

▶ Marine Guard™ Monopile Donut Fender

Urethane Products Corporation (UPC) engineers a wide range of Fender Systems to protect Naval Vessels, Commercial Tankers, Cruise Ships, Docks and Harbors.

▶ MG DONUT FENDER DESCRIPTION

Marine Guard™ Monopile Donut Fender is designed to protect ships by freely traveling up and down a stationary steel monopile while providing an energy absorbing fender system. Ideal for areas of high tidal swings.

Constructed with closed cell energy absorbing foam protected by a non-marking polyurethane elastomer skin reinforced with tire nylon cord for consistent performance over years of service.

Strength built into the fender by a heavy duty galvanized steel sleeve fitted with internal UHMW pads that allow the donut fender free movement along the steel monopile.

▶ MG DONUT FENDER ADVANTAGES

High Energy Absorption 100% Closed-Cell Foam constructed to absorb high impact forces.

Low Reaction Force Slow gradual reaction force compared to hard rubber type fenders.

Easy Installation Install by lowering fender onto a pre-driven steel monopile using lifting eyes on the fender.

Hull Conforming Protrusions from ship hull will not damage or harm fender.

Unsinkable Even when punctured.



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Marine Guard™

▶ Monopile Donut Fender Engineering Specification Data

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DONUT DIAMETER feet / meters	4.5 / 1.37		5.0 / 1.52		6.0 / 1.82		7.0 / 2.13		7.5 / 2.29		9.0 / 2.74		
PILE DIAMETER feet / meters	2.0 / 0.61		2.5 / 0.76		3.0 / 0.91		3.5 / 1.06		4.0 / 1.22		5.0 / 1.52		
PERFORMANCE	ENERGY ABSORPTION	REACTION FORCE	ENERGY ABSORPTION	REACTION FORCE	ENERGY ABSORPTION	REACTION FORCE	ENERGY ABSORPTION	REACTION FORCE	ENERGY ABSORPTION	REACTION FORCE	ENERGY ABSORPTION	REACTION FORCE	
FLAT HEIGHT feet / meters	ft*kip (kN*m)	kip (kN)	ft*kip (kN*m)	kip (kN)	ft*kip (kN*m)	kip (kN)	ft*kip (kN*m)	kip (kN)	ft*kip (kN*m)	kip (kN)	ft*kip (kN*m)	kip (kN)	
2.0 / 0.61	4 (5)	18 (80)	5 (7)	20 (89)	7 (9)	24 (107)	-	-	-	-	-	-	STANDARD CAPACITY
3.0 / 0.91	6 (8)	27 (120)	7 (9)	29 (129)	11 (15)	35 (156)	15 (20)	41 (182)	17 (23)	44 (196)	24 (33)	53 (236)	
4.0 / 1.22	8 (11)	35 (156)	10 (14)	39 (173)	14 (19)	47 (209)	19 (26)	55 (245)	22 (30)	59 (262)	32 (43)	71 (316)	
5.0 / 1.52	10 (14)	44 (196)	12 (16)	49 (218)	18 (24)	59 (262)	24 (33)	69 (307)	28 (38)	74 (329)	40 (54)	88 (391)	
6.0 / 1.82	12 (16)	53 (236)	15 (20)	59 (262)	21 (28)	71 (316)	29 (39)	83 (369)	33 (45)	88 (391)	48 (65)	106 (471)	
7.0 / 2.13	14 (19)	63 (280)	17 (23)	69 (307)	25 (34)	83 (369)	34 (46)	96 (427)	39 (53)	103 (458)	56 (76)	124 (552)	
8.0 / 2.44	16 (22)	72 (320)	20 (27)	79 (351)	29 (39)	94 (418)	39 (53)	110 (489)	45 (61)	118 (525)	64 (87)	141 (627)	
2.0 / 0.61	7 (9)	29 (129)	8 (11)	34 (151)	12 (16)	39 (179)	-	-	-	-	-	-	
3.0 / 0.91	10 (14)	43 (191)	11 (15)	51 (227)	17 (23)	58 (258)	24 (33)	65 (289)	27 (37)	72 (320)	39 (53)	87 (387)	
4.0 / 1.22	13 (18)	58 (258)	15 (20)	68 (302)	23 (31)	77 (342)	33 (45)	87 (387)	36 (49)	96 (427)	52 (71)	116 (516)	
5.0 / 1.52	16 (22)	72 (320)	19 (26)	84 (374)	29 (39)	96 (427)	41 (56)	109 (485)	45 (61)	121 (538)	65 (88)	145 (645)	
6.0 / 1.82	20 (27)	87 (387)	23 (31)	101 (449)	35 (47)	116 (516)	49 (66)	130 (578)	54 (73)	145 (645)	78 (106)	174 (774)	
7.0 / 2.13	23 (31)	101 (449)	27 (37)	118 (525)	41 (56)	135 (600)	57 (77)	152 (676)	63 (85)	169 (752)	91 (123)	203 (903)	
8.0 / 2.44	26 (35)	116 (516)	30 (41)	135 (600)	46 (62)	154 (685)	65 (88)	174 (774)	72 (98)	193 (858)	104 (141)	232 (1032)	
2.0 / 0.61	10 (14)	44 (196)	12 (16)	51 (227)	18 (24)	59 (262)	-	-	-	-	-	-	EXTRA HIGH CAPACITY
3.0 / 0.91	15 (20)	66 (294)	17 (23)	77 (342)	26 (35)	88 (391)	37 (50)	99 (440)	41 (56)	110 (489)	59 (80)	132 (587)	
4.0 / 1.22	20 (27)	88 (391)	23 (31)	103 (458)	35 (47)	117 (520)	49 (66)	132 (587)	55 (75)	147 (654)	79 (107)	176 (783)	
5.0 / 1.52	25 (34)	110 (489)	29 (39)	128 (569)	44 (60)	147 (654)	62 (84)	165 (734)	69 (94)	183 (814)	99 (134)	220 (979)	
6.0 / 1.82	30 (41)	132 (587)	35 (47)	154 (685)	53 (72)	176 (783)	74 (100)	198 (881)	82 (111)	220 (979)	119 (161)	264 (1174)	
7.0 / 2.13	35 (47)	154 (685)	40 (54)	180 (801)	62 (84)	205 (912)	87 (118)	231 (1027)	96 (130)	256 (1139)	138 (187)	308 (1370)	
8.0 / 2.44	40 (54)	176 (783)	46 (62)	205 (912)	70 (95)	234 (1041)	99 (134)	264 (1174)	110 (149)	293 (1303)	158 (214)	352 (1566)	
2.0 / 0.61	15 (20)	66 (294)	17 (23)	77 (342)	26 (35)	88 (391)	-	-	-	-	-	-	
3.0 / 0.91	22 (30)	99 (440)	26 (35)	115 (512)	40 (54)	132 (587)	56 (76)	148 (658)	62 (84)	165 (734)	89 (121)	198 (881)	
4.0 / 1.22	30 (41)	132 (587)	35 (47)	154 (685)	53 (72)	176 (783)	74 (100)	198 (881)	82 (111)	219 (974)	119 (161)	263 (1170)	
5.0 / 1.52	37 (50)	165 (734)	43 (58)	192 (854)	66 (89)	219 (974)	93 (126)	247 (1099)	103 (140)	274 (1219)	148 (201)	329 (1463)	
6.0 / 1.82	44 (60)	198 (881)	52 (71)	230 (1023)	79 (107)	263 (1170)	111 (151)	296 (1317)	123 (167)	329 (1463)	178 (241)	395 (1757)	
7.0 / 2.13	52 (71)	230 (1023)	60 (81)	269 (1197)	92 (125)	307 (1366)	130 (176)	346 (1539)	144 (195)	384 (1708)	207 (281)	461 (2051)	
8.0 / 2.44	59 (80)	263 (1170)	69 (94)	307 (1366)	105 (142)	351 (1561)	148 (201)	395 (1757)	165 (224)	439 (1953)	237 (321)	527 (2344)	

ACTUAL VALUES MAY VARY ±15% DUE TO VARIATIONS IN MATERIALS, TEMPERATURE, TOLERANCES, AND SPEED OF COMPRESSION. CUSTOM FENDER SIZES AVAILABLE.

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