

Spring rates

D110A standard

Axial spring rates (average spring rates from full way and at room temperature in the pipeline*)

Ø mm	Spring rate for					
	0 bar N/mm	1 bar N/mm	2.5 bar N/mm	4 bar N/mm	6 bar N/mm	10 bar N/mm
50	25	42	51	98	134	173
65	24	43	53	100	150	190
80	28	48	58	104	148	185
100	35	59	71	116	206	274
125	36	59	71	137	214	282
150	49	84	102	189	293	390
200	100	153	180	365	568	735
250	105	173	207	388	609	778
300	123	206	248	448	658	883
350	105	153	177	349	567	753
400	154	225	261	516	535	1090
450	167	269	320	581	903	1162
500	196	316	376	686	1060	1364
600	208	264	292	692	1123	1441
700	140	179	198	521	714	954
800	180	240	270	594	975	1258
900	200	320	380	690	1080	1395
1000	225	355	420	742	1248	1568

Lateral spring rates (average spring rates from full way and at room temperature in the pipeline*)

Ø mm	Spring rate for					
	0 bar N/mm	1 bar N/mm	2.5 bar N/mm	4 bar N/mm	6 bar N/mm	10 bar N/mm
50	50	60	65	80	105	145
65	40	65	78	115	150	165
80	35	59	74	136	155	173
100	55	74	88	143	168	192
125	100	162	200	261	293	383
150	120	206	260	309	366	466
200	323	555	723	836	949	1219
250	379	624	806	1022	1173	1479
300	392	647	837	1068	1216	1542
350	305	508	610	762	875	1098
400	338	541	642	817	946	1199
450	342	540	639	821	971	1200
500	426	687	818	1048	1204	1495
600	456	708	834	1062	1295	1586
700	516	798	939	1191	1449	1775
800	558	826	960	1055	1557	1758
900	800	1253	1480	1984	2248	2560
1000	960	1536	1824	2361	2736	2976

D210A standard

Axial spring rates (average spring rates from full way and at room temperature in the pipeline*)

Ø mm	Spring rate for					
	0 bar N/mm	1 bar N/mm	2.5 bar N/mm	3 bar N/mm	6 bar N/mm	10 bar N/mm
32	14	30	56	62	116	180
40	14	30	56	62	116	180
50	12	30	66	76	142	220
65	14	45	87	99	189	286
80	33	75	135	150	258	396
100	28	80	156	176	320	480
125	30	95	186	218	374	580
150	8	68	144	248	320	528
200	42	90	178	204	370	594
250	20	112	224	256	480	768
300	22	108	236	277	520	854
350	28	128	270	310	570	940
400	44	140	296	342	646	1052
500	46	172	354	416	792	1264

Lateral spring rates (average spring rates from full way and at room temperature in the pipeline*)

Ø mm	Spring rate for					
	0 bar N/mm	1 bar N/mm	2.5 bar N/mm	3 bar N/mm	6 bar N/mm	10 bar N/mm
32	11	17	27	30	45	63
40	11	17	27	30	45	63
50	17	35	47	54	79	107
65	21	37	61	61	96	136
80	32	56	92	94	144	204
100	38	77	112	123	180	243
125	45	88	133	150	225	315
150	48	80	116	123	188	265
200	103	155	221	238	343	473
250	126	208	179	308	442	603
300	167	267	337	400	550	750
350	137	263	385	418	587	833
400	187	293	423	457	633	900
500	203	380	536	573	840	1140

*These spring rates should be considered only as approximates which may vary with the elastomers and fabrics used in fabrication and specific construction design. To calculate the approximate spring rate of a multiple arch joint, divide the single arch values by the number of arches.

Guideline values for pressure drop

