



REVOLUTIONISING THE TRADITIONAL TUG FENDER

HIGH PERFORMANCE
LIGHTWEIGHT
PROTECTION





AN INNOVATIVELY ENGINEERED ALTERNATIVE TO RUBBER FENDERING

- **MINIMUM 30% LIGHTER THAN RUBBER FENDERS OF EQUIVALENT SIZE**
- **MODULAR INNOVATIVELY ENGINEERED DESIGNS**
- **EXTREME DURABILITY AND WEAR RESISTANCE**
- **PROGRESSIVE COMPRESSION THROUGH MULTIPLE CAVITIES**
- **VARIABLE HARDNESS RANGE FOR TAILORED PERFORMANCE**
- **EASY, QUICK INSTALLATION AND REDUCED MAINTENANCE COSTS**



Tug Fender layout with Modular Cylindrical and W-Fender replacement sections.

30 YEARS OF EXPERIENCE

Buoyant Works has developed the next generation of Tug Fendering. Utilising our progressive compression technology and modular construction, we have achieved significant performance and environmental benefits.

We have replaced the traditional cylindrical fender with a modular layout which in conjunction with its alternative W-Fender and D-Fender designs, delivers an overall weight saving of up to several tonnes compared with traditional rubber alternatives.

APPLICATION

FENDERIT provides a high performance, engineered approach to protecting the hulls and bows of Tug Boats from costly structural damage and the vessels they push against.

Tug Boat fenders work harder and under more extreme conditions than most other commercial vessels.

Within our **FENDERIT** range, we have designed exceptionally robust and resilient fenders with outstanding grip and abrasion resistance, to enable Tug Boats to operate safely and with precision.



- **HIGHER LEVEL OF PRODUCT ENGINEERING** than traditional tug fenders
- **HIGH PERFORMANCE POLYMER CONSTRUCTION**
- **A MINIMUM OF 30% LESS** weight than an equivalent rubber fender
- **EXCEPTIONAL LONG-TERM DURABILITY**

- **MODULAR CONFIGURATIONS**
- **MULTI CAVITY DESIGNS** generate high levels of energy absorption with a low reaction force
- **LONG TERM CONSISTENT PERFORMANCE**
- **TAILORED HARDNESS CHARACTERISTICS** to meet performance targets.

FEATURES & BENEFITS

- **LONG TERM CONSISTENT PERFORMANCE** reduces maintenance costs and vessel operation downtime
- **SIGNIFICANT WEIGHT SAVINGS** generate performance and operational benefits
- **WEIGHT SAVINGS** lead to lower fuel consumption, generating environmental benefits and lower operational costs
- **CAN BE RECYCLED** and reprocessed back into new fender productions
- **ULTRA-LOW WASTE PRODUCTION METHOD**
- **A MODULAR APPROACH HELPS WITH INSTALLATION AND MAINTENANCE REQUIREMENTS**

Small parts are cheaper and easier to replace if and when required





OTHER FEATURES INCLUDE

- Progressive compression
- Excellent abrasion resistance (up to 5x better than rubber)
- Tensile strength and tear resistance properties are superior to alternative fender technologies
- Non-marking single material construction
- Wide hardness range available enabling great performance flexibility
- Sophisticated and consistent production process enables tight weight and performance tolerances to be achieved
- Custom sections available to suit more complex requirements
- *Available in a variety of colours*

IN-HOUSE PERFORMANCE TESTING



To be sure the fenders we manufacture for you meet your performance requirements, we have a fender press test rig at our production facility in Cornwall and can perform fender profile performance testing (compression and durability) with independent data verification.

STANDARD PRODUCT RANGE FOR TUG BOAT APPLICATIONS



MODULAR BOW FENDERS

Next Generation Replacement for traditional Cylindrical Bow & Stern Fenders

Product Reference	Width (mm)	Depth (mm)	Maximum Length (mm)	Weight per Linear Metre (kg)	Rubber Weight Comparison (kg)
MBF400-01	400	400	1500	82	118
MBF500-01	500	500	1500	125	181
MBF600-01	600	600	1500	175	255
MBF700-01	700	700	1500	240	346
MBF800-01	780	800	1500	318	453

BW BLOCK FENDERS

Next Generation Replacement for traditional W-Fenders

Product Reference	Width (mm)	Depth (mm)	Maximum Length (mm)	Weight per Linear Metre (kg)	Rubber Weight Comparison (kg)
BWW320-200	320	200	2300	40	51
BWW400-250	400	250	2300	61	81
BWW480-300	480	300	2300	87	120
BWW500-350	500	350	2300	100	135
BWW500-450	500	450	2300	136	180

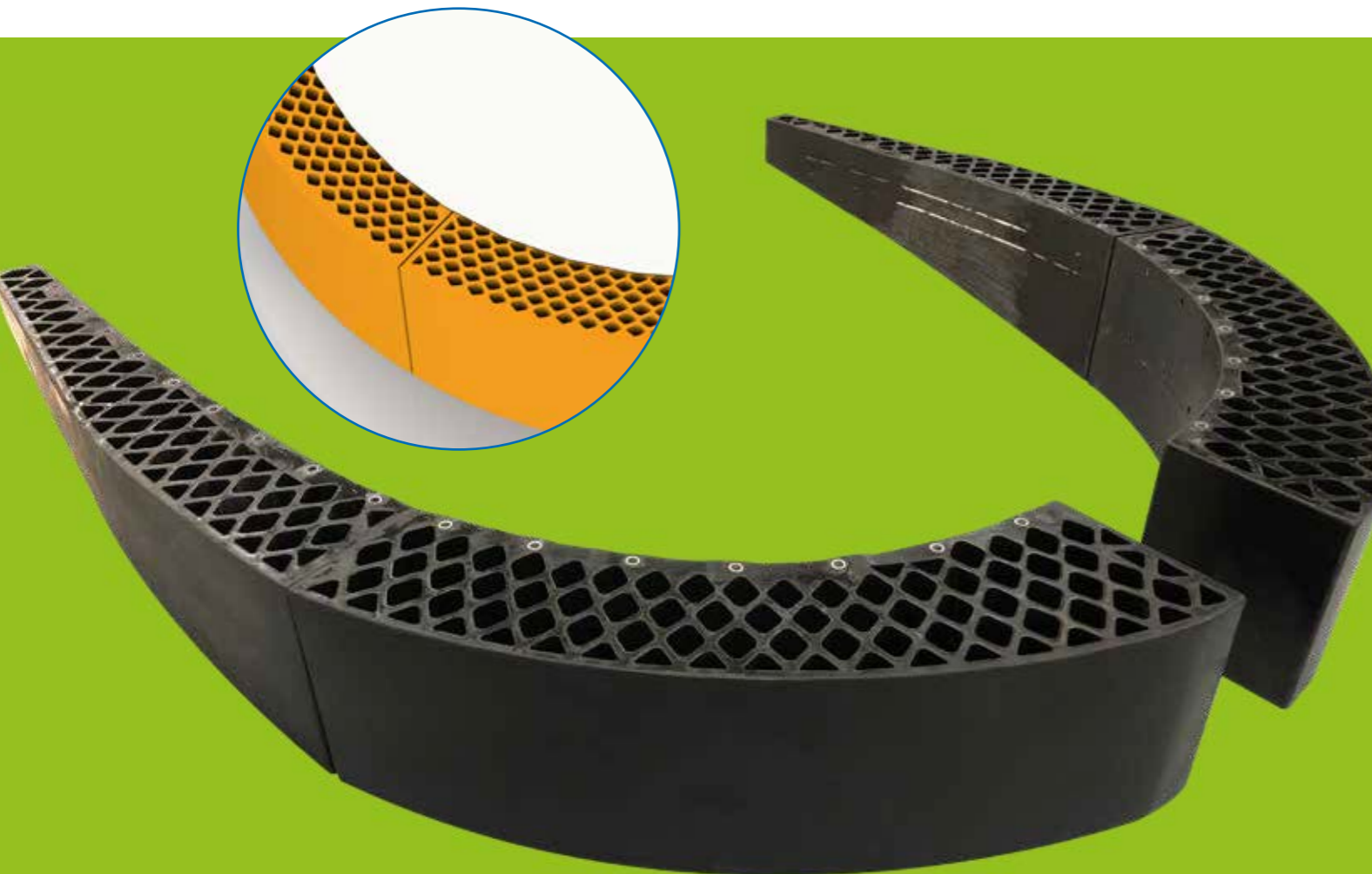


CONTOURED BLOCK FENDERS

Modular alternative to W or D-Fenders

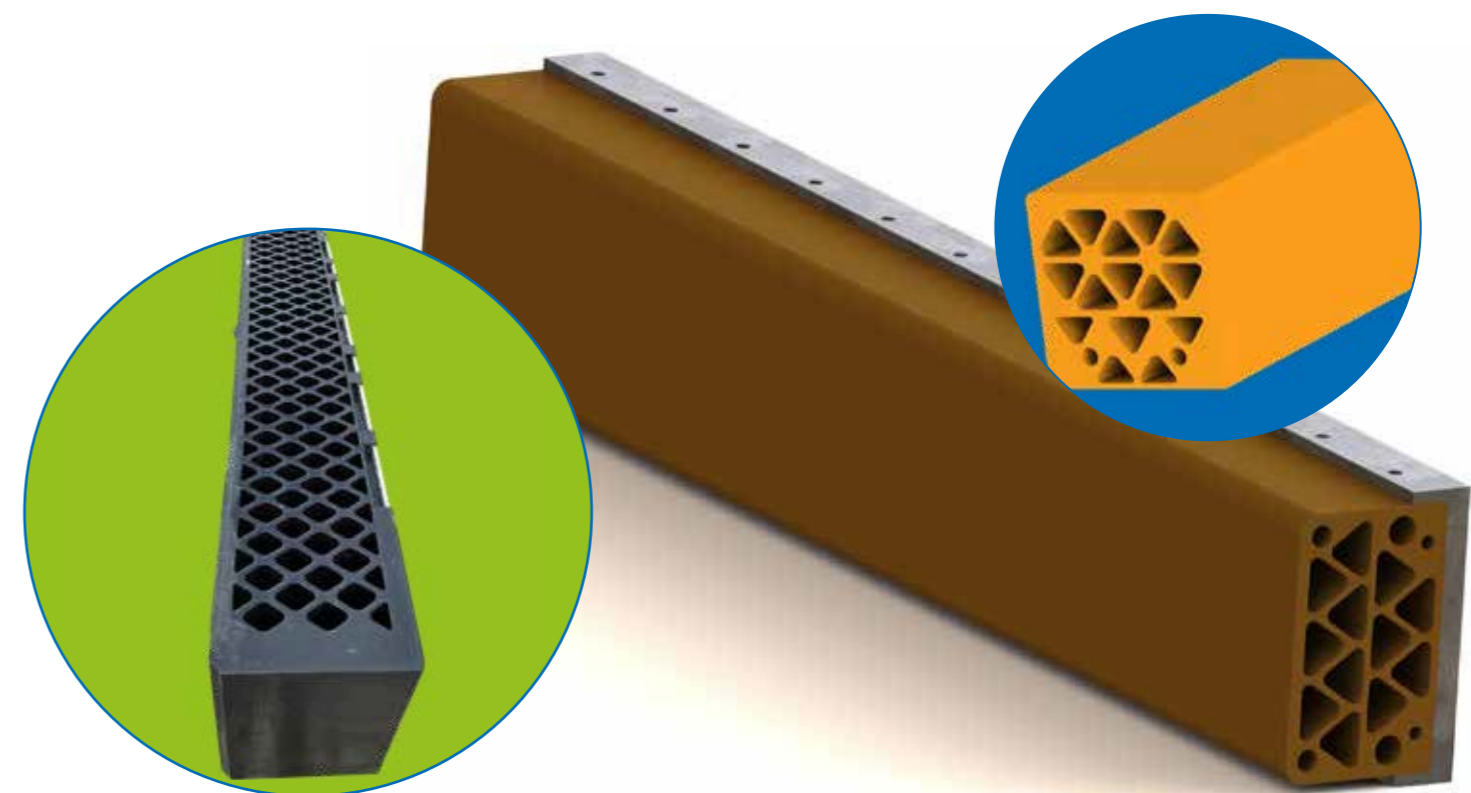
Available as either Straight or Curved Lengths

Product Reference	Width (mm)	Depth (mm)	Maximum Length (mm)	Weight per Linear Metre (kg)
BWCB200-01	2000	200	1500	147
BWCB250-01	2000	250	1500	185
BWCB300-01	2000	300	1500	197
BWCB350-01	2000	350	1500	216
BWCB400-01	2000	400	1500	240
BWCB416-01	2000	416	1500	250
BWCB450-01	2000	450	1500	270
BWCB500-01	2000	500	1500	301



BLOCK FENDERS

Product Reference	Width (mm)	Depth (mm)	Maximum Length (mm)	Weight per Linear Metre (kg)	Rubber Weight Comparison (kg)
BWB150-01	150	150	2350	16	23.6
BWB200-01	200	200	2350	27	43.8
BWB250-01	250	250	2350	44	67.2
BWB300-01	300	300	2350	59	95.6
BWB337-01	337	205	2350	37	n/a
BWB337-01	337	300	2350	57	n/a
BWB350-01	350	350	2350	82	126
BWB400-01	400	400	2350	59	158
BWB450-01	450	450	2350	160	247
BWB530-01	530	356	2350	112	n/a
BWB530-02	530	420	2350	145	n/a





D-FENDERS - MULTI-CAVITY

Product Reference	Base Width (mm)	Height/Depth (mm)	Number of Cavities	Weight per Linear Metre (kg)	Fixing System			Rubber Weight Comparison (kg)
					Bonding	Vertical Bolting	Horizontal Bolting	
DMC100-100	100	100	3	5				8.5-10
DMC150-086	150	86	4	5				n/a
DMC150-113	150	113	3	7.5				n/a
DMC150-150	150	150	6	10.0				18.5-20.5
DMC150-151	150	150	6	12.0				18.5-20.5
DMC150-152	150	150	6	13.5				18.5-20.5
DMC160-157	160	157	7	10				n/a
DMC200-200	200	200	9	22				33-38.5
DMC250-250	250	250	10	36.5				51.5-59
DMC300-210	300	210	8	36				n/a
DMC300-300	300	300	15	49				74-83.5
DMC350-350	350	350	18	69				101-113
DMC400-400	400	400	26	87				132-137
DMC500-500	500	500	36	147				206-214
DH400400-61	400	400	3	83				132-137
DH500500-72	500	500	3	127				206-214
DH500500-97	500	500	3	153.0				206-214

D-FENDERS - VERTICAL BOLTING

Product Reference	Base Width (mm)	Height/Depth (mm)	Number of Cavities	Wall Thickness	Weight per Linear Metre (kg)	Fixing System			Rubber Weight Comparison (kg)
						Bonding	Vertical Bolting	Horizontal Bolting	
DV080080-08	80	80	1	8	2.75				n/a
DV100100-12	100	100	1	12	5				8.5-10
DV150150-15	150	150	1	15	9.6				18.5-20.5
DV150150-21	150	150	1	21	11.8				18.5-20.5
DV200200-22	200	200	1	22	16.8				33-38.5
DV200200-30	200	200	1	30	19.5				33-38.5
DV250250-24	250	250	1	24	23.5				51.5-59
DV250250-36	250	250	1	36	30.4				51.5-59
DV250290-40	250	290	1	40	36				n/a
DV300300-36	300	300	3	36	40				74-83.5
DV300300-42	300	300	3	42	43.2				74-83.5
DV350350-51	350	350	3	51	64				101-113
DV350350-76	350	350	3	76	79				101-113
DV400400-35	400	400	3	35	70				132-137
DV400400-61	400	400	3	61	83				132-137
DV500500-72	500	500	3	72	127				206-214
DV500500-97	500	500	3	97	153.0				206-214






Photography: Turner Photography

FENDERIT - MATERIAL PHYSICAL PROPERTY DATA COMPARED WITH TYPICAL RUBBER PROPERTIES

	Units	Test Method	FENDERIT High Performance Polymer						Typical Rubber
			Soft	Soft	Medium	Medium	Hard	Hard	
Material Density	kg/cu.m.		1080	1090	1090	1100	1120	1130	1200
Shore Hardness	Shore A Scale		70	75	80	85	90	95	65-78
Tensile Strength	mPa	BS903ptA2-ISO37	37	37	39	46	47	51	11.0-16.0
Elongation at Break	%age	BS903ptA2-ISO37	750	710	600	630	560	500	280-400
Tear Strength (Die C)	KN/m	ISO 34-1	74	83	103	100	104	113	35-60
Tear Strength (Trouser)	KN/m	ISO 34-1	37	38	38	39	41	40	
Compression Set	%age	BS903ptA6-ISO815	44	46	40	36	34	33	25-40
Resilience	%age	AST-MD2632-92	55	51	47	46	41	37	
Abrasion Loss **	cubic mm	DIN53516	37	40	40	47	58	59	150-250

**For Abrasion Loss, the lower the stated figure, the better the wear/abrasion resistance is.

ABOUT US

Buoyant Works is an innovative designer and manufacturer of high performance, fendering and offshore wind farm impact protection products.

Born out of 30 years of fender design experience, our fender range is a modern, engineered polyurethane alternative to rubber fendering. It utilises the most efficient processing technology to provide lightweight, durable fender solutions which maximise vessel / quayside protection, increase operational performance and help to lower your running and maintenance costs.

Buoyant Works has a dynamic range of products to offer.



PATENTED DESIGNS

Please get in touch to discuss how we can help you:

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