



ATAYA
CONSTRUCTION PRODUCT

**BRIDGE
BEARINGS**

Issue: April 2024

INTRODUCTION

ATAYA is your trusted partner in building the future. For years, we have set the standard for structural bearings with innovative designs, cutting-edge manufacturing techniques, and unmatched product reliability.

Our team of expert engineers collaborates closely with clients to deliver customized solutions that exceed expectations, ensuring every product we supply is a testament to quality and connects communities for generations to come.

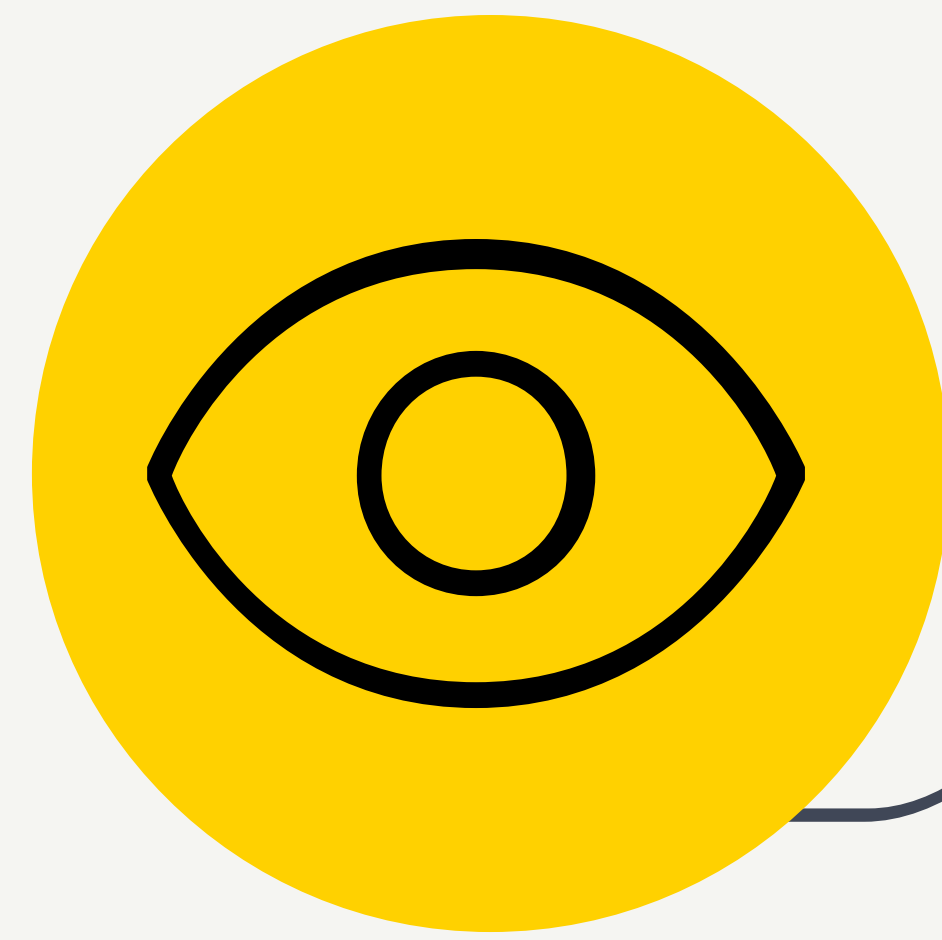
ATAYA's commitment extends far beyond the products we manufacture. We are dedicated to fostering a sustainable future through eco-friendly practices and responsible resource management. By minimizing our environmental impact, we ensure a better tomorrow for ourselves and future generations.



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INTRODUCTION



Our Vision

Our corporate vision is to become a competitive, qualified, and competent projects supplier company by having well managed national/international resources plus networks in domestic and international markets, and demonstrating the highest levels of integrity in all business practices and interactions with customers, suppliers, employees, and the society at large.



Our Mission

Our mission is to conduct domestic and international Projects with various high-quality commodities in order to meet our customer's requirements completely and competitively as well as to achieve all the expectations of our shareholders.

"Quality is a key point of ATAYA manufacturing system."

*— The Quality system, continuously improved, allows ATAYA to achieve and maintain the **CE** for Bearings.*



Our Strengths

*Our range of products meets the requirements of infrastructure:
High-Quality Products, Competitive Prices, Market Exclusivity, and Efficient Customer Service
Brand Marketing Support*

1.0 ABOUT US

1.1 ABOUT ATAYA

ATAYA stands as a leader in the bearing industry industry, renowned for exceeding the highest quality standards and consistently surpassing client expectations.

Our extensive experience translates into innovative designs and cutting-edge manufacturing techniques, ensuring the enduring reliability of Our Products.

Beyond bridge leadership, we exceed expectations. Experience fuels innovation in our cutting-edge designs and industry-leading manufacturing. Unparalleled reliability and enduring performance are built into every bridge product. We collaborate closely to deliver customized solutions, making each bearing a testament to quality construction and your vision.



1.0 ABOUT US

1.2 WHY US?

Leveraging expertise, cutting-edge technology, and a commitment to quality, we deliver dependable, long-lasting products that meet international standards. This ensures exceptional service and builds lasting trust with our clients. Expertise and technology are used to create high-quality products. Products meet international standards for reliability and durability. This combination guarantees exceptional service for clients. Exceptional service builds trust.



OUR FACTORY

ATAYA Factory is the first comprehensive integrated established factory in Egypt & Middle East that located at 10th of Ramadan industrial region which is equipped with the latest technology,

Our factory designed to meet the European standards and has achieved the CE mark in producing Elastomeric, Spherical & Pot bearings & Neoprene joints Nevertheless, ATAYA can also supply bearings complying with other international standards upon request.



2.0 ABOUT US

DESIGN PRINCIPLES & STANDARDS

DESIGN PRINCIPLES

Bearing is capable of transmitting forces while absorbing the structures deformations and rotations.

Bearing consists of steel pot, an elastomeric pad and a steel piston element that shall be capable of transferring applied vertical and horizontal loads between the super structure and substructure and shall permit limited rotational movement up to 0.03



DESIGN STANDARDS

ATAYA bearings are designed according to European Conformity certificate according to EN-1337 requirements from 1337 -11 to 1337-1

Standards used for design are:

- EN1337-1 General Design Rules.
- EN1337-2 Sliding Elements.
- EN1337-5 Pot Bearings.
- EN1337-8 Guide Bearings & restrain bearings
- EN1337-9 Protection
- EN1337-10 Inspection & Maintenance
- EN1337-11 Transport, Storage & Installation
- ASHTO LRFD Bridge Design Specifications.

1.0 ABOUT US

1.5 OUR CERTIFICATIONS

Our commitment to quality is certified according to the requirements of EN-1337 as follows :

- Certificate of constancy of performance for ELASTOMERIC BEARINGS according to EN1337-3 NO.0672-CPR-0974
- Certificate of constancy of performance for POT BEARINGS according to EN1337-5 NO.0672-CPR-1010
- Certificate of constancy of performance for SPHERICAL BEARINGS according to EN1337-7 NO.0672-CPR-0981.
- Management System as per EN ISO 9001 : 2015



MPA Material Testing Institute, University of Stuttgart 2022



MPA Material Testing Institute, University of Stuttgart 2022

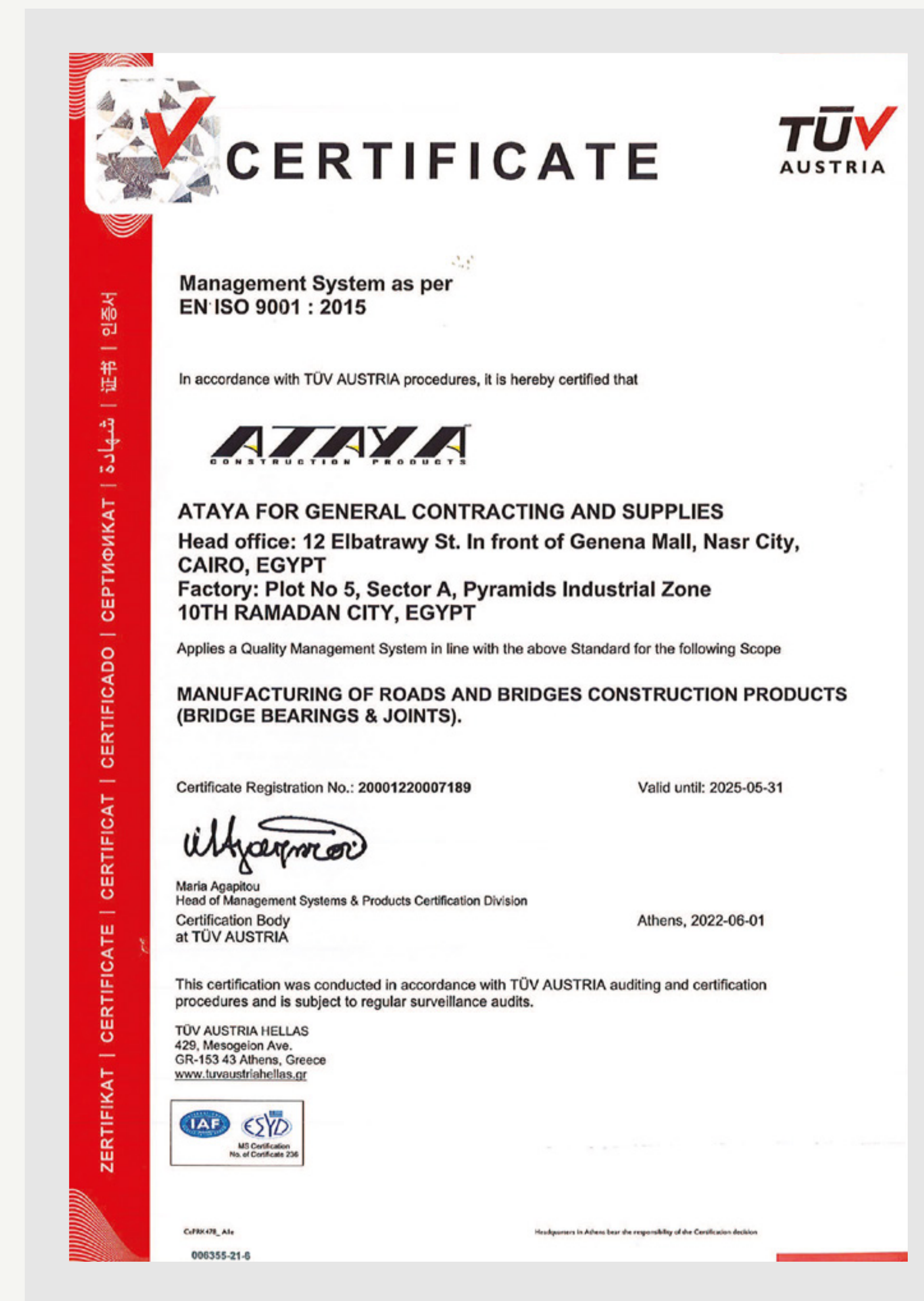
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1.0 ABOUT US

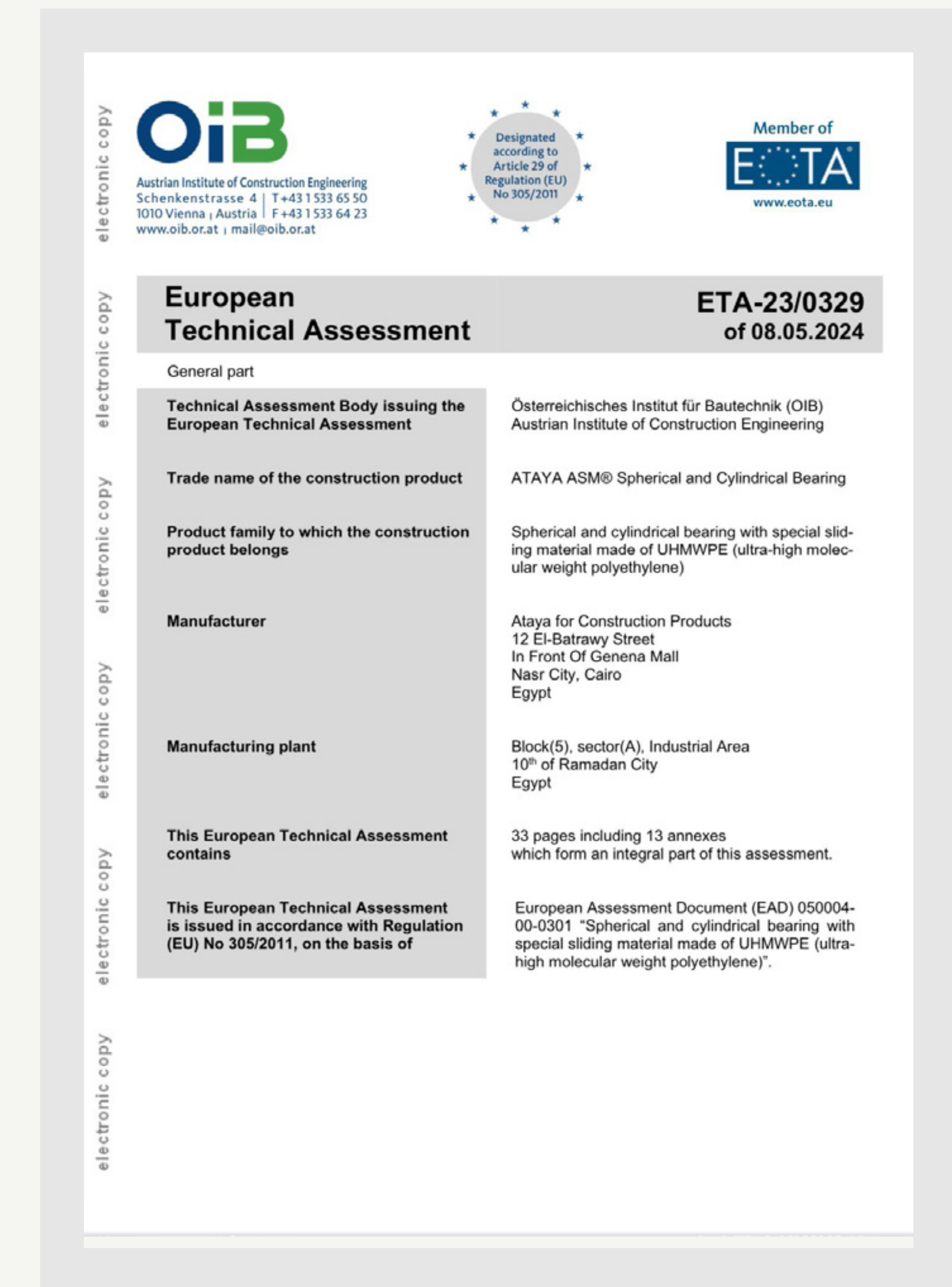
1.5 OUR CERTIFICATIONS



MPA Material Testing Institute, University of Stuttgart 2023



TÜV Austria 2022



European Technical Assessment 2024

Hint: Click on any certifacte to view it in full screen.

OUR SERVICES

BRIDGE BEARINGS

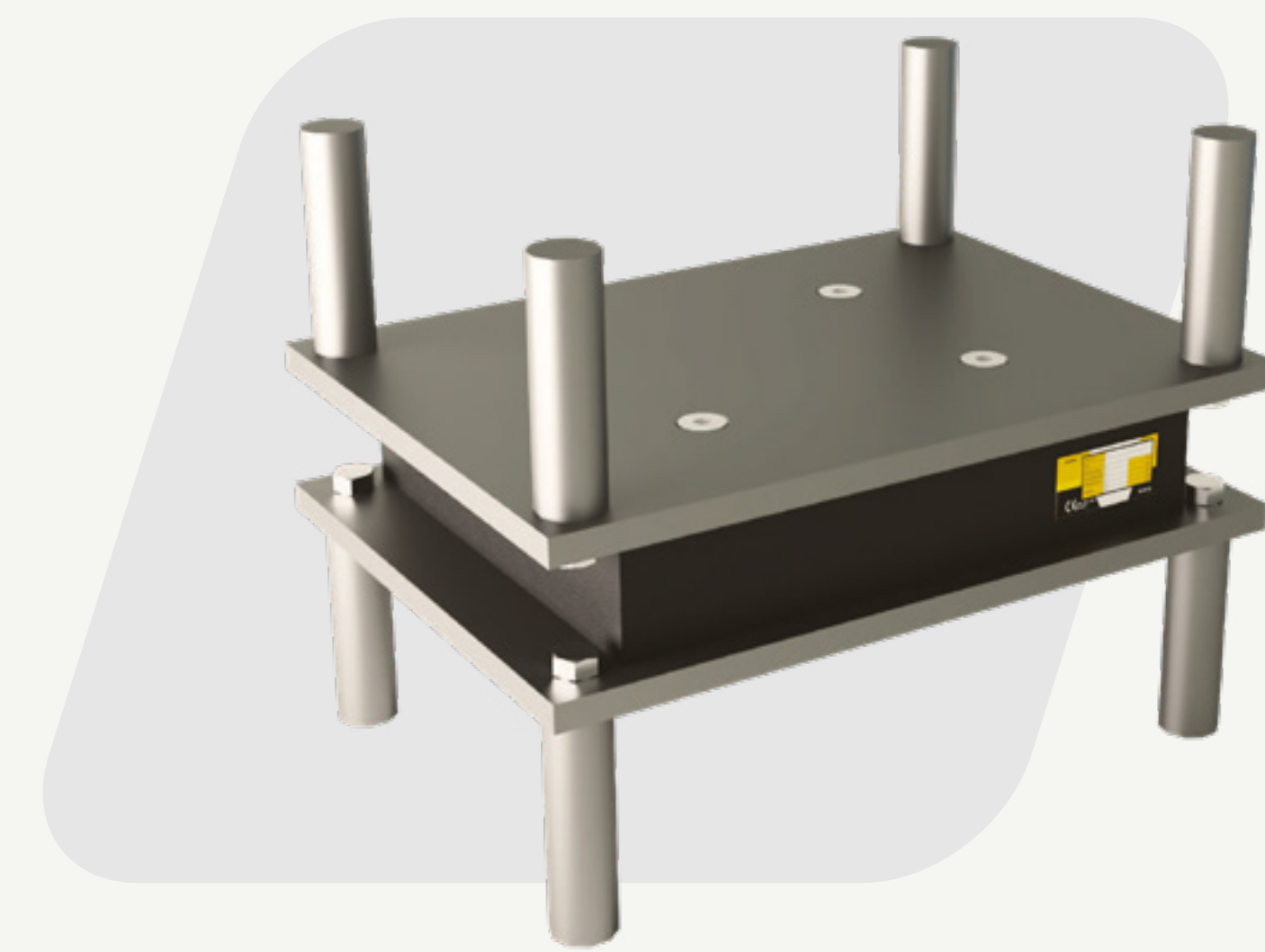
ATAYA CAN PROVIDE THE CLIENT WITH THE FOLLOWING:

- 1 CHOOSING THE SUITABLE BEARING TYPE FOR STRUCTURES
- 2 DESIGN OF BEARINGS ACCORDING TO STRUCTURAL MODEL & PROJECT SPECIFICATIONS
- 3 TECHNICAL PROPOSAL FOR INSTALLATION
- 4 TECHNICAL PROPOSAL FOR MAINTENANCE PLAN
- 5 SUPERVISION ON INSTALLATION AND MAINTENANCE PLANS.

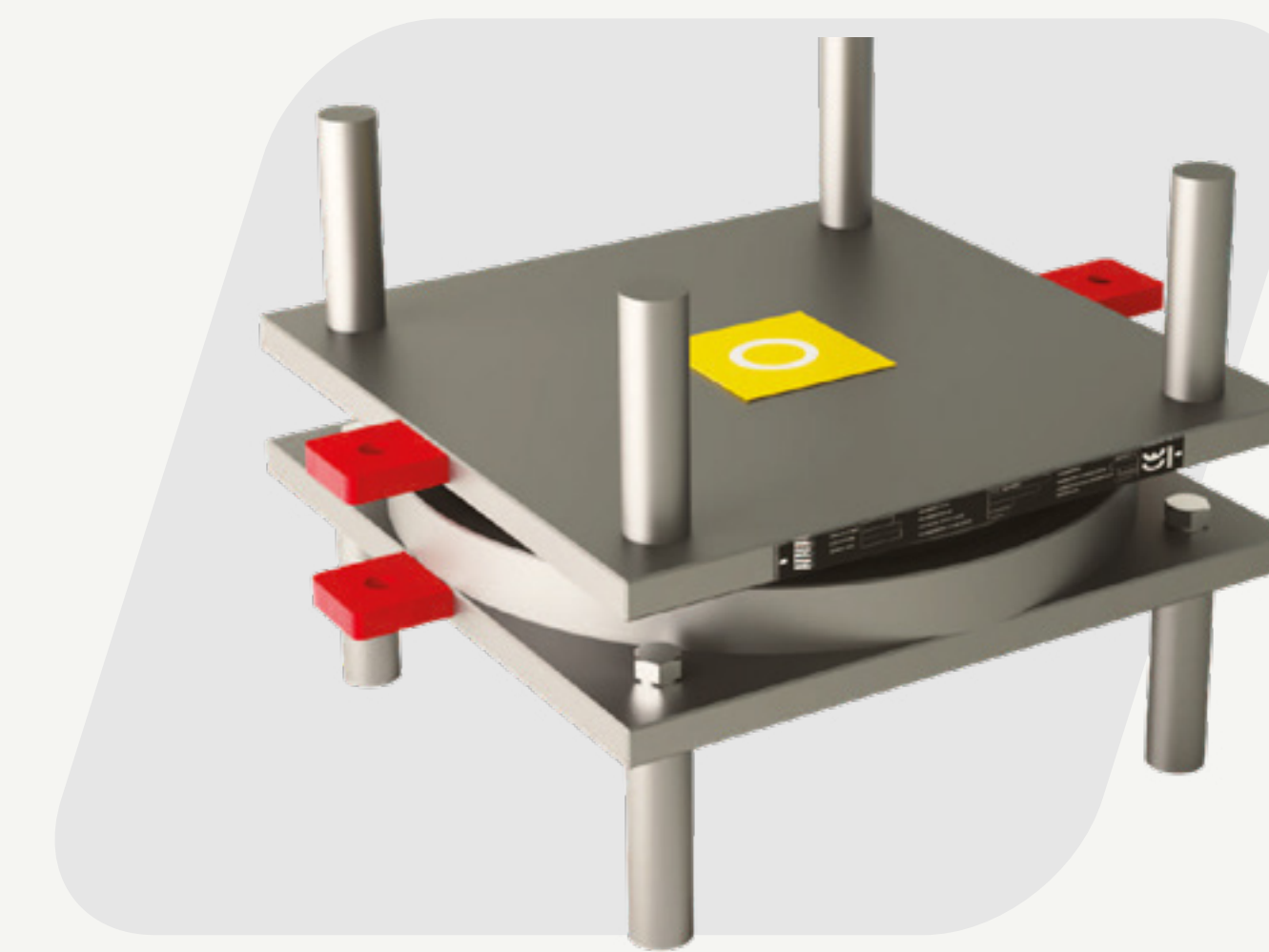
2.0 OUR PRODUCTS

Bridge Bearings are elements allowing rotation between two members of a structure and transmitting the loads defined in the relevant requirements as well as preventing displacements (fixed bearings), allowing displacements in only one direction (guided bearings) or in all directions of a plane (free bearings) as required

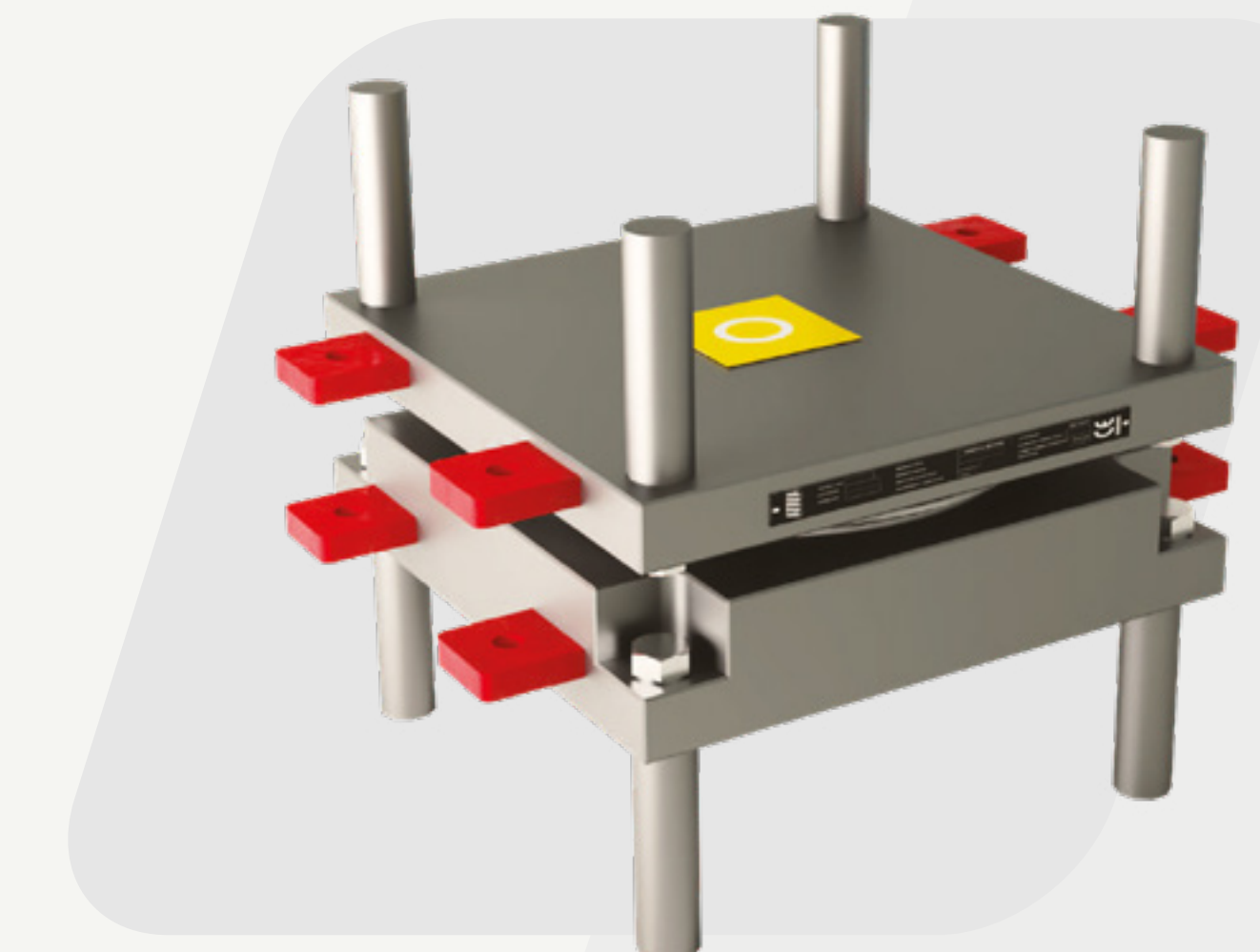
2.1 BRIDGE BEARINGS



Elasto Bearings




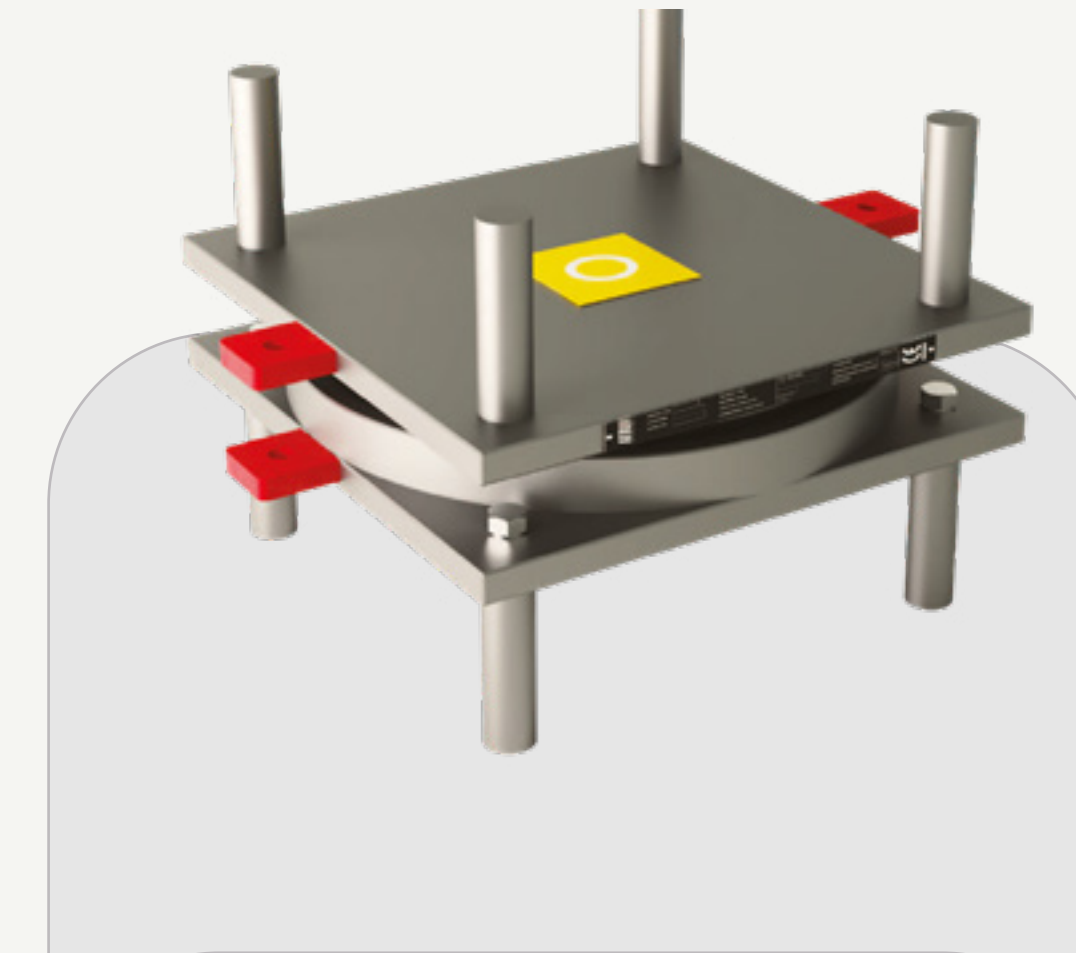
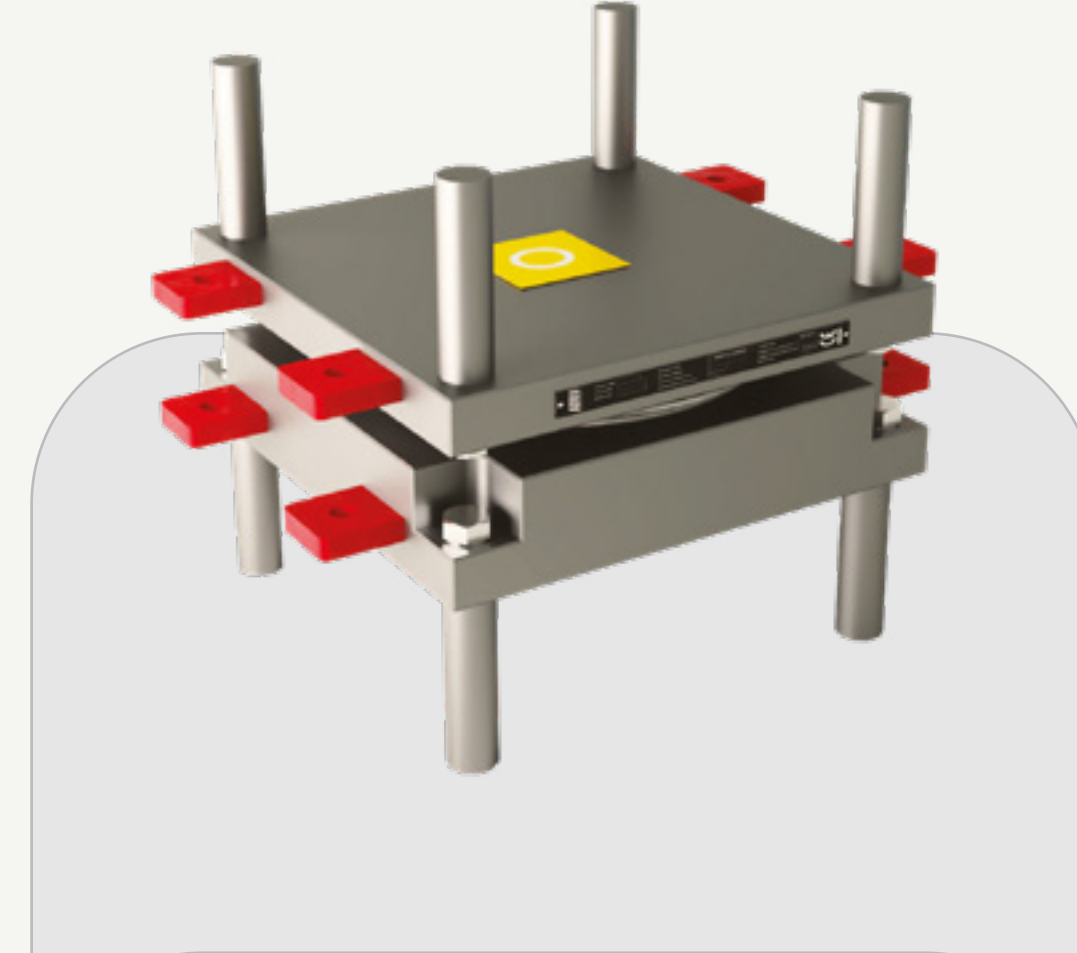
POT Bearings



Spherical Bearings

2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

BEARING PROPERTIES		 ELASTO BEARINGS			 POT BEARINGS			 SPHERICAL BEARINGS		
		Vertical Load	MEDIUM	HIGH	HIGH					
Horizontal Displacement	MEDIUM	NO LIMITS	NO LIMITS							
Rotation	SUITABLE FOR < 30 MRAD	SUITABLE FOR < 30 MRAD	SUITABLE FOR > 30 MRAD							
Dimension	HIGH	SMALL-MEDIUM	SMALL-MEDIUM							
		JUMP TO PAGE	JUMP TO PAGE	JUMP TO PAGE						

Click Button to:

2.0 OUR PRODUCTS

2.0 BRIDGE BEARINGS

2.1

ELASTO BEARINGS

ATAYA's Elasto-Bearings: Engineered for Bridge Flexibility

Bridge movement is inevitable. Thermal changes, wind, and traffic all cause bridges to shift and settle. ATAYA's Elasto-Bearings are the answer, engineered from high-performance elastomeric materials to absorb these movements and protect the bridge structure.

These versatile bearings come in various configurations that comply with the EN 1337-3 standard. This ensures you get the perfect solution for your bridge's specific needs, whether it requires handling horizontal translation, accommodating rotation, or both.



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.1 ELASTO BEARINGS

WHY ELASTO BEARINGS ARE GOOD PRODUCTS?

1. TYPE & SIZE
2. MODERATE COST
3. VIBRATIONS ABSORPTION
4. STABILITY
5. EASY INSTALLATION
6. DURABILITY



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.1 ELASTO BEARINGS

ELASTOMER

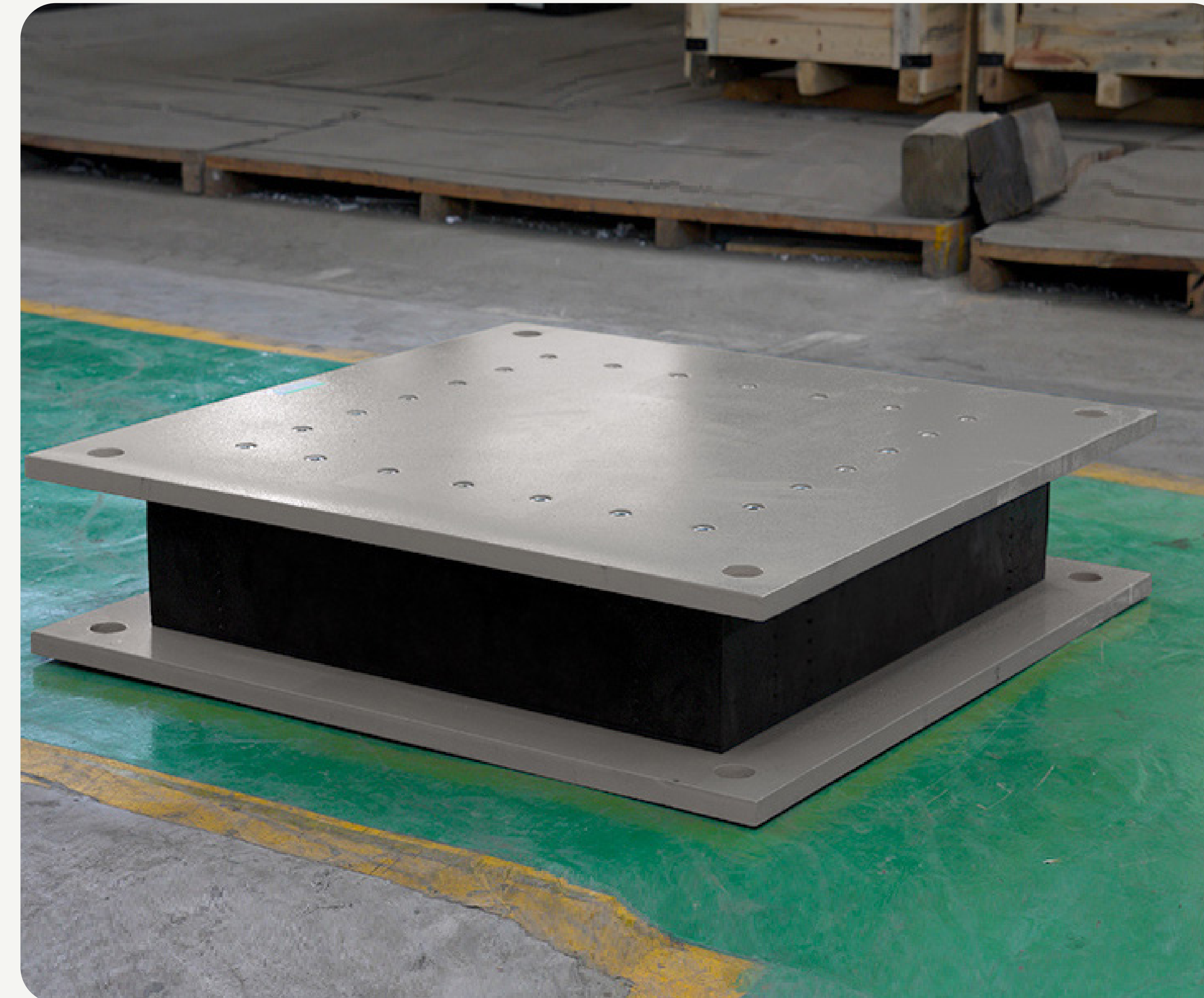
The elastomer used in the manufacturing of Elasto - Bearings should be specified in the project documentation as either natural rubber (NR) or chloroprene rubber (CR) as the raw polymer.

Natural rubber (NR) bearings can be protected by cover of polychloroprene (CR).

The standard design is suitable for operation temperatures between -40°C and $+50^{\circ}\text{C}$ and correlates with the shear modulus class

$G=0.90 \pm 0.15 \text{ N/mm}^2$ in accordance with EN 1337-3.

Shear modulus (G) can be obtained with other values if specified by the structure designer .



STEEL

The Inner Reinforcing plates used in Elasto Bearings are S 235 in accordance with EN 10025.

Their minimum thickness of the inner plates shall be 2 mm. The Outer Reinforcing plates (for Elasto C) are S 235.

For Elasto C with internal layers less than or equal to 8 mm thick, the minimum thickness of the outer plates shall be 15 mm.

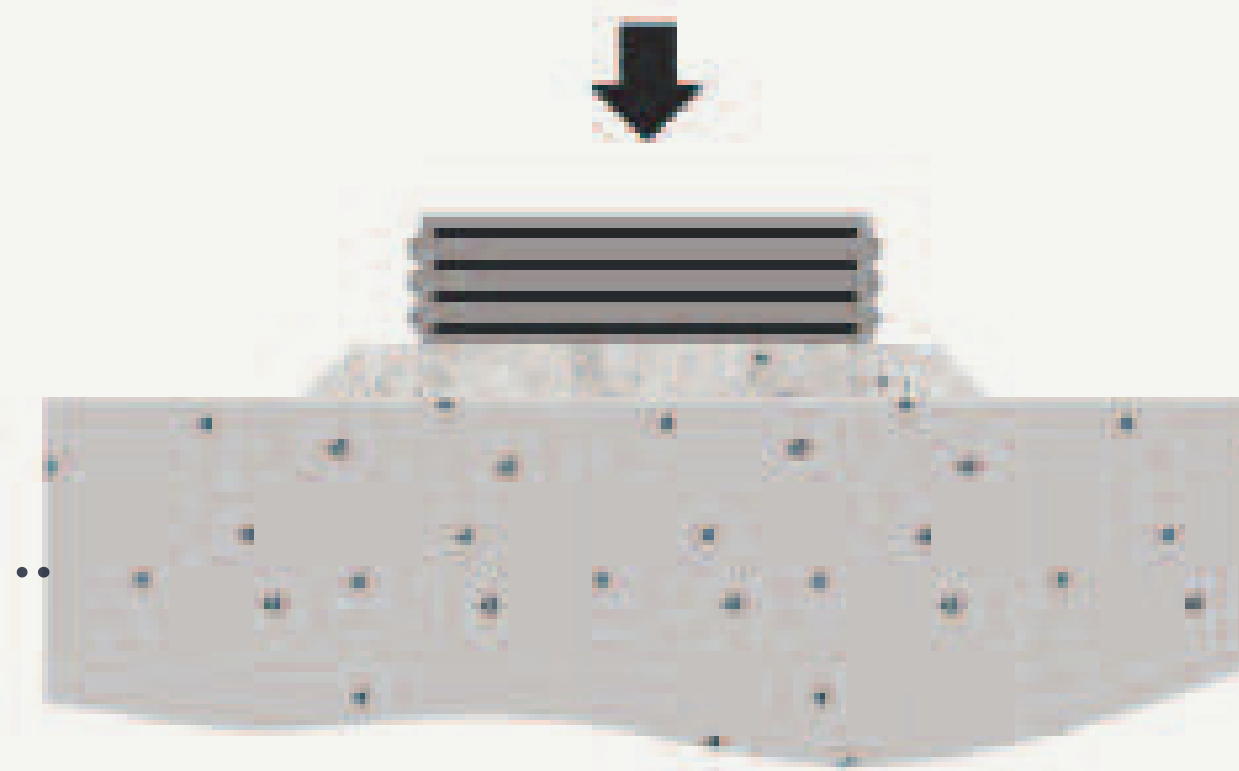
For Elasto C with internal layers bigger than 8 mm thick, the minimum thickness of the outer plates shall be 18 mm.

2.0 OUR PRODUCTS

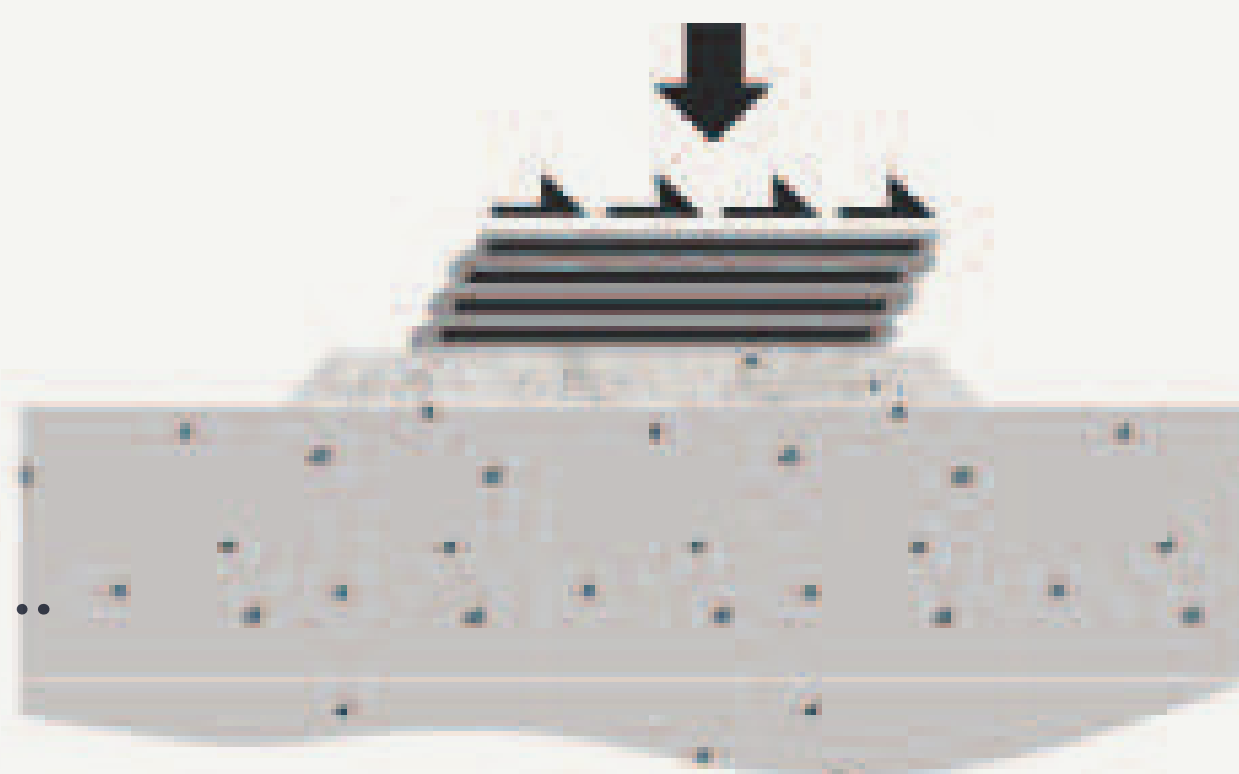
2.1 BRIDGE BEARINGS

2.1.1 ELASTO BEARINGS

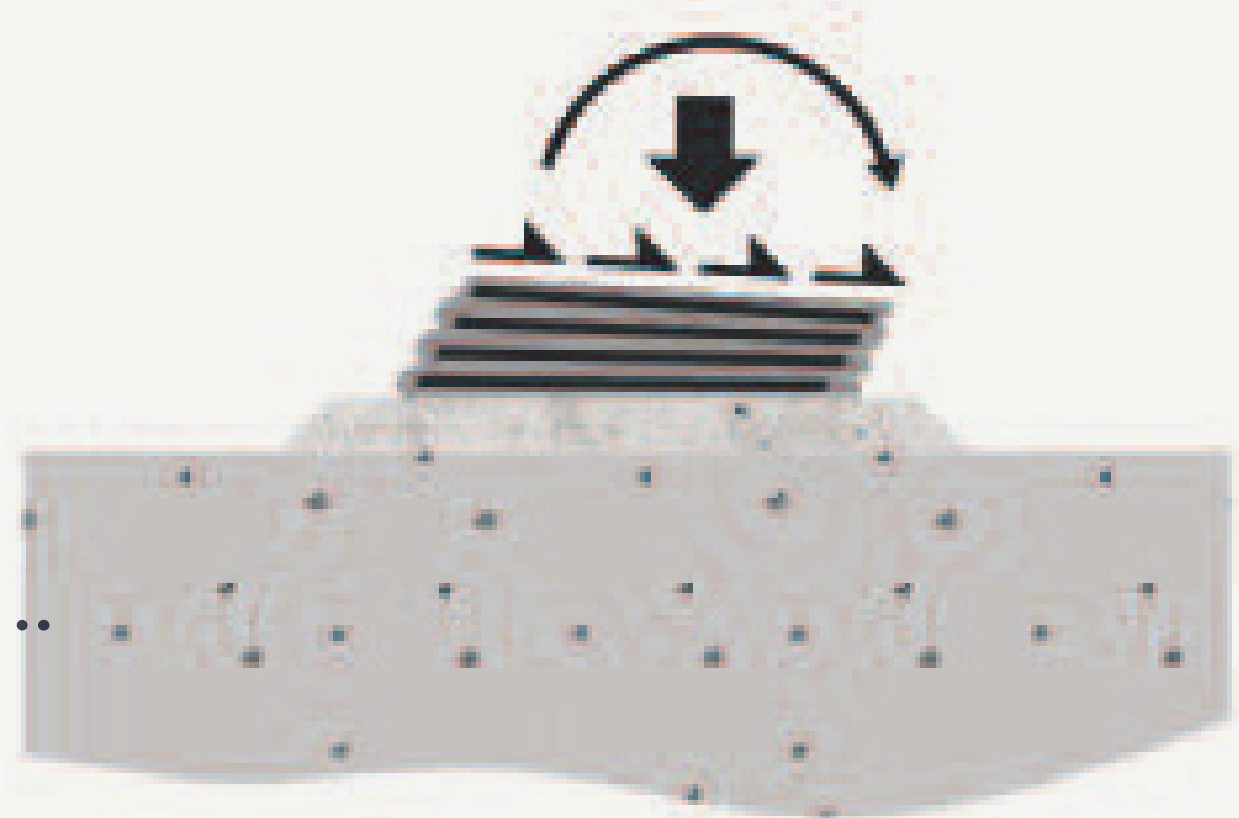
UNDER COMPRESSION
FORCE



UNDER COMPRESSION &
SHEAR FORCE



UNDER COMPRESSION,
SHEAR FORCE & ROTATION



CHARACTERISTICS	REQUIREMENTS			TEST METHODS
G Modulus (MPa)	0.7	0.9	1.15	
Tensile Strength (MPa) Mouldes Test piece Test piece from Bearing	≥ 16 ≥ 14	≥ 16 ≥ 14	≥ 16 ≥ 14	ISO 37 Type 2
Minimum Elongation at break (%) Mouldes Test piece Test piece from Bearing	450 400	425 375	300 250	
Minimum Tear Resistance (KN/m) CR NR	≥ 7 ≥ 5	≥ 10 ≥ 8	≥ 12 ≥ 10	
Compression Set (%) 24h ;70 °C	CR ≤ 15 NR ≤ 30			ISO 815 Ø29X12.5mm SPACER: 9,38-25%
Accelerated Ageing (Maximum Change From Unaged Value) Hardness (IRHD) NR 7d,70 °C CR 3d, 100 *C	-5+10 ± 5			ISO 48 ISO 188
Tensile strength (%) NR 7d,70 °C CR 3d, 100 *C	± 15 ± 15			
Elongation at break (%) NR 7d,70 °C CR 3d, 100 *C	± 25 ± 25			
Ozone resistance 40°C+2°C CR 100 pphm	No cracks			ISO 1431-1

2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

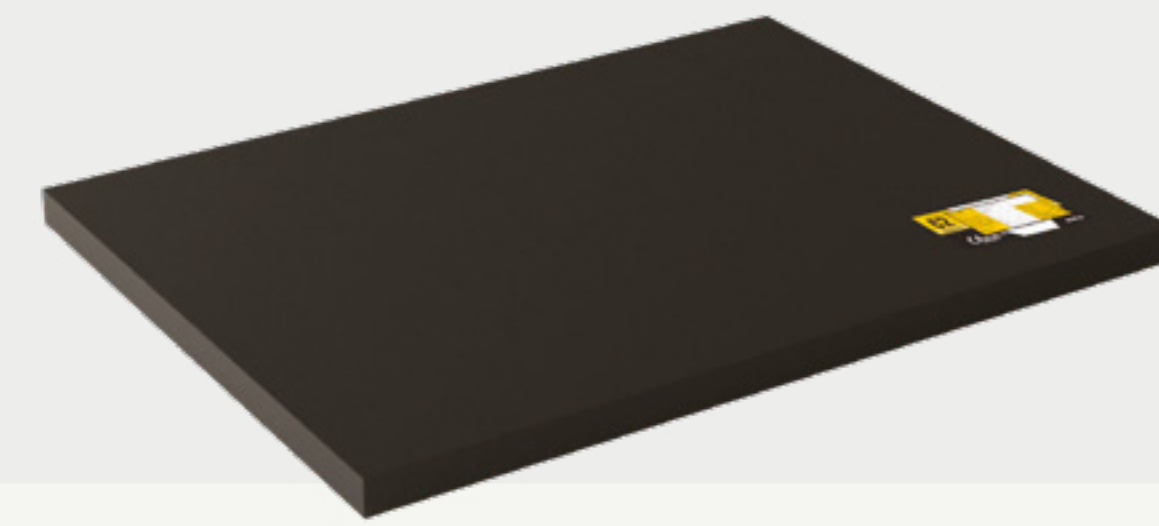
2.1.2 TYPE OF ELASTO BEARINGS

TYPE OF ELASTO BEARINGS



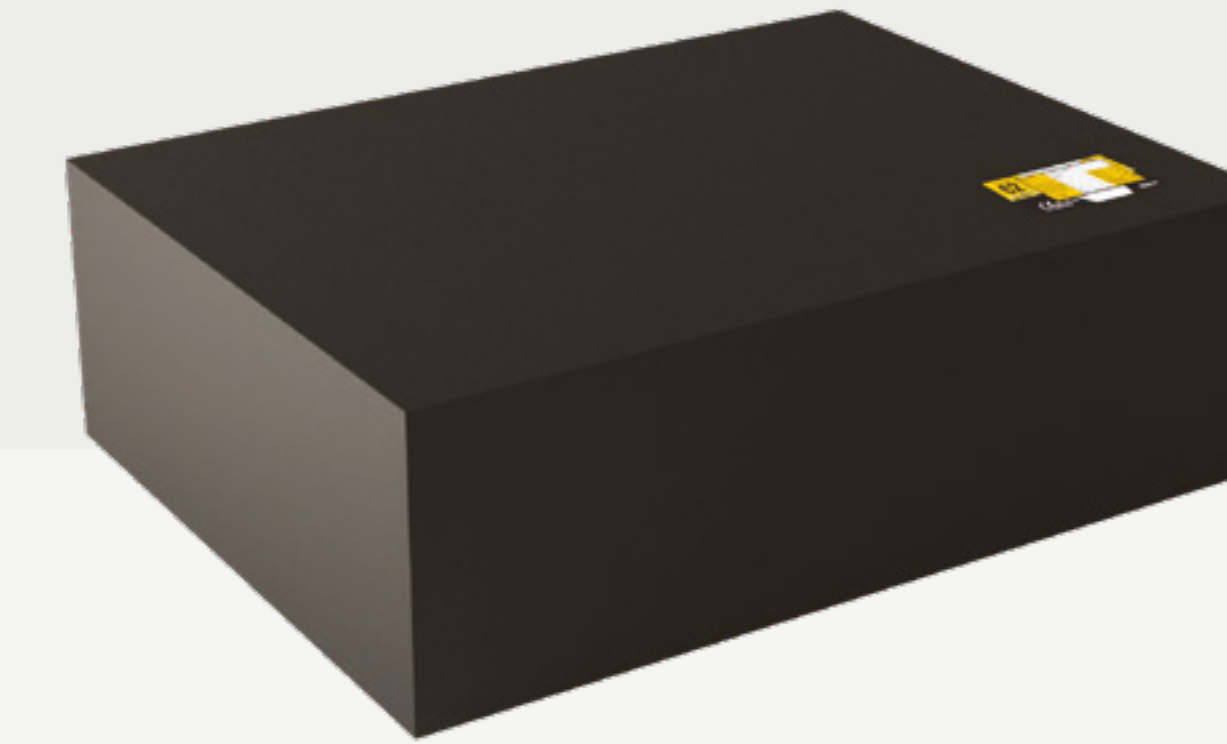
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WATCH ELASTO BEARINGS
INSTALLATION



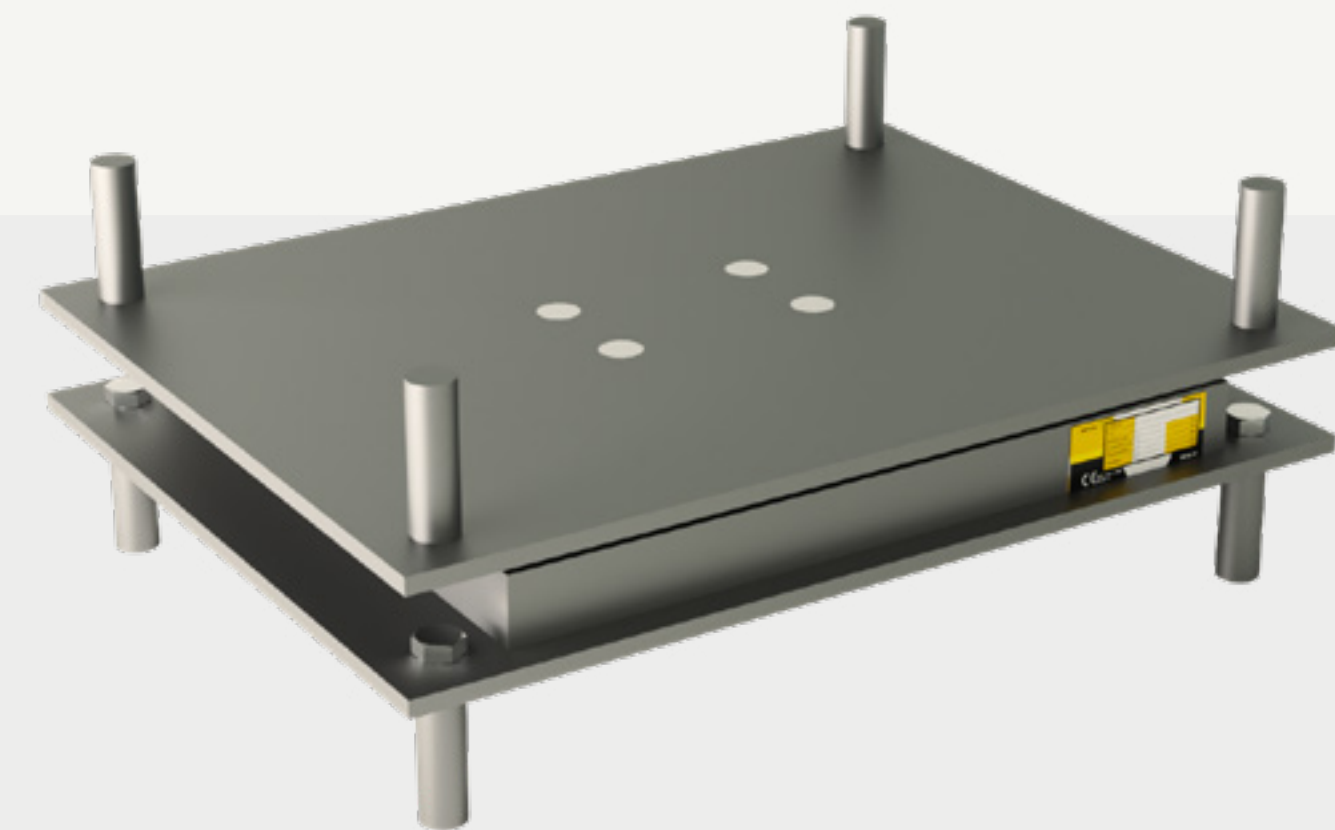
Elasto A

This type of bearing, fully covered with elastomer, comprising only one steel reinforcing plate.

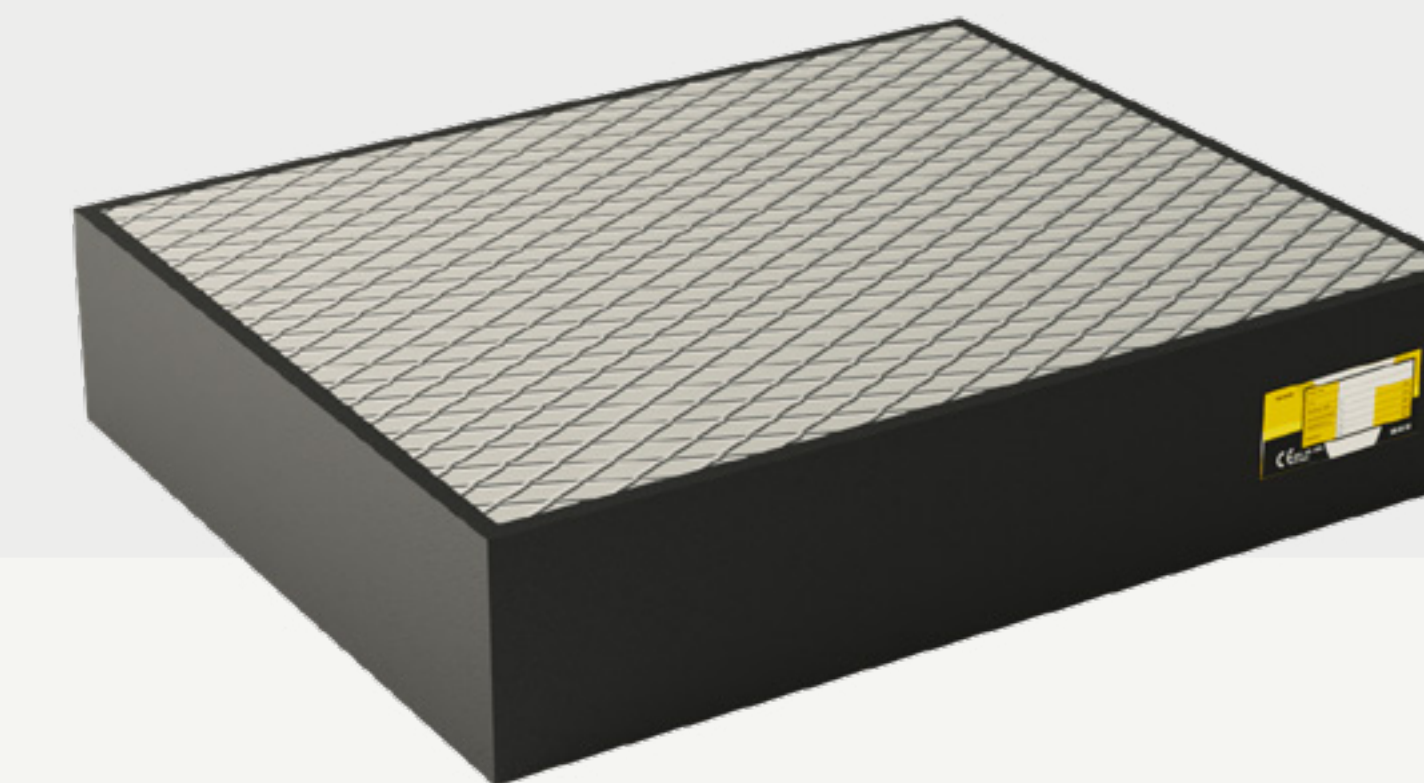


Elasto B

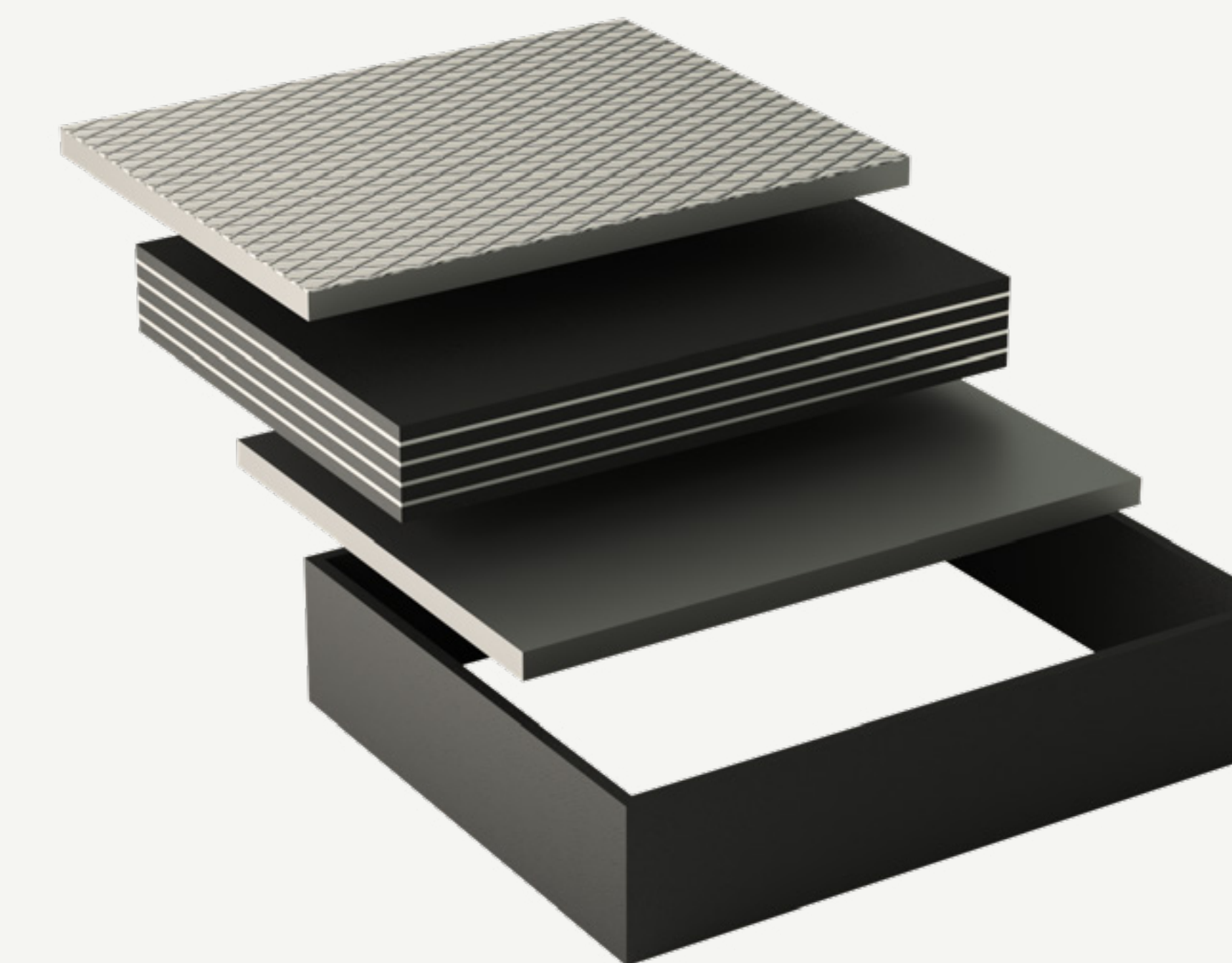
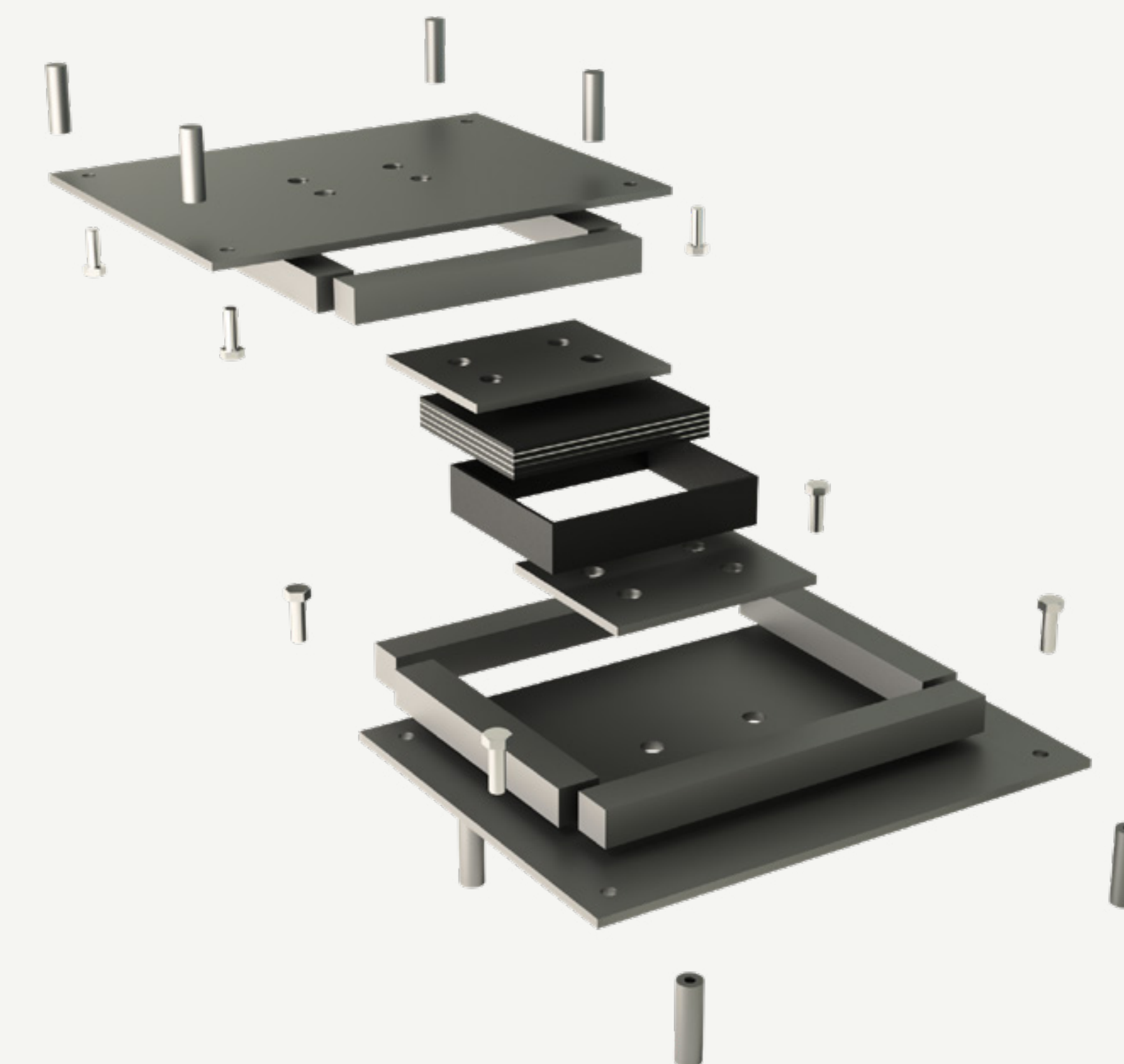
This type of bearing, fully covered with elastomer, comprising more than one reinforcing plate.



Elasto C with anchors



Elasto C without anchors



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

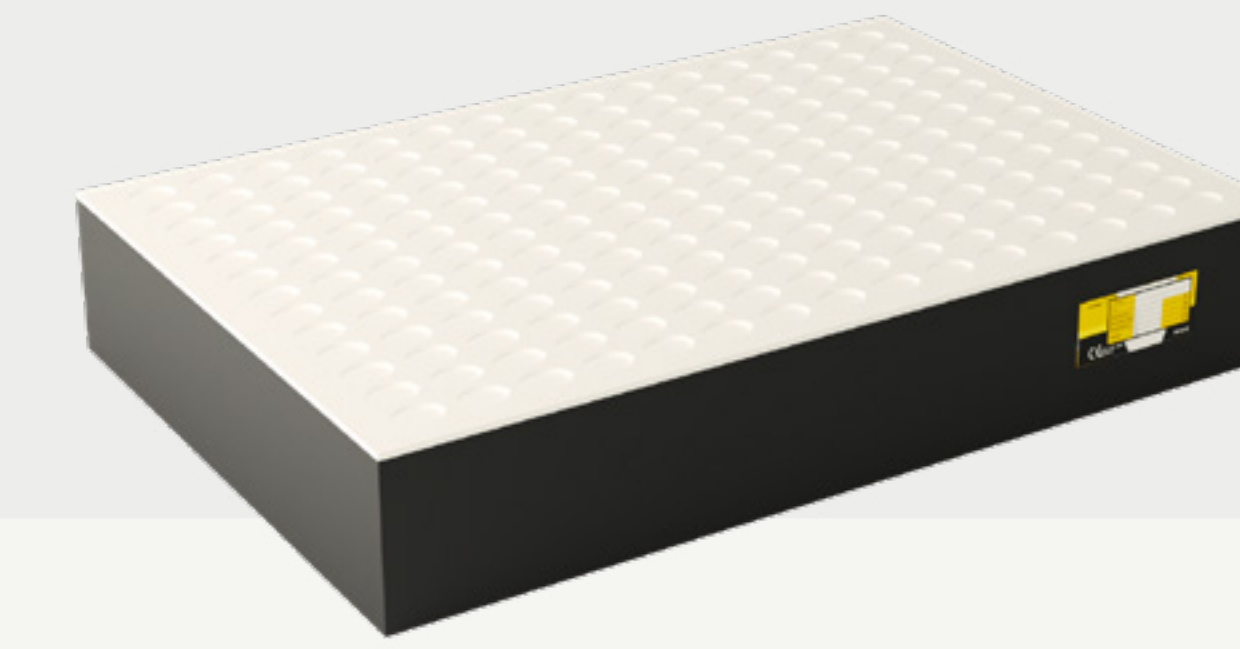
2.1.2 TYPE OF ELASTO BEARINGS

TYPE OF ELASTO BEARINGS



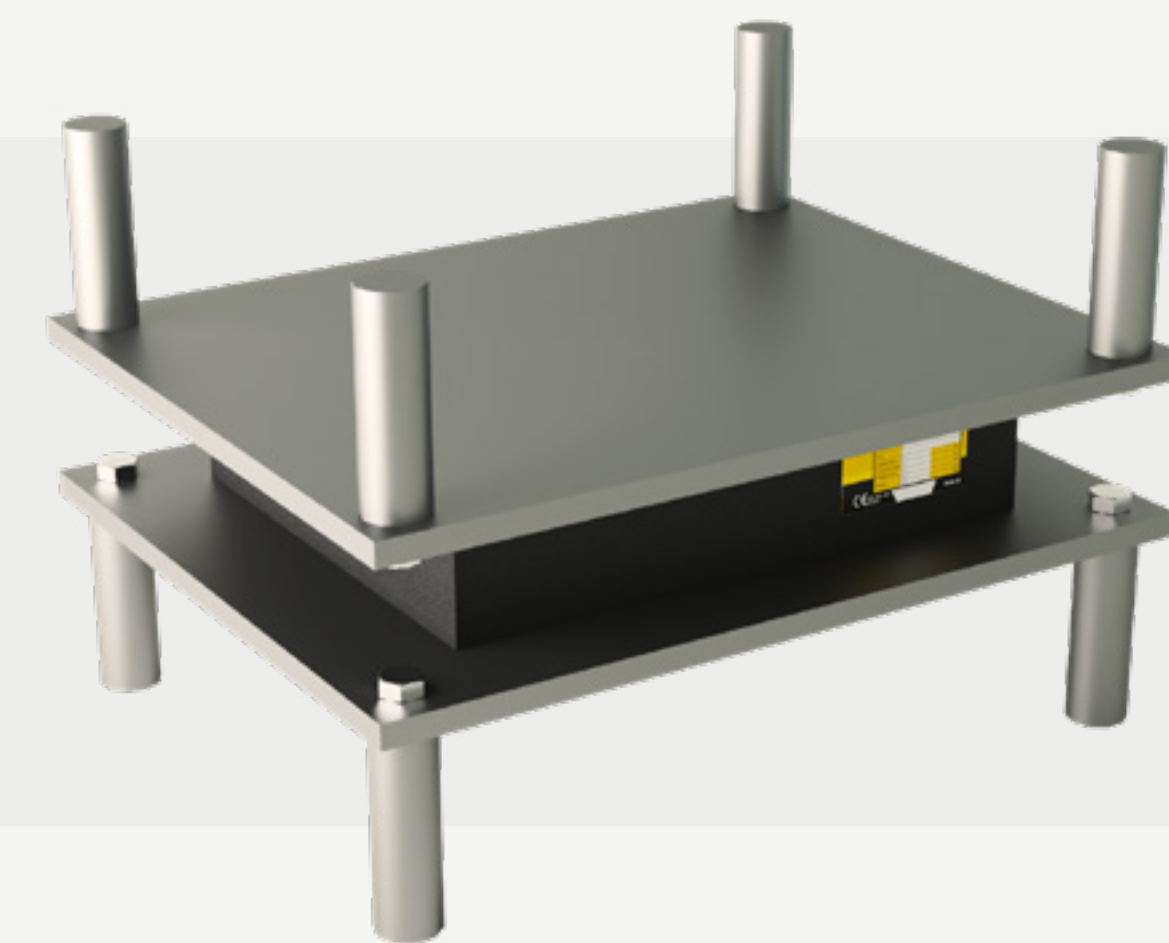
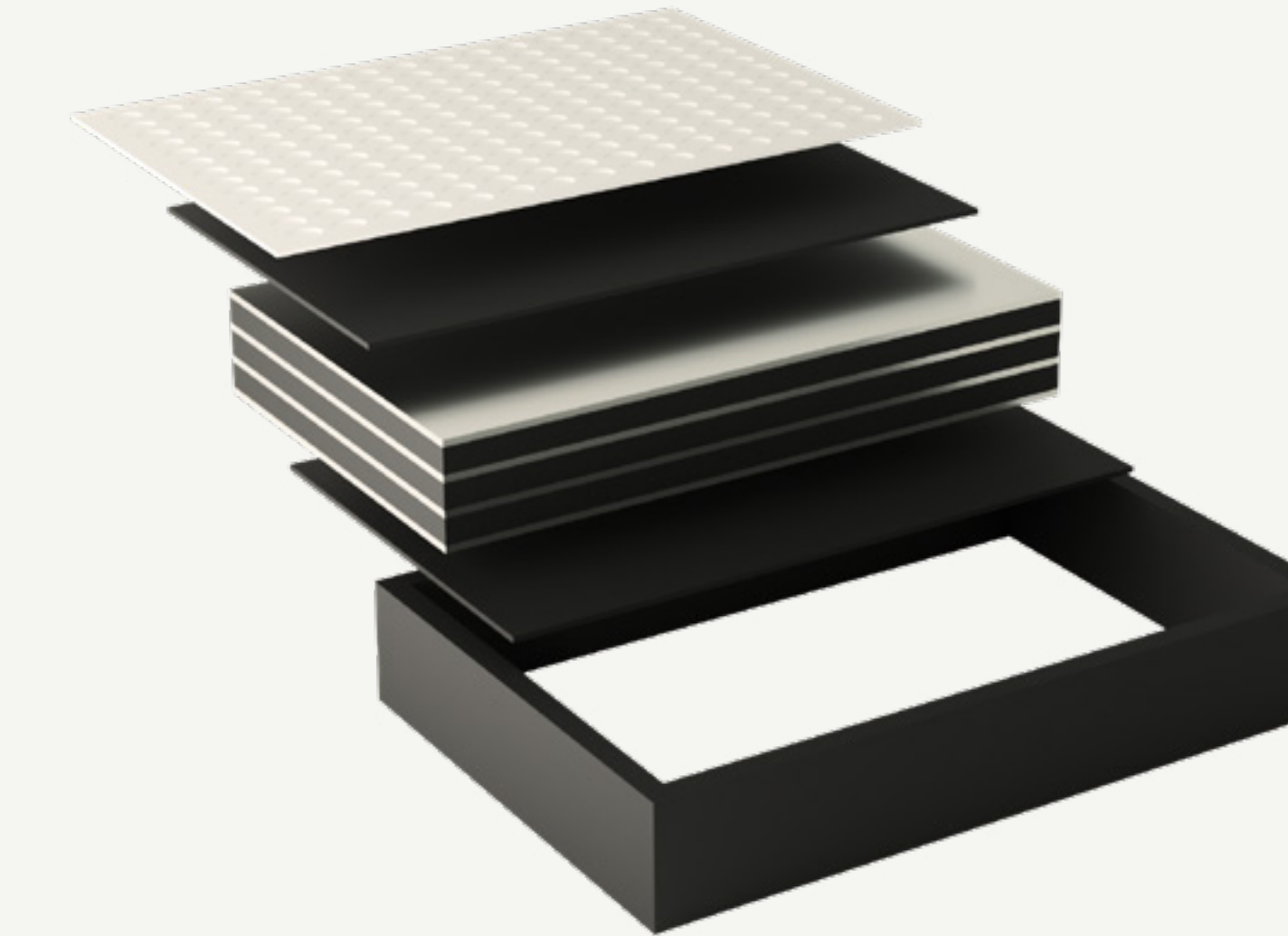
Elasto B/C

These types of bearings are combination of types B and C, with only one side featuring an external steel plate



Elasto D

This type of bearing is same as type B but with PTFE plate vulcanized into its upper surface.



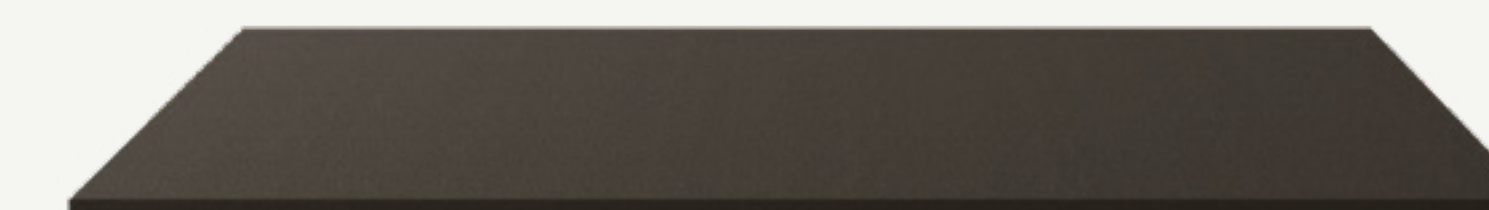
Elasto E

This type of bearing is same as type C with PTFE plate recessed into its outer steel plate.



Elasto F

This type of bearing is made only of rubber without any internal steel plate (not reinforced). They are used when vertical load and horizontal displacement are small.



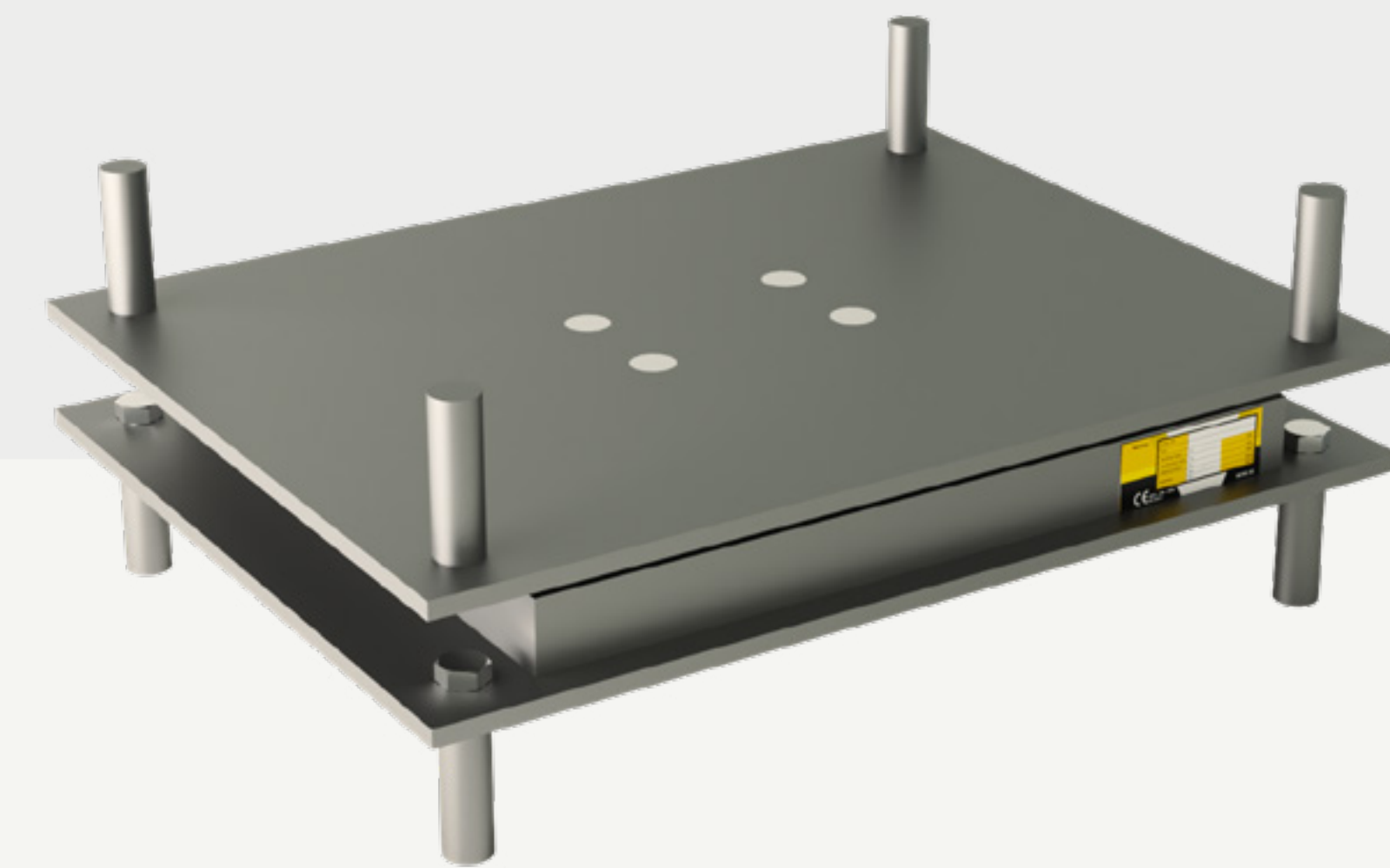
2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.3 ELASTO BEARINGS FOR SPECIAL APPLICATION

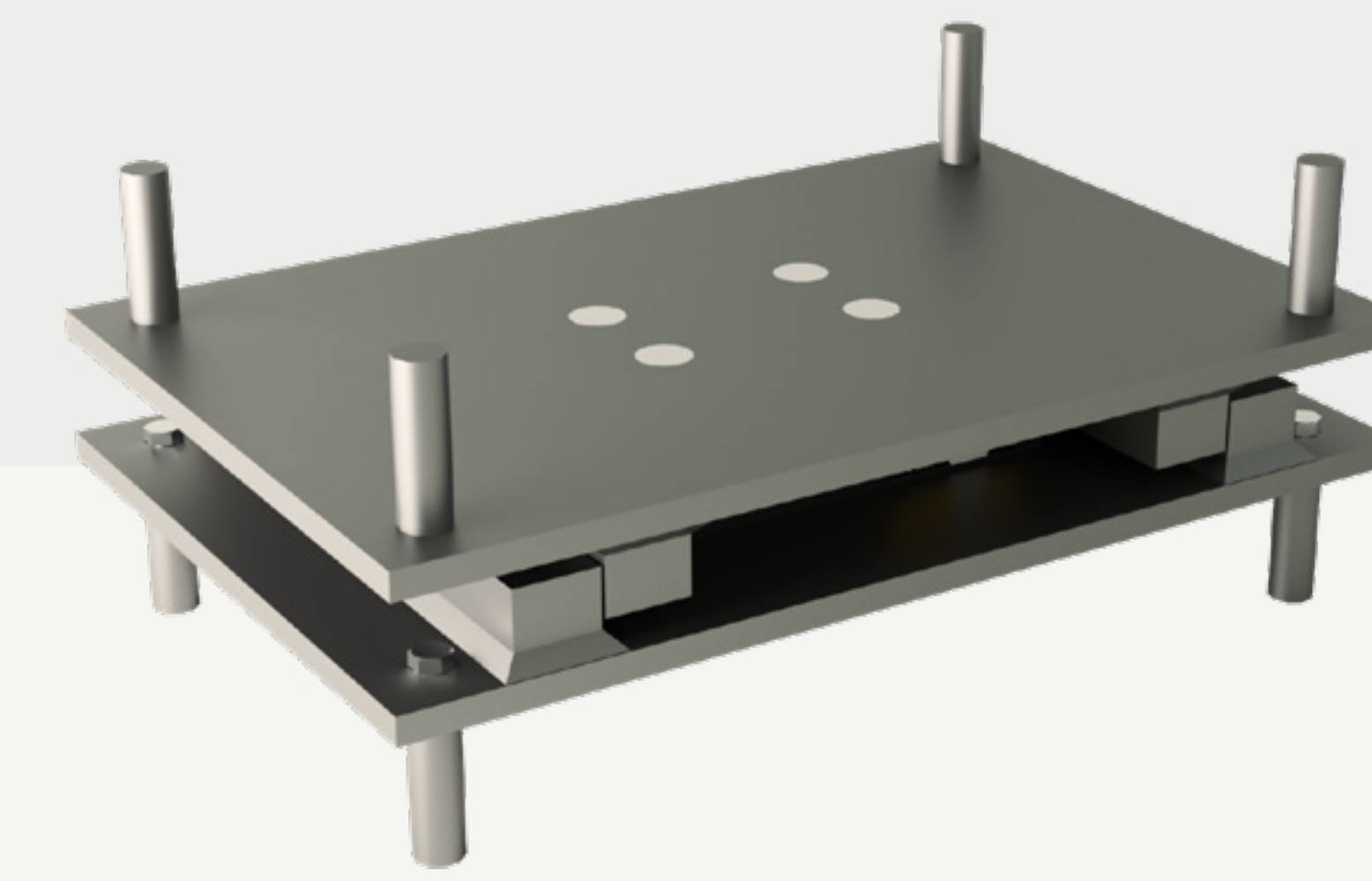
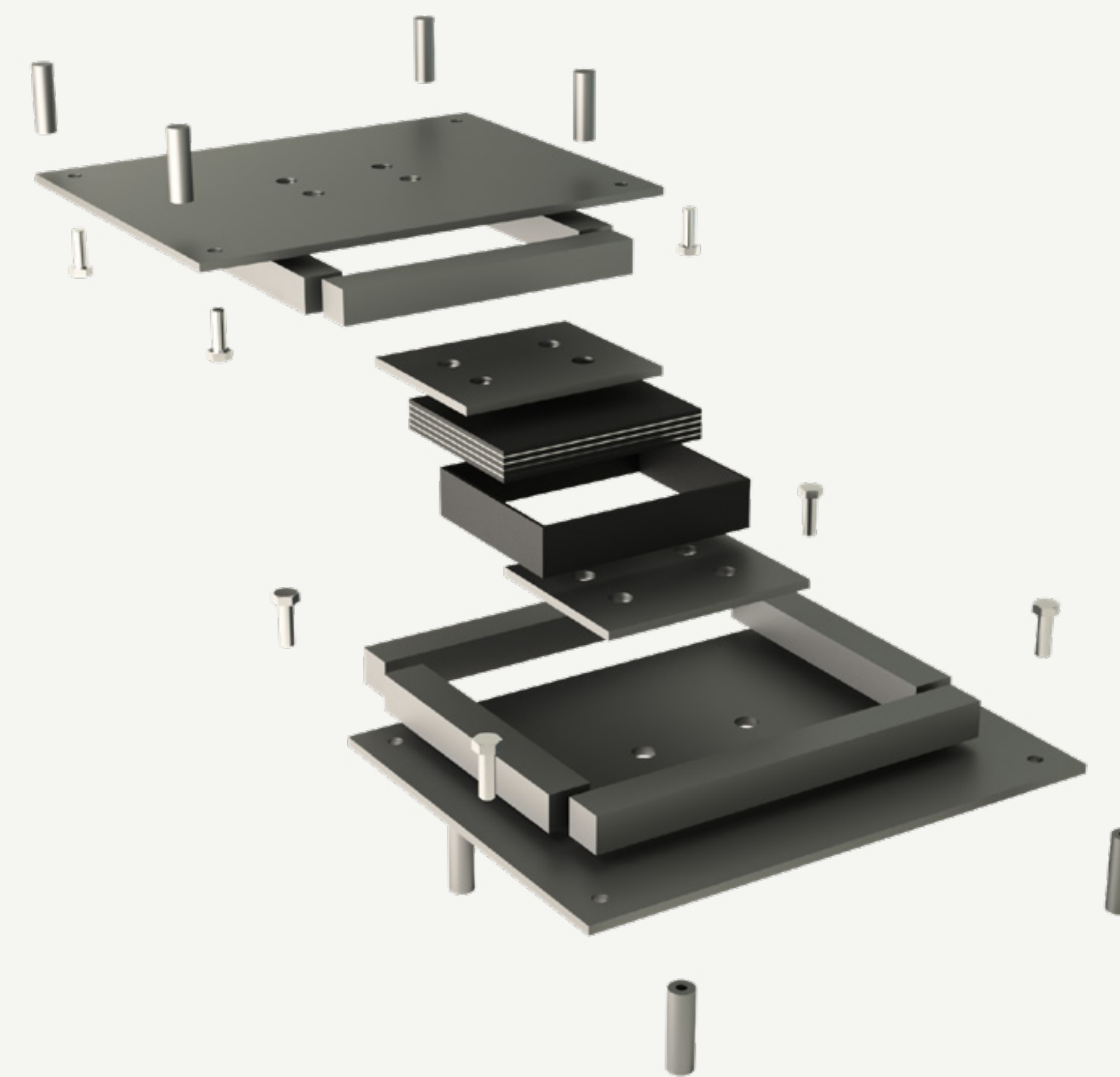
SPECIAL APPLICATION

Movements between structural elements are to be prevented in one direction or in all directions according to consultant loads



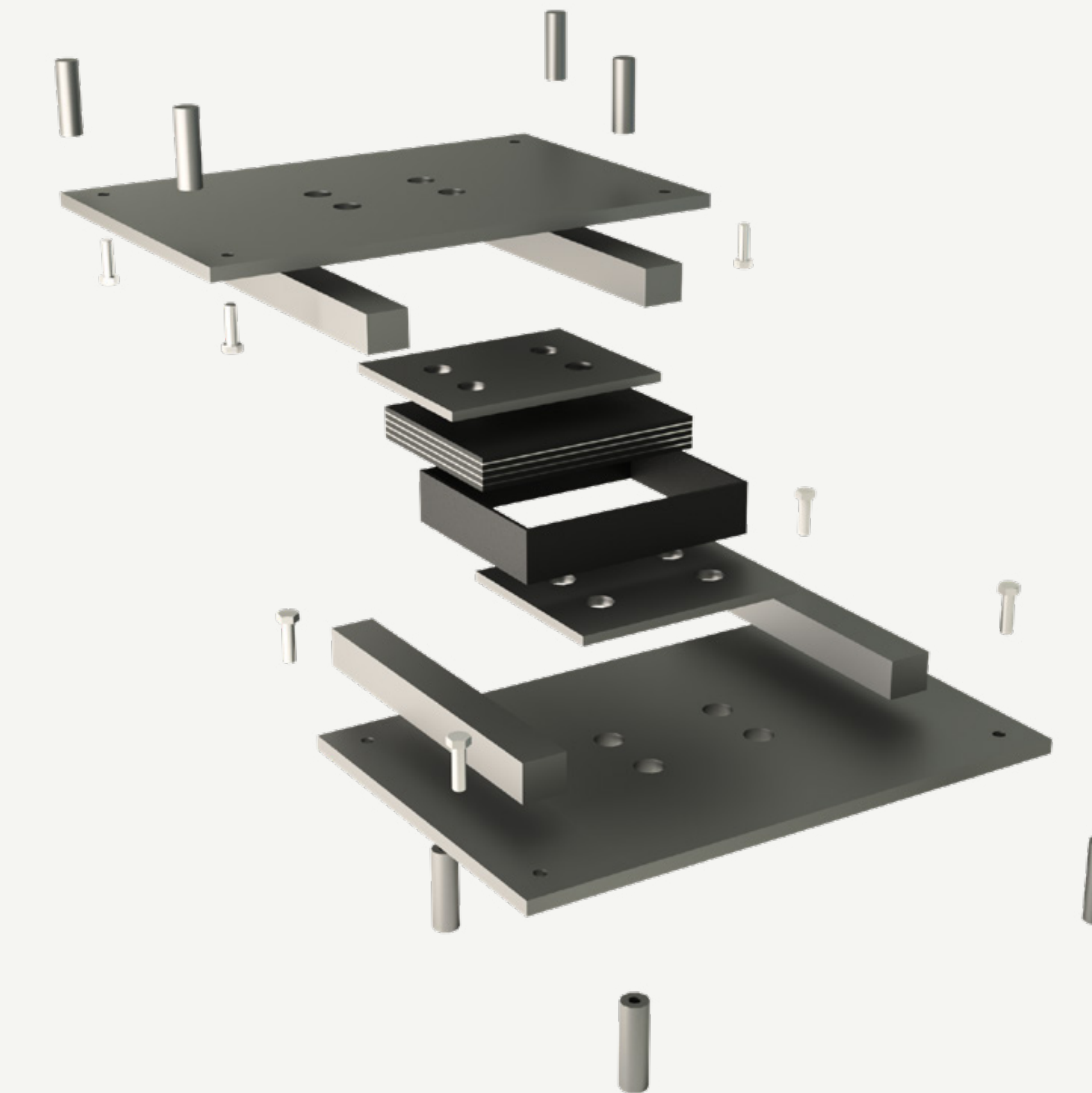
ELASTO FIXED BEARING

Same as type C between 2 steel plates with welded restraints to transfer the horizontal loads in every direction. They prevent horizontal displacements in any direction.



ELASTO GUIDED BEARING

Same as type C between 2 steel plates with welded restraints to transfer the horizontal load in the transversal direction. They allow horizontal displacements only along one direction.



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.4 SPECIFICATIONS AND DIMENSIONS OF ELASTO BEARING

ACCORDING TO EN3 -1337

- The loading limits given in this table correspond to the loading of a bearing device to the ULS, in accordance with the verification requirements of standard EN 1337-3.
- The different values shown below in this table may be changed as a function of the actual load on the bearing given by consultant.
- Each rubber bearing is identified with the acronym EB (ELASTO BEARING).
- The numbers listed below represent plan dimensions and height of the Bearing.

A	B	C	D
EB/B	300	400	73

A ELASTO BEARING TYPE

B OVERALL LENGTH IN (mm)

C OVERALL WIDTH IN (mm)

D THICKNESS OF THE BEARING IN (mm)

TO CALCULATE THE TOTAL THICKNESS OF THE ELASTO BEARING TYPE B:

$$T_b = n_r \times t_i + n_s \times t_s + t_{c1} + t_{c2}$$

n_r : Number of Rubber Layers = 4

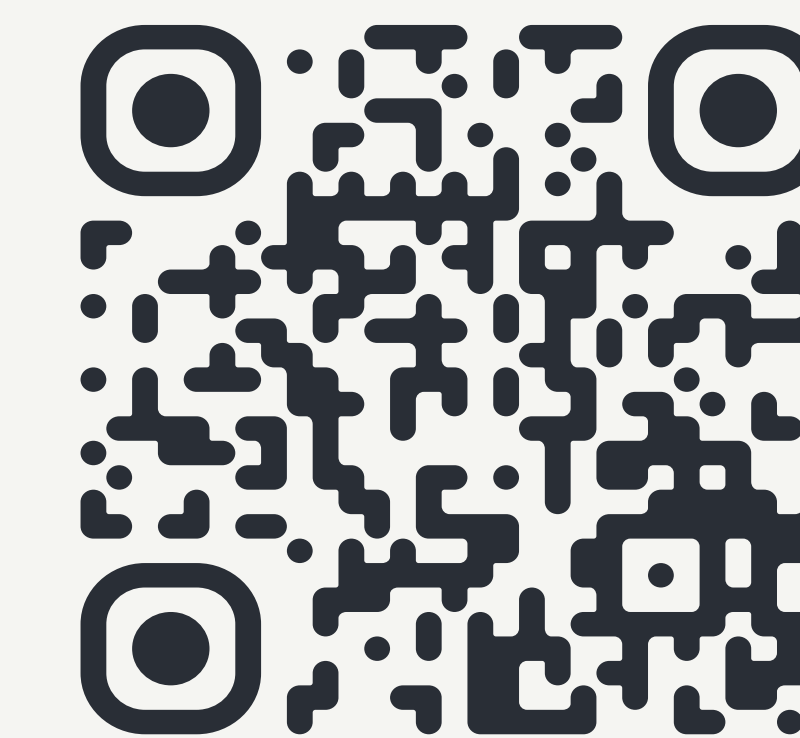
t_i : Elastomeric layer thickness = 12 mm

n_s : Number of steel types = 4 + 1 = 5

t_s : Steel Layer thickness = 4 mm

$t_{c1,2}$: Top and bottom cover thickness = 2.5 mm

$$T_b = (4 \times 12) + (5 \times 4) + (2.5 + 2.5) = 73 \text{ mm}$$



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ACCESS TO FULL DATASHEETS

Hint: Click or scan to access data sheets link

2.0 OUR PRODUCTS

2.0 BRIDGE BEARINGS

2.2

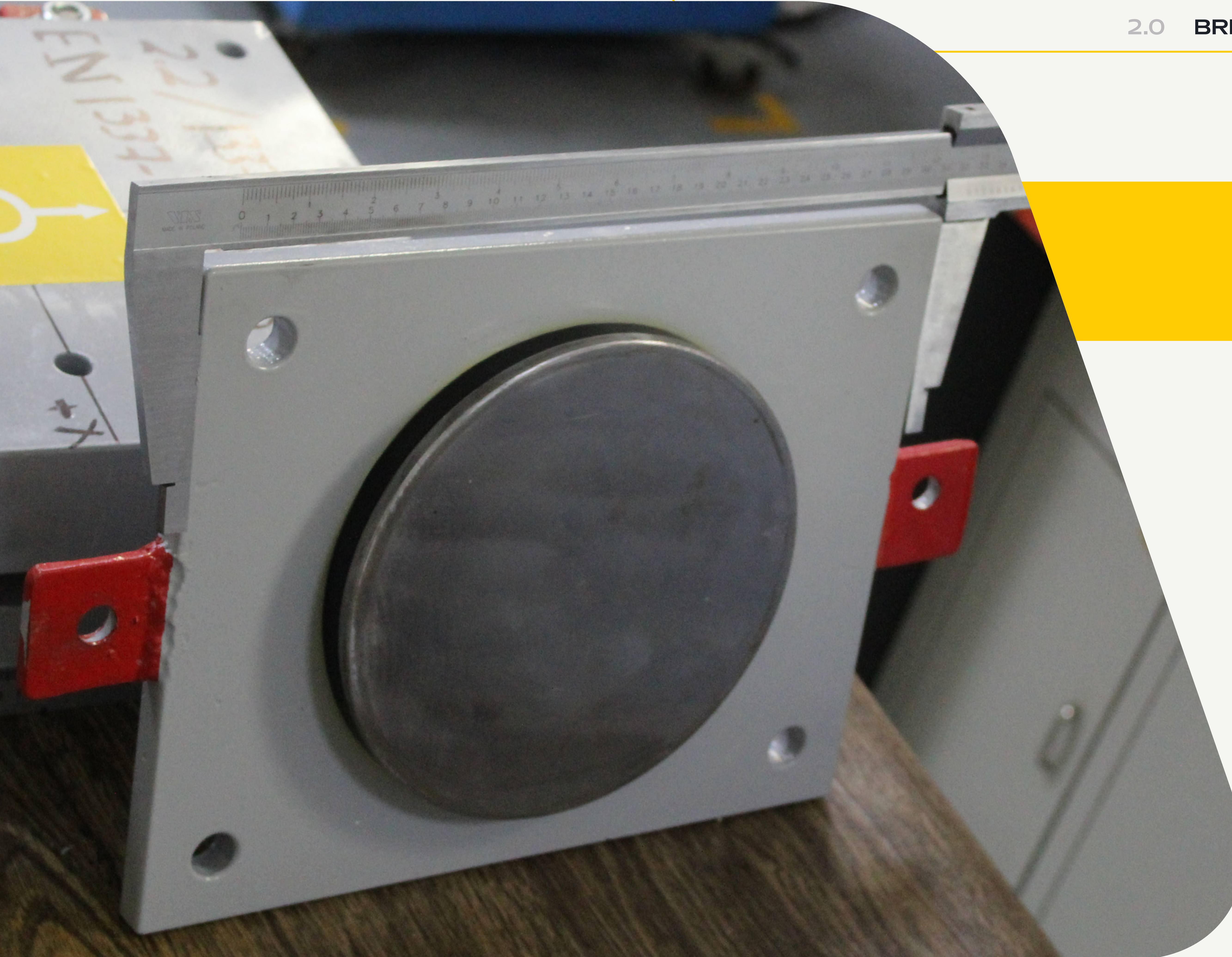
POT BEARINGS

ATAYA's Pot Bearings: Engineered for high endurance and large movements

Long spans require high strength bearings that accommodate large displacements and can withstand very high compressive loads .

These versatile bearings come in various configurations that comply with the EN 1337-5 standard. This ensures you get the perfect solution for your bridge's specific needs, whether it requires handling horizontal translation, accommodating rotation, or both.

By incorporating ATAYA's Elasto-Bearings, you're investing in bearing that is durable for 120 years with no requirement for replacement.

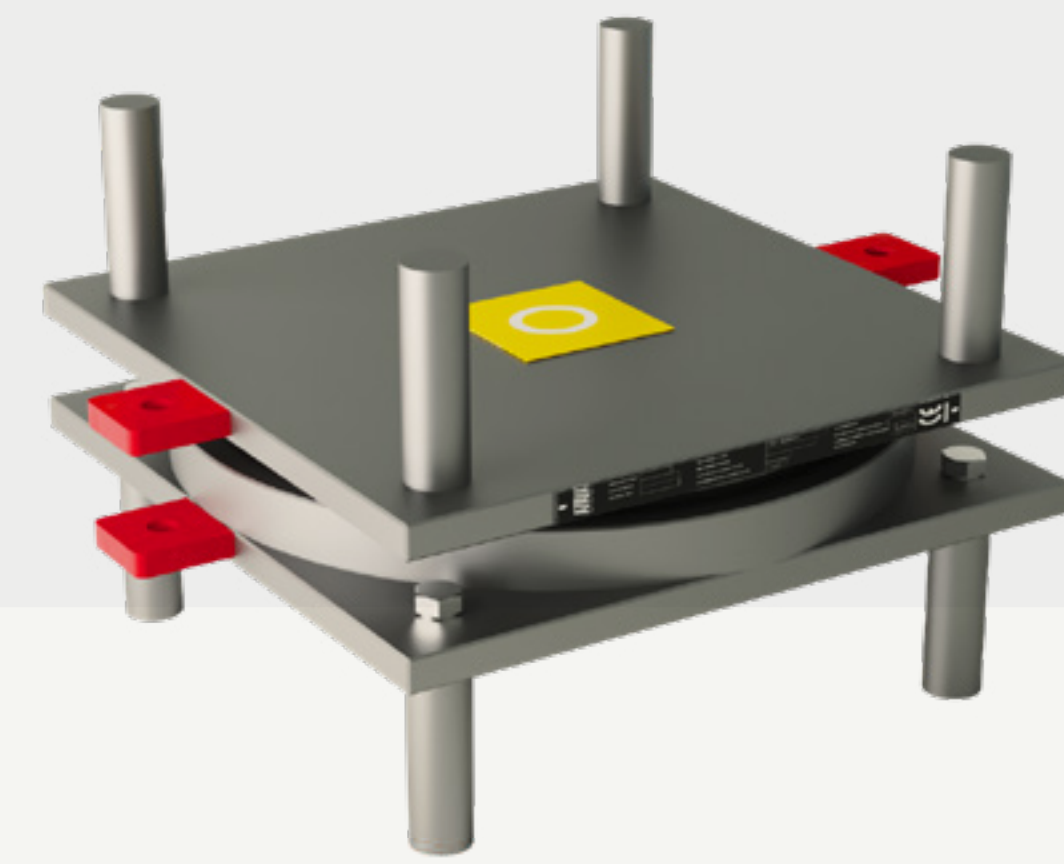


2.0 OUR PRODUCTS

2.2 POT BEARINGS

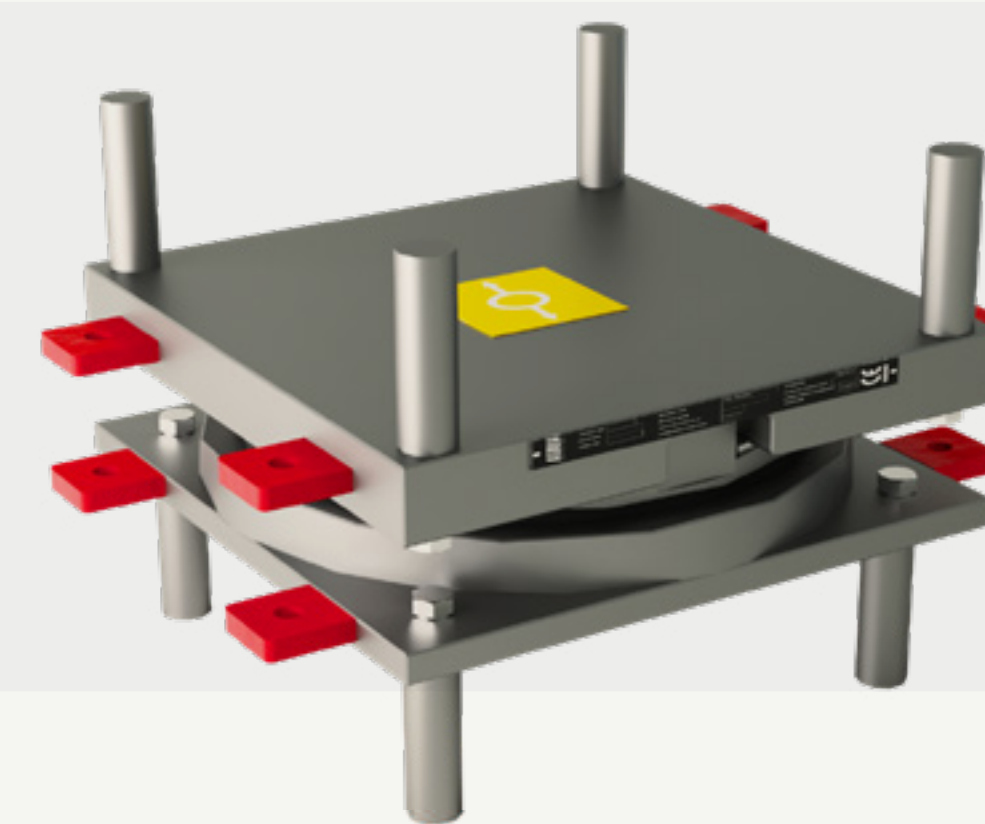
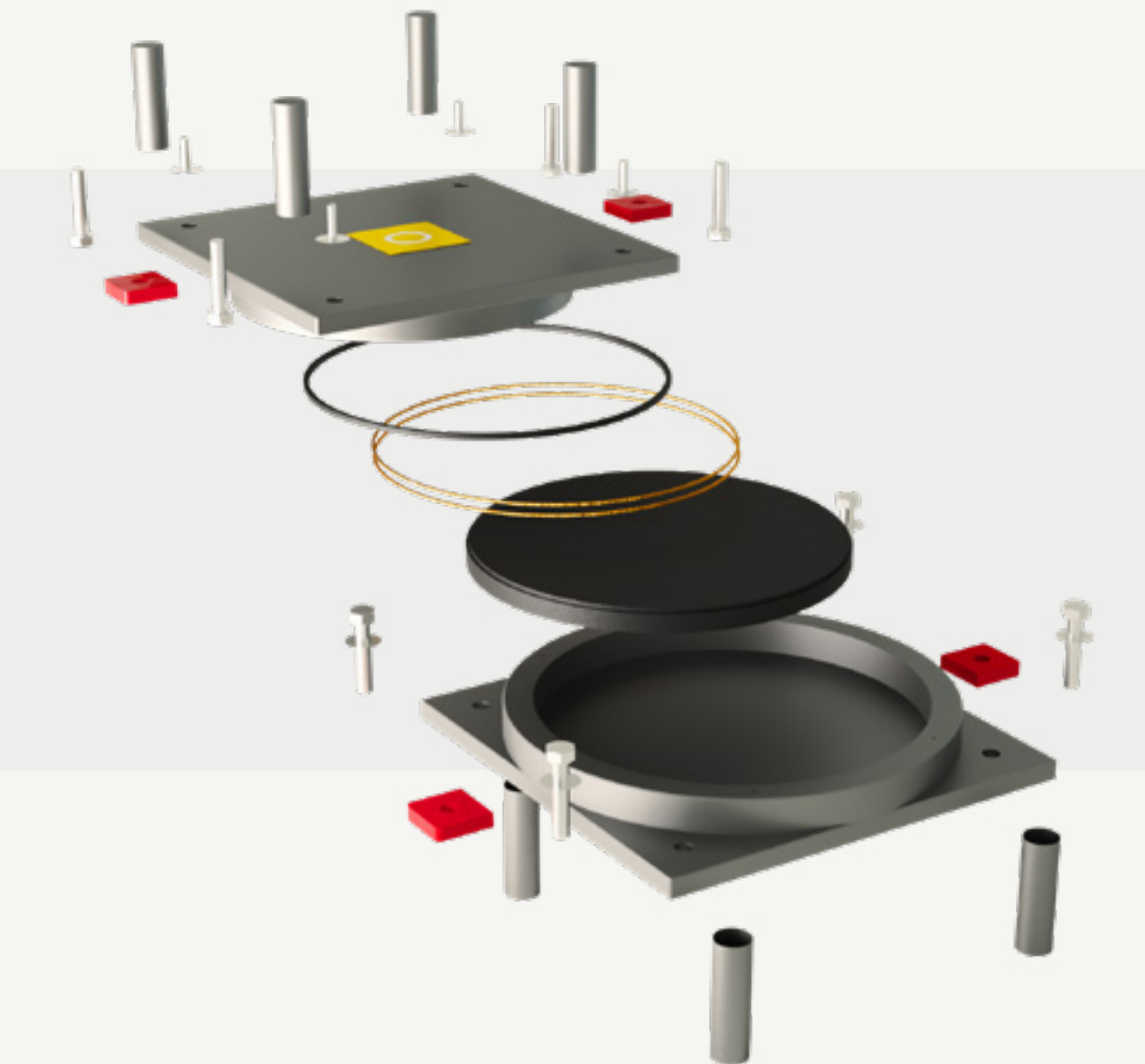
2.2.2 TYPE OF POT BEARINGS

TYPE OF POT BEARINGS



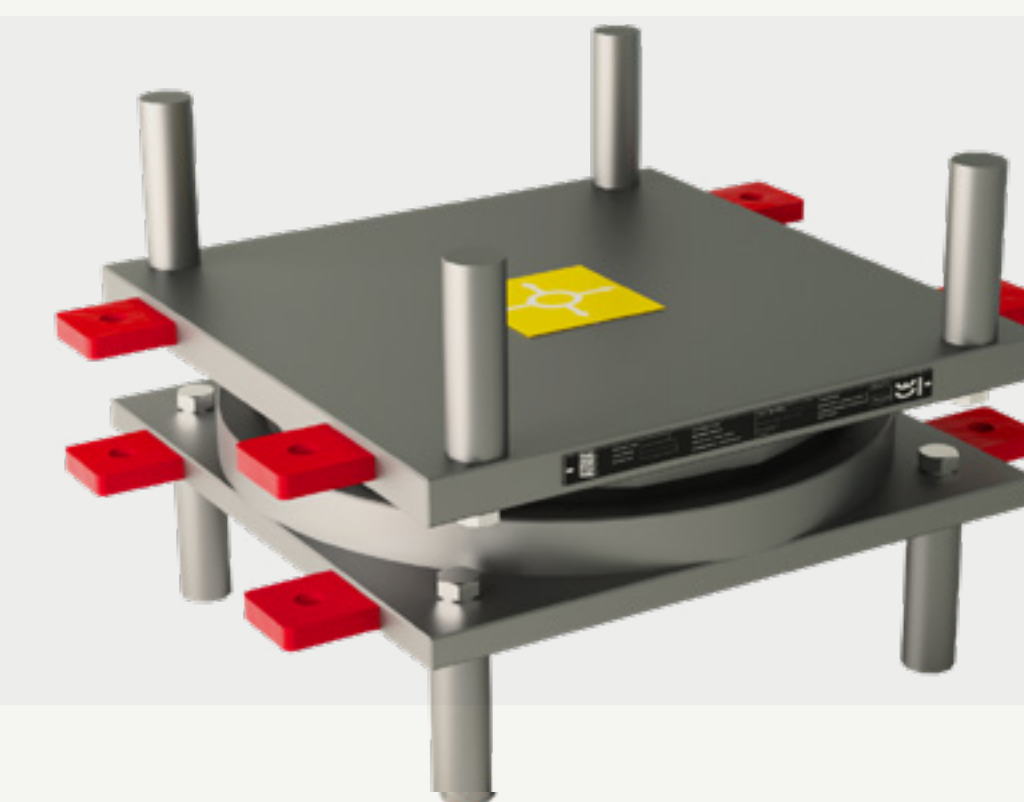
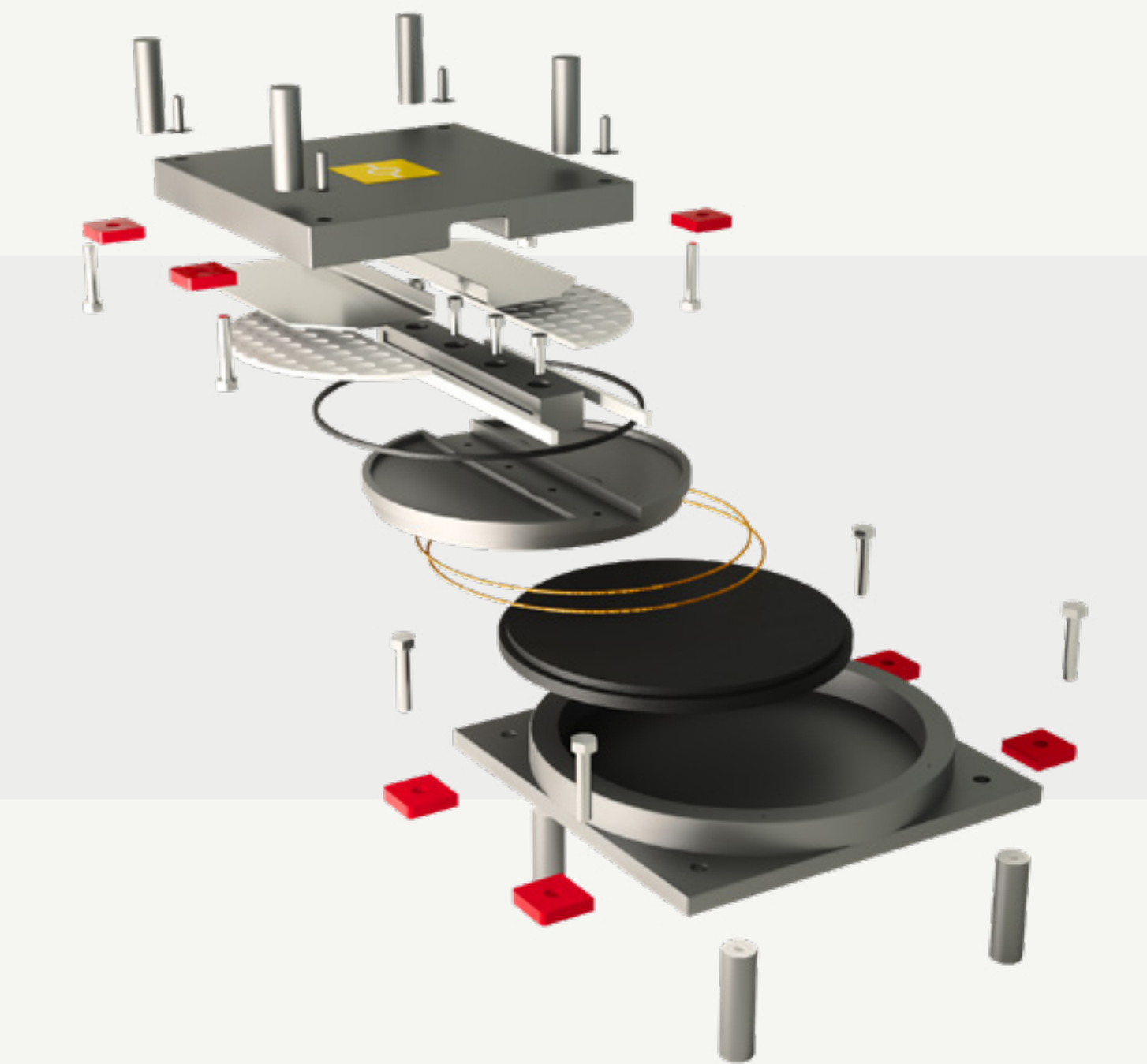
FIXED POT BEARING

This type of bearings restricts horizontal loads in longitudinal and transverse directions, therefore, does not allow any movement and consists of POT, piston assembly including an elastomeric pad which is encapsulated and fitted with an anti-extrusion sealing ring under vertical load this encapsulated elastomeric behaves like a viscous fluid, allowing rotations around the horizontal axis



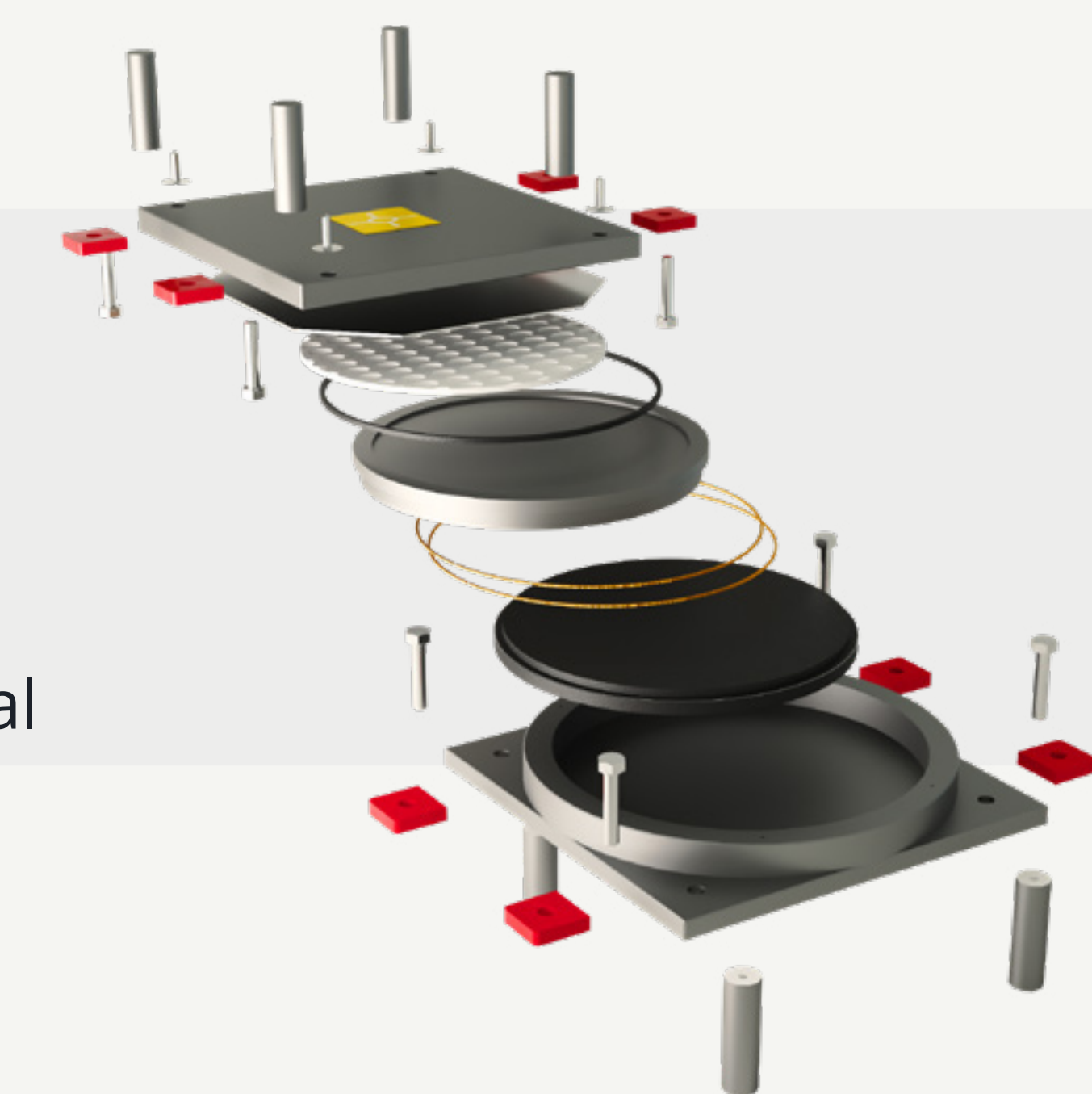
GUIDED POT BEARING

This type of bearings allows movement in one direction between stainless steel and lubricated PTFE which is placed on the piston and restricts horizontal loads perpendicular to the direction of movement by a guide bar placed in the center of the piston



FREE SLIDING POT BEARING

This type of bearings allows movements in both longitudinal and transverse directions between stainless steel and lubricated PTFE which is placed on the Piston, therefore, does not restrict horizontal loads except for nominal friction

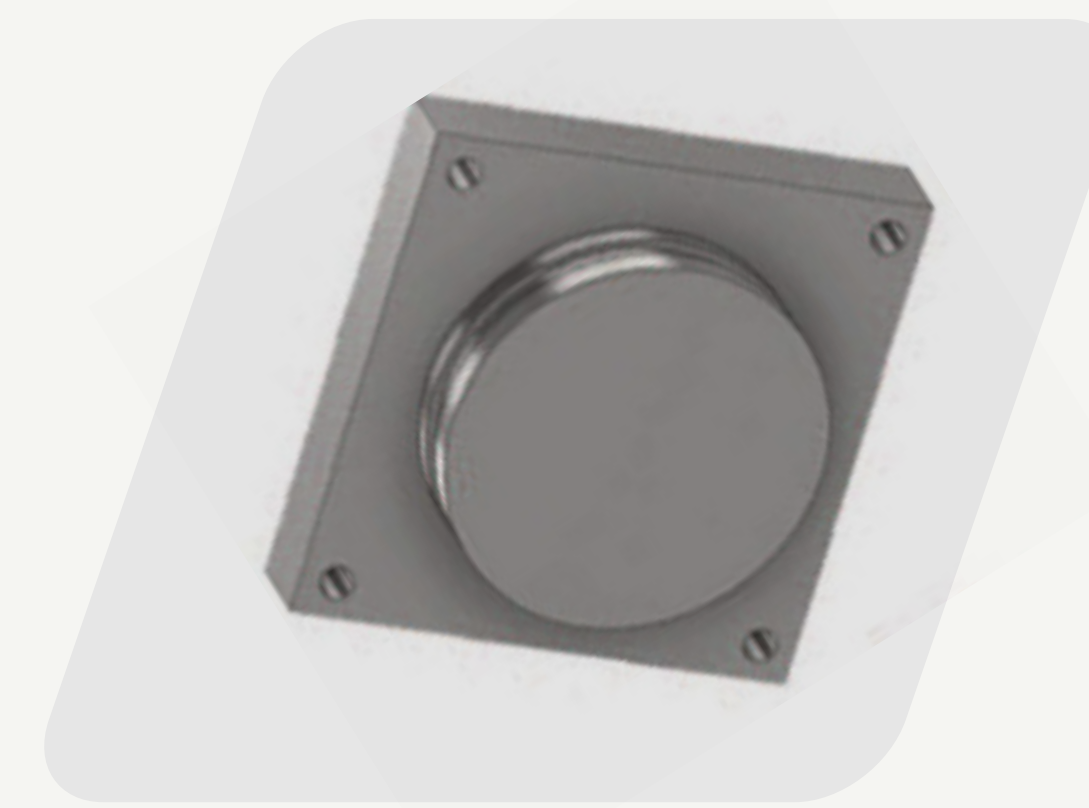


2.0 OUR PRODUCTS

2.2 POT BEARINGS

2.2.3 BEARING COMPONENTS

BEARING COMPONENTS



PISTON

Closes the open end of the recess in the pot and bears on the elastomeric pad and transfers the vertical and horizontal load from the super structure to the remaining parts of the bearings.



EXTERNAL SEAL

Prevents moisture and debris from entering the gap between the piston and the pot



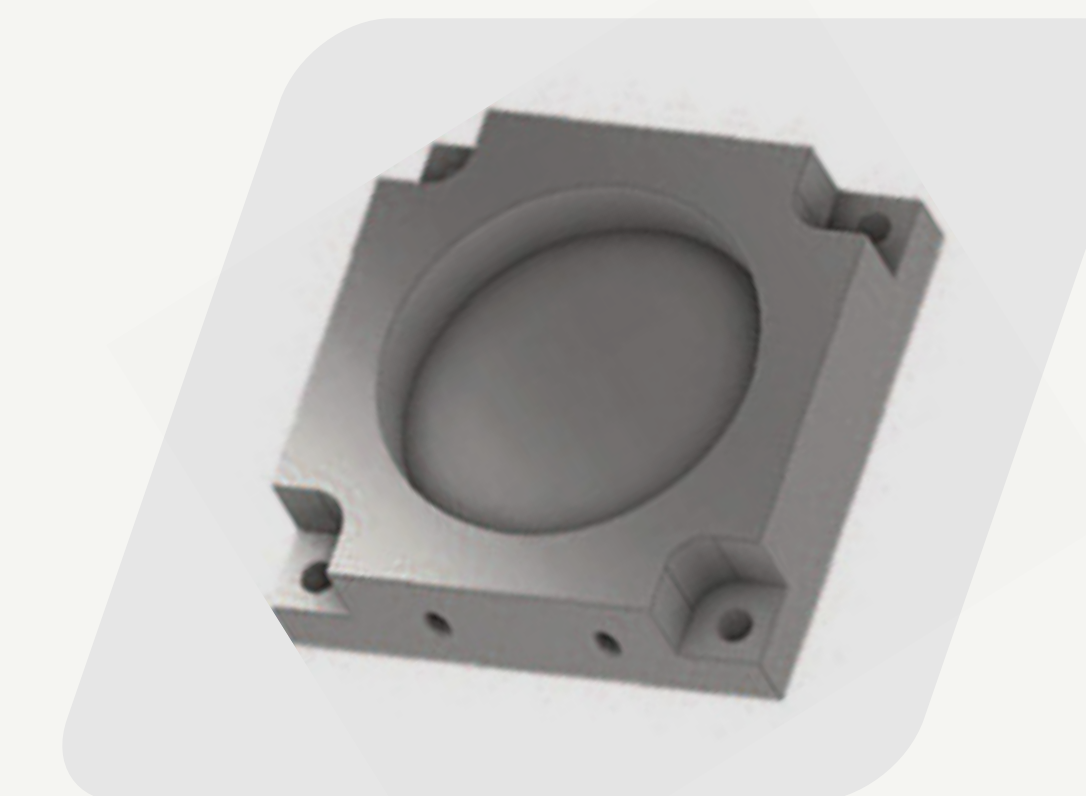
INTERNAL SEAL

component which prevents escape of the elastomer material through the clearance between the recess walls and the piston when a compressive force is applied



ELASTOMERIC PAD

Transfers the vertical load from the piston to the pot and allows the bearing to rotate



POT

Contains the elastomer, piston, internal seal and transfer vertical and horizontal loads to substructure and bolts, respectively



ANCHORS & BOLT

Resist horizontal loads

2.0 OUR PRODUCTS

2.2 POT BEARINGS

2.2.4 MATERIAL SPECIFICATIONS

POT AND PISTON

The pot and piston shall be manufactured from ferrous materials according to EN 10025.

INTERNAL SEAL (BRASS SEAL)

The material use for the brass seal shall be grade CuZn37 or CuZn39Pb3, according to EN 12163 and EN 12164 respectively.

ELASTOMETRIC PAD

The elastomer material used for the elastomeric pad shall be natural or polychloroprene rubber in accordance with ISO 6446.

ELASTOMERIC PAD

CHARACTERISTICS	STANDARD	REQUIREMENTS
Tensile strength (Mpa)	ISO 37 type 2	≥ 16
Elongation at break(%)	ISO 37 type 2	≥ 425
Compression (%) set 24h, 70°C	ISO 815	≤ 30
Hardness (IRHD)	ISO 48	60 ± 5

AUSTENITIC STEEL SHEETS

The austenitic steel used for sliding surfaces according to EN 10088-2 1.4401 +2B with minimum thickness of 1.5mm

The roughness is Ry5i < 1 µm according to EN ISO 4287.

The hardness ranges from (150HV1-220HV1) according to EN ISO 6507-2.

2.0 OUR PRODUCTS

2.2 POT BEARINGS

2.2.4 MATERIAL SPECIFICATIONS

SLIDING PLATE (PTFE)

The PTFE sheets shall be Pure polytetrafluorethylene free sintered without regenerated or filler materials.

CHARACTERISTICS	TESTIING STANDARD	REQUIREMENTS
Tensile strength (kg/m ³)	EN ISO 1183 (All Parts)	$\rho=2140$ to 2200
Tensile strength (Mpa)	EN ISO 527-1 and 3	fptk=29 to 40
Elongation at break (%)	EN ISO 527-1 and 3	$\delta\rho>300$
Ball Hardness (Mpa)	EN ISO 2039-1	H132/60 = 23 to 33

LUBRICANT (SILICONE GRESE)

The lubricant shall not be harmful to the elastomer or other components and shall not cause excessive swelling of the elastomer.

CHARACTERISTICS	TESTIING STANDARD	REQUIREMENTS
Worked penetration (mm)	ISO 2137	26.5 - 29.5
Dropping point (°C)	ISO 2176	≥ 180
Oil separation after 24h at 100°C (% mass)	Annex G	≤ 3
Oxidation resistance pressure drop after, 100h at 160°C (MPa)	Annex H	≤ 0.1
Pour-point of base oil (°C)	ISO 3016	Below -60

Hint: materials may vary in compliance with the project requirements.

2.0 OUR PRODUCTS

2.2 POT BEARINGS

2.2.1 QUALITY

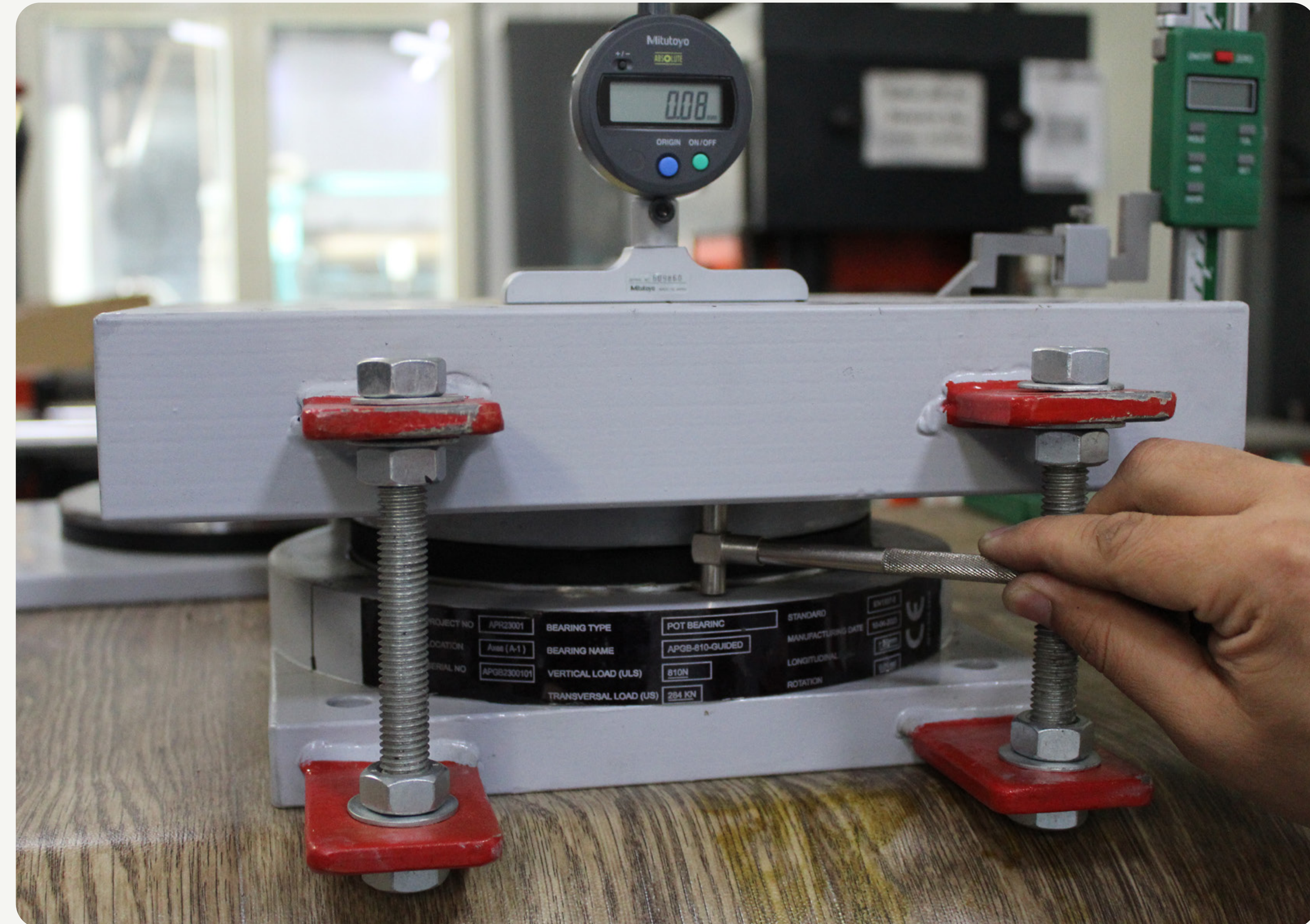
QUALITY

MOVEMENT INDICATOR

Measuring and monitoring the horizontal movements of the sliding bearing, allowing to check the initial presetting of the bearing and verifying the bearing motion during the future inspections.

REFERENCE SURFACE

According to EN 1337 the bearing can be provided with reference surface to ensure the perfect horizontal position during installation and make it possible to observe any rotation during the service life of the structure.



2.0 OUR PRODUCTS

2.0 BRIDGE BEARINGS

2.3

SPHERICAL BEARINGS

ATAYA's Spherical Bearings: Engineered for high endurance and large movements Railway bridges and long spans require high strength bearings that accommodate large displacements, high vibrations and can withstand very high compressive loads .

These versatile bearings come in various configurations that comply with the EN 1337-7 standard. This ensures you get the perfect solution for your bridge's specific needs, whether it requires handling horizontal translation, accommodating rotation, or both.

By incorporating ATAYA's Elasto-Bearings, you're investing in bearing that is durable for 120 years with no requirement for replacement.

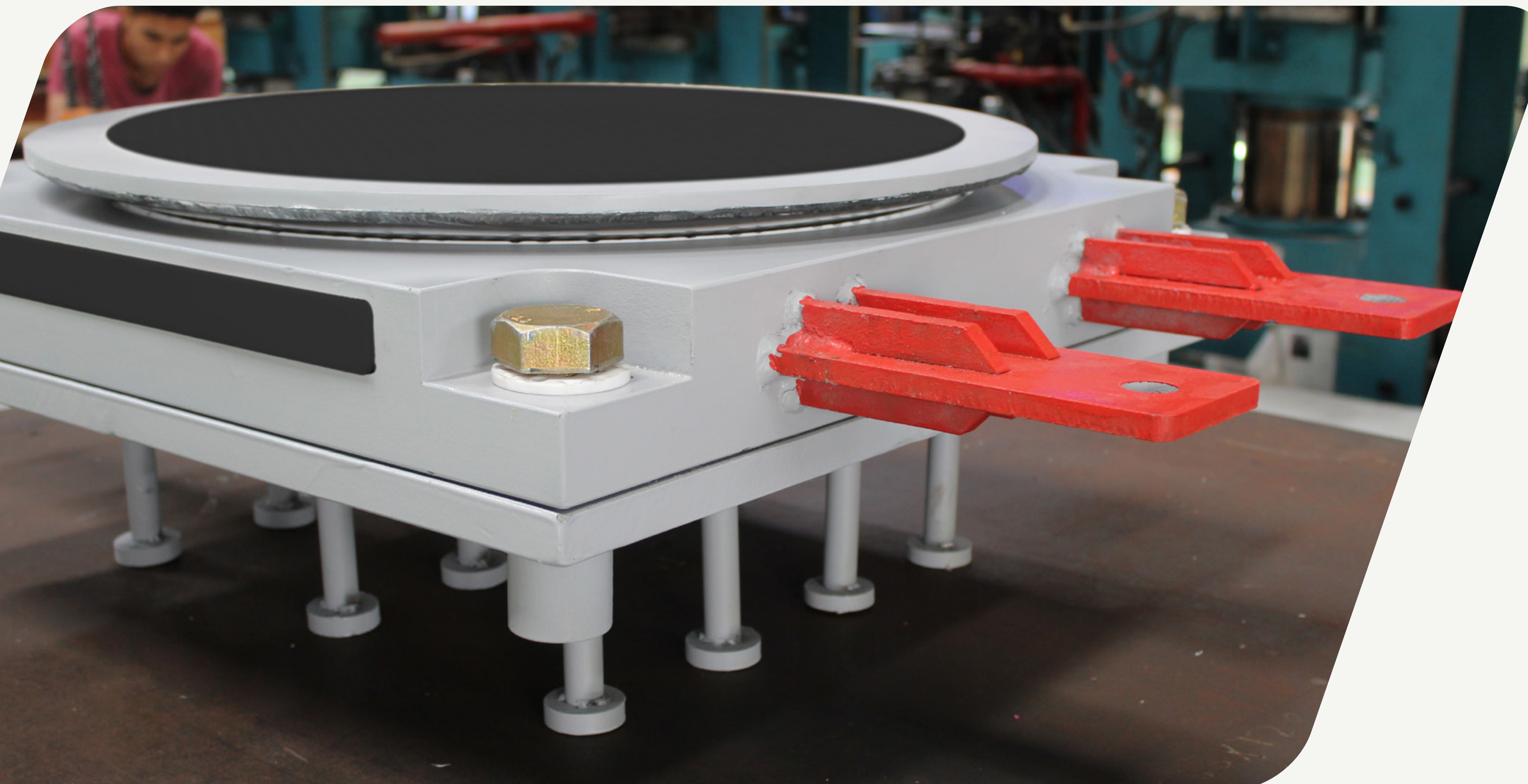


2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.2 SPHERICAL BEARINGS

SPHERICAL BEARINGS FEATURES & PERFORMANCE



1 VERY LOW SLIDING FRICTION

2 EASY MAINTENANCE

3 HIGH DURABILITY

4 UNLIMITED MOVEMENT CAPACITY

5 REPLACEABLE

6 EASY INSTALLATION

7 HIGHEST ROTATION CAPACITY

8 SUITABLE FOR STEEL AND CONCRETE BRIDGES

9 LIFE TIME OF 120 YEARS WITH NO REPLACEMENT

2.0 OUR PRODUCTS

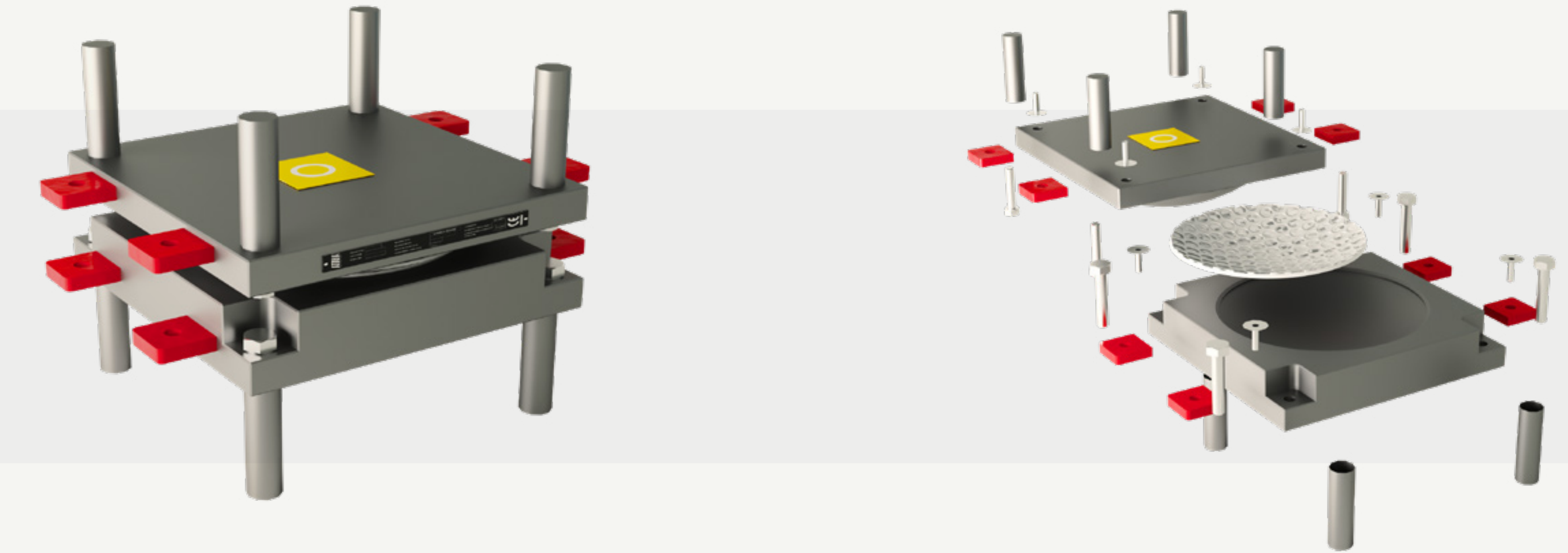
2.1 BRIDGE BEARINGS

2.1.4 TYPE OF SPHERICAL BEARINGS

TYPE OF SPHERICAL BEARINGS

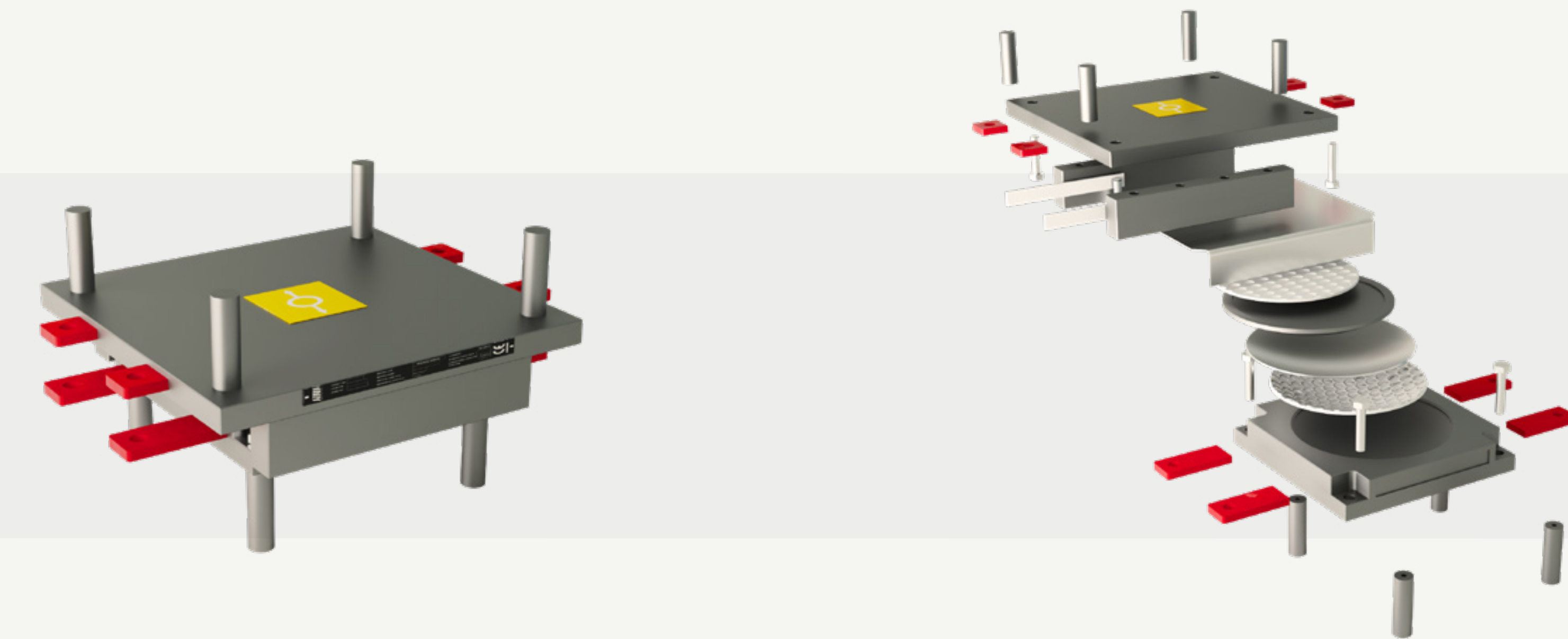
Fixed Spherical Bearing

This type of bearings is restrained from horizontal movement in all directions while allowing rotation in all directions.



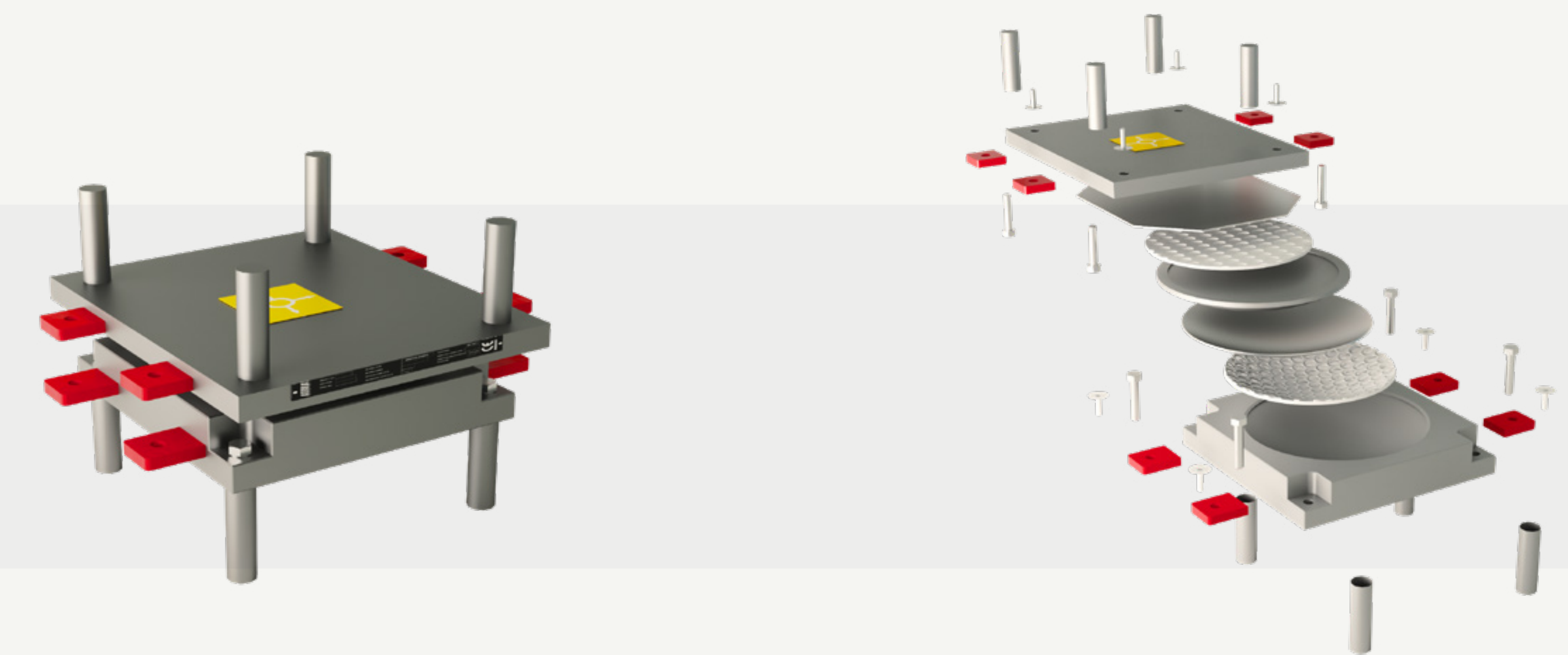
Guided Spherical Bearing

This type of bearings allows movement along only one axis and rotation in all directions.



Free Sliding Spherical Bearing

This type of bearings allows movements and rotation in all directions.



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.5 BEARING COMPONENTS

BEARING COMPONENTS

UPPER BACKING PLATE (SOLE PLATE)

Transfers super structure loads to the bearing and provides a stainless steel sliding surface for super structure transition.

CONVEX STEEL PLATE

Provides PTFE sliding surface for upper backing plate and stainless steel mating surface for rotation on PTFE concave surface.

CONCAVE STEEL PLATE

Provides PTFE concave surface for rotation.

LOWER BACKING PLATE (MASONRY PLATE)

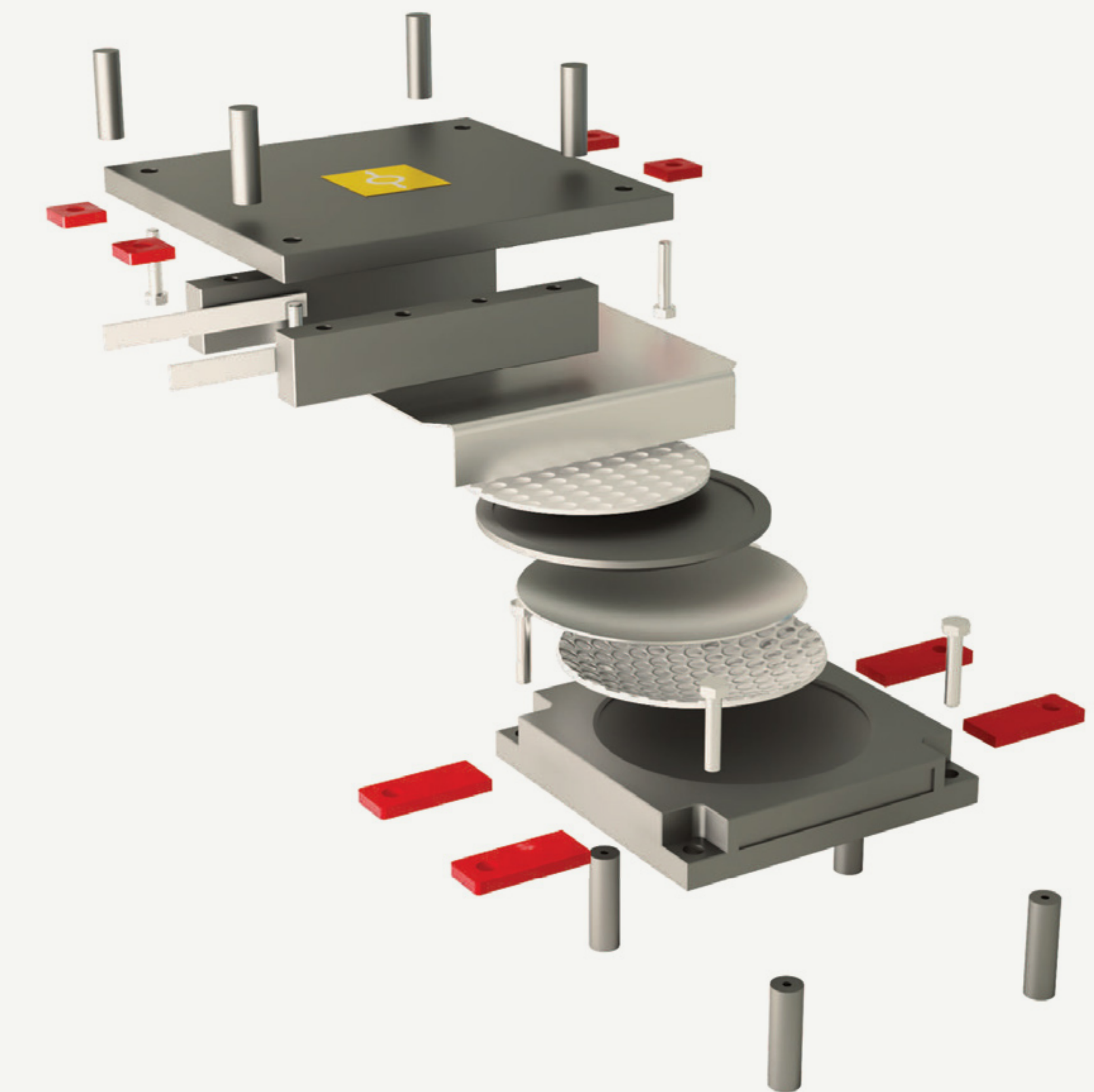
A steel lower part with a concave seat for the sliding material and suitable connections to the substructure.

GUIDE BAR

Guide bar in guided bearings only (if required) to allow movement in one direction.

RESTRAINING RING

It is used only in fixed bearings (if required) to restrain the movements in all directions.



2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.6 MATERIAL SPECIFICATIONS

MATERIAL SPECIFICATIONS

ATAYA ASM[®] the ultimate third-generation UHMWPE for sliding bearings

PTFE has been the state-of-art sliding material for bridge bearings for decades, thanks to its excellent properties such as low coefficient of friction, load bearing capacity, and insensitivity to moisture and ageing, and its use is regulated in the European standard EN 1337-2.

Nevertheless, in recent years the increase in traffic loads, the trend towards the design of longer and more flexible bridges, and the development of constructions in countries with extremely cold or hot climate has been requiring an increase in performance which PTFE is not able to meet. To cope with the new requirements, starting from the beginning of the 2000s new sliding materials have been introduced, such as first and second-generation UHMWPE and modified PTFE. Most of these materials are covered by an European Technical Assessment (ETA).

ASM[°] is a third-generation UHMWPE purposely developed by ATAYA to meet the increasing performance demands coming from increased traffic conditions and new challenging bridge designs. In particular, ASM[°] has been developed to satisfy three requirements: High compressive strength, to reduce the size of structural bearings: the characteristic load bearing capacity of ASM[°] is 5 times higher

than PTFE according to standard EN 1337-2;

Extreme wear endurance, to increase the service life of bridge bearings: ASM[°] has been successfully tested over a total sliding distance of 100 km, i.e. ten times longer than PTFE acc. to EN 1337-2, and 339 to 100% longer than first and second-generation UHMWPEs; Ultra-low coefficient of friction, to reduce stresses on adjacent structural members: the coefficient of friction of ATAYA ASM[°] after 100 km is lower than standard PTFE and first and second-generation UHMWPEs.

ASM[°] is not hygroscopic and is insensitive to weathering, chemicals and ageing.

As for PTFE and UHMWPE, in main flat and curved sliding surfaces of bridge bearings ASM[®] is used in form of sheets provided with a uniform pattern of dimples which act as a reservoir of silicone grease.

2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.6 MATERIAL SPECIFICATIONS

MATERIAL SPECIFICATIONS

Use of ASM® as sliding material in structural bearings is covered by the European Technical Assessment ETA-23/0329 based on the European Assessment Document FAD 050004-00-0301 issued by OIB (Austrian Building Institute).

Next table compares the performances of ASM® to those of conventional PTFE according to EN 1337-2 and first and second-generation UHMPEs according to various ETAs.

Performances of ASM® compared other sliding materials for structural bearings:

CHARACTERISTIC	ASM®	SECOND-GENERATION UHMWPE	FIRST-GENERATION UHMWPE	MODIFIED PTFE	PTFE ACC. EN 1337-2
Technical specification	ETA-23/0329	various ETAs	various ETAs	various ETAs	EN 1337-2
Compressive strength	180 MPa (T ≤ 35 °C)	180 MPa (T ≤ 35 °C)	180 MPa (T ≤ 35 °C)	150 to 180 MPa (T ≤ 35 °C)	90 MPa (T ≤ 30 °C)
Tested sliding distance	100 km	60 – 75 km	50 km	10 km	10 km
Expected lifetime	100 years	60-75 years	50 years	10-25 years	10-25 years
Min/Max operating temperature	-50 / +80 °C	-50 / +80 °C	-50 / +80 °C	-50 / +90 °C	-35 / +48 °C
Friction coefficient	1.4 – 2.2	2.3 – 2.8	1.6 – 3.1	2.0 – 3.0	2.0 – 3.0

2.0 OUR PRODUCTS

2.1 BRIDGE BEARINGS

2.1.6 MATERIAL SPECIFICATIONS

MATERIAL SPECIFICATIONS

BACKING PLATE WITH CONVEX & CONCAVE PLATE SPHERICAL SURFACE

Backing plate is fabricated from steel S355 according to EN 10025

AUSTENITIC STEEL SHEETS

The austenitic steel used for sliding surfaces according to EN 10088-2 1.4401 +2B with minimum thickness of 1.5mm

The roughness is $Ry5i < 1\mu m$ according to EN ISO 4287. The hardness ranges from (150HV1-220HV1) according to EN ISO 6507-2.

LUBRICANT [SILICONE GREASE]

	TESTING STANDARD	REQUIREMENTS
Worked penetration (mm)	EN ISO 1183 (All Parts)	$\rho=2140$ to 2200
Dropping point (°C)	EN ISO 527-1 and 3	$f_{ptk}=29$ to 40
Oil separation after 24h at 100°C (% mass)	EN ISO 527-1 and 3	$\delta\rho > 300$
Oxidation resistance pressure drop after 100h at 160°C (MPa)	EN ISO 2039-1	H132/60 = 23 to 33
Pour-point of base oil (°C)		

QUALITY & TESTING

Quality is a key point of ATAYA manufacturing system.

Ataya products are manufactured to close tolerances by skilled technician working.

We have all testing facilities as per the national & international standards. All the tests can be conducted in-house from raw material to finished products in our well-equipped testing laboratory the continuously improved system to allows ATAYA to achieve and maintain the CE Certification for bearings

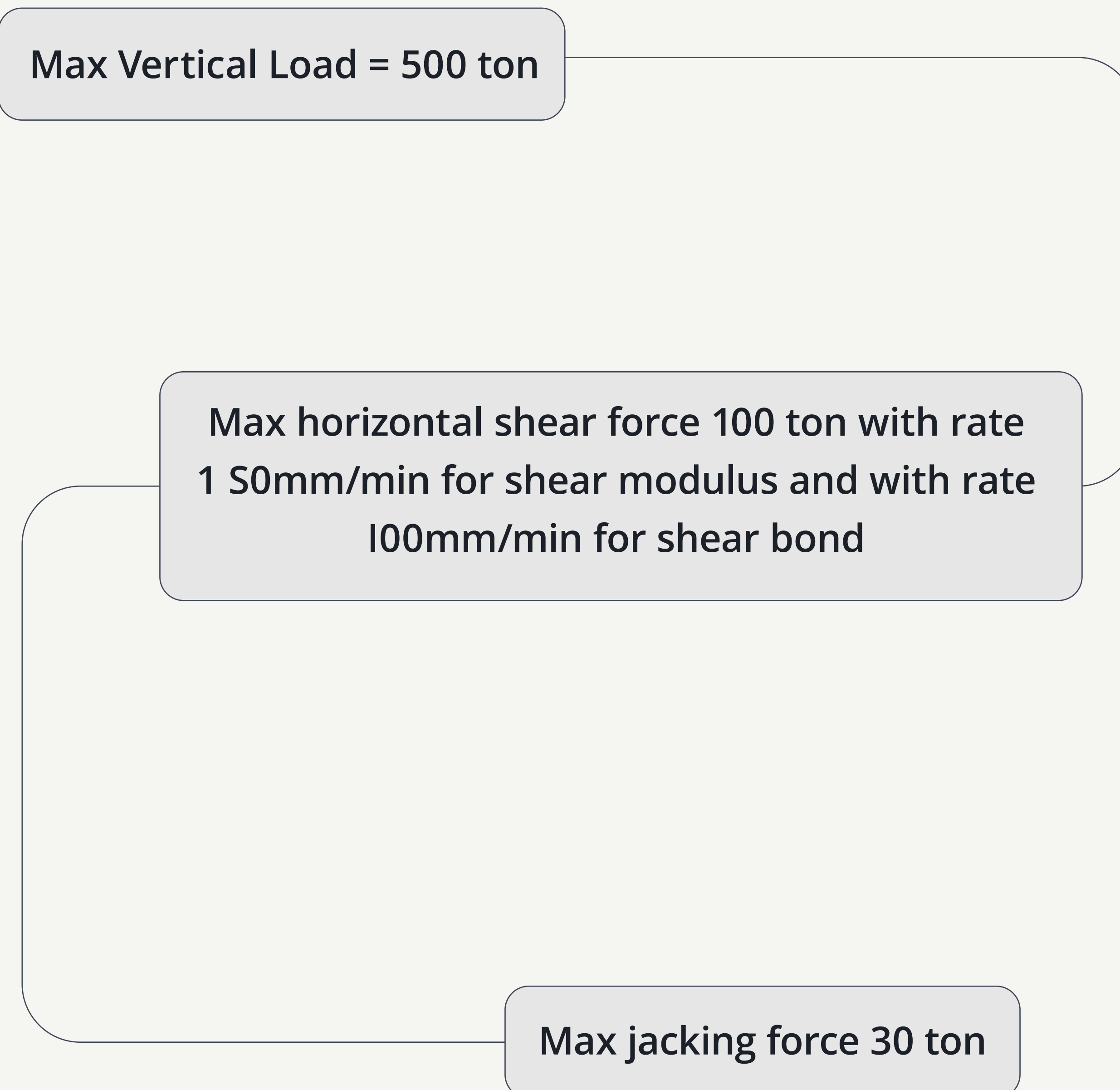


3.0 QUALITY & TESTING

3.1 ELASTO BEARING AND TRANSFLEX JOINT

TEST EQUIPMENT

ATAYA has a Bearing testing Machine with:



The quality of each bearing is checked according to quality control plan in accordance the European standard EN 1337-3 to determine the stiffness.

FOLLOWING TESTS CAN BE PERFORMED AT OUR LABORATORY:

- **COMPRESSION TEST**
- **SHEAR MODULUS TEST**

Shear modulus of Elasto Bearing determined by testing at different temperatures or after ageing:

- At nominal temperature of $(23 \pm 2 \text{ } ^\circ\text{C})$.
- At low temperature of $(-25 \pm 2 \text{ } ^\circ\text{C})$.
- At very low temperature of $(-40 \pm 2 \text{ } ^\circ\text{C})$.
- After Ageing low temperature of $(70 \pm 2 \text{ } ^\circ\text{C})$.
- After Ageing low temperature of $(70 \pm 2 \text{ } ^\circ\text{C})$.

- **SHEAR BOND TEST**



3.0 QUALITY & TESTING

3.2 ELASTO BEARING

TEST EQUIPMENT

- TENSILE AND ELONGATION TEST MACHINE
- OSCILLATING DIE RHEOMETER
- HARDNESS TESTER
- COMPRESSION SET APPARATUS
- DEFLECTION
- THICKNESS GAUGE : 5MM AND 25MM RANGE
- HOT AIR OVEN [250°C]
- OZONE AGING TEST CHAMBER
- MOONEY VISCOSITY

The quality of each bearing is checked according to quality control plan in accordance the European standard EN 1337-3 to determine the stiffness.

FOLLOWING TESTS CAN BE PERFORMED AT OUR LABORATORY:

- HARDNESS
- COMPRESSION SET
- TEAR RESISTANCE
- ELONGATION
- OZONE RESISTANCE
- TENSILE STRENGTH



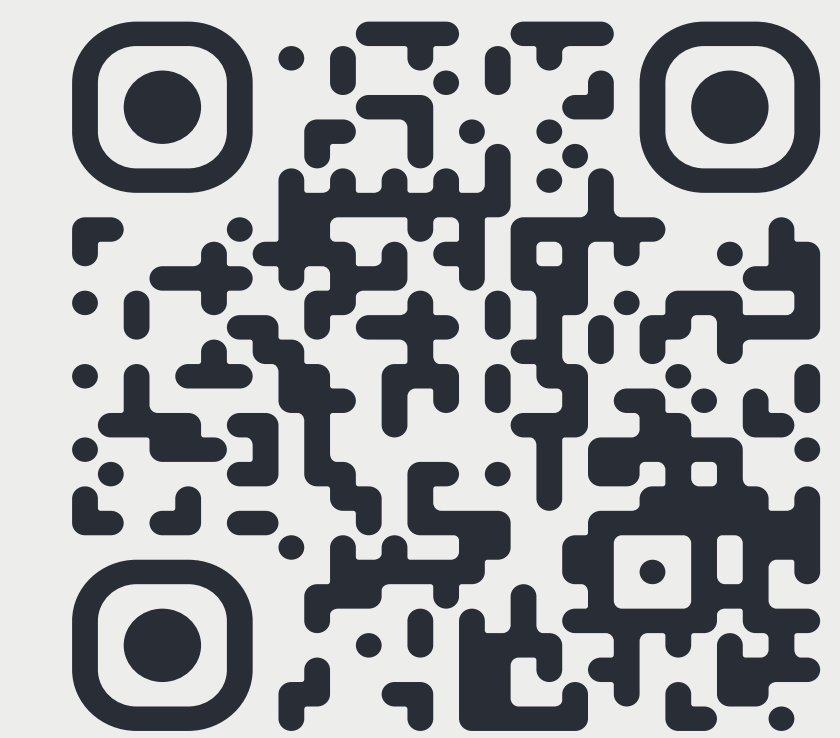
3.0 QUALITY & TESTING

3.3 STEEL TESTING MACHINE

STEEL TESTING MACHINE

The quality management system scheme monitors the production of the required steel plates and ensures that materials and geometry remain within the limits of this technical approval. The products are also subject to a programmer of periodic testing.

- **STATIC TENSILE TEST**
 - **TENSILE STRENGTH**
 - **PERCENTAGE ELONGATION**
- **SLIP TEST**
- **CYCLE TENSILE TEST**
- **FATIGUE TEST**



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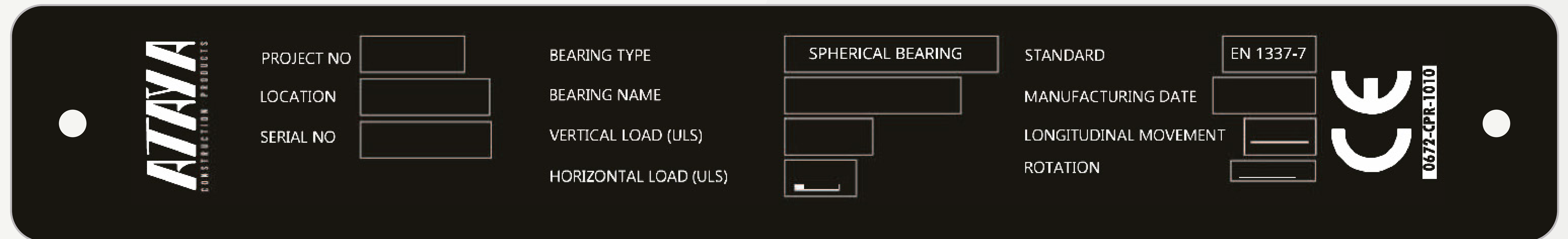
[QUALITY & TESTING](#)

4.0 ACCESSORIES

BEARING LABELING

Pot bearings are supplied with a label which contains the following information:

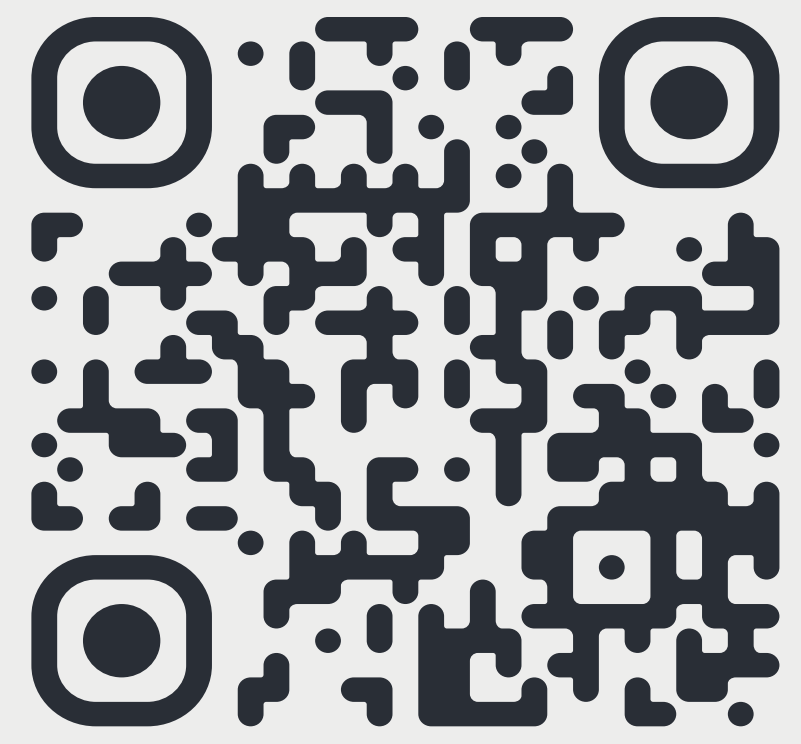
- CE Conformity.
- Pot bearing type.
- Order number.
- Date of manufacture.
- Maximum load.
- Maximum displacement.
- Maximum rotation.



STANELY BRIDGE, ALEX

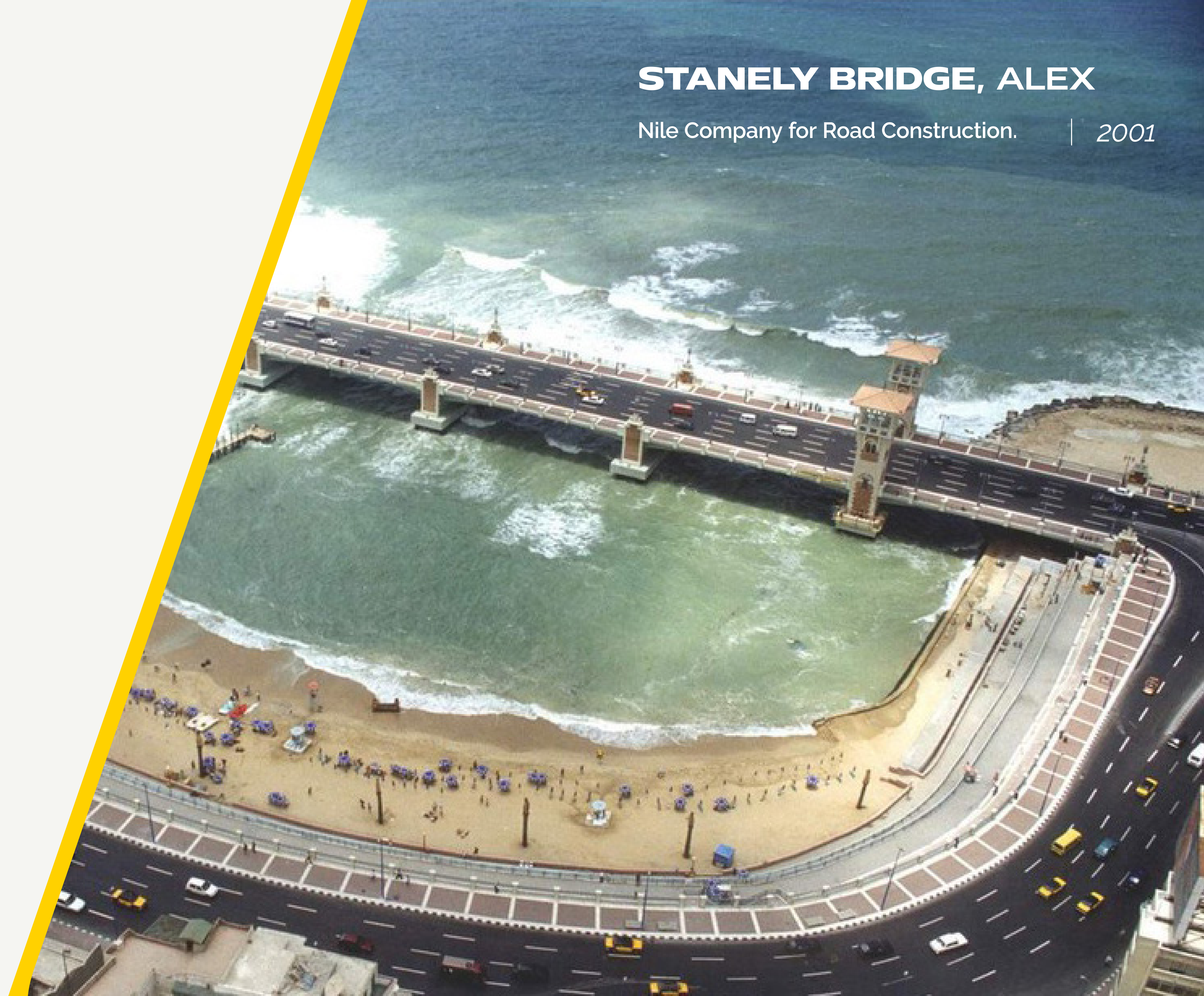
Nile Company for Road Construction. | 2001

FEATURED PROJECTS

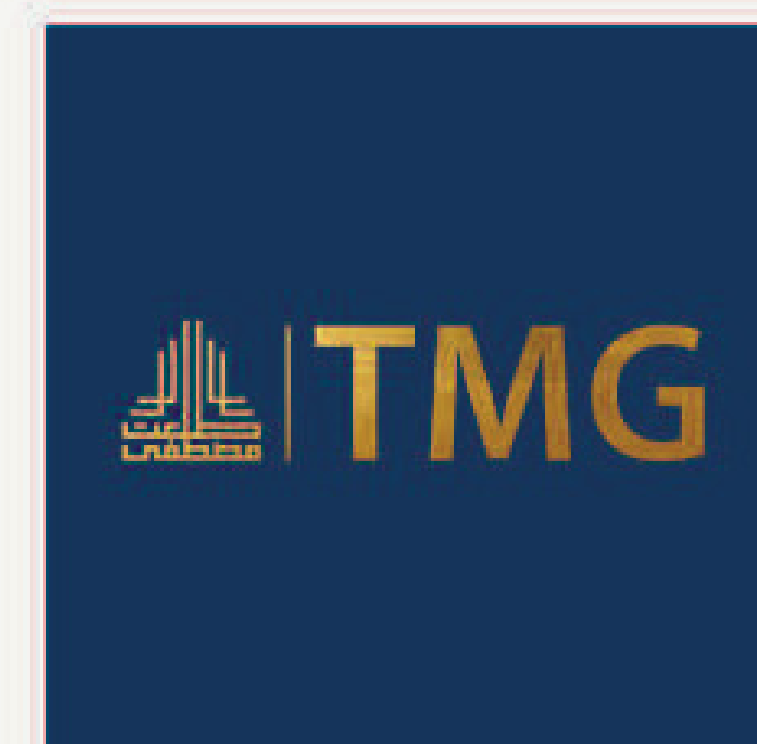


Click here or scan to:

[ACCESS TO ALL PROJECT](#)



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