



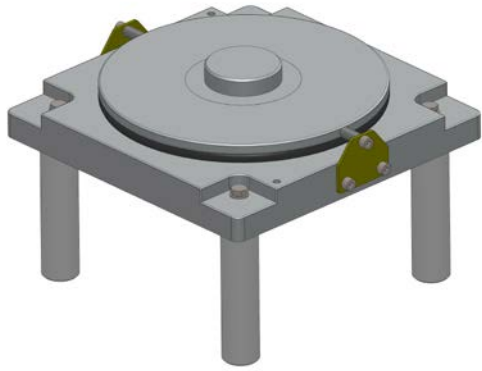
POT BEARINGS ERGOFLON DISC

Pot bearings are structural bearings that allow rotation. Depending on their type (fixed, guided, or free), they may or may not allow movement and transfer load.



POT BEARINGS

SOMMA “ERGOFLON DISC” devices are POT bearings, which allow rotations up to ± 0.02 rad around any horizontal axis, through the deformation of the elastomeric disc. The bearings are designed to act as hinge (fixed) or one single direction (guided) or all plan directions (free). The connection to the structure can be made by mechanical anchorage or by friction.



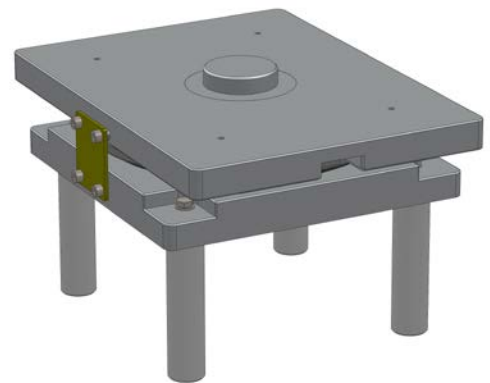
POT FIXED (EDF)

- VERTICAL LOAD
- HORIZONTAL LOAD
- ROTATION

The fixed pot bearing is composed by a steel baseplate (POT) on which are laid an elastomeric disc and the bottom part of the piston, composed by the contact face. The piston and the basement can be machined to seat the mechanical anchors.

POT GUIDED (EDL/EDT)

- VERTICAL LOAD
- ROTATION
- DISPLACEMENT (ONE DIRECTION)



The guided pot bearing is a fixed pot bearing modified to allow displacement in one direction. The top of the piston accommodates two PTFE sheets and a central guide. The sliding plate is machined to insert the guide and has a mirror-polished stainless-steel plate on which the PTFE slides. According to the direction of the guide, the bearing will be longitudinal (EDL) or transversal (EDT). The sliding plate and the basement can be machined to seat the mechanical anchors.



POT FREE (EDM)

- VERTICAL LOAD
- ROTATION
- DISPLACEMENT (ALL DIRECTIONS)

The free pot bearing is a fixed pot bearing modified to allow displacement in both directions. The top of the piston accommodates one PTFE sheet. The sliding plate has a mirror-polished stainless-steel plate on which the PTFE slides. The sliding plate and the basement can be machined to seat the mechanical anchors.

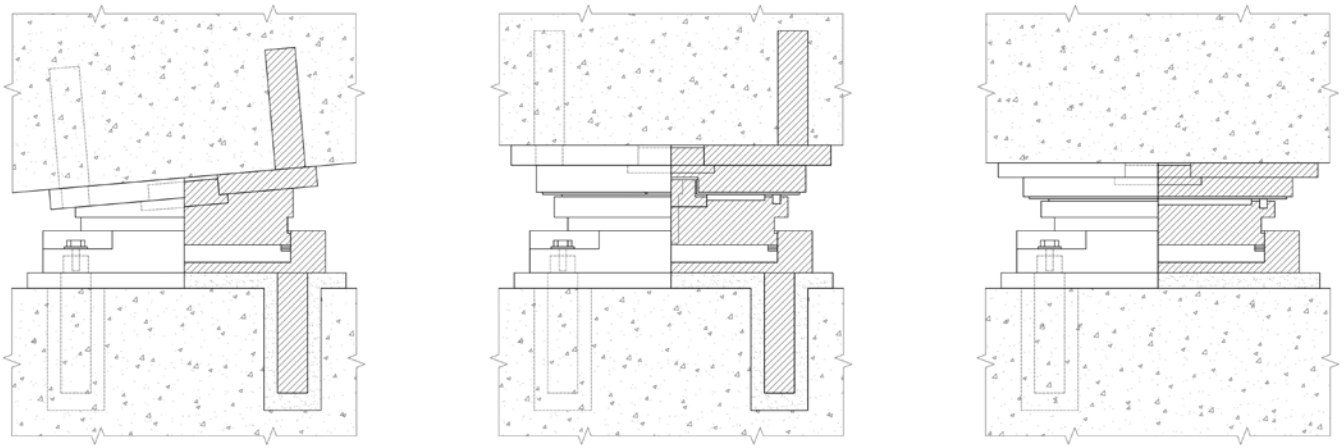


The ERGOFLON DISC devices are CE marked according to EN 1337 or comply to AASHTO LRFD standard.

ANCHORING SYSTEM

Different types of anchorages to the structure can be designed and provided:

- **Friction:** through the loads transferred by contact between the bearing and the structure.
- **Mechanical anchorage:** system used to connect the device to the structure, above and below, when the horizontal loads are significant and in any case in a seismic area. They can be made with long anchor bolts, bolts or pins.
- **Masonry plates:** if necessary, SOMMA designs and supplies steel masonry plates.



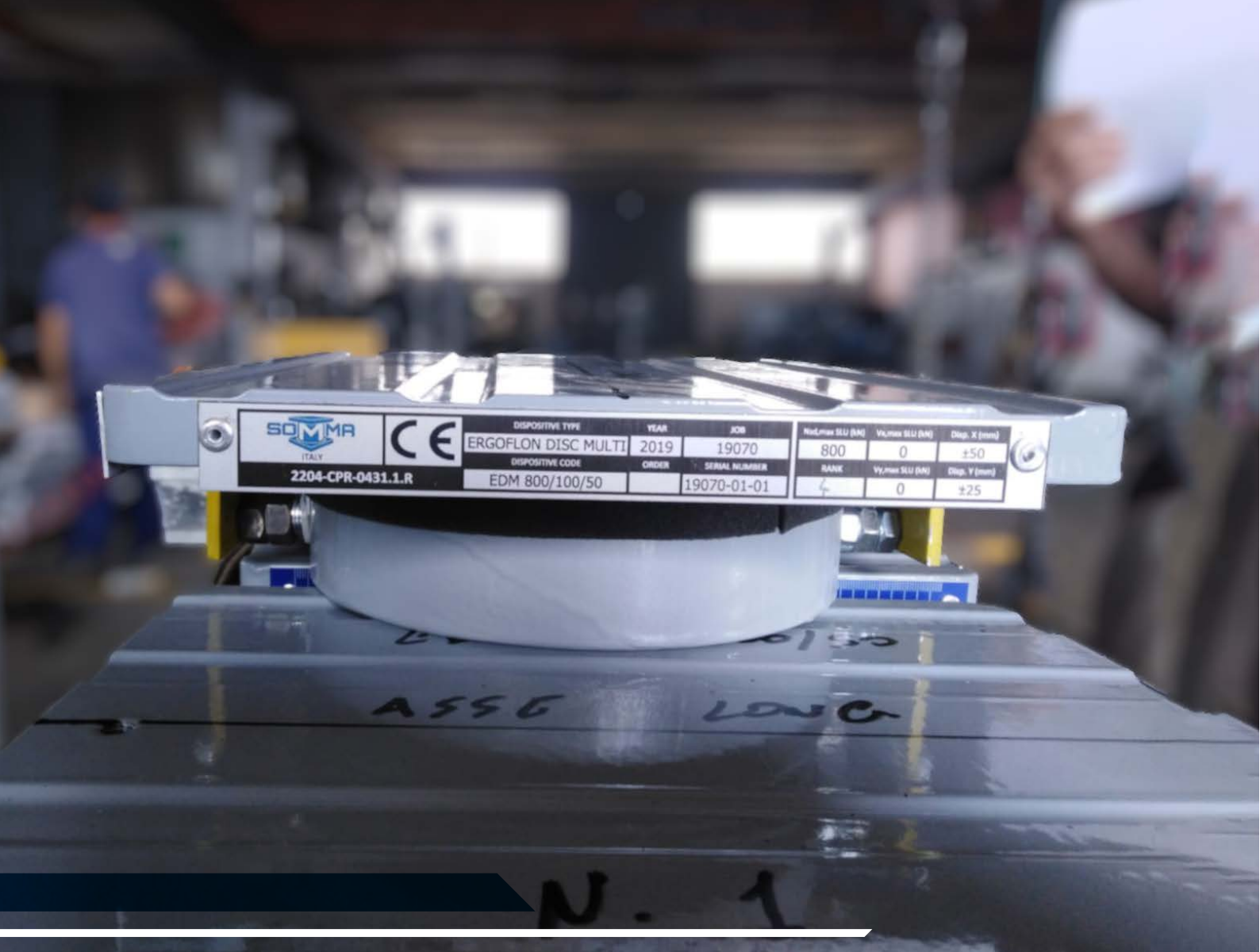
All connections and interfaces to the structure can be designed and adapted according to the necessity of the client. It is possible to provide tapered plates for slope.





THE ADVANTAGES OF THE ERGOFLON DISC POT BEARINGS

- Excellent compromise between performances and cost
- Long durability
- Ease to install
- Protection of structural components
- Ease to replace
- High load capacities
- Good rotation capacities



KEY TO LABEL

- **EDF:** Fixed POT bearing.
- **EDL:** Longitudinal POT bearing.
- **EDT:** Transversal POT bearing.
- **EDM:** Multidirectional POT bearing.
- **EDF 1000-200:** Fixed POT bearing with 1000 kN of vertical load – 200 kN of horizontal force.
- **EDL 7000/300-1000:** Longitudinal POT bearing with 7000 kN of vertical load with longitudinal movement ± 150 mm and horizontal transversal force 1000 kN.
- **EDT 7000-1000/80:** Transversal POT bearing with 7000 kN of vertical load, ± 40 mm of transversal displacement and 1000 kN of horizontal longitudinal load.
- **EDM 3000/300/300:** Free POT bearing with 3000 kN of vertical load, ± 150 mm longitudinal and transversal displacement.



ELASTOMERIC PAD	NATURAL RUBBER 50 Sh A3	EN 1337
BASEMENT	S355J2	EN 10025
PISTON	S355J2	EN 10025
LOW FRICTION SURFACE	PTFE	EN 1337
SLIDING SURFACE	X5CrNiMo17-12	EN 10088
VERTICAL SLIDING SURFACE	CM1	EN 1337
SLIDING PLATE	S355J2	EN 10025
DIRECTIONAL GUIDE	S355J2	EN 10025
ANCHORS	C45Bon. / 39NiCrMo3	EN 10083

If requested is possible to use different material according to the reference Standard or to particular Specifications.

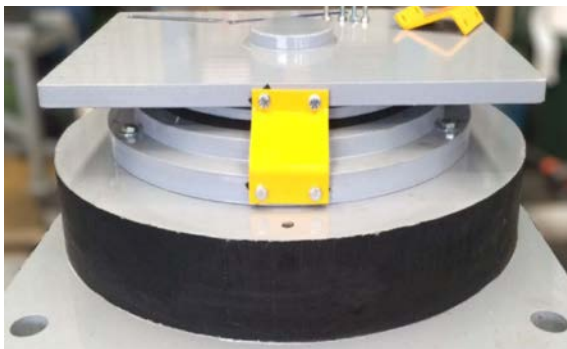
 	DISPOSITIVE TYPE	YEAR	JOB	NSD x max SLU	V x max SLU	Disp x (mm)
	DISPOSITIVE CODE	ORDER	SERIAL NUMBER	RANK	V y max SLU	Disp y (mm)

SPECIAL BEARING DEVICES

The ERGOFLON DISC pot bearings can be integrated by other devices capable of giving the bearing additional features. Some of the most common examples are:

- The request to resist a tensile load: since the bearing device is made with a simple overlapping of components, it is essential to add “anti-lifting” elements that transfer the tensile load while allowing the bearing to rotate and/or move;
- The request to block the displacement in dynamic conditions: it can be obtained adding to guided or free bearing device, a shock transmitter unit (STU). In this way the bearing maintains its sliding capacity for slow actions (e.g. thermal expansion, viscosity, shrinkage), but reacts with a force to a dynamic action (earthquake);
- The request to give an elastic response: it is possible to give a horizontally deformable behaviour with an elastic response to the bearing by inserting elastomeric elements.

SPECIAL POT BEARING WITH ANTLIFTING



POT BEARING WITH ELASTIC RESPONSE

POT BEARING WITH STU



ANTI-CORROSIVE PROTECTION

The components exposed to atmospheric agents are protected with C5 anticorrosive treatment compliant with ISO 12944-5, made with Sa 2.5 white metal sandblasting, a bicomponent epoxy primer and a polyurethane finish.

On request, depending on the atmospheric agents acting on the device, it is possible to apply different protective treatments.

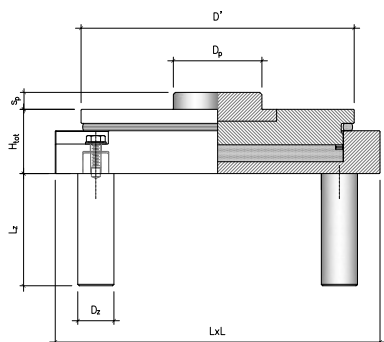


QUALITY ENSURANCE

SOMMA is CE certified according to EN1337 for the design and production of bearing devices and operates according to ISO 9001 and to ISO 45001 quality system. The entire design and production process is carried out according to the requirements of EN 1337. Independent third parties carry out regular inspections to verify the compliance to the regulations.

For production according to EN 1337, SOMMA issues the declaration of Constancy of Performance.

FIXED POT BEARING – V = 10% N



N vertical load

V horizontal load

LxL plan dimension of the basement

N° number of bottom anchors

Dz diameter of bottom anchors

Lz length of bottom anchors

D' diameter of the piston

Dp diameter of the pin

Sp height of the pin

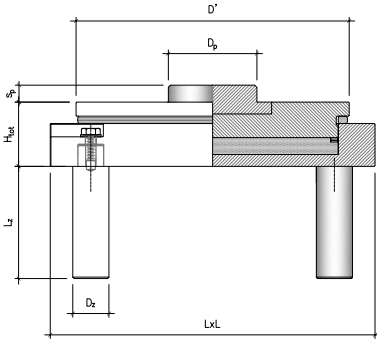
Htot total height of the bearing

W weight of the bearing

ID	N [kN]	V [kN]	LxL [mm]	N° [-]	Dz [mm]	Lz [mm]	D' [mm]	Dp [mm]	Sp [mm]	H _{TOT} [mm]	W [Kg]
EDF 500-50	500	50	210	4	20	100	200	30	18	51	15
EDF 1000-100	1000	100	230	4	20	100	220	30	18	51	18
EDF 1500-150	1500	150	260	4	20	100	240	30	18	51	22
EDF 2000-200	2000	200	290	4	25	100	280	50	18	55	31
EDF 2500-250	2500	250	330	4	25	100	310	50	18	59	41
EDF 3000-300	3000	300	370	4	25	100	340	50	18	64	54
EDF 3500-350	3500	350	390	4	30	120	360	70	18	69	65
EDF 4000-400	4000	400	430	4	30	120	390	70	18	73	84
EDF 4500-450	4500	450	440	4	40	160	400	80	18	73	93
EDF 5000-500	5000	500	480	4	40	160	430	80	18	77	110
EDF 6000-600	6000	600	520	4	40	160	460	100	18	82	136
EDF 7000-700	7000	700	550	4	40	160	480	100	18	82	150
EDF 8000-800	8000	800	580	4	50	200	510	100	22	90	188
EDF 9000-900	9000	900	630	4	50	200	560	100	22	89	213
EDF 10000-1000	10000	1000	660	4	50	200	580	150	22	94	249
EDF 12000-1200	12000	1200	730	4	60	240	640	150	22	102	334
EDF 14000-1400	14000	1400	790	4	60	240	690	150	22	110	420
EDF 16000-1600	16000	1600	850	4	60	240	740	200	22	110	477
EDF 18000-1800	18000	1800	890	4	80	320	770	200	22	124	625
EDF 20000-2000	20000	2000	930	4	80	320	800	200	28	123	669
EDF 25000-2500	25000	2500	1050	4	80	320	920	200	28	135	907
EDF 30000-3000	30000	3000	1150	4	100	400	990	320	28	161	1359
EDF 40000-4000	40000	4000	1310	4	100	400	1120	320	28	187	1986

Bottom surface in concrete C28/35. Rotation: $\pm 0,01$ rad.

FIXED POT BEARING – $V = 30\% N$



N vertical load

V horizontal load

LxL plan dimension of the basement

N° number of bottom anchors

Dz diameter of bottom anchors

Lz length of bottom anchors

diameter of the piston

diameter of the pin

height of the pin

total height of the bearing

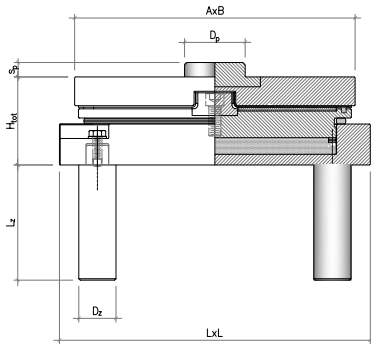
weight of the bearing

ID	N [kN]	V [kN]	LxL [mm]	N° [-]	Dz [mm]	Lz [mm]	D' [mm]	Dp [mm]	Sp [mm]	H _{TOT} [mm]	W [Kg]
EDF 500-150	500	150	210	4	20	100	200	30	18	51	15
EDF 1000-300	1000	300	240	4	30	120	220	50	18	54	25
EDF 1500-450	1500	450	280	4	40	160	240	70	18	56	37
EDF 2000-600	2000	600	330	4	40	160	280	90	18	64	54
EDF 2500-750	2500	750	360	4	40	160	310	100	18	71	68
EDF 3000-900	3000	900	400	4	50	200	340	100	23	74	91
EDF 3500-1050	3500	1050	440	4	50	200	360	120	23	75	108
EDF 4000-1200	4000	1200	470	4	60	240	400	120	23	80	134
EDF 4500-1350	4500	1350	490	4	60	240	410	150	23	84	155
EDF 5000-1500	5000	1500	530	4	60	240	440	150	23	84	173
EDF 6000-1800	6000	1800	570	4	80	320	440	200	23	90	245
EDF 7000-2100	7000	2100	610	4	80	320	490	250	23	95	292
EDF 8000-2400	8000	2400	660	4	80	320	520	250	23	103	349
EDF 9000-2700	9000	2700	710	4	80	320	560	250	28	106	407
EDF 10000-3000	10000	3000	740	4	100	400	580	300	28	111	495
EDF 12000-3600	12000	3600	820	4	100	400	640	300	28	118	619
EDF 14000-4200	14000	4200	890	4	100	400	690	350	28	130	778
EDF 16000-4800	16000	4800	960	4	120	480	740	400	28	141	1045
EDF 18000-5400	18000	5400	1020	4	120	480	770	400	33	160	1263
EDF 20000-6000	20000	6000	1070	4	120	480	800	400	33	159	1359
EDF 25000-7500	25000	7500	1200	4	140	560	900	450	39	175	1905
EDF 30000-9000	30000	9000	1310	4	150	600	980	450	43	199	2548
EDF 40000-12000	40000	12000	1520	4	170	680	1110	550	48	223	3829

Bottom surface in concrete C28/35. Rotation: $\pm 0,01$ rad.

All the bearings can be designed with different loads and rotations.

GUIDED POT BEARING – $V = 10\% N$

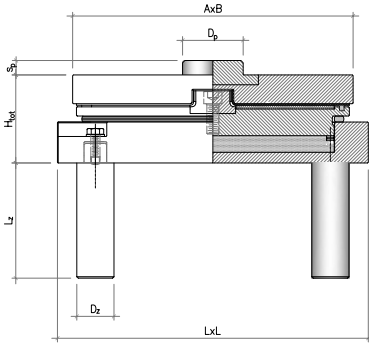


- N** vertical load
- V** horizontal load
- LxL** plan dimension of the basement
- N°** number of bottom anchors
- Dz** diameter of bottom anchors
- Lz** length of bottom anchors
- A** size of the sliding plate in the sliding direction
- B** size of the sliding plate in the direction orthogonal to the slide
- Dp** diameter of the pin
- Sp** height of the pin
- H_{tot}** total height of the bearing
- W** weight of the bearing

ID	N [kN]	V [kN]	LxL [mm]	N° [-]	Dz [mm]	Lz [mm]	A [mm]	B [mm]	Dp [mm]	Sp [mm]	H _{tot} [mm]	W [Kg]
EDL 500/100-50	500	50	210	4	20	100	220	350	30	18	87	36
EDL 1000/100-100	1000	100	230	4	20	100	270	400	30	18	87	47
EDL 1500/100-150	1500	150	260	4	20	100	300	430	30	18	87	57
EDL 2000/100-200	2000	200	290	4	25	100	300	430	50	18	91	65
EDL 2500/100-250	2500	250	330	4	25	100	330	460	50	18	91	78
EDL 3000/100-300	3000	300	370	4	25	100	350	480	50	18	96	95
EDL 3500/100-350	3500	350	400	4	30	120	370	500	70	18	96	108
EDL 4000/100-400	4000	400	430	4	30	120	400	530	70	18	104	133
EDL 4500/100-450	4500	450	440	4	40	160	420	550	80	18	104	145
EDL 5000/100-500	5000	500	480	4	40	160	440	570	80	18	105	163
EDL 6000/100-600	6000	600	520	4	40	160	470	600	100	18	115	209
EDL 7000/100-700	7000	700	550	4	40	160	500	630	100	18	114	230
EDL 8000/100-800	8000	800	580	4	50	200	540	670	100	22	119	280
EDL 9000/100-900	9000	900	630	4	50	200	570	700	100	22	126	332
EDL 10000/100-1000	10000	1000	660	4	50	200	600	730	150	22	131	381
EDL 12000/100-1200	12000	1200	730	4	60	240	650	780	150	22	144	507
EDL 14000/100-1400	14000	1400	790	4	60	240	700	840	150	22	154	628
EDL 16000/100-1600	16000	1600	850	4	60	240	750	880	200	22	161	743
EDL 18000/100-1800	18000	1800	890	4	80	320	790	920	200	22	180	941
EDL 20000/100-2000	20000	2000	930	4	80	320	820	950	200	28	180	1013
EDL 25000/100-2500	25000	2500	1050	4	80	320	910	1040	200	28	197	1358
EDL 30000/100-3000	30000	3000	1140	4	100	400	1000	1140	320	28	222	1903
EDL 40000/100-4000	40000	4000	1310	4	100	400	1150	1290	320	28	251	2785

Bottom surface in concrete C28/35. Rotation: $\pm 0,01$ rad. Displacement of ± 50 mm.
All the bearings can be designed with different loads and rotations.

GUIDED POT BEARING – $V = 30\% N$



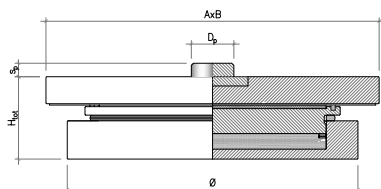
- N** vertical load
- V** horizontal load
- LxL** plan dimension of the basement
- N°** number of bottom anchors
- Dz** diameter of bottom anchors
- Lz** length of bottom anchors
- A** size of the sliding plate in the sliding direction
- B** size of the sliding plate in the direction orthogonal to the slide
- Dp** diameter of the pin
- Sp** height of the pin
- H_{tot}** total height of the bearing
- W** weight of the bearing

ID	N [kN]	V [kN]	LxL [mm]	N° [-]	Dz [mm]	Lz [mm]	A [mm]	B [mm]	Dp [mm]	Sp [mm]	H _{TOT} [mm]	W [Kg]
EDL 500/100-150	500	150	210	4	20	100	230	360	30	18	87	37
EDL 1000/100-300	1000	300	240	4	30	120	290	420	50	18	86	55
EDL 1500/100-450	1500	450	280	4	40	160	300	430	70	18	93	68
EDL 2000/100-600	2000	600	330	4	40	160	340	470	90	18	102	102
EDL 2500/100-750	2500	750	360	4	40	160	370	500	100	18	109	124
EDL 3000/100-900	3000	900	400	4	50	200	390	520	100	23	121	166
EDL 3500/100-1050	3500	1050	440	4	50	200	420	550	120	23	124	200
EDL 4000/100-1200	4000	1200	470	4	60	240	450	580	120	23	127	238
EDL 4500/100-1350	4500	1350	490	4	60	240	470	600	150	23	132	266
EDL 5000/100-1500	5000	1500	530	4	60	240	500	630	150	23	140	316
EDL 6000/100-1800	6000	1800	570	4	80	320	540	670	200	23	149	418
EDL 7000/100-2100	7000	2100	610	4	80	320	580	710	250	23	157	501
EDL 8000/100-2400	8000	2400	650	4	80	320	610	740	250	23	170	593
EDL 9000/100-2700	9000	2700	710	4	80	320	650	780	250	28	179	717
EDL 10000/100-3000	10000	3000	740	4	100	400	690	820	300	28	188	874
EDL 12000/100-3600	12000	3600	820	4	100	400	750	880	300	28	198	1069
EDL 14000/100-4200	14000	4200	890	4	100	400	810	940	350	28	227	1383
EDL 16000/100-4800	16000	4800	960	4	120	480	860	990	400	28	233	1653
EDL 18000/100-5400	18000	5400	1020	4	120	480	900	1030	400	33	245	1898
EDL 20000/100-6000	20000	6000	1070	4	120	480	940	1070	400	33	260	2180
EDL 25000/100-7500	25000	7500	1200	4	140	560	1060	1190	450	39	289	3090
EDL 30000/100-9000	30000	9000	1310	4	150	600	1140	1270	450	43	319	4040
EDL 40000/100-12000	40000	12000	1520	4	170	680	1310	1440	550	48	354	5945

Bottom surface in concrete C28/35. Rotation: $\pm 0,01$ rad. Displacement of ± 50 mm.

All the bearings can be designed with different loads and rotations.

FREE POT BEARING



N vertical load

Ø diameter of the basement

A size of the sliding plate in the sliding direction ± 50 mm

B size of the sliding plate in the sliding direction ± 25 mm

D_p diameter of the pin

S_p height of the pin

H_{tot} total height of the bearing

W weight of the bearing

ID	N [kN]	Ø [mm]	A [mm]	B [mm]	D _p [mm]	S _p [mm]	H _{TOT} [mm]	W [Kg]
EDM 500/100/50	500	210	270	320	30	18	72	26
EDM 1000/100/50	1000	230	290	340	30	18	72	30
EDM 1500/100/50	1500	260	320	370	30	18	78	41
EDM 2000/100/50	2000	290	350	400	30	18	86	54
EDM 2500/100/50	2500	320	380	430	30	18	86	65
EDM 3000/100/50	3000	350	410	460	30	18	96	83
EDM 3500/100/50	3500	370	430	480	30	18	96	91
EDM 4000/100/50	4000	400	460	510	30	18	96	102
EDM 4500/100/50	4500	420	470	520	30	18	100	116
EDM 5000/100/50	5000	450	500	550	30	18	105	140
EDM 6000/100/50	6000	480	530	580	50	18	111	164
EDM 7000/100/50	7000	510	550	600	50	18	112	179
EDM 8000/100/50	8000	550	580	630	50	18	117	211
EDM 9000/100/50	9000	590	620	670	50	18	126	266
EDM 10000/100/50	10000	620	640	690	50	18	126	286
EDM 12000/100/50	12000	690	700	750	60	23	140	382
EDM 14000/100/50	14000	740	750	800	60	23	145	450
EDM 16000/100/50	16000	800	800	850	80	23	159	578
EDM 18000/100/50	18000	840	830	880	80	23	159	624
EDM 20000/100/50	20000	880	860	910	80	23	169	719
EDM 25000/100/50	25000	1000	960	1010	100	23	182	956
EDM 30000/100/50	30000	1090	1040	1090	150	23	199	1242
EDM 40000/100/50	40000	1250	1170	1220	200	23	212	1680

Bottom surface in concrete C28/35. Rotation: $\pm 0,01$ rad.

Displacement of ± 50 mm in one direction and ± 25 in the other.

All the bearings can be designed with different loads and rotations.



Bridge in Istanbul



Roma Fiumicino Airport - Completion works for the land side and air side infrastructures of the East side terminal subsystem - Boarding area A, Terminal T1

INFO & CONTACTS

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