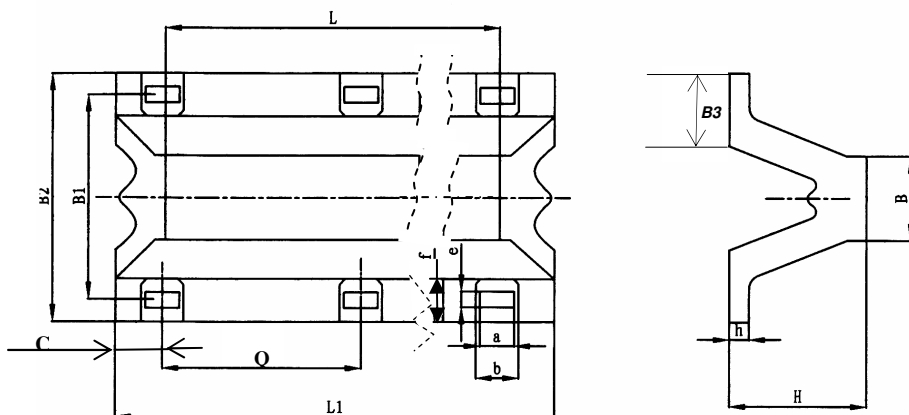


"HANGO-OMEGA" TLT-BA

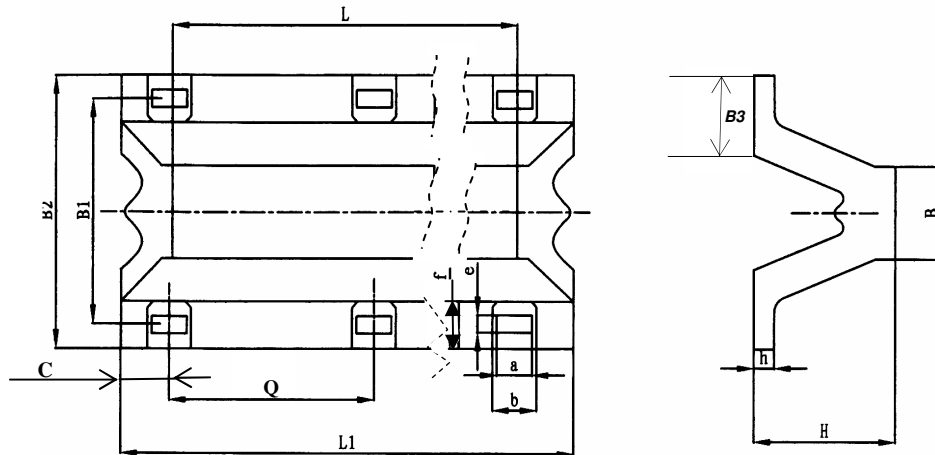
(TLT-BA super arch type rubber fender)



specification	dimensions in [mm]													
	H	L	L1	C	Q	B	B1	B2	B3	h	a	b	e	f
TLT-BA200×1000	200	1000	1100	120	860	145	320	400	128	30	58	105	29	75
TLT-BA 200×1500	200	1500	1600	120	680	145	320	400	128	30	58	105	29	75
TLT-BA 200×2000	200	2000	2100	120	620	145	320	400	128	30	58	105	29	75
TLT-BA 200×2500	200	2500	2600	122.5	785	145	320	400	128	30	58	105	29	75
TLT-BA 200×3000	200	3000	3100	120	715	145	320	400	128	30	58	105	29	75
TLT-BA 200×3500	200	3500	3600	120	672	145	320	400	128	30	58	105	29	75
TLT-BA 250×1000	250	1000	1125	130	865	164	410	500	160	30	64	125	32	90
TLT-BA 250×1500	250	1500	1625	132.5	680	164	410	500	160	30	64	125	32	90
TLT-BA 250×2000	250	2000	2125	132.5	620	164	410	500	160	30	64	125	32	90
TLT-BA 250×2500	250	2500	2625	127.5	790	164	410	500	160	30	64	125	32	90
TLT-BA 250×3000	250	3000	3125	132.5	715	164	410	500	160	30	64	125	32	90
TLT-BA 250×3500	250	3500	3625	130	673	164	410	500	160	30	64	125	32	90
TLT-BA 300×1000	300	1000	1150	140	870	225	490	600	195	33	70	140	35	105
TLT-BA 300×1500	300	1500	1650	140	685	225	490	600	195	33	70	140	35	105
TLT-BA 300×2000	300	2000	2150	137.5	625	225	490	600	195	33	70	140	35	105
TLT-BA 300×2500	300	2500	2650	140	790	225	490	600	195	33	70	140	35	105
TLT-BA 300×3000	300	3000	3150	145	715	225	490	600	195	33	70	140	35	105
TLT-BA 300×3500	300	3500	3650	140	674	225	490	600	195	33	70	140	35	105
TLT-BA 400×1000	400	1000	1200	150	900	300	670	800	260	40	82	165	41	120
TLT-BA 400×1500	400	1500	1700	150	700	300	670	800	260	40	82	165	41	120
TLT-BA 400×2000	400	2000	2200	147.5	635	300	670	800	260	40	82	165	41	120
TLT-BA 400×2500	400	2500	2700	150	800	300	670	800	260	40	82	165	41	120
TLT-BA 400×3000	400	3000	3200	150	725	300	670	800	260	40	82	165	41	120

"HANGO-OMEGA" TLT-BA

(TLT-BA super arch type rubber fender)



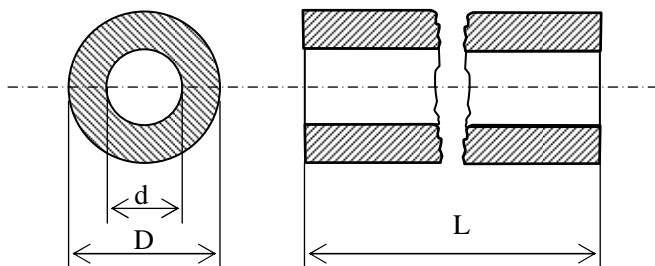
specification	dimensions in [mm]													
	H	L	L1	C	Q	B	B1	B2	b3	h	a	b	e	f
TLT-BA 400×3500	400	3500	3700	150	680	300	670	800	260	40	82	165	41	120
TLT-BA 500×1000	500	1000	1250	160	930	375	840	1000	325	45	94	180	47	140
TLT-BA 500×1500	500	1500	1750	160	715	375	840	1000	325	45	94	180	47	140
TLT-BA 500×2000	500	2000	2250	157.5	645	375	840	1000	325	45	94	180	47	140
TLT-BA 500×2500	500	2500	2750	160	810	375	840	1000	325	45	94	180	47	140
TLT-BA 500×3000	500	3000	3250	165	730	375	840	1000	325	45	94	180	47	140
TLT-BA 500×3500	500	3500	3750	160	686	375	840	1000	325	45	94	180	47	140
TLT-BA 600×1000	600	1000	1300	170	960	450	1010	1200	390	54	100	195	50	160
TLT-BA 600×1500	600	1500	1800	170	730	450	1010	1200	390	54	100	195	50	160
TLT-BA 600×2000	600	2000	2300	167.5	655	450	1010	1200	390	54	100	195	50	160
TLT-BA 600×2500	600	2500	3800	170	820	450	1010	1200	390	54	100	195	50	160
TLT-BA 600×3000	600	3000	3300	170	740	450	1010	1200	390	54	100	195	50	160
TLT-BA 600×3500	600	3500	3800	170	692	450	1010	1200	390	54	100	195	50	160
TLT-BA 800×1000	800	1000	1400	180	1040	600	1340	1600	520	72	136	270	68	260
TLT-BA 800×1500	800	1500	1900	180	770	600	1340	1600	520	72	136	270	68	260
TLT-BA 800×2000	800	2000	2400	180	680	600	1340	1600	520	72	136	270	68	260
TLT-BA 800×2500	800	2500	2900	182.5	845	600	1340	1600	520	72	136	270	68	260
TLT-BA 800×3000	800	3000	3400	180	760	600	1340	1600	520	72	136	270	68	260
TLT-BA 1000×1000	1000	1000	1500	200	1100	750	1680	2000	650	90	136	290	68	300
TLT-BA 1000×1500	1000	1500	2000	200	800	750	1680	2000	650	90	136	290	68	300
TLT-BA 1000×2000	1000	2000	2500	200	700	750	1680	2000	650	90	136	290	68	300

"CYLINDER" TLT-Y

Cylindrical type rubber fenders have a low reaction forces, small surface pressures and moderate energy absorption properties.

Cylindrical fenders can be used for damping ships' longitudinal movements and heeling while berthing at the dock.

Various installations methods can be used.



specification	Outer diameter [D]	Inner diameter [d]	length [L]
Y150	150	75	500 ... 30000
Y200	200	100	
Y250	250	125	
Y300	300	150	
Y350	350	175	
Y400	400	200	
Y450	450	225	
Y500	500	250	
Y600	600	300	
Y700	700	350	
Y800	800	400	
Y900	900	450	
Y1000	1000	500	
Y1100	1100	550	
Y1200	1200	600	
Y1300	1300	650	
Y1400	1400	700	
Y1500	1500	750	
Y1600	1600	800	1000 ... 6000
Y1800	1800	900	
Y2000	2000	1000	



"CYLINDER" TLT-Y

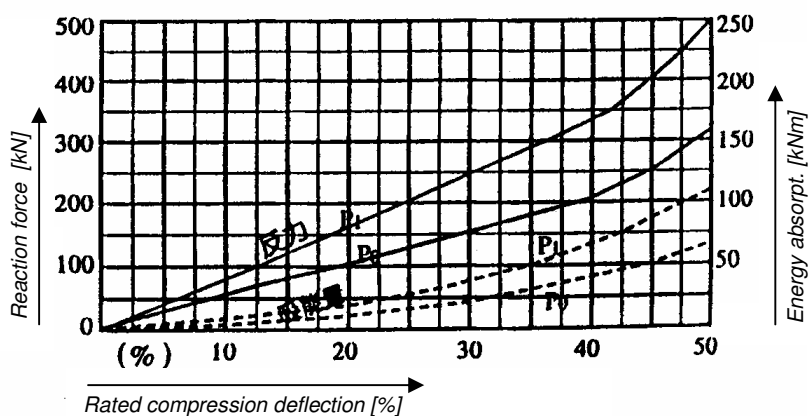
Dynamic performance:

specification	rated compression	performance				tolerance
		reaction force [kN]		energy absorbt. [kJ]		
		standard	high reaction force	standard	high reaction force	
Y150	50%	44	73	1.5	2.3	±10%
Y200		60	95	2.6	4.2	
Y250		75	120	4	6.5	
Y300		89	143	6	9	
Y350		104	167	8	13	
Y400		119	191	10	17	
Y500		148	239	16	26	
Y600		179	286	24	27	
Y700		208	334	31	50	
Y800		237	383	41	66	
Y900		268	430	52	84	
Y1000		297	479	64	103	
Y1100		331	528	77	129	
Y1200		363	574	95	152	
Y1300		392	623	108	179	
Y1400		422	670	128	208	
Y1500		451	718	147	238	
Y1600		481	776	176	282	
Y1700		511	824	206	338	
Y1800		541	872	247	406	
Y1900	570	920	288	487		
Y2000	653	1054	321	584		

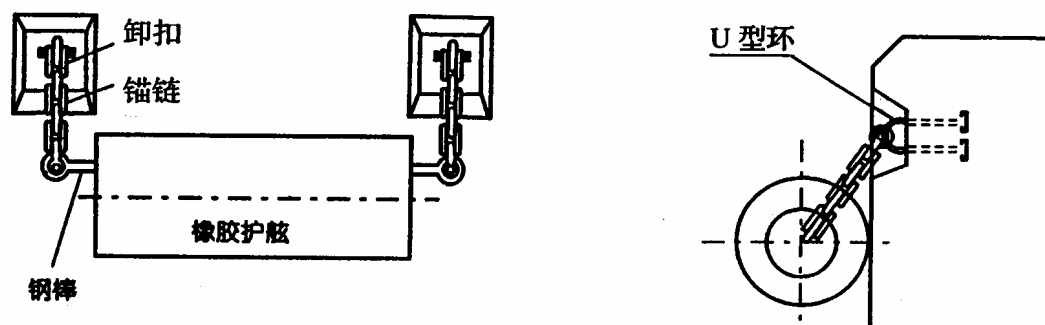


"CYLINDER" TLT-Y

performance curve for Y1000



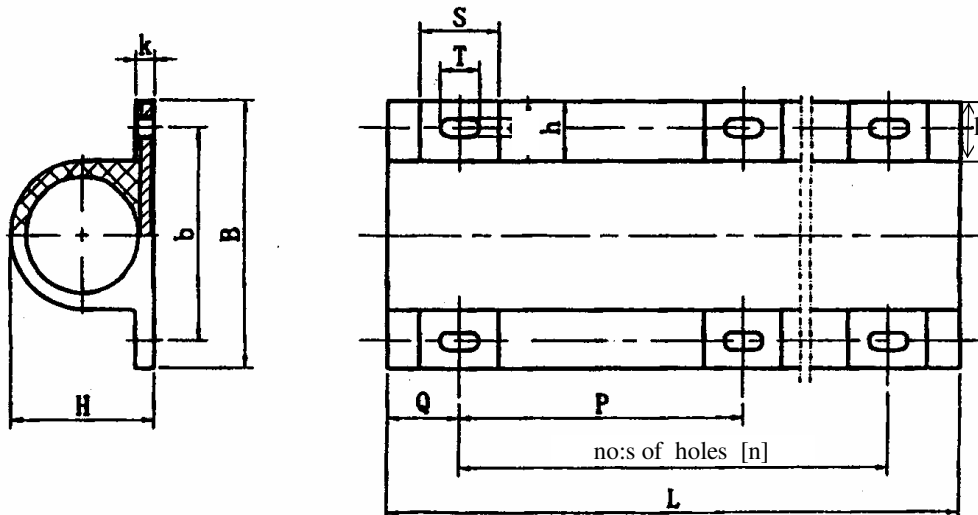
one installation option





"OMEGA" TLT-GD

TLT-GD type rubber fender is a new type based on the "Tipped D" model. It has an integrated steel in the fixing rails. This increases the mounting strength compared to non-reinforced rubber fenders.



specifications	dimensions in [mm]											
	H	B	b	L	Q	P	S	h	T	t	k	n
GD280×540×1000	280	540	430	1000	150	700	165	120	82	41	40	2
GD 280×540×1500	280	540	430	1500	150	600	165	120	82	41	40	3
GD 280×540×2000	280	540	430	2000	145	570	165	120	82	41	40	4
GD 280×540×2500	280	540	430	2500	150	550	165	120	82	41	40	5
GD 280×540×3000	280	540	430	3000	150	540	165	120	82	41	40	6
GD 300×600×1000	300	600	490	1000	150	700	165	120	82	41	40	2
GD 300×600×1500	300	600	490	1500	150	600	165	120	82	41	40	3
GD 300×600×2000	300	600	490	2000	145	570	165	120	82	41	40	4
GD 300×600×2500	300	600	490	2500	150	550	165	120	82	41	40	5
GD 300×600×3000	300	600	490	3000	150	540	165	120	82	41	40	6

Other specifications upon request

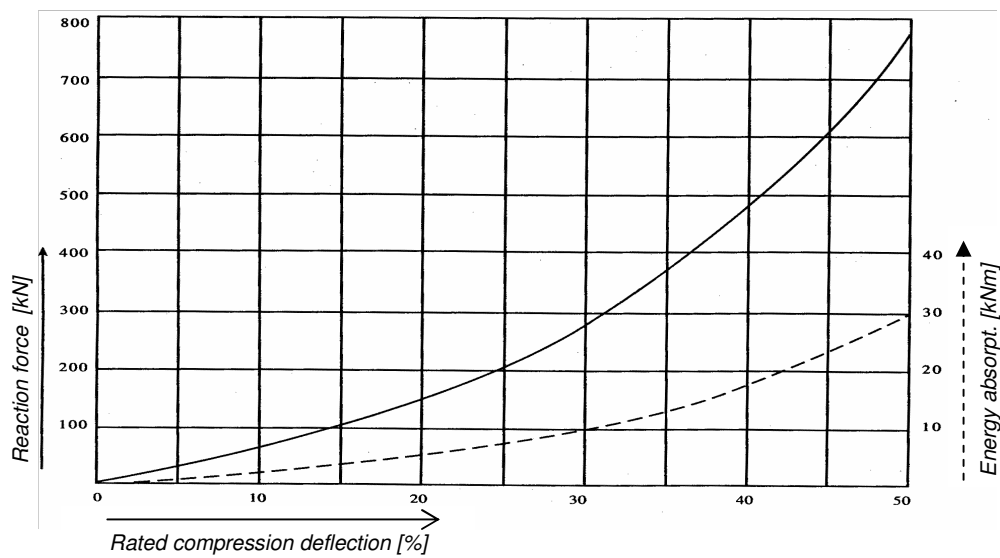


"OMEGA" TLT-GD

Examples for dynamic performance

specification	Dynamic performance:		
	Rated compression deflection [%]	Reaction force [kN]	Energy absorpt. [kNm]
<i>DG 280×540×1000</i>	50	375	14
<i>DG 300×600×1000</i>		398.2	15.9

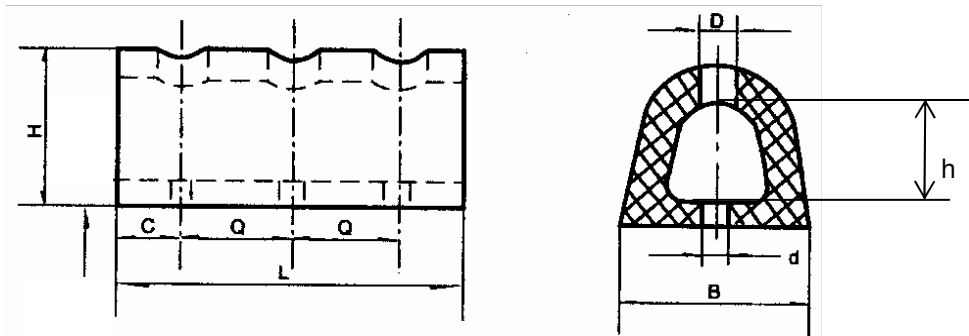
Dynamic performance curve:
(for TLT-GD 300×600×2000)





"Tipped D" TLT-D

Suitable for applications, where higher energy absorption, compared to cylindrical rubber fenders, is needed.



specification	H	B	h	D	d	note
<i>D200×200×L</i>	200	200	35	Φ60	Φ27	<i>L = 850 ... 3000</i> <i>C = 100 ... 150</i> <i>Q = 325 ... 600</i>
<i>D300×300×L</i>	300	300	40	Φ65	Φ32	
<i>D400×400×L</i>	400	400	55	Φ80	Φ40	
<i>D500×500×L</i>	500	500	90	Φ97	Φ45	<i>L = 850 ... 1500</i> <i>C = 100 ... 150</i> <i>Q = 325 ... 600</i>

Other specifications can be manufactured upon request.

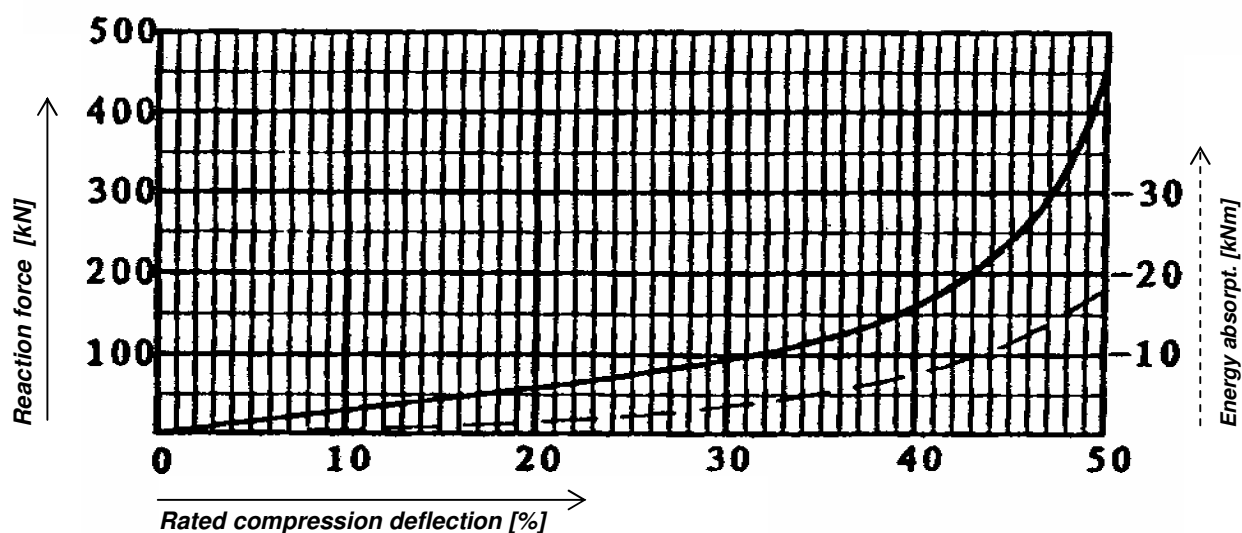
specification	performance			
	Rated compression deflection [%]	Reaction force [kN]	Energy absorbt. [kJm]	tolerances [%]
<i>D200×200×850</i>	50	176.2	7.1	±10
<i>D200×200×1000</i>		207.3	8.4	
<i>D200×200×1500</i>		310.9	12.6	
<i>D300×300×850</i>		255	10	
<i>D300×300×1000</i>		294.3	11.8	
<i>D300×300×1500</i>		441.5	16.7	
<i>D400×400×850</i>		325.2	16.7	
<i>D400×400×1000</i>		382.6	19.6	



"Tipped D" TLT-D

specification	performance			
	Rated compression deflection [%]	Reaction force [kN]	Energy absorbt. [kNm]	tolerances [%]
<i>D400×400×1500</i>	50	573.9	29.4	±10
<i>D500×500×850</i>		383.6	26.7	
<i>D500×500×1000</i>		451.3	31.4	
<i>D500×500×1500</i>		686.7	47.1	

performance curve for D300 × 1500



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