

VSPHERE TYPE SPF



- Transfers horizontal loads in both longitudinal and transverse directions
- Allows rotations in any direction
- Restrains horizontal movements in any direction

Bearings according to European Standard EN 1337-7 and AASHTO LRFD 2020

FIXED BEARING										
DATASHEET FOR A HORIZONTAL LOAD OF 10% THE VERTICAL LOAD										
BEARING DESIGNATION	V _{max, ULS} (kN)	V _{max, SLS} (kN)	H _{max, ULS} (kN)	H _{max, SLS} (kN)	EN			AASHTO		
					D5 (mm)	D2 (mm)	TH (mm)	D5 (mm)	D2 (mm)	TH (mm)
SPF-500-H10%	500	358	50	36	222	172	66	221	168	61
SPF-1000-H10%	1000	715	100	72	271	221	69	280	227	71
SPF-1500-H10%	1500	1072	150	107	311	261	79	312	259	77
SPF-2000-H10%	2000	1429	200	143	342	292	75	347	294	82
SPF-3000-H10%	3000	2143	300	214	394	344	84	407	354	88
SPF-4000-H10%	4000	2858	400	286	440	390	84	462	409	98
SPF-5000-H10%	5000	3572	500	357	477	427	100	511	458	104
SPF-6000-H10%	6000	4286	600	429	519	465	96	559	498	99
SPF-7000-H10%	7000	5000	700	500	551	497	105	601	540	105
SPF-8000-H10%	8000	5715	800	572	591	525	101	649	576	105
SPF-9000-H10%	9000	6429	900	643	628	558	105	683	610	116
SPF-10000-H10%	10000	7143	1000	714	663	585	115	719	642	116
SPF-12000-H10%	12000	8572	1200	857	721	635	116	784	703	129
SPF-14000-H10%	14000	10000	1400	1000	772	682	126	848	759	133
SPF-16000-H10%	16000	11429	1600	1143	820	722	126	913	812	139
SPF-18000-H10%	18000	12858	1800	1286	871	765	136	975	862	143
SPF-20000-H10%	20000	14286	2000	1429	915	801	147	1027	906	152
SPF-22000-H10%	22000	15715	2200	1572	966	840	137	1072	951	165
SPF-24000-H10%	24000	17143	2400	1714	1003	873	147	1124	991	165
SPF-26000-H10%	26000	18572	2600	1857	1047	909	147	1175	1034	166
SPF-28000-H10%	28000	20000	2800	2000	1086	940	157	1221	1072	165
SPF-30000-H10%	30000	21429	3000	2143	1120	970	158	1265	1108	174
SPF-34000-H10%	34000	24286	3400	2429	1186	1032	168	1347	1182	192
SPF-38000-H10%	38000	27143	3800	2714	1259	1089	168	1429	1248	209
SPF-42000-H10%	42000	30000	4200	3000	1346	1144	173	1508	1311	207
SPF-46000-H10%	46000	32858	4600	3286	1390	1196	181	1579	1370	224
SPF-50000-H10%	50000	35715	5000	3572	1453	1247	190	1646	1429	231

FIXED BEARING										
DATASHEET FOR A HORIZONTAL LOAD OF 20% THE VERTICAL LOAD										
BEARING DESIGNATION	V _{max, ULS} (kN)	V _{max, SLS} (kN)	H _{max, ULS} (kN)	H _{max, SLS} (kN)	EN			AASHTO		
					D5 (mm)	D2 (mm)	TH (mm)	D5 (mm)	D2 (mm)	TH (mm)
SPF-500-H20%	500	358	100	72	222	172	70	221	168	62
SPF-1000-H20%	1000	715	200	143	271	221	74	280	227	76
SPF-1500-H20%	1500	1072	300	214	311	261	84	312	259	83
SPF-2000-H20%	2000	1429	400	286	342	292	87	347	294	90
SPF-3000-H20%	3000	2143	600	429	398	344	97	415	354	101
SPF-4000-H20%	4000	2858	800	572	460	390	102	474	409	121
SPF-5000-H20%	5000	3572	1000	714	493	427	122	531	458	121
SPF-6000-H20%	6000	4286	1200	857	547	465	129	583	498	128
SPF-7000-H20%	7000	5000	1400	1000	579	497	139	629	540	139
SPF-8000-H20%	8000	5715	1600	1143	623	525	141	681	576	141
SPF-9000-H20%	9000	6429	1800	1286	664	558	141	715	610	143
SPF-10000-H20%	10000	7143	2000	1429	695	585	148	759	642	159
SPF-12000-H20%	12000	8572	2400	1714	765	635	164	828	703	174
SPF-14000-H20%	14000	10000	2800	2000	816	682	174	900	759	175
SPF-16000-H20%	16000	11429	3200	2286	868	722	184	961	812	186
SPF-18000-H20%	18000	12858	3600	2572	919	765	194	1023	862	196
SPF-20000-H20%	20000	14286	4000	2857	963	801	195	1079	906	197
SPF-22000-H20%	22000	15715	4400	3143	1018	840	195	1128	951	207
SPF-24000-H20%	24000	17143	4800	3429	1055	873	205	1180	991	208
SPF-26000-H20%	26000	18572	5200	3714	1103	909	205	1239	1034	208
SPF-28000-H20%	28000	20000	5600	4000	1146	940	215	1293	1072	219
SPF-30000-H20%	30000	21429	6000	4286	1188	970	216	1341	1108	219
SPF-34000-H20%	34000	24286	6800	4857	1254	1032	235	1427	1182	239
SPF-38000-H20%	38000	27143	7600	5429	1331	1089	235	1509	1248	250
SPF-42000-H20%	42000	30000	8400	6000	1422	1144	236	1588	1311	261
SPF-46000-H20%	46000	32858	9200	6572	1470	1196	247	1675	1370	282
SPF-50000-H20%	50000	35715	10000	7143	1533	1247	257	1746	1429	282

FIXED BEARING										
DATASHEET FOR A HORIZONTAL LOAD OF 30% THE VERTICAL LOAD										
BEARING DESIGNATION	$V_{max, ULS}$ (kN)	$V_{max, SLS}$ (kN)	$H_{max, ULS}$ (kN)	$H_{max, SLS}$ (kN)	EN			AASHTO		
					D5 (mm)	D2 (mm)	TH (mm)	D5 (mm)	D2 (mm)	TH (mm)
SPF-500-H30%	500	358	150	107	222	172	71	221	168	66
SPF-1000-H30%	1000	715	300	215	271	221	82	280	227	84
SPF-1500-H30%	1500	1072	450	322	311	261	98	312	259	99
SPF-2000-H30%	2000	1429	600	429	346	292	98	351	294	105
SPF-3000-H30%	3000	2143	900	643	406	344	118	427	354	117
SPF-4000-H30%	4000	2858	1200	857	472	390	121	490	409	130
SPF-5000-H30%	5000	3572	1500	1072	509	427	152	543	458	152
SPF-6000-H30%	6000	4286	1800	1286	559	465	153	603	498	152
SPF-7000-H30%	7000	5000	2100	1500	603	497	163	653	540	163
SPF-8000-H30%	8000	5715	2400	1715	647	525	163	709	576	163
SPF-9000-H30%	9000	6429	2700	1929	688	558	173	739	610	173
SPF-10000-H30%	10000	7143	3000	2143	723	585	173	783	642	174
SPF-12000-H30%	12000	8572	3600	2572	785	635	184	852	703	195
SPF-14000-H30%	14000	10000	4200	3000	840	682	194	924	759	195
SPF-16000-H30%	16000	11429	4800	3429	896	722	204	989	812	206
SPF-18000-H30%	18000	12858	5400	3857	951	765	215	1063	862	217
SPF-20000-H30%	20000	14286	6000	4286	995	801	224	1119	906	217
SPF-22000-H30%	22000	15715	6600	4715	1054	840	224	1168	951	227
SPF-24000-H30%	24000	17143	7200	5143	1091	873	234	1224	991	237
SPF-26000-H30%	26000	18572	7800	5572	1139	909	234	1283	1034	238
SPF-28000-H30%	28000	20000	8400	6000	1182	940	245	1329	1072	248
SPF-30000-H30%	30000	21429	9000	6429	1220	970	255	1381	1108	249
SPF-34000-H30%	34000	24286	10200	7286	1302	1032	275	1479	1182	280
SPF-38000-H30%	38000	27143	11400	8143	1379	1089	276	1561	1248	311
SPF-42000-H30%	42000	30000	12600	9000	1470	1144	277	1648	1311	311
SPF-46000-H30%	46000	32858	13800	9857	1522	1196	307	1727	1370	312
SPF-50000-H30%	50000	35715	15000	10715	1585	1247	307	1798	1429	326

Bearings have been designed with the following parameters :

Concrete on deck is H40 ($f_{ck} = 40$ MPa)

Concrete on piers and abutment is H35 ($f_{ck} = 35$ MPa)

Bearing designation: bearing type – $V_{max, ULS}$ (kN) – % $H_{max, ULS}$ *

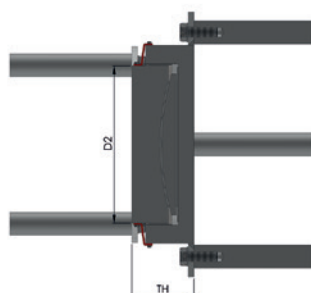
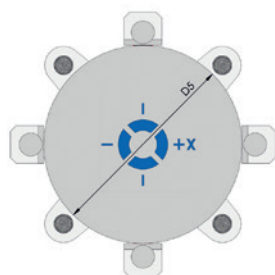
*% of horizontal load in ULS in comparison with vertical load in ULS

Minimum vertical load at SLS and ULS is 25% of maximum vertical load at SLS

Rotation 0,01 rad (EN) and 0,02 rad (AASHTO)

Other models are available on request.

The dimensions given are indicative. Designs and dimensions may be modified by VSL without prior notification.



Notes

D5 = upper plate diameter

D2 = lower plate diameter

TH = total height