extruded rubbers either in EPDM or Natural Rubber. Standard color is black. Coloured fenders are available on request. EPDM Fenders have excellent weather resistance, ozone resistance, crack resistance and high abrasion resistance.

TYPES:

The Fenders are available in the following types.

- 1) D-Fenders
- 2) Cylindrical Fenders
- 3) Arch Fenders
- 4) Element Fenders
- 5) Cone Fenders
- 6) Square Fenders

Customized Fenders can be manufactured as per client requirement.

STANDARD LENGTH:

The standard length of the Fender is 5 meters.

INSTALLATION:

The Fenders can be fixed horizontally to a wall or mounted in short vertical strips on flat or curved surfaces.

RUBBER SELECTION DATA CHART

	NATURAL RUBBER	SBR	EPDM
COST FACTOR	1	1	1
HARDNESS RANGE	30-95°	40-95°	30-85°
COLORS	Full Range	Full Range	Limited Range
HEAT RESISTANCE (°C) Maximum Continuous Maximum Intermittent	75°C 105°C	85°C 115°C	130°C 150°C
LOW TEMPERATURE RESISTANCE	-60°C	-55°C	-50°C
RESISTANCES Oxidation Ozone & Weathering	Poor Poor	Poor Poor	Excellent Outstanding
OIL RESISTANCE *ASTM Oil No. 1 @ 20°C @ 100°C *ASTM Oil No. 3 @ 20°C @ 100°C	Poor Unsatisfactory Unsatisfactory Unsatisfactory	Poor Unsatisfactory Unsatisfactory Unsatisfactory	Fair Unsatisfactory Unsatisfactory Unsatisfactory
FUEL RESISTANCE *ASTM FUEL B @ 40°C	Unsatisfactory	Unsatisfactory	Unsatisfactory
CHEMICAL RESISTANCE Acids Bases	Fair Good	Fair Good	Good Good
PHYSICAL STRENGTH	Excellent	Good	Good
COMPRESSION SET	Good	Good	Good
TEAR & ABRASION RESISTANCE	Excellent	Good	Good
RESILIENCE	Excellent	Good	Very Good
PERMEABILITY TO GAS	Poor	Fairly Low	Fairly Low
FLAME RESISTANCE	Poor	Poor	Poor
WATER RESISTANCE	Very Good	Good	Excellent

RUBBER SELECTION DATA CHART

	NEOPRENE CR	NITRILE NBR	SILICONE Si	VITON* FPM
COST FACTOR	2	2	6	15
HARDNESS RANGE	30-90°	40-100°	40-80°	50-95°
COLORS	Full Range	Limited Range	Limited Range	Limited Range
HEAT RESISTANCE (°C) Maximum Continuous Maximum Intermittent	95°C 125°C	100°C 130°C	205°C 300°C	205°C 300°C
LOW TEMPERATURE RESISTANCE	-40°C	-20°C	-60°C (special grades - 80°C)	-20°C
RESISTANCES Oxidation Ozone & Weathering	Good Good	Fair Fair	Good Good	Outstanding Outstanding
OIL RESISTANCE *ASTM Oil No. 1 @ 20°C @ 100°C *ASTM Oil No. 3 @ 20°C @ 100°C	Good Good Good Fair	Excellent Good Excellent Good	Excellent Good Good Fair	Excellent 150°C Excellent Excellent 150°C Excellent
FUEL RESISTANCE *ASTM FUEL B @ 40°C	Poor	Fair	Unsuitable	Excellent
CHEMICAL RESISTANCE Acids Bases	Good Fair	Good Fair	Fair Fair	Excellent Good
PHYSICAL STRENGTH	Good	Good	Poor	Good
COMPRESSION SET	Fair to Good	Good	Fair	Good
TEAR & ABRASION RESISTANCE	Good	Good	Poor	Good
RESILIENCE	Very Good	Good	Good	Fair
PERMEABILITY TO GAS	Low	Low	Fairly Low	Very Low
FLAME RESISTANCE	Self-extinguishing	Poor	Good	Self-extinguishing
WATER RESISTANCE	Good	Good	Good	Good

SPECIFICATION

Hira Industries presents a range of rubber protection systems that are made of high impact resistance rubber manufactured in a number of different sizes and color configurations. Rubtech™ product range comprises of elements which can control the speed of vehicles, thus protecting people, structural surface and other vehicles in the car park.

Rubtech™ product range also incorporates other elements which are purely for impact resistance, in order to avoid or minimize the potential damage to a structural component such as a column, a wall or a loading dock area when impacted.

The system has an aesthetic finish with concealed fixings, ease of installation, maintenance free and has an excellent resistance to UV & weathering. SBR Rubber properties are used in the manufacture of impact protection Systems.

Sr.No.	Test Description	Unit	ASTM Method	Lab Observation
1.	Material	-	-	SBR
2.	Specific Gravity	-	-	1.450
3.	Hardness	°SA	D2240	75±5
4.	Tensile Strength	N/mm ²	D412	12.0
5.	Elongation at Break	% Min	D412	325
6.	Tear Resistance- Die C	KN/m min	D624	30
7.	Compression Set at 22hrs @70 ⁰ C (158 deg F)	% Max	D395	26
8.	Ageing Resistance 70hrs @ 100oC (212oF)	°F	D573	Below are the results for the Ageing Resistance after the duration of time and temperature.
8.1	Change in Hardness	Points	D573	+4
8.2	Change in Tensile Strength	%	D573	-25
8.3	Change in Elongation at Break	%	D573	-22
9.	Water Resistance			Good
10.	Weather Resistance			Good

Note: Above specification is for all products except Neoprene Pads and Rubtech Rubber Fenders