

HI-TECH DOCK FENDERS

M TYPE & BETA TYPE FENDER (HMT & HBT)



Where
Innovation
is Tradition



M TYPE FENDER (HMT)

Hi-Tech 'M' Type Fenders are very efficient design among range of available solid dock fenders. Special "M" shape of the fender allows very high energy absorption with comparatively lower reaction force.

Shape allows the larger contact area which reduces face pressure. It is engineered for high stress dispersion in multi direction which ensures more durability.

Single piece mould construction ensures high durability of fender service life.

Variation of size & length provides variety of energy absorption range makes it most suitable for many applications.

FEATURES

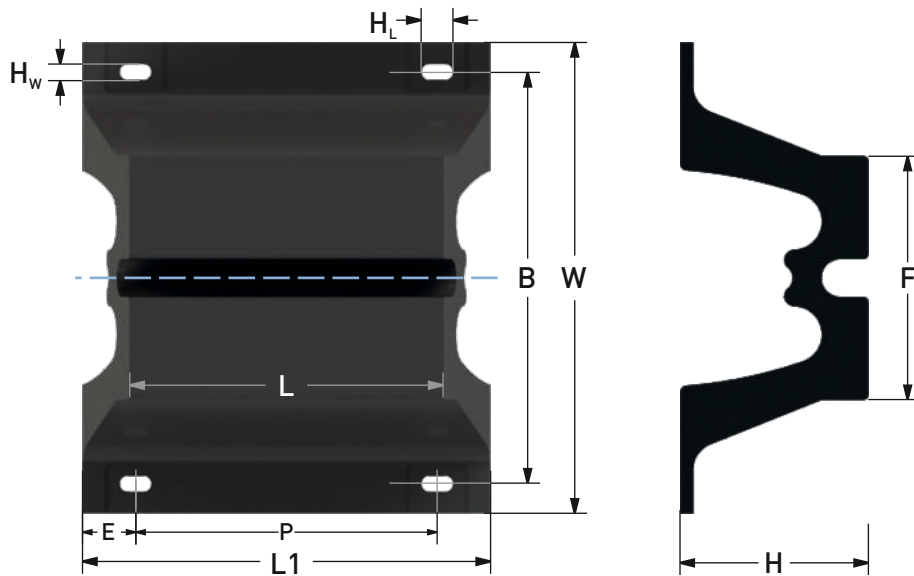
- High Energy Absorption with Low Reaction Force
- Wider Contact Face and Low Face Pressure
- Single Piece Compression Moulded Body
- Multi Direction Stress Distribution at Maximum Deflection
- Strong Against Shear Forces
- Durable and Easy to Install
- Maintenance Free

APPLICATIONS

- General Cargo Berth
- Bulk Cargo Berth
- Barge/Tug Jetty
- Bridge Pile Protection
- RORO Terminal

M TYPE FENDER (HMT)

DIMENSIONS



SIZE & DIMENSION CHART

HMT SERIES	W (mm)	H (mm)	B (mm)	F (mm)	H _w (mm)	H _L (mm)
HMT 250H	626	250	535	330	32	64
HMT 300H	750	300	640	396	35	70
HMT 400H	1000	400	870	528	41	82
HMT 500H	1250	500	1090	660	47	94
HMT 600H	1500	600	1310	776	58	116
HMT 800H	2000	800	1740	1040	68	136
HMT 1000H	2480	1000	2180	1294	68	136

FIXING DIMENSION CHART

HMT SERIES	L																		Fixing Bolt Size
	1000			1500			2000			2500			3000			3500			
	L1	E	P	L1	E	P	L1	E	P	L1	E	P	L1	E	P	L1	E	P	
HMT 250H	1125	130	865	1625	132.5	680	2125	140	615	2625	135	785	3125	132.5	715	3625	150	665	M24
HMT 300H	1150	140	870	1650	140	685	2150	130	630	2650	140	790	3150	145	715	3650	150	670	M30
HMT 400H	1200	150	900	1700	150	700	2200	155	630	2700	150	800	3200	160	720	3700	150	680	M36
HMT 500H	1250	160	930	1750	165	710	2250	180	630	2750	175	800	3250	185	720	3750	175	680	M42
HMT 600H	1300	170	960	1800	170	730	2300	175	650	2800	170	820	3300	170	740	3800	175	690	M48
HMT 800H	1400	200	1000	1900	200	750	2400	180	680	2900	190	840	3400	200	750	-	-	-	M56 / M64
HMT 1000H	1500	200	1100	2000	200	800	2500	200	700	-	-	-	-	-	-	-	-	-	M64

* Standard tolerances will apply.

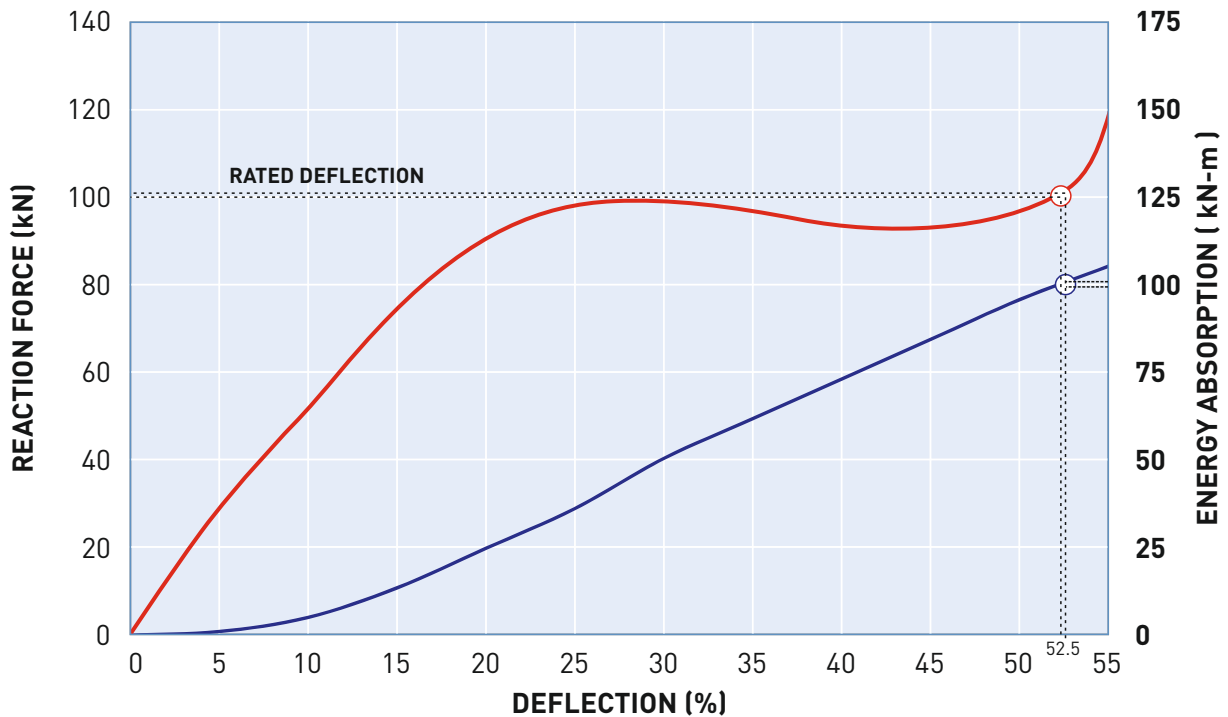
* Spacing of bolt can be changed.

* The data are subject to change without notice.

* The above table shows standard sizes. Custom design special sizes are available on request/as per project.

M TYPE FENDER (HMT)

PERFORMANCE CURVE



D(%)	0	5	10	15	20	25	30	35	40	45	52.5	55
E(kN-m)	0	1.5	5.8	15	23	35	47	59	70	82	100	105
R(kN)	0	27	52	74	88	96	98	96	93	92	100	120

* Actual Curve may vary depend upon Grade/Temperature/Velocity/Angle.

* Rated Deflection -52.5%, Maximum Deflection -55%

* Standard tolerance $\pm 10\%$

* Generic Curve data shown. It may vary depend on Grade and factors such as RPD / Temperature / Velocity and Angle.

PERFORMANCE TABLE

Compound	H 0				H 1.0				H 2.0				H 3.0			
	52.50%		55%		52.50%		55%		52.50%		55%		52.50%		55%	
Height	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)
HMT 250H	155.6	15.1	214.2	17.1	181.8	17.1	251.5	20.2	219.2	21.2	310.2	24.2	286.9	29.3	397	33.3
HMT 300H	187.9	21.2	257.6	25.2	219.2	25.2	303.1	29.3	264.7	30.3	373.8	35.3	346.5	41.4	486	47.4
HMT 400H	249.5	38.3	343.5	44.4	291	45.4	404.1	51.5	351.6	54.5	497.1	62.6	460	74.7	645.6	85.8
HMT 500H	313.2	60.6	429.4	69.7	364.7	70.7	505.2	81.8	440.5	85.8	622	99	577	115	808.3	135.3
HMT 600H	375.8	86.8	515	101	438	103	606.2	118.2	527.4	123.2	747.7	142.4	693.1	169.7	972	194
HMT 800H	501	157	687	178.8	585	182.8	808.3	210.1	706.2	219.2	999	252.6	924	302	1296.3	344.5
HMT 1000H	626	242.5	858.8	279.8	730.5	285.9	1010	328.3	879	343	1245	375.8	1154	473.8	1619.7	539.5

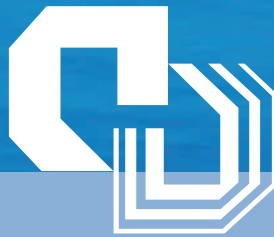
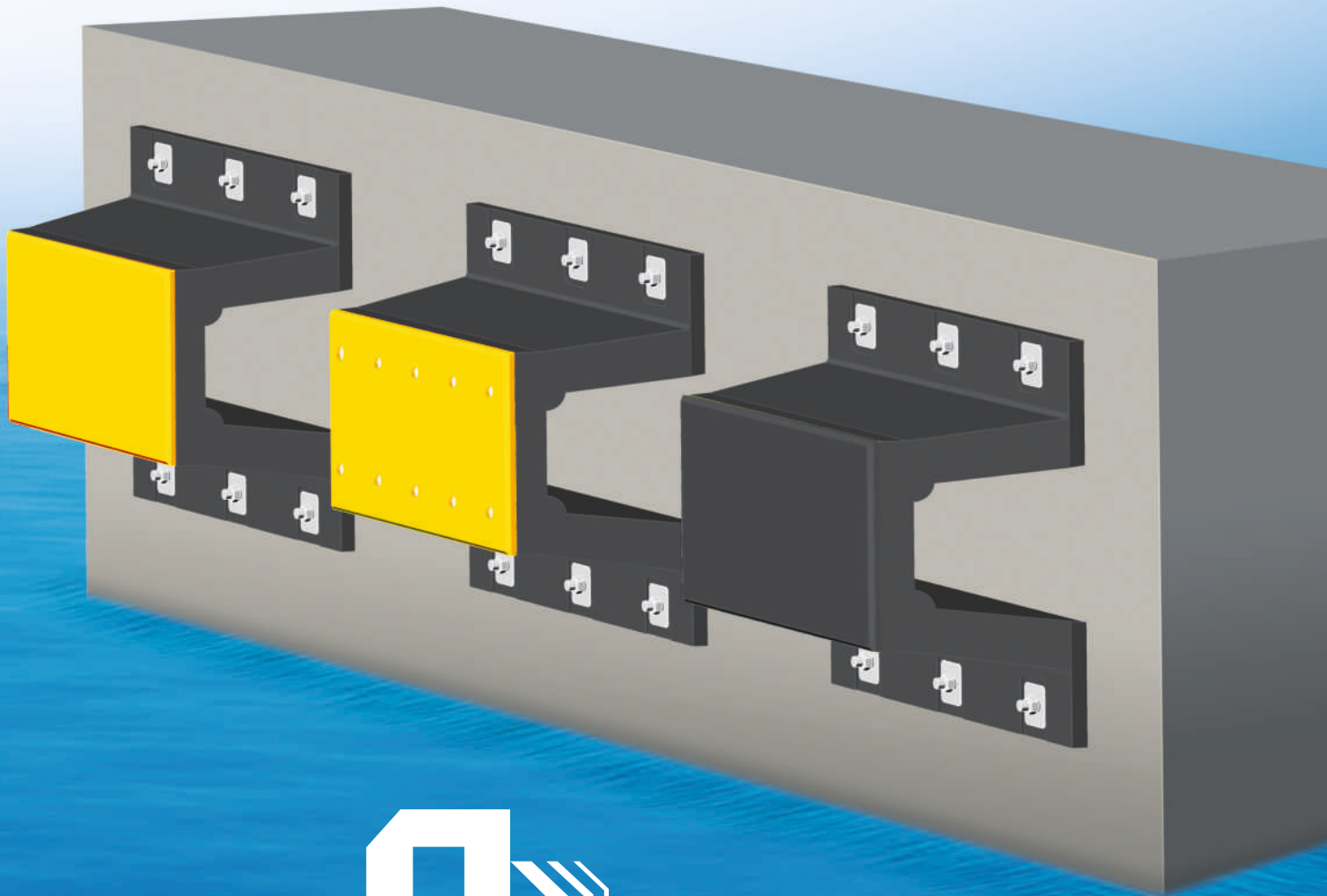
R: Reaction Force E: Energy Absorption

Rated Deflection: 52.5%, Maximum Deflection: 55%

Tolerance: Performance & Deflection Tolerance $\pm 10\%$.

* Special/Intermediate Grades available as Custom design.

* Above Performance Value for 1.0 Meter Length



BETA TYPE FENDER (HBT)

Hi-Tech Beta Type Fender developed to achieve design deflection with wider contact area to reduce face pressure. It is engineered as single piece design which eliminates the requirement of frontal panel.

It is also available in variant having UHMWPE facia pad bolted on the top (HBT-UB TYPE) and UHMWPE Facia pad Moulded (HBT-UM Type) which reduces friction and prevent rubbing of rubber.

HBT-UB & HBT-UM both are popular as non-marking fenders.

FEATURES

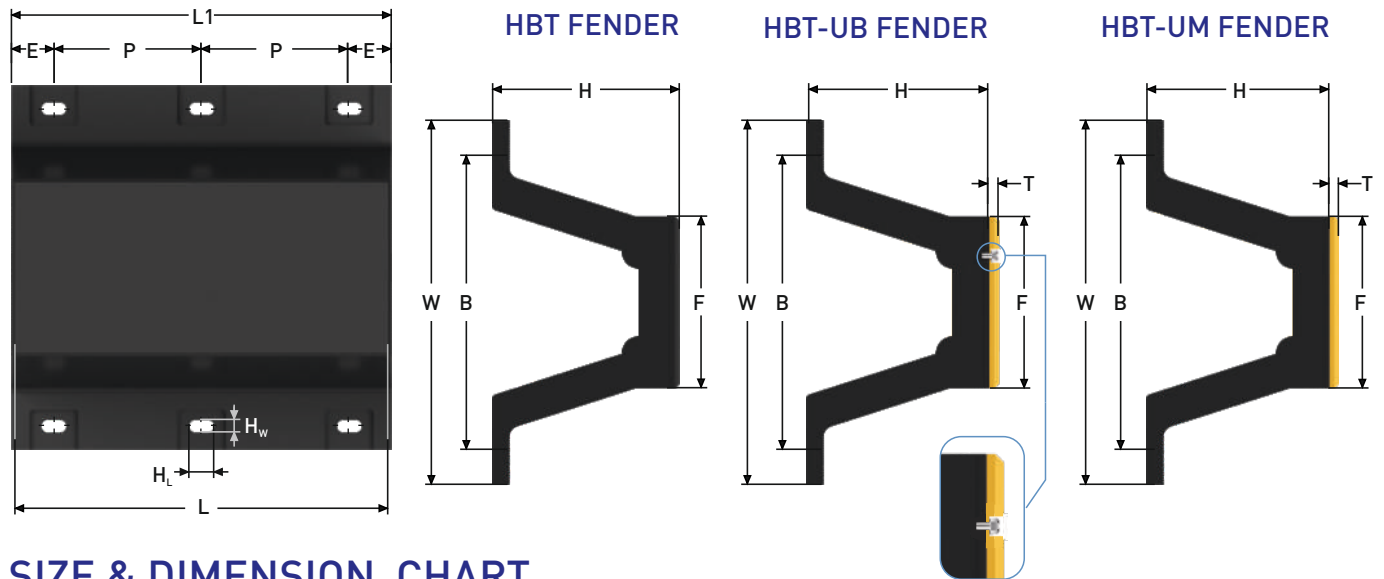
- Higher Contact Area Reduces Face Pressure
- Single Piece Moulded Eliminates Requirement of Frontal Panel
- High Energy Absorption
- Maintenance Free
- With UHMWPE Facia Pad it reduces Friction Force and do not leave marks on Vessel

APPLICATIONS

- Cargo Berth
- Naval Berth
- Bridge Pile Protection
- Yatch/Marina
- General Cargo Berth
- RORO Berth

BETA TYPE FENDER (HBT)

DIMENSIONS



SIZE & DIMENSION CHART

HBT SERIES	W (mm)	H (mm)	B (mm)	F (mm)	H _w (mm)	H _L (mm)	FIXING BOLT Size & Qty
HBT 250H	625	250	525	287.5	29	58	M20 x 6
HBT 300H	750	300	630	345	35	70	M20 x 6
HBT 400H	1000	400	840	460	42	84	M24 x 6
HBT 500H	1250	500	1050	575	42	84	M27 x 6
HBT 600H	1500	600	1260	690	49	98	M30 x 6
HBT 800H	1900	800	1700	920	55	110	M33 x 6
HBT 900H	2100	900	1845	1010	55	110	M36 x 6
HBT 1000H	2300	1000	2050	1150	55	110	M36 x 6

FIXING DIMENSION CHART

HBT SERIES	L																		ANCHOR BOLT SIZE
	1000			1500			2000			2500			3000			3500			
	L1	E	P	L1	E	P	L1	E	P	L1	E	P	L1	E	P	L1	E	P	
HBT 250H	1125	130	865	1625	132.5	680	2125	140	615	2625	135	785	3125	132.5	715	3625	665	665	M24
HBT 300H	1150	140	870	1650	140	685	2150	130	630	2650	140	790	3150	145	715	3650	670	670	M30
HBT 400H	1200	150	900	1700	150	700	2200	155	630	2700	150	800	3200	160	720	3700	680	680	M36
HBT 500H	1250	160	930	1750	165	710	2250	180	630	2750	175	800	3250	185	720	3750	680	680	M36
HBT 600H	1300	170	960	1800	170	730	2300	175	650	2800	170	820	3300	170	740	3800	690	690	M42
HBT 800H	1400	200	1000	1900	200	750	2400	180	680	2900	190	840	3400	200	750	-	-	-	M48
HBT 900H	1450	200	1050	1950	190	785	2450	190	690	2950	200	850	-	-	-	-	-	-	M48
HBT 1000H	1500	200	1100	2000	200	800	2500	200	700	-	-	-	-	-	-	-	-	-	M48

* Spacing of bolt can be changed.

* The data are subject to change without notice.

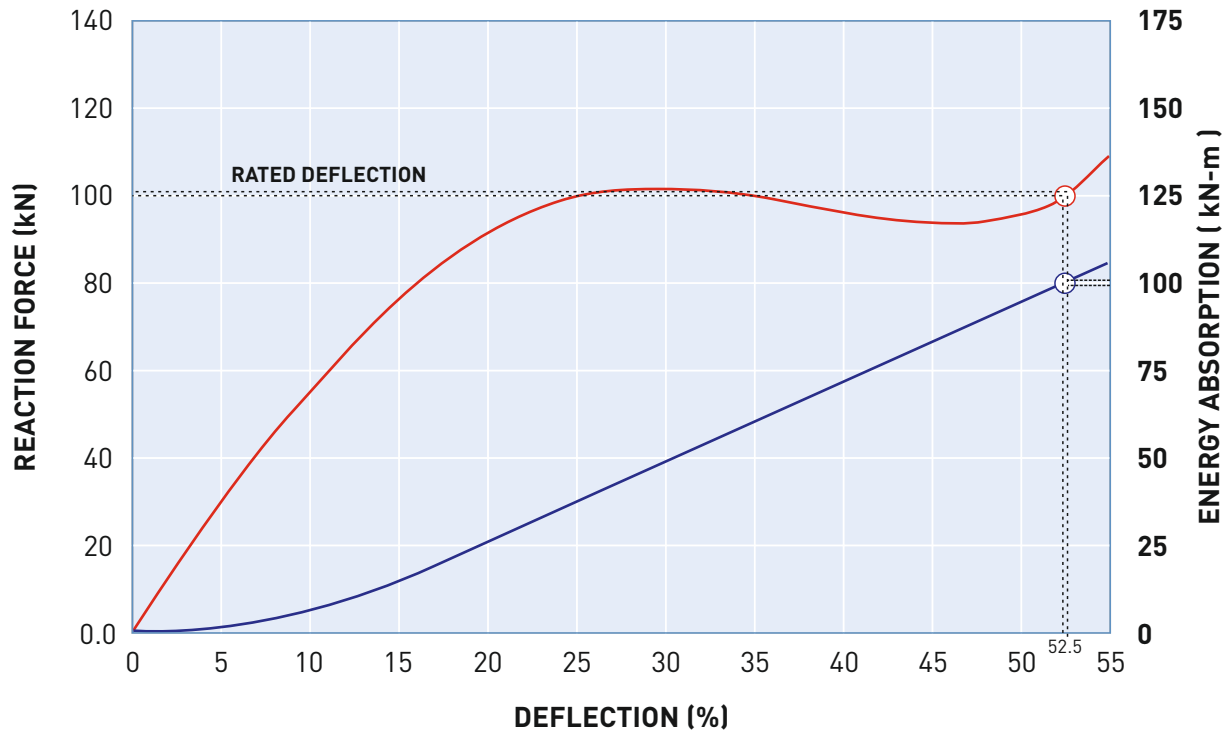
* The above table shows standard sizes. Special / Intermediate sizes available as per Custom Design.

* L: is available from 500mm to 6000 mm in single piece

* T: Thickness of Facia Pad can be provided as per Requirement /Project Design.

BETA TYPE FENDER (HBT)

PERFORMANCE CURVE



D(%)	0	5	10	15	20	25	30	35	40	45	50	52.5	55
E(kN-m)	0	1.5	6	14	26	37	49	60	72	83	94.5	100	106
R(kN)	0	30	55	77	92	99.5	100	98	95	93	95	100	110

* Actual Curve may vary depend upon Grade/Temperature/Velocity/Angle.

* Rated Deflection -52.5%, Maximum Deflection -55%

* Standard tolerance $\pm 10\%$

* Generic Curve data shown. It may vary depend on Grade and factors such as RPD / Temperature / Velocity and Angle.

PERFORMANCE TABLE

Compound	H 1.3				H 1.2				H 1.1				H 1.0				H 0			
	52.50%		55%		52.50%		55%		52.50%		55%		52.50%		55%		52.50%		55%	
Height	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)	R (kN)	E (kN-m)
HBT 200H	199	16.7	221	17.8	158	13.3	175	41.1	135	11.4	150	12.1	113	9.5	125	10.1	90	7.6	100	8.1
HBT 250H	248	26.1	275	27.7	197	20.8	219	22.1	169	17.8	188	18.9	141	14.8	157	15.7	113	11.9	125	12.6
HBT 300H	298	37.6	331	40	237	29.9	263	31.8	203	25.6	225	27.2	169	21.4	188	22.7	135	17.1	150	18.2
HBT 400H	397	66.9	441	71.1	316	53.2	351	56.6	271	45.6	301	48.5	226	38	251	40.4	181	30.4	201	32.3
HBT 500H	496	104	551	111	395	83.1	438	88.3	338	71.2	375	75.5	282	59.4	313	63.1	226	47.5	251	50.5
HBT 600H	596	150	662	159	474	120	526	128	406	103	451	109	338	85.5	375	90.9	271	68.4	301	72.7
HBT 800H	794	267	881	284	632	213	702	226	542	182	602	193	451	152	501	162	361	122	401	130
HBT 900H	880	310	964	328	701	260	768	275	605	220	663	233	481	198	527	210	406	150	445	159
HBT 1000H	993	418	1102	444	790	332	877	353	677	285	751	303	564	237	626	252	451	190	501	202

R:Reaction Load E:Energy Absorption

Rated Deflection:52.5%, Maximum Deflection:55%

Tolerance:- Performance & Deflection Tolerance $\pm 10\%$.

*Special /Intermediate Grade available as per Custom Design

*Above Performance Value for 1.0 meter Length .

PRODUCT INSTALLATION PICTURES





HI-TECH ELASTOMERS LTD.

WHERE INNOVATION IS A TRADITION

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