



REINFORCED ELASTOMERIC BEARINGS Structural Movements control Guide

Reinforced Elastomeric Bearings Type B

(Replaces old RBP products)

Based on BS-EN 1337 –3

Introduction to Reinforced Elastomeric Bearings:

Structural movements, due to various forces such as longitudinal, transverse and rotational, can effectively cause problems to structures such as building, bridge, tunnel, etc. One highly effective and efficient method of dealing with these reactions is the use of Elastomeric Bearing pads. One of the key advantages of these pads is to isolate super structure from vibrations of the substructure; in line with this, it is important to note that natural rubber is very low in deformation over a constant load. This system, in contrast with other potential solutions, is inexpensive, with comparatively minimal effort required when it comes to installation.

- The following table is a brief version of the main AssaFlex bearing table which gives some information on the selection of Reinforced Bearings of Type B and **the given values are only valid for AssaFlex products where the mechanical properties of their ingredients completely make changes in calculations results.**
- Ask the bearing design requirement table from engineering office to have the optimum offer of this unit.
- The complete Bearing table is available upon your request from central office.
- Attachments including **PTFE sliding surfaces, External steel plates, guides and restrains** can be added to the selected bearing pad based on EN 1337-1.
- AssaFlex Engineering Department will be pleased to provide you with any technical support you may need.
- In order to be assured of a true selection of a Bearing Pad please make sure that all the following main parameters are deemed :
 - a. Maximum Rotation (Reversible Rotation (Due to live load effects)+ Irreversible Rotation(Due to Permanent reactions))
 - b. Maximum Displacement
 - c. Maximum Axial (Vertical) Load
 - d. Minimum Axial (Vertical) Load



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Type: BPEN	Dimensions W x L mm	Unloaded Height of Bearing mm	Total Effective Elastomer Thickness mm	Number of Elastomer layers	Maximum Shear Deflection mm	Maximum Vertical Load(In No Shear Deflection and Rotation) KN	Maximum Vertical Load (In Full Shear Deflection and Full Rotation) KN	Minimum Vertical Load KN	Vertical Deflection mm	Rotation In Full Load & Full Shear Deflection (Across the Width) Rad	Max Horizontal Force Exerted (On Structure) KN
BPEN-1012	100x150	30	16	2	11.2	83	57	41	1.70	0.060	13
BPEN-1013	100x150	41	24	3	16.8	45	45	41	1.90	0.058	13
BPEN-1022	100x200	30	16	2	11.2	129	93	54	1.60	0.055	17
BPEN-1023	100x200	41	24	3	16.8	70	70	54	1.52	0.052	17
BPEN-1032	150x200	30	16	2	11.2	383	196	81	1.20	0.020	25
BPEN-1033	150x200	41	24	3	16.8	336	191	81	1.63	0.030	25
BPEN-1034	150x200	52	32	4	22.4	252	186	81	2.10	0.038	25
BPEN-1042	150x250	30	16	2	11.2	539	284	101	1.10	0.019	31
BPEN-1043	150x250	41	24	3	16.8	473	277	101	1.54	0.028	31
BPEN-1044	150x250	52	32	4	22.4	355	270	101	2.10	0.037	31
BPEN-1052	150x300	30	16	2	11.2	702	378	121	1.02	0.018	37
BPEN-1053	150x300	41	24	3	16.8	616	368	121	1.50	0.027	37
BPEN-	150x300	52	32	4	22.4	462	358	121	1.94	0.035	37



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BPEN-1103	250x300	41	24	3	16.8	1781	847	202	1.05	0.010	61
BPEN-1104	250x300	52	32	4	22.4	1738	836	202	1.35	0.014	61
BPEN-1105	250x300	63	40	5	28	1695	824	202	1.70	0.017	61
BPEN-1106	250x300	74	48	6	33.6	1437	812	202	2.00	0.020	61
BPEN-1107	250x300	85	56	7	39.2	1238	800	202	2.30	0.023	61
BPEN-1113	250x400	45	24	3	16.8	2742	1353	269	1.00	0.010	81
BPEN-1114	250x400	57	32	4	22.4	2676	1334	269	1.35	0.013	81
BPEN-1115	250x400	69	40	5	28	2610	1315	269	1.65	0.016	81
BPEN-1116	250x400	81	48	6	33.6	2254	1295	269	1.90	0.019	81
BPEN-1117	250x400	93	56	7	39.2	1907	1275	269	2.20	0.022	81
BPEN-2013	300x400	57	36	3	25.2	2459	1226	323	1.85	0.015	97
BPEN-2014	300x400	73	48	4	33.6	2280	1104	323	2.40	0.011	97
BPEN-2015	300x400	89	60	5	42	1829	1081	323	2.90	0.022	97
BPEN-2016	300x400	105	72	6	50.4	1507	1050	323	3.45	0.029	97
BPEN-2023	300x500	61	36	3	25.2	3407	1748	403	1.75	0.014	121
BPEN-2024	300x500	73	48	4	33.6	3303	1716	403	2.3	0.019	121



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BPEN-2025	300x500	95	60	5	42	2812	1682	403	2.80	0.023	121
BPEN-2026	300x500	112	72	6	50.4	2297	1648	403	3.30	0.028	121
BPEN-2033	300x600	61	36	3	25.2	4397	2298	484	1.70	0.014	145
BPEN-2034	300x600	78	48	4	33.6	3750	1891	484	2.25	0.015	145
BPEN-2035	300x600	95	60	5	42	3214	2105	484	2.75	0.020	145
BPEN-2036	300x600	112	72	6	50.4	2743	1954	484	3.20	0.025	145
BPEN-2043	350x450	61	36	3	25.2	3848	1863	423	1.60	0.011	127
BPEN-2044	350x450	78	48	4	33.6	3749	1835	423	2.10	0.0152	127
BPEN-2045	350x450	95	60	5	42	3649	1807	423	2.60	0.018	127
BPEN-2046	350x450	112	72	6	50.4	3104	1778	423	3.05	0.022	127
BPEN-2047	350x450	129	84	7	58.8	2610	1749	423	3.50	0.025	127
BPEN-2054	400x500	83	48	4	33.6	5546	1635	537	1.90	0.0011	162
BPEN-2055	400x500	101	60	5	42	5419	2601	537	2.35	0.014	162
BPEN-2056	400x500	119	72	6	50.4	5292	2567	537	2.80	0.017	162
BPEN-2057	400x500	137	84	7	58.8	4500	2532	537	3.20	0.020	162
BPEN-2058	400x500	155	96	8	67.2	3868	2496	537	3.60	0.022	162



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BPEN-2064	400x600	83	48	4	33.6	7255	3513	645	1.85	0.011	194
BPEN-2065	400x600	101	60	5	42	7088	3475	645	2.30	0.014	194
BPEN-2066	400x600	119	72	6	50.4	6922	3428	645	2.70	0.017	194
BPEN-2067	400x600	137	84	7	58.8	5886	3379	645	3.10	0.019	194
BPEN-2068	400x600	155	96	8	67.2	5059	3330	645	3.50	0.022	194
BPEN-2074	450x600	83	48	4	33.6	8919	4153	725	1.75	0.009	218
BPEN-2075	450x600	101	60	5	42	8740	4107	725	2.15	0.011	218
BPEN-2076	450x600	119	72	6	50.4	8560	4060	725	2.55	0.014	218
BPEN-2077	450x600	137	84	7	58.8	8262	4013	725	2.90	0.016	218
BPEN-2078	450x600	155	96	8	67.2	7124	3964	725	3.30	0.018	218
BPEN-2079	450x600	173	108	9	75.6	6228	3915	725	3.65	0.020	218
BPEN-2084	500x600	83	48	4	33.6	10676	4774	806	1.65	0.008	241
BPEN-2085	500x600	101	60	5	42	10484	4729	806	2.00	0.009	241
BPEN-2086	500x600	119	72	6	50.4	9050	4253	806	2.40	0.009	241
BPEN-2087	500x600	137	84	7	58.8	8960	4210	806	2.75	0.011	241
BPEN-2088	500x600	155	96	8	67.2	8608	4078	806	3.10	0.013	241



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BPEN-2089	500x600	173	108	9	75.6	7521	4039	806	3.45	0.015	241
BPEN-2081	500x600	191	120	10	84	6662	3990	806	3.80	0.016	241
BPEN-3014	600x600	104	64	4	44.8	10598	4743	967	2.35	0.009	290
BPEN-3015	600x600	127	80	5	56	10383	4692	967	2.95	0.012	290
BPEN-3016	600x600	150	96	6	67.2	10170	4641	967	3.50	0.014	290
BPEN-3017	600x600	173	112	7	78.4	9956	4588	967	4.00	0.016	290
BPEN-3018	600x600	196	128	8	89.6	8670	4535	967	4.55	0.018	290
BPEN-3019	600x600	219	144	9	100.8	7596	4480	967	5.05	0.020	290
BPEN-3024	600x700	109	64	4	44.8	13411	6132	1280	2.35	0.009	339
BPEN-3025	600x700	132	80	5	56	13140	6065	1280	2.90	0.011	339
BPEN-3026	600x700	157	96	6	67.2	12870	5997	1280	3.40	0.014	339
BPEN-3027	600x700	181	112	7	78.4	12599	5928	1280	3.95	0.016	339
BPEN-3028	600x700	205	128	8	89.6	10972	5858	1280	4.45	0.018	339
BPEN-3029	600x700	229	144	9	100.8	9579	5786	1280	4.90	0.020	339
BPEN-3034	700x700	109	64	4	44.8	17275	7434	1315	2.10	0.007	395
BPEN-3035	700x700	133	80	5	56	16980	7369	1315	2.65	0.009	395



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BPEN-3036	700x700	157	96	6	67.2	16685	7304	1315	3.10	0.010	395
BPEN-3037	700x700	181	112	7	78.4	16389	7237	1315	3.60	0.012	395
BPEN-3038	700x700	205	128	8	89.6	16094	7169	1315	4.10	0.014	395
BPEN-3039	700x700	229	144	9	100.8	14715	7100	1315	4.55	0.015	395
BPEN-3031	700x700	253	160	10	112	13039	7030	1315	5.00	0.017	395
BPEN-3044	700x800	114	64	4	44.8	18173	8257	1505	2.10	0.006	451
BPEN-3045	700x800	139	80	5	56	18811	8175	1505	2.60	0.008	451
BPEN-3046	700x800	164	96	6	67.2	18449	8092	1505	3.05	0.010	451
BPEN-3047	700x800	189	112	7	78.4	18087	8008	1505	3.55	0.012	451
BPEN-3048	700x800	214	128	8	89.6	17725	7923	1505	4.00	0.014	451
BPEN-3049	700x800	239	144	9	100.8	16035	7835	1505	4.45	0.015	451
BPEN-3041	700x800	264	160	10	112	13981	7747	1505	4.90	0.017	451
BPEN-4014	800x800	130	80	4	56	18072	8122	1720	2.80	0.008	516
BPEN-4015	800x800	159	100	5	70	18334	8033	1720	3.50	0.010	516
BPEN-4016	800x800	188	120	6	84	17994	7942	1720	4.15	0.012	516
BPEN-4017	800x800	217	140	7	98	17554	7850	1720	4.75	0.014	516



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BPEN-4018	800x800	246	160	8	112	16489	7756	1720	5.40	0.016	516
BPEN-4019	800x800	275	180	9	126	14154	7660	1720	6.00	0.018	516
BPEN-4011	800x800	304	200	10	140	12276	7562	1720	6.60	0.020	516
BPEN-4024	900x900	135	80	4	56	27010	10790	2175	2.60	0.006	653
BPEN-4025	900x900	165	100	5	70	26512	10683	2175	3.20	0.007	653
BPEN-4026	900x900	195	120	6	84	26014	10575	2175	3.80	0.009	653
BPEN-4027	900x900	225	140	7	98	25516	10456	2175	4.40	0.010	653
BPEN-4028	900x900	255	160	8	112	25018	10353	2175	4.95	0.011	653
BPEN-4029	900x900	285	180	9	126	23716	10239	2175	5.55	0.013	653
BPEN-4021	900x900	315	200	10	140	20674	10123	2175	6.10	0.016	653

General Notes:

- Total Vertical Deflection of a bearing may vary minus or plus 15% of the Estimation which is given above and where this parameter is critical to design of the structure, the stiffness of the bearing should be ascertained by tests.
- The Friction Coefficient in calculations is considered to be 0.3. This value can be varied where the sitting material of the bearings are some material other than steel or concrete.
- Maximum allowable rotation in the above table is calculated to avoid the uplift even in the minimum permitted vertical load.
- AssaFlex Engineering Department will be pleased to tailor Bearings to meet your needs and requirements in a more cost effective manner, if we have knowledge and specifications of your project.