

# *Floating Fenders*

## *DONUT FENDERS*



Where  
**Innovation**  
is Tradition



## DONUT FENDERS

With high energy absorption, easy installation and low maintenance, Donut Fenders are ideal for bridge supports and monopiles at the dock and port entrances to protect vessels and structures from damage.

Donut Fenders from Hi-Tech are effective solutions for simple birthing dolphins, guiding and turning structures. With the fluctuating water levels, due to its construction, the Donut fender floats up and down and rotates to help align or redirect ships.

### FEATURES

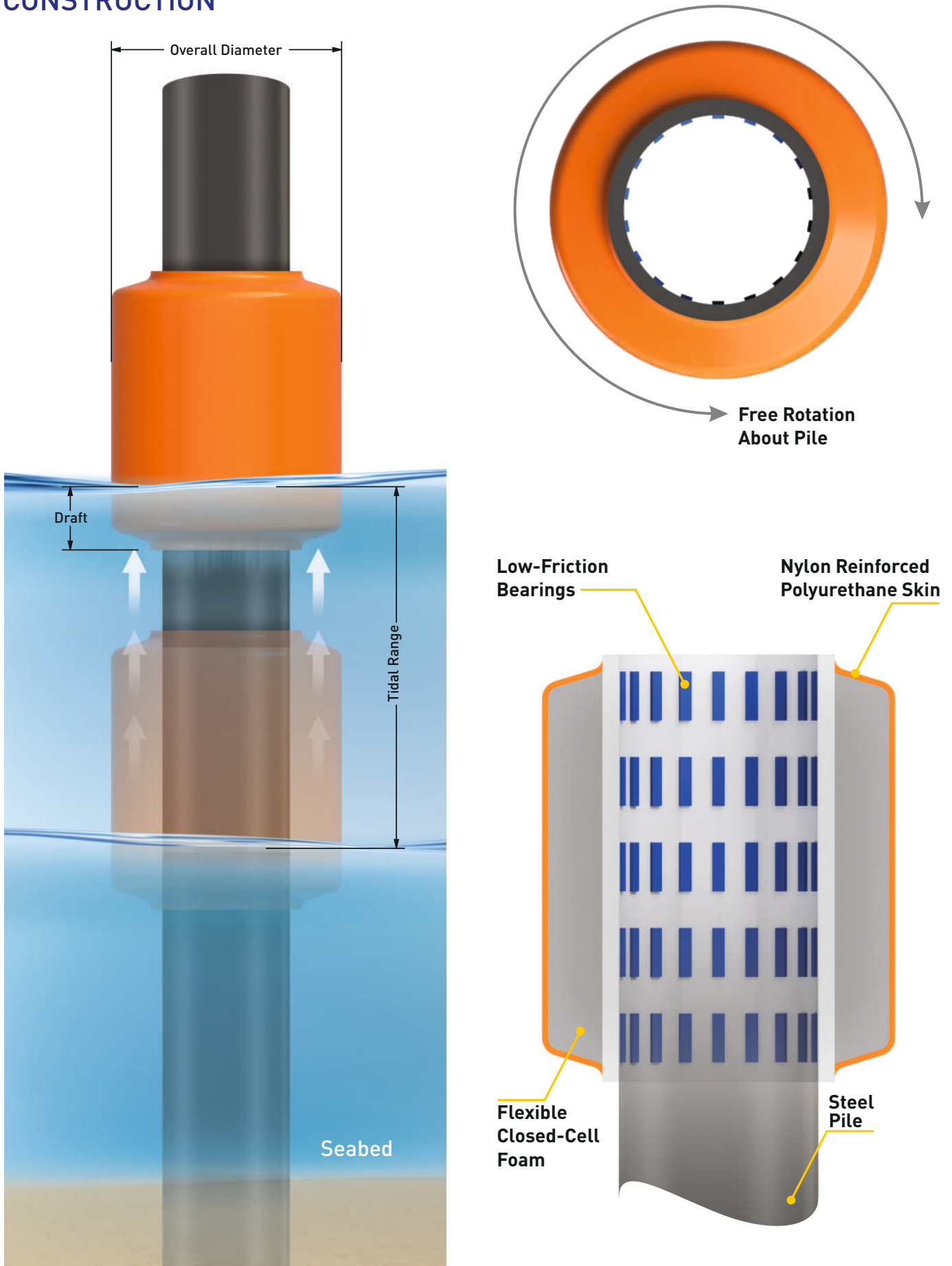
- Freely Rotates Around a Pile
- Rises and Falls with Water Level
- Simple Installation
- Requires Minimal Maintenance
- High Performance
- Low Hull Pressures
- Will Not Mark Ship Hulls

### APPLICATIONS

- Corner Protection
- Turning Structures
- Lead-in Jetties
- Simple Berthing Dolphins
- Bridge Protection
- RoRo Berths

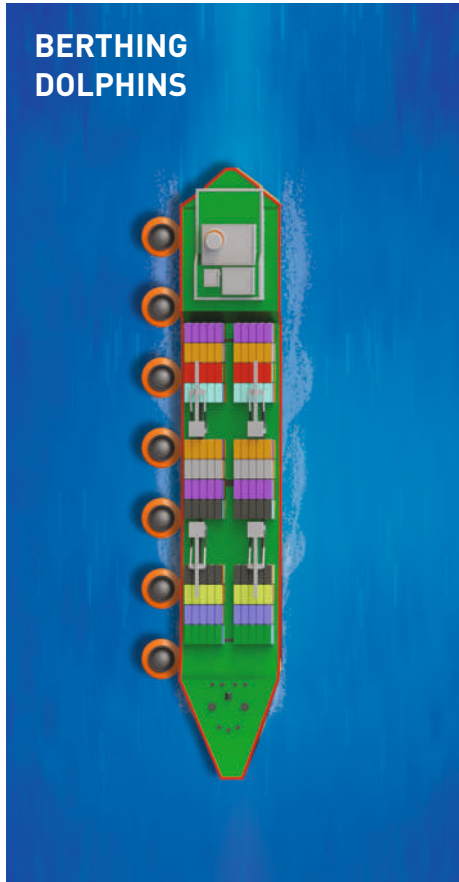
# DONUT FENDERS

## CONSTRUCTION



# DONUT FENDERS

## APPLICATIONS



# DONUT FENDERS

## PERFORMANCE AT 60% DEFLECTION, STANDARD GRADE

DONUT SIZE D		MAXIMUM PILE ØP		ENERGY*	REACTION*	ENERGY†	REACTION†
mm	ft	mm	ft	kNm	kN	ft-kip	kip
1270	4.2	610	2.0	7.2	116	1.6	7.9
1450	4.8	710	2.3	9.2	131	2.1	9.0
1520	5.0	762	2.5	10.5	140	2.4	9.6
1780	5.8	914	3.0	14.1	162	3.2	11.1
1910	6.3	995	3.3	16.4	175	3.7	12.0
2030	6.7	1067	3.5	18.6	186	4.2	12.8
2210	7.3	1185	3.9	22.3	204	5.0	14.0
2290	7.5	1219	4.0	23.6	210	5.3	14.4
2490	8.2	1345	4.4	28.0	229	6.3	15.7
2540	8.3	1372	4.5	29.3	234	6.6	16.0
2790	9.2	1524	5.0	35.3	256	7.9	17.6
2970	9.7	1636	5.4	40.1	273	9.0	18.7
3050	10.0	1676	5.5	42.1	280	9.5	19.2
3300	10.8	1829	6.0	49.5	304	11.1	20.8
3450	11.3	1933	6.3	54.6	319	12.3	21.9
3530	11.6	1981	6.5	57.2	327	12.9	22.4
3810	12.5	2134	7.0	65.9	350	14.8	24.0
3960	13.0	2241	7.4	72.1	366	16.2	25.1
4060	13.3	2286	7.5	75.1	374	16.9	25.6
4220	13.8	2388	7.8	81.3	389	18.3	26.7



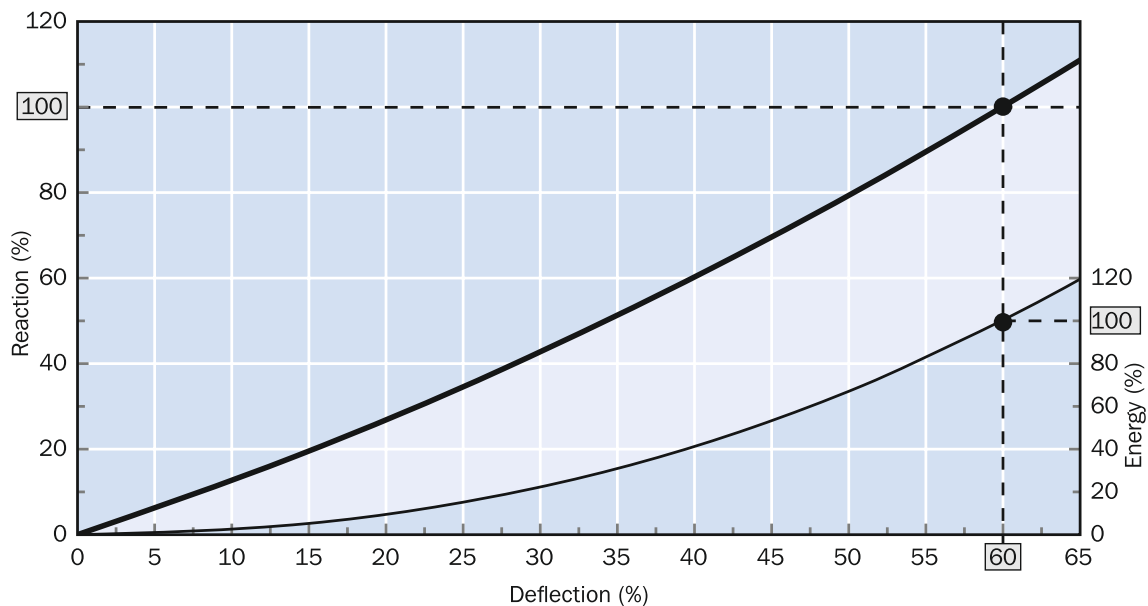
Increasing Donut height (H) will increase reaction and energy proportionately.

Other sizes, material grades and performance available upon request.

\* values for H = 1000mm.

† values for H = 1 foot.

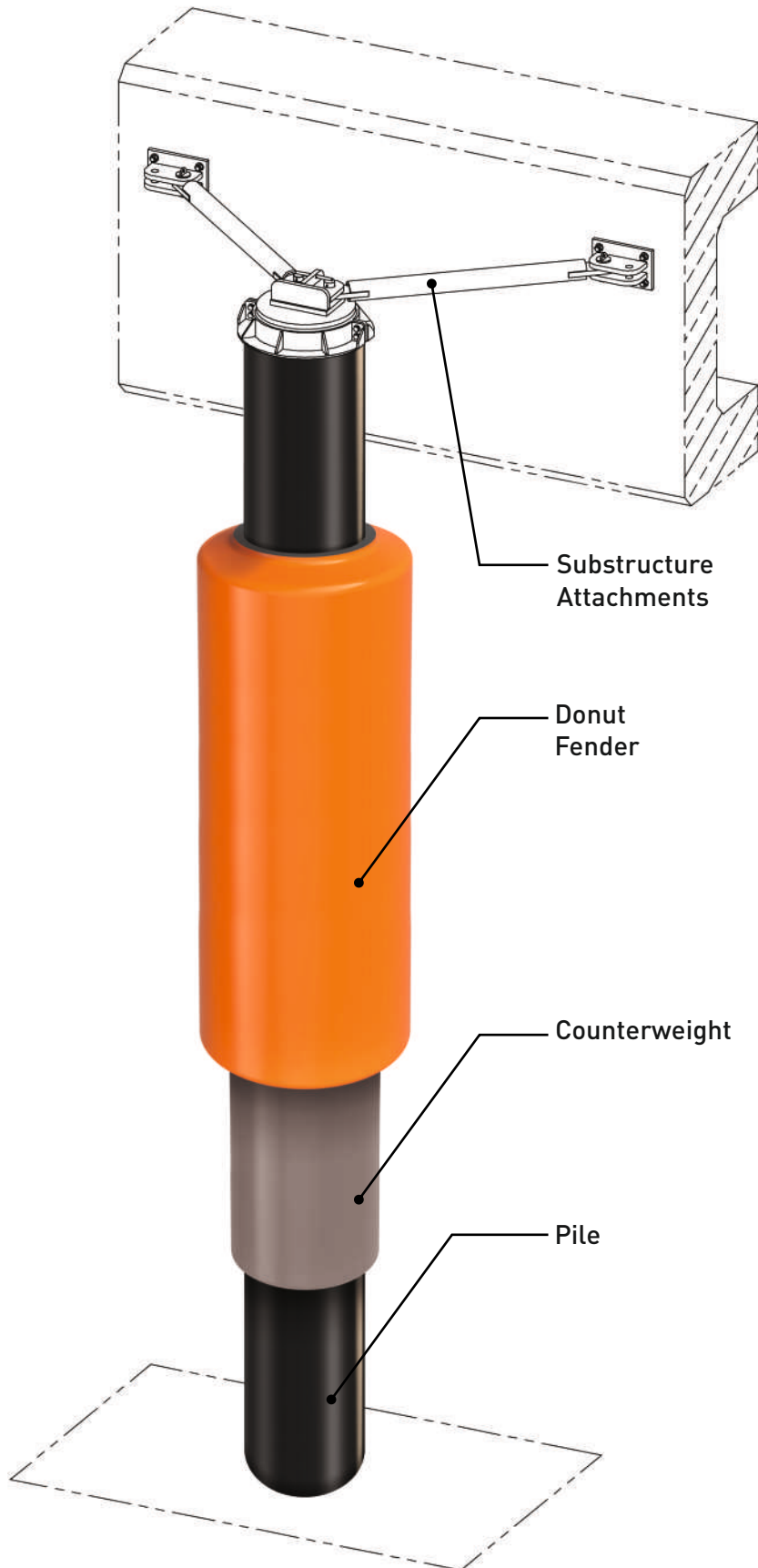
‡ all performances at f = 60% of donut resilient foam wall thickness.



Note: standard manufacturing and performance tolerance:  
Energy: 100%, reaction: 100%, Tolerance: ± 10%

# DONUT FENDERS

## Applications

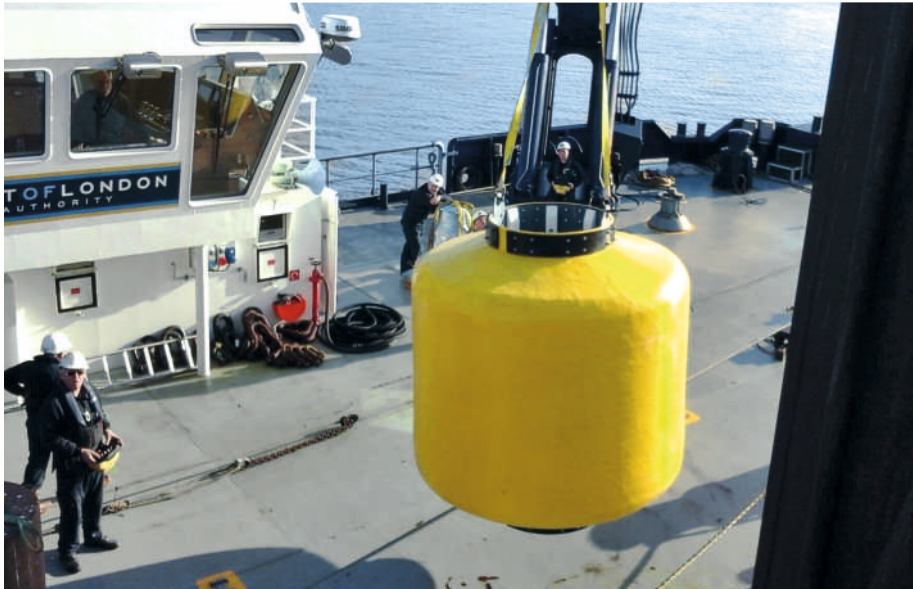


Hi-Tech Donut Fenders are also designed to provide a high rate of energy absorption with a relatively low reaction force. It is designed to simply slip over a stationary monopile and float at the fluctuating water line.

The internal casing of Donut fenders has long-lasting, low-friction bearings which need minimal maintenance. The foam is unsinkable and cannot burst or deflate. The Donut skin is durable polyurethane reinforced with continuous nylon filaments. The body of Donut fenders can be additionally protected with rubbing strips to cope with ferry beltings and bright colours are often used to improve visibility and safety.

Upon contact with a ship or vessel, the design of the Donut Fender allows it to freely rotate and self adjust with the changing water level. The unique rotating feature also makes it ideal for turning dolphins and eliminates shear.

# PRODUCT INSTALLATION PICTURES





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**WHERE INNOVATION IS A TRADITION**

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