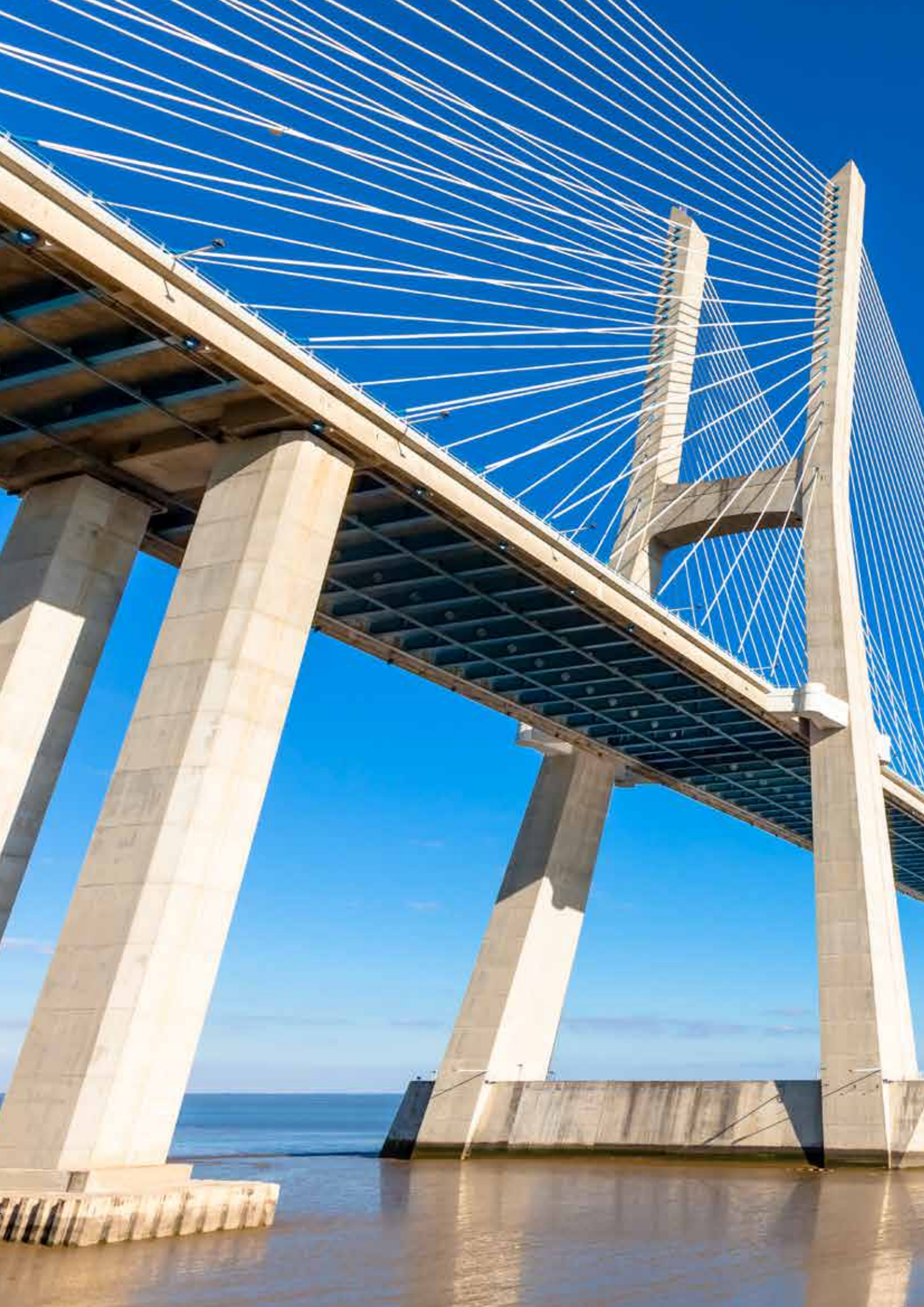


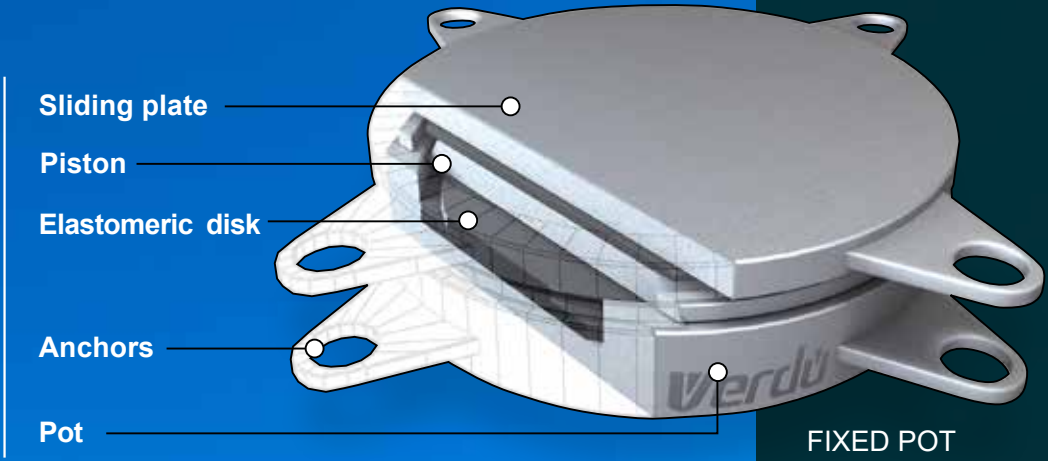


POT BEARINGS

LOADS AND MOVEMENTS
IN ANY HORIZONTAL AXIS







1. POT BEARINGS

POT bearings are structural bearings which supports loads and movements in any horizontal axis.

Caucho Industrial Verdú POT Bearing systems, perform the binding between the structure and its supports. These bearings absorb possible rotations of the structure when high loads and movements appear in any horizontal axis.

Caucho Industrial Verdú POT Bearing systems are made of an elastomer disk restrained in a steel pot.

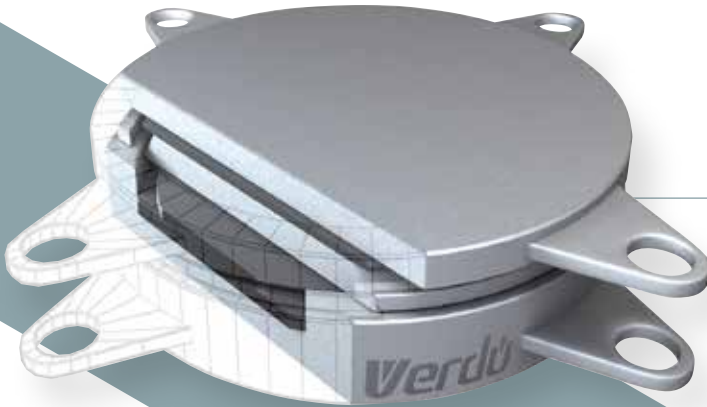
Bearings are totally detachable, making them easy to dismantle if any element needs to be replaced.

The bearings are used as flexible bearings in roads, bridges and other large structures where large forces and movements need to be absorbed.

POT Verdú bearings are designed and manufactured according to UNE – 1337:5 and AASHTO.

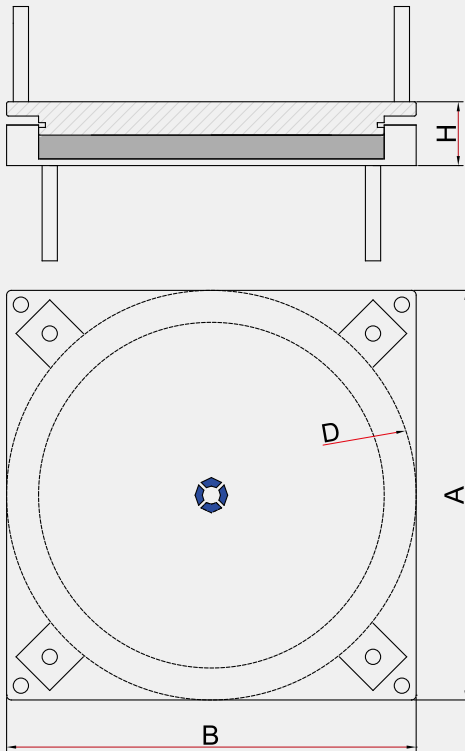


POT
BEARINGS



POT BEARING

FIXED



FIXED POT.

- Device that acts as a hinge, allowing rotation.

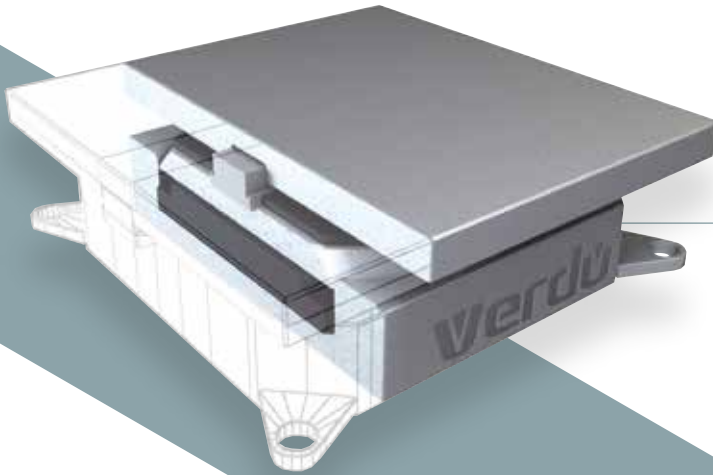
Capacity (kN)	Structure size (mm)			
	A	B	D	H
500	201	201	201	80
1000	251	251	251	80
1500	251	251	251	80
2000	323	323	323	85
2500	333	333	333	85
3000	352	352	352	85
3500	385	385	385	89
4000	426	426	426	90
4500	434	434	434	90
5000	468	468	468	99
6000	507	507	507	99
7000	544	544	544	99
8000	582	582	582	105
9000	613	613	613	117
10000	641	641	641	117
12000	704	704	704	132
14000	772	772	772	137
16000	824	824	824	147
18000	873	873	873	157
20000	913	913	913	158
24000	1002	1002	1002	167
28000	1073	1073	1073	189
30000	1164	1164	1164	199
35000	1229	1229	1229	209
40000	1329	1329	1329	219
45000	1378	1378	1378	230
50000	1461	1461	1461	240

For any other size and type of support don't hesitate to contact our technical department and they will make a custom calculation that fits your needs and meets the standards UNE – EN 1337-5.

Materials

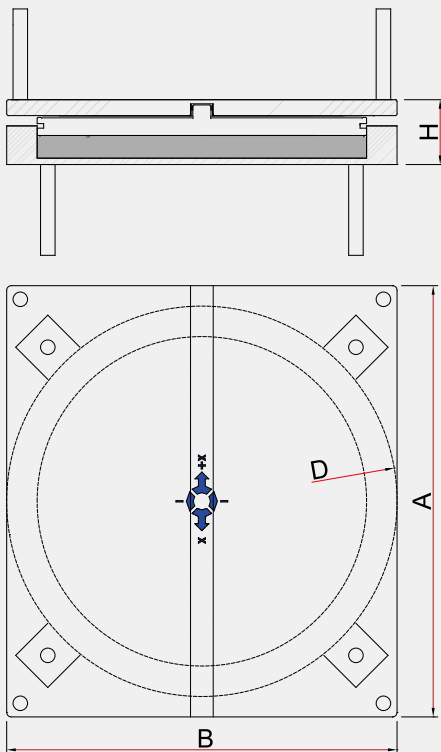
If there's not any specific instruction, the main materials used in the fabrication of the POT are the following:

- Pot, piston, upper plate: S355JR
- Elastomeric Pad: Natural rubber
- PTFE sheets: Polytetrafluorethylene



POT BEARING

GUIDED



GUIDED POT.

- Device that acts as a hinge allowing rotation and movements in the direction of guidance.

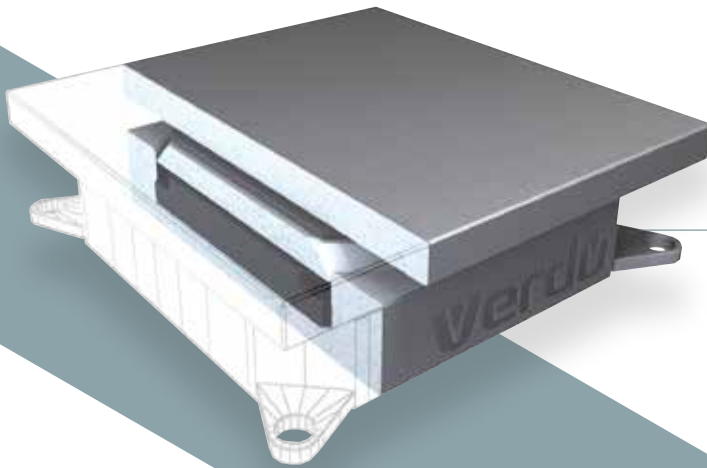
Capacity (kN)	Structure size (mm)			
	A	B	D	H
500	381	251	251	89
1000	401	271	271	89
1500	421	291	291	90
2000	451	324	324	94
2500	491	369	369	95
3000	531	413	413	100
3500	531	421	421	100
4000	561	456	456	110
4500	591	488	488	110
5000	591	496	496	110
6000	621	534	534	115
7000	651	572	572	116
8000	681	606	606	128
9000	701	633	633	133
10000	721	661	661	133
12000	771	723	723	148
14000	811	775	775	151
16000	851	826	826	172
18000	891	875	875	173
20000	921	917	917	177
24000	1004	1004	1004	188
28000	1075	1075	1075	209
30000	1167	1167	1167	221
35000	1232	1232	1232	234
40000	1332	1332	1332	247
45000	1443	1443	1443	260
50000	1465	1465	1465	264

For any other size and type of support don't hesitate to contact our technical department and they will make a custom calculation that fits your needs and meets the standards UNE – EN 1337-5.

Materials

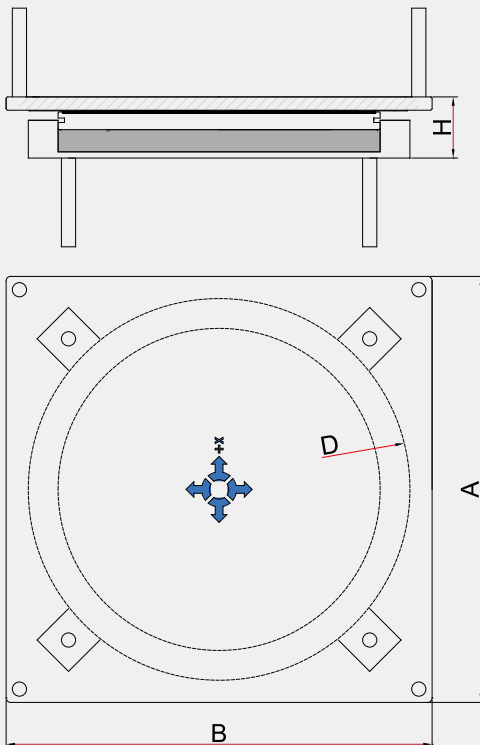
If there's not any specific instruction, the main materials used in the fabrication of the POT are the following:

- Pot, piston, upper plate: S355JR
- Elastomeric Pad: Natural rubber
- PTFE sheets: Polytetrafluorethylene



POT BEARING

MULTI DIRECTIONAL



MULTIDIRECTIONAL POT.

- Device that acts as a hinge allowing rotation and movements in any horizontal directions.

Capacity (kN)	Structure size (mm)			
	A	B	D	H
500	331	241	241	86
1000	381	291	291	86
1500	381	291	291	86
2000	451	361	361	91
2500	451	361	361	91
3000	461	371	371	91
3500	491	401	401	92
4000	531	441	441	95
4500	531	441	441	95
5000	561	471	471	105
6000	591	501	501	105
7000	621	531	531	110
8000	651	561	561	110
9000	681	591	591	123
10000	701	611	611	128
12000	751	665	665	133
14000	811	732	732	143
16000	851	780	780	143
18000	891	827	827	153
20000	921	865	865	163
24000	991	949	949	163
28000	1051	1017	1017	186
30000	1131	1105	1105	196
35000	1181	1167	1167	196
40000	1271	1261	1261	216
45000	1307	1307	1307	216
50000	1387	1387	1387	236

For any other size and type of support don't hesitate to contact our technical department and they will make a custom calculation that fits your needs and meets the standards UNE – EN 1337-5.

Materials

If there's not any specific instruction, the main materials used in the fabrication of the POT are the following:

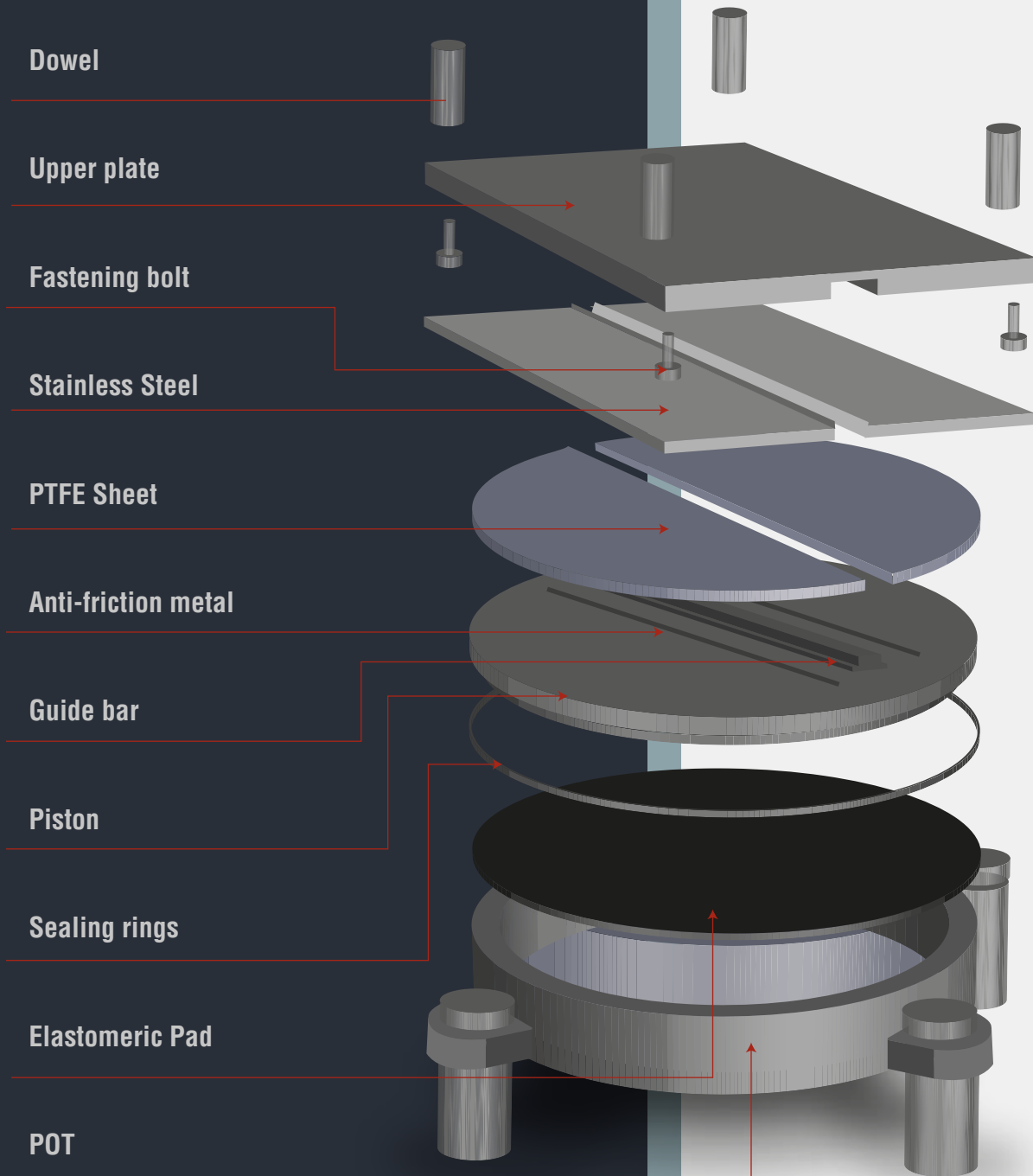
- Pot, piston, upper plate: S355JR
- Elastomeric Pad: Natural rubber
- PTFE sheets: Polytetrafluorethylene



GUIDED POT. PARTS

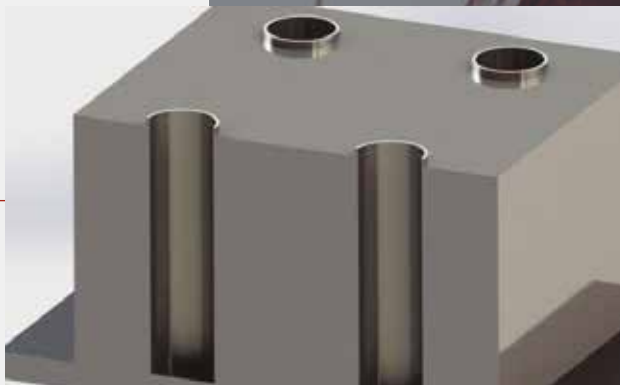
High quality
ENGINEERED SOLUTIONS

COMPONENTS SPECIFICATIONS



A. PREPARATION OF THE PIERS

Before the concreting in piers, recesses should be prepared for bearing dowels, using plastic ducts sealed at the lower point with cellulose caps. That tubes shall protrude to avoid the concrete spill inside them during the concreting.



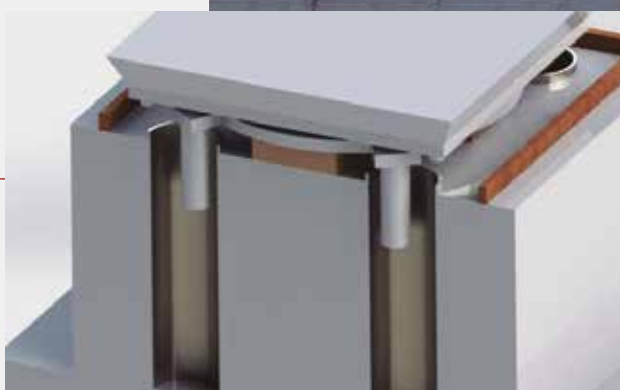
B. PLACING IN POSITION AND LEVELING OF THE BEARING

Place the bearing on its final location according to topography. It is very important to ensure that the bearing is in horizontal position. Furthermore, you should leave an empty space between the holes and the base to guarantee that the leveling mortar flow freely and fill the tubes completely.



C. MORTAR FILLING

To ensure a correct fill it could be necessary to built a little formwork and to flow, vibrating if necessary , high resistance self-leveling mortar



D. DECK FORMWORK AND REINFORCEMENT

Deck formwork is placed embedding the upper dowels of the bearing. The corresponding bearing's reinforcement steel should be positioned on the deck.



QUALITY CERTIFICATES

CAUCHO INDUSTRIAL VERDÚ, S.L.
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 03802 ALCOY (ALICANTE) - ESPAÑA
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 F: +34 91 367 2001
 www.aiv.com



CERTIFICATE



No. **0370-CPR-2964**

CERTIFICATE OF CONSTANCY OF PERFORMANCE

In accordance with Regulation 305/2011/UE of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

STRUCTURAL BEARINGS, PART 5: "POT" BEARINGS
 POT BEARINGS IN ACCORDANCE WITH A ZA.1a.
 POT BEARINGS WITH SLIDING ELEMENTS IN ACCORDANCE WITH A ZA.1b

- PF - FIXED BEARING
- PM - FREE BEARING
- PG - GUIDED BEARING

Produced by:

CAUCHO INDUSTRIAL VERDÚ, S.L.

POL. IND. SAN. TIBAGO PAYA - C/ FILE BENIMERINS, 32
 03802 ALCOY (ALICANTE) - ESPAÑA

And produced in the manufacturing plant:

POL. IND. SANTIAGO PAYA - C/ FILE BENIMERINS, 32
 03802 ALCOY (ALICANTE) - ESPAÑA

This certificate attests that, in compliance with the assessment and verification of constancy of performance and the performance described in Annex ZA of the standard:

EN 1337-S:2005

under system 1 are applied and that the product fulfils all the prescribed requirements set out above.

This certificate was first issued on 27th April 2018 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions at the plant are not modified significantly.

The monitoring assessment will be done before April 2019

Barcelona, 27th April 2018

CAI Technological Center, S.A.
 Jordi Bruch Riera
 General Manager

ICAI Technological Center, S.A.
 Xavier Ruiz Peña
 Product Conformity D.U., Managing Director



This document is not valid without its technical annex, whose number coincides with the number of certificate.
 Page 2 of 2



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

AENOR has issued an IQNet recognized certificate that the organization:

CAUCHO INDUSTRIAL VERDU, S.L.

PI SANTIAGO PAYA, CL. FILE BENIMERINS, 32 APDO. 98.
 03802 - ALCOY
 (ALICANTE)

has implemented and maintains a

Quality Management System

for the following scope:

**The production of rubber joint seals for water conductions.
 The production of elastomery and "POT" support for construction.**

which fulfills the requirements of the following standard

ISO 9001:2015

First issued on: **2000-12-27** Last issued: **2018-12-09** Validity date: **2021-12-09**

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document

Registration Number: **ES-1590/2000**



Alex Stoichitov
 President of IQNet

Rafael GARCÍA MEIRO
 Chief Executive Officer

AENOR

Original Document Certificate

IQNet Partners:
 AENOR Spain; AFNOR Certification France; APCER Portugal; CCC Certuras China; CQC China; CQM China; CQS Czech Republic; Cst Cert Croatia; DQS Holding GmbH Germany; FCVAV Brazil; FORDNORIMA Venezuela; ICONTEC Colombia; Inspectoria Certificada Oy Finland; INTECO Costa Rica; IRAM Argentina; JQA Japan; KQI Korea; METEC Greece; MSZT Hungary; Norkem AB Norway; NSAI Ireland; NICE-ENIE Slovenia; PCBC Poland; Quality Austria Austria; SRI Shamsi SA Israel; SRIQ Slovenia; SIEM (SIA) International Malaysia; SQS Switzerland; SRAC Romania; TEST St Petersburg Russia; TSE Turkey; YUQS Serbia; IQNet is represented in the USA by: AFNOR Certification, CRI, DQS Holding GmbH and NSAI Inc.

* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com



MATERIALS

Materials used for realizing the bearing are given below.

S355 STRUCTURE STEEL

Steel plates are realized by using S355J2 structural steel according to UNE EN 10025.

The mechanical properties are given below:

Thickness [mm]	f_k [MPa]	Thickness [mm]	f_k [MPa]
		$t \leq 3$	510-680
$t \leq 16$	355		
$16 < t \leq 40$	345		
$40 < t \leq 63$	335	$3 < t \leq 100$	470-630
$63 < t \leq 80$	325		
$80 < t \leq 100$	315		
$100 < t \leq 150$	295		
$150 < t \leq 200$	285		
$200 < t \leq 250$	275	$100 < t \leq 400$	450-600
$250 < t \leq 400$	265		

39NiMo3 STEEL

The mechanical properties of 39NiMo3 steel are the following:

Diameter [mm]	$16 \leq \emptyset \leq 40$	$40 \leq \emptyset \leq 100$	$100 \leq \emptyset \leq 160$
Minimum elongation [%]	11	12	12
Failure stress (strength) [MPa]	930	880	830
Yield stress [MPa]	735	685	635

BOLTS CLASS AND THREADED RODS

Bolts and rods belong all to 8.8 or 10.9 classes.

Bolt's class	8,8	10,9	12,9
Failure stress (strength) [MPa]	800	1000	1200
Yield stress [MPa]	640	900	1080

Limit states resistance [MPa]			
Tension/compression	560	700	840
Shear	396	495	595



PTFE

Sliding surfaces are realized by using first-use PTFE plates.
The mechanical properties are the following:

Density [Kg/ m ³]	2140÷2200
Tensile strength (23 C) [MPa]	29÷40
Elongation to failure (23 C) [MPa]	>300
Hardness with spherical penetrator [MPa]	23÷33

Values of characteristic compressive strength f_k are given below for temperatures up to 30 °C:

Material	Position	Load	f_k [MPa]
PTFE	For bearing's principal surfaces	Permanent and variable loads	90
	For guides	Variable loads	90
		Temp./shrinkage/viscous def.	30
		Permanent and variable loads	10

γ_m used is equal to 1.4

COMPOSITE MATERIAL CM1

Values of characteristic compressive strength f_k are given below for temperatures up to 30 °C:

Material	Position	Load	f_k [MPa]
CM1	For guides	Horizontal permanent and variable loads	200

ELASTOMERIC MATERIAL

Elastomeric material used for realizing the elastomeric pad shall be done by natural rubber according to ISO 6446.

Properties	Requirements	
Hardness	50 ± 5	Sh A
Failure stress (Strength)	≥ 16	MPa
Elongation to failure	≥ 450	%



Verdú
The global rubber technical service

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