

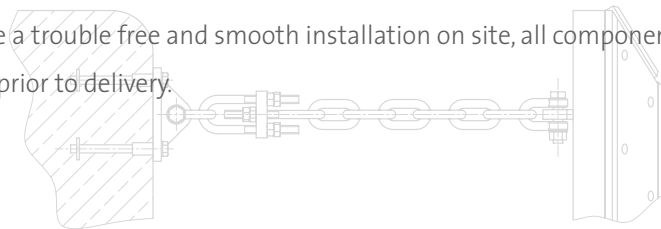


ACCESSORIES AND FIXINGS

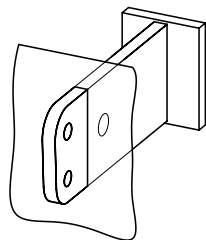
High quality accessories and fixings to assemble and install fenders are an important part of each fender solution. Supplies include:

- ▶ Cast-in and resin anchors in different material grades to comply with specifications and local corrosion environments
- ▶ Bolts, nuts and washers in mild steel and in various grades of stainless steel
- ▶ Chains, shackles, tensioners and chain anchors

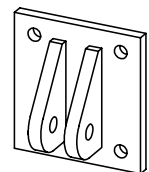
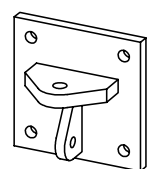
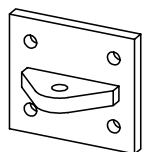
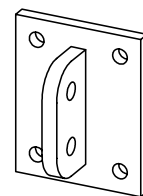
To ensure a trouble free and smooth installation on site, all components are checked prior to delivery.



TYPICAL BRACKETS



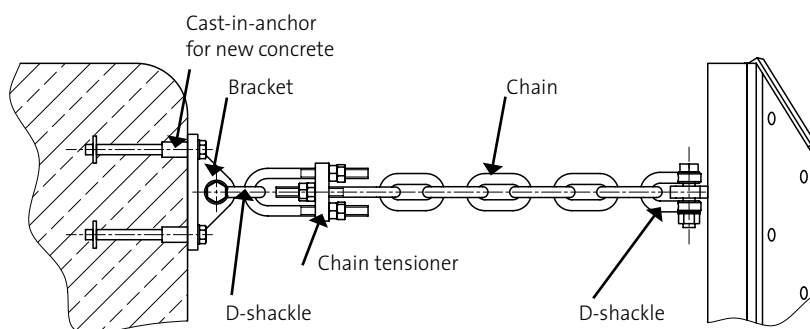
cast-in bracket



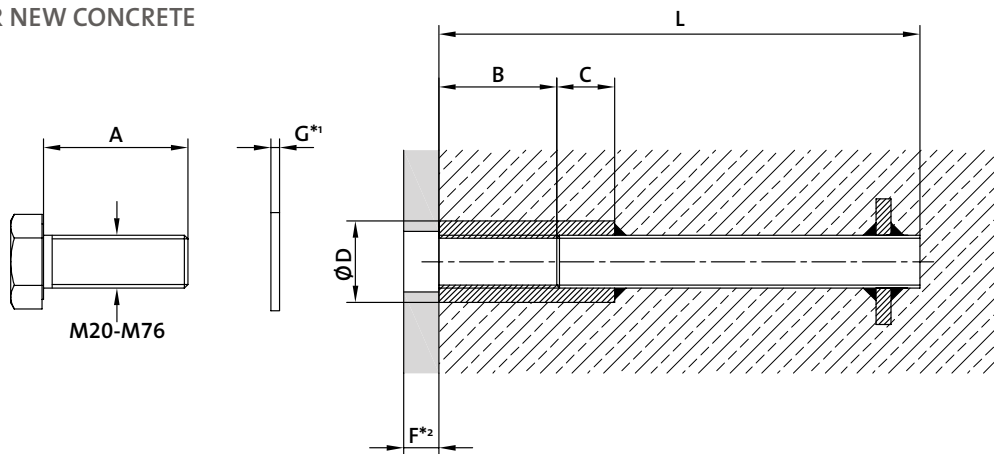
various bolt / weld on brackets



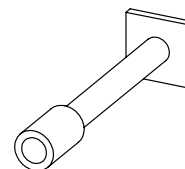
TYPICAL CHAIN SYSTEM



CAST-IN-ANCHOR FOR NEW CONCRETE

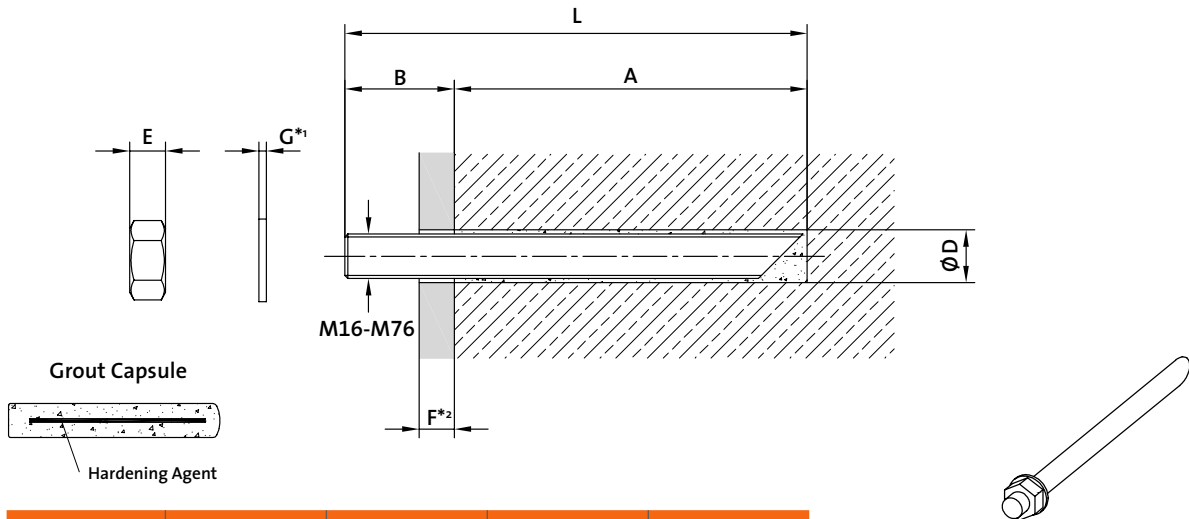


Anchor size	L [mm]	B [mm]	C [mm]	D [mm]	Weight [kg]
M20	214	50	20	30	0.8
M24	258	60	25	35	1.5
M30	318	70	30	45	2.4
M36	328	80	40	55	3.7
M42	416	85	45	65	6.0
M48	431	100	50	75	9.0
M56	436	105	60	85	14.0
M64	600	128	80	100	23.0
M76	700	152	90	114	42.0



Other sizes available upon request
 *1 See next page (78)
 *2 F = Bracket or Fender Foot thickness
 $A > G + F + 1.2 \times M$
 $A < G + F + B$

CHEMICAL ANCHOR FOR EXISTING CONCRETE



Anchor size	A [mm]	D [mm]	E [mm]	Grout volume [ml]
M16	140	18	13	18
M20	170	22	16	30
M24	210	28	19	66
M30	280	35	24	130
M36	360	42	29	232
M42	420	48	34	325
M48	460	55	38	460
M56	500	62	45	550
M64	560	70	51	725
M76	670	84	61	1200

Other sizes available upon request

*1 See below (Washers)

*2 F = Bracket or Fender Foot thickness

req. $B = E + F + G + ca. 0.4 \times M$

req. $L = A + B$

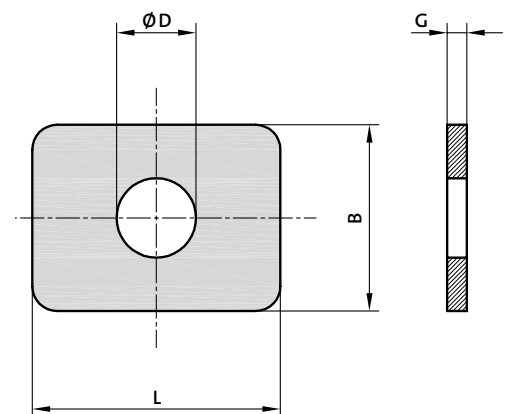
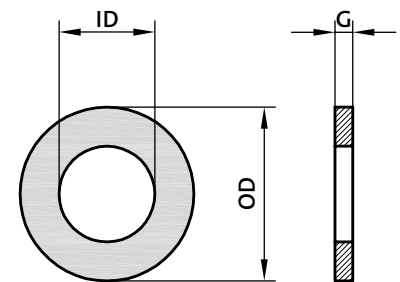
In all cases required

length should be

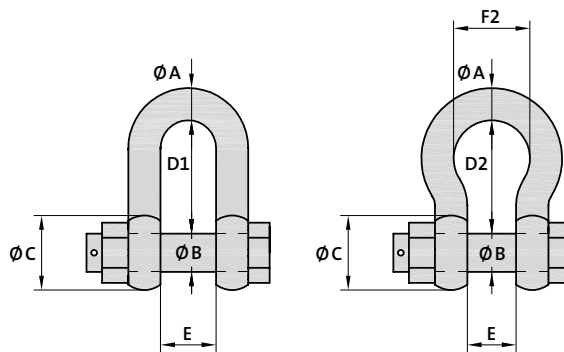
checked by calculation

WASHERS

Anchor size	DIN 125			Special washer plates for SPC-, CSS-, SX-, SX-P-, SH- Fender, FE			
	ID [mm]	OD [mm]	G [mm]	L x B [mm]	D [mm]	G [mm]	Weight [kg]
M16	17	30	3	-	-	-	-
M20	21	37	3	50 x 45	22	5	0.08
M24	25	44	4	75 x 55	26	6	0.15
M30	31	56	4	85 x 65	32	6	0.30
M36	37	66	5	100 x 75	38	6	0.36
M42	45	78	8	150 x 90	45	9	0.97
M48	52	92	8	175 x 100	52	9	1.26
M56	62	105	10	185 x 125	62	10	1.85
M64	70	115	10	200 x 130	70	10	2.08
M76	80	130	12	230 x 150	80	12	3.30

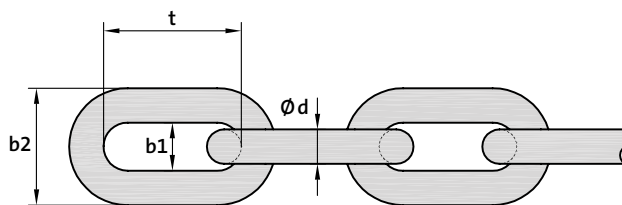


SHACKLES



WLL [t]	Ø A [mm]	Ø B [mm]	Ø C [mm]	E [mm]	D-Type		Bow-Type		
					D1 [mm]	Weight [kg]	D2 [mm]	F2 [mm]	Weight [kg/m]
2.0	13	16	34	22	43	0.4	51	32	0.4
3.25	16	19	40	27	51	0.7	64	43	0.8
4.75	19	22	47	31	59	1.1	76	51	1.3
6.5	22	25	53	36	73	1.5	83	58	1.9
8.5	25	28	60	43	85	2.6	95	68	2.8
9.5	28	32	67	47	90	3.3	108	75	3.8
12.0	32	35	74	51	94	4.7	115	83	5.3
13.5	35	38	80	57	115	6.2	133	95	7.0
17.0	38	42	84	60	127	7.6	146	99	8.8
25.0	45	50	104	74	149	12.8	178	126	15.0

CHAINS



Ø d [mm]	Chain 4 x d				Chain 5 x d				K2	K3
	t [mm]	b1 [mm]	b2 [mm]	Weight [kg/m]	t [mm]	b1 [mm]	b2 [mm]	Weight [kg/m]	MBL [kN]	MBL [kN]
14	56	20	48	3.8	70	21	49	3.7	124	154
16	64	22	54	5.0	80	24	56	4.8	160	202
18	72	25	61	6.3	90	27	63	6.0	209	262
20	80	28	68	7.8	100	30	70	7.5	264	330
22	88	31	75	9.4	110	33	77	9.0	304	380
25	100	35	85	12.1	125	38	88	11.6	393	491
28	112	39	95	15.2	140	42	98	14.6	492	616
30	120	42	102	17.4	150	45	105	16.7	566	706
32	128	45	109	19.8	160	48	112	19.0	644	804
35	140	49	119	23.8	175	53	123	22.8	770	964
38	152	53	129	28.0	190	57	133	26.9	900	1130
40	160	56	136	31.0	200	60	140	29.8	1010	1260
45	180	63	153	39.3	225	68	158	37.7	1275	1590
50	200	70	170	48.5	250	75	175	46.5	1570	1960