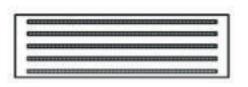


REINFORCED ELASTOMERIC BEARINGS

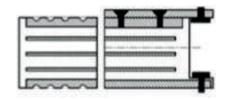
"**ESAFLON**" type devices are structural bearings, produced through a vulcanisation process and made by an alternation of layers of elastomer and metal plates. They are designed to take account of sideshifting movements in any horizontal direction and rotational movements around any axis by elastic deformation. The reinforcement sheets rigidify considerably under vertical force, but do not significantly alter their behaviour under horizontal force.

TYPE A

TYPE B



TYPE C

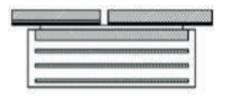


Laminated bearing fully covered with elastomer comprising only one steel reinforcing plate.

Laminated bearing fully covered with elastomer comprising at least two steel reinforcing plates.

Laminated bearing with outer steel plates (profiled or allowing fixing).
NOTE The sketch shows examples of a few fixing methods; other methods can be used.

TYPE E



TYPE F



Type C with one outer plate bonded to the elastomer and PTFE sheet recessed in the steel. Pad rubber bearing without laminated steel.



MATERIALS

ELEMENT	MATERIALS	STANDARD
ELASTOMER	ELASTOMER 50 SH A3	EN 1337 / ASTM
VULCANIZED STEEL PLATES	S275	EN 10025-2 /EN 10025-5
OUTER STEEL PLATES	S275	EN 10025-2 /EN 10025-5
ANCHORS	C45 BON / 39NICRMO3	EN 10083

KEY TO LABEL:

ESA AxBxH: Elastomeric bearing ESAFLON type with the following dimensions:

A = Dimension of the elastomer in longitudinal direction

B = Dimension of the elastomer in transversal direction

H = Total height

IDENTIFICATION LABEL

l			DISPOSITIVE TYPE	YEAR	JOB	Nad,max SLU (kN)	Vx,max SLU (kN)	Disp. X (mm)
Ш		(+						
Ш		/	DISPOSITIVE CODE	ORDER	SERIAL NUMBER	RANK	Vy,max SLU (kN)	Disp. Y (mm)
	2204-CPR-0367.1	.m-2013						
L								

PRODUCTS





CORROSION PROTECTION

The components exposed to atmospheric agents are protected with C4 H anticorrosive treatment compliant with ISO 12944-5, carried out after sandblasting with Sa 2.5 white metal, with bicomponent epoxy coating with high thickness, in RAL 7001 grey.

- External surfaces, minimum thickness of dry film: 220 μm
- Internal surfaces, minimum thickness of dry film: 60 μm
- Total thickness of the cycle ≥280 µm

On request, depending on the atmospheric agents to which the device is subjected, different protective treatments (C5M, C5I) can be applied.

ANCHORING SYSTEMS

Various types of systems of anchorage to the structure can be designed and provided:

Friction: through the loads transferred by contact between the supporting device and the structure.

<u>Clamps</u>: system used to connect the device to the structure, above and below, in the event of significant vertical and horizontal loads.

<u>Counterplates</u>: if necessary, **SOMMA** designs and supplies steel counterplates, which are generally supplied directly to the prefabricator (in the case of CAP beams) or to the manufacturer of the metal deck in the case of a steel bridge, so that they are either incorporated into the concrete or welded to the metal deck.

Bolts: this system is generally used in the case of metal structures to resist tensile forces and horizontal loads.

Welding: welding the bearing unit to the superstructure (when it is made of steel) or to a counterplate.

HANDLING

The packaging of the bearing devices must be such that no damage occurs during transport.

The devices must be handled with care and only by qualified staff.

The bearings must be protected against damage and contamination.

If the devices are not suitable for manual lifting, appropriate sections need to be provided so that they can be lifted mechanically.

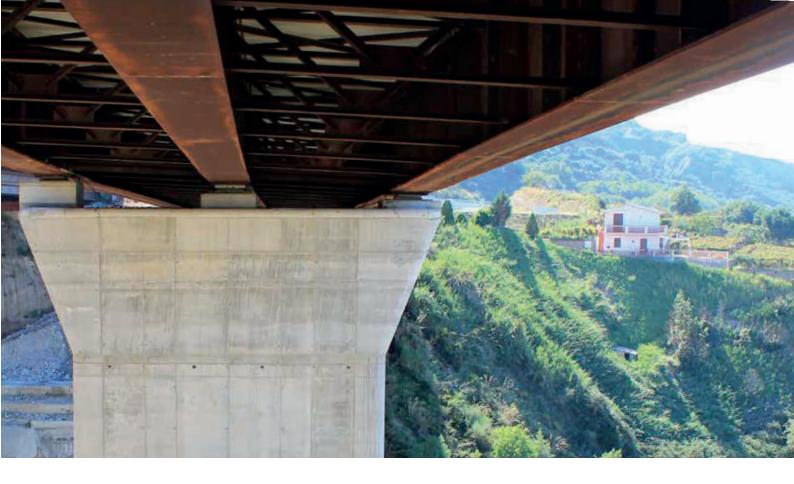
Cranes and hoists must be used to unload the bearings from the vehicle, lifting them by means of special hooks (eyebolts).

STORAGE

If the bearings are not installed immediately after delivery, they must be suitably stored on a special support that allows ventilation from below and covered with a protective sheet.

Temporary storage must ensure that the bearings are protected from damage caused by exposure to the weather (solar radiation, rain, snow or hail) and from contamination or other negative effects due to work and traffic on the site.





INSPETION AND MAINTENANCE

The bearing devices must be inspected at regular intervals.

Generally, a first inspection is recommended within one year of installation. Thereafter, an inspection every five years is sufficient.

The actions to be carried out during the periodic inspection visits are:

- Check sufficient residual movement capacity with respect to the type of bearing, keeping in mind the temperature of the structure;
- Check that there are no visible defects such as cracks, incorrect positioning or unexpected movements and deformations;
- · Check the condition of sealing and fastening
- Check the condition of the corrosion protection, dust cover and gaskets;
- Check the condition of the sliding and rotating surfaces;
- Check for visible defects in the adjacent structural parts.

The measurements obtained must be compared with the design values in order to be able to check the behaviour of the bearing.

Following exceptional events such as earthquakes, fires, accidents, an extraordinary inspection is recommended to verify what damage the device may have suffered as a result of the exceptional event. It is essential that, in order for the right corrective measures to be carried out, all the information gathered is passed on to the technical office.





INSTALLATION

During the installation of the bearings it is important to follow the instructions provided in the installation instructions supplied by **SOMMA**.

The actions to be carried out, regardless of the structure on which the bearing is to be installed, are to:

- check the position of the bearing and its correct orientation;
- check the Constraint Scheme;
- check on the identification plates that the design complies with the requirements for type and model, vertical and horizontal load, range of movement, permitted movements and direction (except for fixed bearing devices);
- on site check of the correctness and consistency of the support, the presence of the housings on the support and the horizontal positioning and finish of the support.

For a correct installation of the bearing device, it is of crucial importance to position the bearing device on a level surface.

The installation methods vary according to the characteristics of the superstructure.

There are different ways of anchoring to the structure when the beams are made of concrete or steel. In addition to providing technical assistance if needed, **SOMMA** provides the necessary assembly instructions.

REPLACEMENT

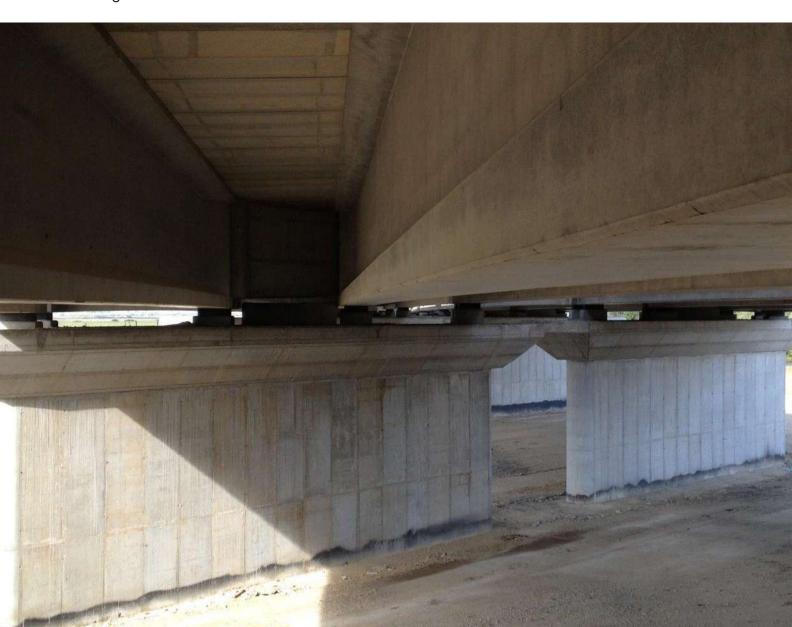
A lifting operation is required to replace the bearing devices.

The type of lifting varies according to the design and characteristics of the work.

Thanks to its affiliate TLS, which has equipment and staff who are experts in the maintenance of viaducts, **SOMMA** can plan and execute lifting work on decks and the replacement of bearings.

The operations, in short and very approximately, can be summarised as:

- jack positioning;
- lifting;
- replacement of damaged bearings;
- support cleaning in order to ensure the horizontal nature of the new bearing;
- insertion of new bearing;
- lowering of deck.



QUALITY

SOMMA is CE certified according to EN1337 for the design and production of bearing devices and operates a quality system according to ISO 9001:2015.

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 compliance with the regulations.

For production according to 1337, together with the devices **SOMMA** supplies the declaration of constancy of performance in accordance with CPR 305/2011.

Outside the European Community, **SOMMA** also provides support and a declaration of compliance with the required standards.

QUALIFICATION AND PRODUCTION CONTROL TESTS

Some regulatory standards require empirical verification of the design performance of manufactured devices

SOMMA is able to carry out static tests for medium sized bearings at its SMLAB laboratory, equipped with a press for tests on bearings and a press for load and fatigue tests for expansion joints, while for more demanding tests it relies on third party laboratories.

ELASTOMERIC BEARINGS TYPE B

C1: Max vertical load Elastomer shear strain: $\gamma = 0.3$ Rotation: $\alpha_{long} = 0.005 \text{ rad}$ $\alpha_{trasv} = 0.003 \text{ rad}$

C2: Max horizontal load Elastomer shear strain: $\gamma = I$ Rotation: $\alpha_{long} = 0,005 \text{ rad}$ $\alpha_{trasv} = 0,003 \text{ rad}$

	CI:	Max ve	ertical	load	C2: M	ax hori load	zontal	Stiff	ness			Dime	nsions			Weight
TYPE	F _{zd}	F _{z,min}	F _{xyd}	S _{eq}	F _{zd}	F _{zd} F _{xyd} S _{eq}		K _H	K,	Α	В	Н	n _{ei}	t _{ei}	t _{ii}	W
TYPE	[kN]	[kN]	[kN]	[mm]	[kN]	[kN]	[mm]	[kN/mm]	[kN/mm]	[mm]	[mm]	[mm]	Ci	[mm]	 [mm]	[kg]
ESA B 100×150×28	236	42	4,1	4,5	190	13,5	15,0	0,90	79	100	150	28	3	5	2	1,4
ESA B 100x150x42	136	55	4,1	7,5	107	13,5	25,0	0,54	53	100	150	42	5	5	2	2,1
ESA B 100×150×56	94	70	4,1	10,5	65	13,5	35,0	0,39	40	100	150	56	7	5	2	2,8
ESA B 100x200x28	348	53	5,4	4,5	275	18,0	15,0	1,20	132	100	200	28	3	5	2	1,9
ESA B 100x200x42	206	69	5,4	7,5	162	18,0	25,0	0,72	88	100	200	42	5	5	2	2,8
ESA B 100×200×56	142	87	5,4	10,5	98	18,0	35,0	0,51	66	100	200	56	7	5	2	3,7
ESA B 150×200×31	597	77	8,1	5,4	490	27,0	18,0	1,50	213	150	200	31	3	6	2	3,1
ESA B 150×200×47	468	82	8,1	9,0	393	27,0	30,0	0,90	140	150	200	47	5	6	2	4,6
ESA B 150x200x63	325	105	8,1	12,6	250	25,7	40,0	0,64	104	150	200	63	7	6	2	6,2
ESA B 150x250x31	795	97	10,1	5,4	275	33,8	18,0	1,88	318	150	250	31	3	6	2	3,8
ESA B 150×250×47	648	100	10,1	9,0	162	33,8	30,0	1,13	209	150	250	47	5	6	2	5,8
ESA B 150x250x63	450	130	10,1	12,6	98	33,8	42,0	0,80	155	150	250	63	7	6	2	7,7
ESA B 150x300x31	960	118	12,2	5,4	780	40,5	18,0	2,25	431	150	300	31	3	6	2	4,6
ESA B 150x300x47	836	120	12,2	9,0	702	40,5	30,0	1,35	283	150	300	47	5	6	2	7,0
ESA B 150x300x63	581	150	12,2	12,6	447	40,5	42,0	0,96	211	150	300	63	7	6	2	9,3
ESA B 200×250×34	1096	135	13,5	6,3	920	45,0	21,0	2,14	401	200	250	34	3	7	2	5,5
ESA B 200×250×52	1062	130	13,5	10,5	915	45,0	35,0	1,29	260	200	250	52	5	7	2	8,3
ESA B 200×250×70	740	148	13,5	14,7	590	45,0	49,0	0,92	193	200	250	70	7	7	2	11,1
ESA B 200x300x34	1370	160	16,2	6,3	1140	54,0	21,0	2,57	556	200	300	34	3	7	2	6,6
ESA B 200×300×52	1340	160	16,2	10,5	1150	54,0	35,0	1,54	361	200	300	52	5	7	2	10,0
ESA B 200×300×70	960	175	16,2	14,7	780	54,0	49,0	1,10	268	200	300	70	7	7	2	13,4
ESA B 200×350×38	1620	190	18,9	6,3	1330	63,0	21,0	3,00	724	200	350	38	3	7	3	9,7
ESA B 200×350×58	1730	185	18,9	10,5	1390	63,0	35,0	1,80	470	200	350	58	5	7	3	14,7
ESA B 200×350×78	1205	200	18,9	14,7	970	63,0	49,0	1,29	348	200	350	78	7	7	3	19,7
ESA B 200×400×38	1820	215	21,6	6,3	1470	72,0	21,0	3,43	899	200	400	38	3 5	7	3	11,1
ESA B 200×400×58 ESA B 200×400×78	2080	215	21,6	10,5 14,7	1600	72,0	35,0	2,06	584	200	400	58 78	7	7	3	16,9
ESA B 200x400x78	1440	205	20.3		1150	72,0	49,0 24,0	1,47 2,81	433 631	250	400 300	41	3	8	3	22,6
ESA B 250x300x41	1780 1920	203	20,3	7,2 12,0	1505	67,5 67,5	40,0	1,69	407	250	300	63	5	8	3	16,6
ESA B 250x300x63	1360	200	20,3	16,8	1140	63,0	56,0	1,69	300	250	300	85	7	8	3	22,3
ESA B 250x300x83	2450	275	27,0	7,2	2005	90,0	24,0	3,75	1048	250	400	41	3	8	3	14,6
ESA B 250x400x41	2650	270	27,0	12,0	2155	90,0	40,0	2,25	675	250	400	63	5	8	3	22,2
ESA B 250x400x85	2050	265	27,0	16,8	1750	90,0	56,0	1,61	498	250	400	85	7	8	3	29,8
ESA B 250x500x41	2850	345	33,8	7,2	2300	112,5	24,0	4,69	1506	250	500	41	3	8	3	18,3
ESA B 250x500x41	3335	340	33,8	12.0	2695	112,3	40.0	2,81	970	250	500	63	5	8	3	27,9
ESA B 250x500x85	2830	335	33,8	16,8	2380	112,5	56,0	2,01	716	250	500	85	7	8	3	37,4
ESA B 300×400×48	3020	335	32,4	8,1	2485	108,0	27,0	4,00	1139	300	400	48	3	9	4	21,9
ESA B 300×400×74	3200	325	32,4	13,5	2660	108,0	45,0	2,40	729	300	400	74	5	9	4	33,3
ESA B 300×400×100	2620	320	32,4	18,9	2285	108,0	63,0	1,71	536	300	400	100	7	9	4	44,7
ESA B 300×500×48	3690	420	40,5	8,1	3005	135,0	27,0	5,00	1663	300	500	48	3	9	4	27,4
ESA B 300×500×74	4000	410	40,5	13,5	3425	135,0	45,0	3,00	1064	300	500	74	5	9	4	41,8
ESA B 300×500×100	3690	400	40,5	18,9	3150	135,0	63,0	2,14	782	300	500	100	7	9	4	56,1
ESA B 300×600×48	4020	500	48,6	8,1	3190	162,0	27,0	6,00	2223	300	600	48	3	9	4	33,0
ESA B 300×600×74	4850	495	48,6	13,5	4010	162,0	45,0	3,60	1423	300	600	74	5	9	4	50,2
ESA B 300×600×100	4750	485	48,6	18,9	4100	162,0	63,0	2,57	1046	300	600	100	7	9	4	67,5
	1730	103	10,0	10,7	1100	102,0	05,0	2,37	1010	300	- 000	100				07,3

TYPE	\mathbf{F}_{zd}	F _{z,min}	F _{xyd}	Seq	F _{zd}	F _{xyd}	Seq	K _H	K _v	A	В	Н	n _{ei}	t _{ei}	t _{li}	W
	[kN]	[kN]	[kN]	[mm]	[kN]	[kN]	[mm]	[kN/mm]	[kN/mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[kg]
ESA B 350x500x51	4450	490	47,3	9,0	3650	157,5	30,0	5,25	1758	350	500	51	3	10	4	33,2
ESA B 350x500x79	4700	480	47,3	15,0	4100	157,5	50,0	3,15	1119	350	500	79	5	10	4	50,6
ESA B 350x500x107	4500	470	47,3	21,0	3850	157,5	70,0	2,25	820	350	500	107	7	10	4	68, I
ESA B 350x600x51	5120	590	56,7	9,0	4090	189,0	30,0	6,30	2377	350	600	51	3	10	4	39,9
ESA B 350x600x79	5700	580	56,7	15,0	4900	189,0	50,0	3,78	1513	350	600	79	5	10	4	60,9
ESA B 350x600x107	5500	570	56,7	21,0	4700	189,0	70,0	2,70	1109	350	600	107	7	10	4	81,9
ESA B 350x700x51	5350	690	66,2	9,0	4130	220,5	30,0	7,35	3028	350	700	51	3	10	4	46,6
ESA B 350x700x79	6700	680	66,2	15,0	5590	220,5	50,0	4,41	1927	350	700	79	5	10	4	71,1
ESA B 350×700×107	6570	670	66,2	21,0	5550	220,5	70,0	3,15	1413	350	700	107	7	10	4	95,7
ESA B 400x500x65	5530	560	54,0	12,0	4750	180,0	40,0	4,50	1780	400	500	65	4	10	4	48,0
ESA B 400x500x93	5400	550	54,0	18,0	4800	180,0	60,0	3,00	1232	400	500	93	6	10	4	68,0
ESA B 400×500×121	5350	540	54,0	24,0	4500	180,0	80,0	2,25	942	400	500	121	8	10	4	88,0
ESA B 400x600x65	6600	670	64,8	12,0	5620	216,0	40,0	5,40	2420	400	600	65	4	10	4	57,7
ESA B 400x600x93	6400	660	64,8	18,0	5800	216,0	60,0	3,60	1675	400	600	93	6	10	4	81,8
ESA B 400x600x121	6400	650	64,8	24,0	5400	216,0	80,0	2,70	1281	400	600	121	8	10	4	105,8
ESA B 400x700x65	7780	790	75,6	12,0	6050	252,0	40,0	6,30	3093	400	700	65	4	10	4	67,4
ESA B 400×700×93	7650	780	75,6	18,0	6800	252,0	60,0	4,20	2143	400	700	93	6	10	4	95,5
ESA B 400×700×121	7500	770	75,6	24,0	6300	252,0	80,0	3,15	1638	400	700	121	8	10	4	123,6
ESA B 450x600x74	7400	770	72,9	13,2	6450	243,0	44,0	5,52	2415	450	600	74	4	Ш	5	77,4
ESA B 450x600x106	7400	760	72,9	19,8	6500	243,0	66,0	3,68	1667	450	600	106	6	Ш	5	109,7
ESA B 450x600x138	7200	750	72,9	26,4	6200	243,0	88,0	2,76	1272	450	600	138	8	- 11	5	141,9
ESA B 450x700x74	8750	900	85, I	13,2	7250	283,5	44,0	6,44	3113	450	700	74	4	- 11	5	90,5
ESA B 450×700×106	8650	890	85, I	19,8	7650	283,5	66,0	4,30	2148	450	700	106	6	- 11	5	128,1
ESA B 450×700×138	8500	875	85, I	26,4	7250	283,5	88,0	3,22	1640	450	700	138	8	- 11	5	165,8
ESA B 450x800x74	9800	1050	97,2	13,2	7650	324,0	44,0	7,36	3841	450	800	74	4	- 11	5	103,5
ESA B 450x800x106	9800	1000	97,2	19,8	8700	324,0	66,0	4,91	2651	450	800	106	6	- 11	5	146,6
ESA B 450x800x138	9750	985	97,2	26,4	8200	324,0	88,0	3,68	2023	450	800	138	8	- 11	5	189,7
ESA B 500x600x78	8300	860	81,0	14,4	7250	270,0	48,0	5,63	2385	500	600	78	4	12	5	88,5
ESA B 500x600x112	8100	850	81,0	21,6	7300	270,0	72,0	3,75	1642	500	600	112	6	12	5	125,6
ESA B 500x600x146	8100	835	81,0	28,8	6900	270,0	96,0	2,81	1251	500	600	146	8	12	5	162,7
ESA B 500×700×78	9700	1050	94,5	14,4	8300	315,0	48,0	6,56	3098	500	700	78	4	12	5	103,5
ESA B 500x700x112	9650	990	94,5	21,6	8600	315,0	72,0	4,38	2132	500	700	112	6	12	5	146,8
ESA B 500×700×146	9500	970	94,5	28,8	8100	315,0	96,0	3,28	1625	500	700	146	8	12	5	190,1
ESA B 500x800x78	11000	1150	108,0	14,4	9050	360,0	48,0	7,50	3845	500	800	78	4	12	5	118,4
ESA B 500x800x112	11000	1120	108,0	21,6	9850	360,0	72,0	5,00	2646	500	800	112	6	12	5	168,0
ESA B 500x800x146	10800	1100	108,0	28,8	9300	360,0	96,0	3,75	2017	500	800	146	8	12	5	217,5
ESA B 600x800x105	13400	1400	129,6	21,00	12200	432,0	70,0	6,17	3065	600	800	105	5	14	5	181,8
ESA B 600x800x143	13200	1350	129,6	29,40	11600	432,0	98,0	4,41	2232	600	800	143	7	14	5	245,2
ESA B 600x800x181	12900	1320	129,6	37,80	10800	432,0	126,0	3,43	1755	600	800	181	9	14	5	308,7

KEY LABEL

Maximum vertical load. Minimum vertical load.

Horizontal load.

Equivalent displacement. Horizontal stiffness.

Vertical stiffness.

Dimension of the elastomer in longitudinal

direction.

B: Dimension of the elastomer in transversal

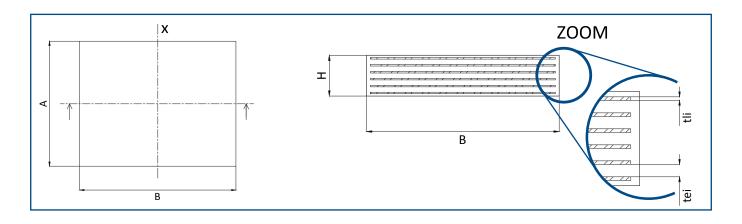
direction. Height of bearing. H:

Number of elastomeric layers.

Thickness of an elastomeric layer.

n_{ei}: t_{ei}: t_{li}: W: Thickness of a steel plate.

Weight of the bearing.



ELASTOMERIC BEARINGS TYPE C

C1: Max vertical load Elastomer shear strain: $\gamma = 0.3$ Rotation: $\alpha_{long} = 0.005 \text{ rad}$ $\alpha_{trasv} = 0.003 \text{ rad}$

C2: Max horizontal load Elastomer shear strain: $\gamma = 1$ Rotation: $\alpha_{long} = 0,005 \text{ rad}$ $\alpha_{trasv} = 0,003 \text{ rad}$

	CI: N	Max ve	ertical	load		C2: Ma zontal		Stiff	ness						D	ime	nsio	ns						Weight
TYPE	F _{zd}	F _{z,min}	F _{xyd}	Seq	F _{zd}	F _{xyd}	S _{eq}	K _H	K _v	A	В	Н	n _{ei}	t _{ei}	T _q	t _{ii}	L _x	Ļ	F _P	H _P	nz	Fz	hz	W
	[kN]	[kN]	[kN]	[mm]	[kN]	[kN]	[mm]	[kN/mm]	[kN/mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[kg]
ESA C 100×150×49	236	32	4,1	4,5	197	13,5	15,0	0,90	106	100	150	49	3	5	15	2	120	260	30	13	w	20	200	6,9
ESA C 100×150×63	136	20	4,1	7,5	107	13,5	25,0	0,54	64	100	150	63	5	5	25	2	120	260	30	13	2	20	200	7,5
ESA C 100×150×77	94	14	4,1	10,5	65	13,5	35,0	0,39	46	100	150	77	7	5	35	2	120	260	30	13	2	20	200	8,1
ESA C 100×200×49	357	53	5,4	4,5	299	18,0	15,0	1,20	177	100	200	49	3	5	15	2	120	310	30	13		20	200	8,4
ESA C 100×200×63	206	32	5,4	7,5	162	18,0	25,0	0,72	106	100	200	63	5	5	25	2	120	310	30	13		20	200	9,2
ESA C 100x200x77	142	23	5,4	10,5	98	18,0	35,0	0,51	76	100	200	77	7	5	35	2	120	310	30	13	2	20	200	9,9
ESA C 150x200x52 ESA C 150x200x68	597 468	128	8,1	5,4	518	27,0	18,0 30.0	1,50	272	150	200	52	3	6	18	2	170	310	30	13	2	20	200	11,9
ESA C 150x200x88	325	77 55	8, I 8. I	9,0 12,6	393 250	27,0 27,0	42.0	0,90	163	150	200	68 84	5 7	6	30 42	2	170 170	310	30	13	2	20	200	14,5
ESA C 150x250x54	827	190	10.1	5,4	717	33,8	18.0	1,88	406	150	250	52	3	6	18	2	170	360	30	13	2	20	200	14,1
ESA C 150x250x68	648	114	10,1	9.0	544	33,8	30.0	1,13	244	150	250	68	5	6	30	2	170	360	30	13	2	20	200	15,7
ESA C 150x250x84	450	82	10,1	12,6	346	33,8	42,0	0,80	174	150	250	84	7	6	42	2	170	360	30	13		20	200	17,3
ESA C 150x300x52	1067	258	12,2	5,4	926	40,5	18,0	2,25	552	150	300	52	3	6	18	2	170	410	30	13	2	20	200	16,3
ESA C 150x300x68	836	155	12,2	9,0	702	40,5	30,0	1,35	331	150	300	68	5	6	30	2	170	410	30	13	2	20	200	18,3
ESA C 150x300x84	581	Ш	12,2	12,6	447	40,5	42,0	0,96	236	150	300	84	7	6	42	2	170	410	30	13	2	20	200	20,2
ESA C 200x250x55	1096	315	13,5	6,3	990	45,0	21,0	2,14	497	200	250	55	3	7	21	2	220	360	30	13	2	20	200	18,8
ESA C 200x250x73	1062	189	13,5	10,5	915	45,0	35,0	1,29	298	200	250	73	5	7	35	2	220	360	30	13		20	200	21,5
ESA C 200x250x91	740	135	13,5	14,7	590	45,0	49,0	0,92	213	200	250	91	7	7	49	2	220	360	30	13	2	20	200	24,1
ESA C 200×300×55	1370	437	16,2	6,3	1260	54,0	21,0	2,57	689	200	300	55	3	7	21	2	220	410	30	13	2	20	200	21,9
ESA C 200x300x73	1340	263	16,2	10,5	1150	54,0	35,0	1,54	414	200	300	73	5	7	35	2	220	410	30	13	2	20	200	25,1
ESA C 200x300x91 ESA C 200x350x57	960	188	16,2	14,7	780	54,0	49,0	1,10	295	200	300 350	91	7	7	49	2	220	410	30	13	2	20	200	28,3
ESA C 200x350x57 ESA C 200x350x77	1785	568 341	18,9	6,3	1616	63,0 63.0	21,0 35.0	3,00	896 538	200	350	77	3 5	7	35	3	220	460	30	13	2	20	200	24,9 28,7
ESA C 200x350x77 ESA C 200x350x97	1207	244	18.9	14,7	971	63.0	49.0	1,00	384	200	350	97	7	7	49	3	220	460	30	13	2	20	200	32.4
ESA C 200x330x77	2146	706	21,6	6,3	1943	72,0	21,0	3,43	1114	200	400	57	3	7	21	3	220	510	30	13	2	20	200	28,0
ESA C 200x400x77	2080	424	21,6	10,5	1796	72,0	35,0	2,06	668	200	400	77	5	7	35	3	220	510	30	13	2	20	200	32,4
ESA C 200x400x97	1451	303	21,6	14,7	1167	72,0	49,0	1,47	477	200	400	97	7	7	49	3	220	510	30	13	2	20	200	36,5
ESA C 250x300x60	1728	611	20,3	7,2	1619	67,5	24,0	2,81	763	250	300	60	3	8	24	3	270	420	40	13	2	30	200	29,4
ESA C 250x300x82	1888	367	20,3	12,0	1585	67,5	40,0	1,69	458	250	300	82	5	8	40	3	270	420	40	13	2	30	200	34, I
ESA C 250x300x104	1366	262	20,3	16,8	1126	67,5	56,0	1,21	327	250	300	104	7	8	56	3	270	420	40	13	2	30	200	38,9
ESA C 250x400x60	2630	1014	27,0	7,2	2464	90,0	24,0	3,75	1267	250	400	60	3	8	24	3	270	520	40	13	2	30	200	37,2
ESA C 250x400x82	2870	609	27,0	12,0	2411	90,0	40,0	2,25	760	250	400	82	5	8	40	3	270	520	40	13	2	30	200	43,6
ESA C 250x400x104	2878	435	27,0	16,8	1713	90,0	56,0	1,61	543	250	400	104	7	8	56	3	270	520	40	13	2	30	200	50,0
ESA C 250x500x60	3583	1457	33,8	7,2	3356	112,5	24,0	4,69	1820	250	500	60	3	8	24	3	270	620	40	13		30	200	45,1
ESA C 250x500x82 ESA C 250x500x104	3606 2831	874 625	33,8	12,0 16,8	3163 2334	112,5	40,0 56.0	2,81	1092 780	250 250	500	104	5	8	40 56	3	270 270	620	40	13	2	30	200	53,I 61,I
ESA C 300x400x75	3029	1306	32,4	8,1	2919	108,0	27,0	4,00	1350	300	400	75	3	9	27	4	320	520	40	18	2	30	200	57,3
ESA C 300x400x101	3384	783	32,4	13,5	2903	108,0	45,0	2.40	810	300	400	101	5	9	45	4	320	520	40	18	2	30	200	67,1
ESA C 300x400x101	2698	560	32,4	18,9	2259	108,0	63,0	1,71	579	300	400	127	7	9	63	4	320	520	40	18	2	30	200	76,9
ESA C 300x500x75	4168	1906	40,5	8,1	4018	135,0	27,0	5,00	1972	300	500	75	3	9	27	4	320	620	40	18	2	30	200	69,7
ESA C 300×500×101	4658	1143	40,5	13,5	3995	135,0	45,0	3,00	1183			101	5	9	45	4	320	620	40	18			200	82,0
ESA C 300×500×127	3713	817	40,5	18,9	3109	135,0	63,0	2,14	845	300		127		9	63	4	320	620	40	18	2	30		94,2
ESA C 300x600x75	5356	2548	48,6	8, I	5163	162,0	27,0	6,00	2635	300	600	75	3	9	27	4	320	720	40	18	2	30	200	82, I
ESA C 300x600x101	5986	1529	48,6	13,5	5134	162,0	45,0	3,60	1581	300		101	5	9	45	4	320	720	40	18	2	30		96,8
ESA C 300x600x127	4771	1092	48,6	18,9	3995	162,0	63,0	2,57	1129	300		127		9	63	4	320	720	40	18	2		200	111,5
ESA C 350x500x78	4661	2326	47,3	9,0	4607	157,5	30,0	5,25	2052	350		78	3	10	30	4	370	650	60	18	2		200	85, I
ESA C 350×500×106	5316	1396	47,3	15,0	4639	157,5	50,0	3,15	1231	350		106		10	50	4	370	650	60	18	2	40	200	99,9
ESA C 350x500x134	4571	997	47,3	21,0	3869	157,5	70,0	2,25	879	350	_	134		10	70	4	370	650	60	18	2		200	114,6
ESA C 350x600x78	6032	3144	56,7	9,0	5961	189,0	30,0	6,30	2774	350		78	3	10	30	4	370	750	60	18	2	40	200	
ESA C 350x600x106 ESA C 350x600x134	5915	1887 1348	56,7 56,7	15,0 21,0	5891 5006	189,0 189,0	50,0 70,0	3,78 2,70	166 4 1189	350 350		106	-	10	50 70	4	370 370	750 750	60	18 18	2	40 40	200	117,4
ESA C 350x600x134 ESA C 350x700x78	7449	4005	66,2	9,0	7361	220,5	30,0	7,35		350		78	3	10	30	4	370	850	60	18	2	40	_	114,2
ESA C 350x700x106	7721	2403	66,2	15,0	6889	220,5	50,0	4,41	2120	350		106		10	50	4	370	850	60	18	2	40		134,9
ESA C 350x700x100	7305	1717	66,2	21,0	6183	220,5	70,0	3,15	1514			134		10	70	4	370	850	60	18	2	40		155,6
							. 0,0	-5,15				, · · ·											,	,

TYPE	Fzd	F _{z,min}	F _{xyd}	Seq	F _{zd}	F _{xyd}	Seq	K _H	K	A	В	Н	n _{ei}	t _{ei}	Tq	t	L _x	Ļ	F _P	H _P	nz	Fz	hz	W
	[kN]	[kN]	[kN]	[mm]	[kN]	[kN]	[mm]	[kN/mm]	[kN/mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[kg]
ESA C 400×500×92	5790	2605	54,0	12,0	5641	180,0	40,0	4,50	2003	400	500	92	4	10	40	4	420	650	60	18	2	40	200	104,9
ESA C 400×500×120	6276	1736	54,0	18,0	5567	180,0	60,0	3,00	1335	400	500	120	6	10	60	4	420	650	60	18	2	40	200	121,8
ESA C 400×500×148	5695	1303	54,0	24,0	4824	180,0	80,0	2,25	1002	400	500	148	8	10	80	4	420	650	60	18	2	40	200	138,7
ESA C 400×600×92	7538	3541	64,8	12,0	7110	216,0	40,0	5,40	2723	400	600	92	4	10	40	4	420	750	60	18	2	40	200	123,3
ESA C 400×600×120	7757	2361	64,8	18,0	6703	216,0	60,0	3,60	1815	400	600	120	6	10	60	4	420	750	60	18	2	40	200	143,6
ESA C 400×600×148	7415	1771	64,8	24,0	6280	216,0	80,0	2,70	1362	400	600	148	8	10	80	4	420	750	60	18	2	40	200	163,9
ESA C 400×700×92	8980	4528	75,6	12,0	8315	252,0	40,0	6,30	3483	400	700	92	4	10	40	4	420	850	60	18	2	40	200	141,6
ESA C 400×700×120	8838	3019	75,6	18,0	7840	252,0	60,0	4,20	2322	400	700	120	6	10	60	4	420	850	60	18	2	40	200	165,3
ESA C 400×700×148	8695	2264	75,6	24,0	7365	252,0	80,0	3,15	1741	400	700	148	8	10	80	4	420	850	60	18	2	40	200	189,0
ESA C 450x600x99 ESA C 450x600x131	8135 9145	3946 2631	72,9 72,9	13,2	8029 8089	243,0 243.0	44,0 66.0	5,52 3,68	2690 1793	450 450	600	99	6	11	44 66	5	470 470	750 750	60	18 18	2	40 40	200	145,5 173,1
ESA C 450x600x131	8386	1973	72,9	26.4	7137	243,0	88.0	2,76	1345	450	600	163	8		88	5	470	750	60	18	2	40	200	200.7
ESA C 450x700x99	10141	5086	85,I	13,2	10010	283.5	44.0	6.44	3467	450	700	99	4	11	44	5	470	850	60	18	2	40	200	167,3
ESA C 450x700x131	11344	3391	85,1	19,8	10084	283,5	66,0	4,30	2312	450	700	131	6	ii	66	5	470	850	60	18	2	40	200	199,6
ESA C 450×700×163	10455	2543	85.1	26.4	8898	283.5	88.0	3.22	1734	450	700	163	8	II	88	5	470	850	60	18	2	40	200	231.9
ESA C 450×800×99	12231	6275	97,2	13,2	12055	324,0	44,0	7,36	4278	450	800	99	4	Ш	44	5	470	950	60	18	2	40	200	189,2
ESA C 450x800x131	12988	4183	97,2	19,8	11560	324,0	66,0	4,91	2852	450	800	131	6	Ш	66	5	470	950	60	18	2	40	200	226,1
ESA C 450x800x163	12591	3138	97,2	26,4	10716	324,0	88,0	3,68	2139	450	800	163	8	Ш	88	5	470	950	60	18	2	40	200	263,1
ESA C 500×600×103	8667	4303	81,0	14,4	8652	270,0	48,0	5,63	2634	500	600	103	4	12	48	5	520	750	60	18	2	40	200	162,5
ESA C 500x600x137	9821	2869	81,0	21,6	8755	270,0	72,0	3,75	1756	500	600	137	6	12	72	5	520	750	60	18	2	40	200	194,0
ESA C 500x600x171	9294	2152	81,0	28,8	7940	270,0	96,0	2,81	1317	500	600	171	8	12	96	5	520	750	60	18	2	40	200	225,4
ESA C 500×700×103	10850	5588	94,5	14,4	10831	315,0	48,0	6,56	3421	500	700	103	4	12	48	5	520	850	60	18	2	40	200	187,0
ESA C 500×700×137	11592	3725	94,5	21,6	10344	315,0	72,0	4,38	2280	500	700	137	6	12	72	5	520	850	60	18	2	40	200	223,8
ESA C 500×700×171	11413	2794	94,5	28,8	9750	315,0	96,0	3,28	1710	500	700	171	8	12	96	5	520	850	60	18	2	40	200	260,5
ESA C 500×800×103	13112		108,0	14,4	12524	360,0	48,0	7,50	4246	500	800	103	4	12	48	5	520	950	60	18	2	40	200	211,5
ESA C 500×800×137	13272 13068	4623 3468	108,0	21,6	11843	360,0 360.0	72,0 96.0	5,00 3,75	2830	500	800	137	6 8	12	72 96	5	520 520	950 950	60	18 18	2	40 40	200	253,6 295,7
ESA C 500x800x171 ESA C 600x800x135	14510	6460	129,6	21,00	13260	432,0	70.0	6,17	3285	600	800	171	5	14	70	5	750	820	80	23	4	40	200	317,0
ESA C 600x800x133	14510	4614	129,6	29,40	12540	432,0	98,0	4,41	2346	600	800	173	7	14	98	5	750	820	80	23	4	40	200	370,0
ESA C 600x800x173	14080	3589	129.6	37.80	11830	432.0	126.0	3.43	1825	600	800	211	9	14	126	5	750	820	80	23	4	40	200	423.0
ESA C 600×1000×135	18180	9246	162.0	21,0	16610	540,0	70.0	7,71	4702	600	1000	135	5	14	70	5	750	1020	80	23	4	40	200	394.0
ESA C 600x1000x173	17910	6605	162,0	29,4	15720	540,0	98,0	5,51	3358	600	1000	_	7	14	98	5	750	1020	80	23	4	40	200	459,0
ESA C 600x1000x211	17630	5137	162,0	37,8	14820	540,0	126,0	4,29	2612	600	1000	211	9	14	126	5	750	1020	80	23	4	40	200	526,0
ESA C 700x900x145	16740	8800	170,1	24,00	15330	567,0	80,0	7,09	3826	700	900	145	5	16	80	5	850	920	80	23		40	200	416,0
ESA C 700×900×187	16500	6286	170,1	33,60	14520	567,0	112,0	5,06	2733	700	900	187	7	16	112	5	850	920	80	23	4	40	200	489,0
ESA C 700x900x229	16260	4889	170,1	43,20	13720	567,0	144,0	3,94	2126	700	900	229	9	16	144	5	850	920	80	23		40	200	562,0
ESA C 700x1100x145	20500	12185	207,9	24,0	18750	693,0	80,0	8,66	5298	700	1100	145	5	16	80	5	850	1120	80	23	4	40	200	508,00
ESA C 700x1100x187	20200	8704	207,9	33,6	17750	693,0	112,0	6,19	3784	700	1100	187	7	16	112	5	850	1120	80	23	4	40		597,00
ESA C 700×1100×229	19900	6770	207,9	43,2	16800	693,0	144,0	4,81	2943	700	1100	229	9	16	144	5	850	1120	80	23	4	40		686,00
ESA C 800×1000×165	18950	11489	216,0	27,00	17350	720,0	90,0	8,00	4363	800	1000	165	5	18	90	5	1000	1020	100	28	4	50	-	619,00
ESA C 800×1000×211 ESA C 800×1000×257	18680	8207 6383	216,0	37,80	16500	720,0	126,0	5,71 4,44	3116 2424	800	1000	211	7	18	126	5	1000	1020	100	28	4	50 50	200	716,00
ESA C 800x1000x257 ESA C 800x1200x165	18400 22750		216,0 259,2	48,60 27,0	20900	720,0 864,0	90,0	9,60	5876	800	1200	165	5	18	90	5	1000	1020	100	28	4	50		813,00 741,00
ESA C 800x1200x163	22/50		259,2	37.8	19800	864.0	126.0	6.86	4197	800	1200	211	7	18	126	5	1000	1220	100	28	4	50		856.00
ESA C 800x1200x211	22100		259,2	48.6	18750	864.0	162.0	5.33	3265	800	1200	257	9	18	162	5	1000	1220	100	28	4	50		972.00
-ESA C 000X1200X237	22100	0377	237,2	10,0	10/30	307,0	102,0	3,33	3203	000	1200	237	,	10	102	- J	1000	1220	100	20	т.	30	200	77 2,00

KEY LABEL

Maximum vertical load. Minimum vertical load. Horizontal load. Equivalent displacement. Horizontal stiffness. Vertical stiffness. Dimension of the elastomer in longitudinal direction. B:

Dimension of the elastomer in transversal direction. H:

Height of bearing.

Number of elastomeric layers. n_{ei}:

Thickness of the elastomeric layer.

Total height of elastomer.

Thickness of the steel plate.

Length of the steel plate in longitudinal direction.

Length of the steel plate in transversal direction.

Diameter of the pin.

Height of the pin.

Number of anchors.

Diameter of anchors.

Height of anchors.

Weight of the bearing.

