

## BRIDGE ELASTOMERIC BEARINGS EN 1337-3

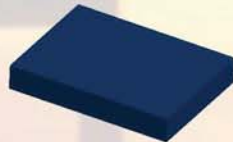


Agom's E-Link elastomeric bearings are built to withstand loads and simultaneous deformation in any direction, while also allowing for minor rotations in any of the bearing's axes. Agom bearings can be made entirely of rubber or can be reinforced with special sheet steel to increase capacity and transversal strength.

E-Link Bearings can also be produced with special anchor plates or with sliding surfaces to improve the structure's displacement capacity. This kind of bearing can withstand vertical loads of up to 12,000 kN.

### Not Reinforced Bearings

Agom E-Link F non-reinforced bearings can be used in many construction and civil engineering applications to support concrete and steel structures, and where a simple, low-cost rubber separation strip is capable of carrying compressive loads, while at the same time providing translational movement and rotational capacity. Plain pad bearings have a large and varied range of possible applications though these bearings are more typically used in prefabricated structures.



### Laminated bearings

Agom's E-Link B reinforced bearings are designed for use in bridge and building structures as a vertical-load-bearing component capable of providing translational movement in any direction and simultaneous rotational capacity. Agom's elastomeric bridge bearings with simple reinforcement are made up of multiple elastomer layers separated by reinforcing steel plates moulded on the actual layers, and can be manufactured in a rectangular or circular shape to meet individual engineering requirements.



These products are simple, robust and corrosion free as the steel inserts are covered entirely by rubber. Easy to install, they will provide long problem-free service.

### Laminated bearings with outer fixing steel plates

Two external steel plates can be vulcanised directly onto Agom E-Link elastomeric bearings with simple reinforcement during production, so securing the bearings to the structure with mechanical fastenings and reducing the risk of slippage.

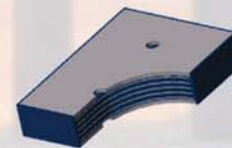
Agom can produce various types of bearings depending on the fastening method specified:

#### E-Link C2

Elastomeric bearings with two external plates and holes for plain anchor bars, primarily for use on in situ cast concrete structures.

#### E-Link C3

Elastomeric bearings with two external plates and threaded holes for use on metal structures, or as an anti-lift device; in this latter case,



suitable anchor bars must be fitted to the bearings for anchoring purposes.

#### E-Link C4

Elastomeric bearings with external plates and pins that connect to suitable steel plates in order to secure the bearing to the structure.

#### E-Link C5

Elastomeric bearings with two suitably etched external plates to facilitate the bearing's bonding to the structure with glue.

#### E-Link BPF

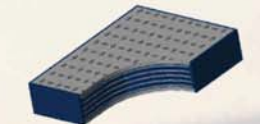
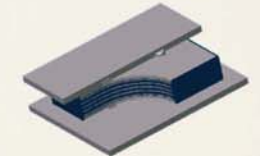
Elastomer friction bearing support, which is executed as a fixed point by means of steel guides

#### E-Link D

Elastomer friction bearing support: designed as a free sliding bearing in longitudinal and transversal directions. A virgin PTFE layer is bonded to the elastomer to reduce the friction coefficient with the stainless steel welded to the top steel plate.

#### E-Link DG

Elastomer friction bearing support: fitted as a fixed bearing in longitudinal or transversal directions by means of steel guides. Where a large range of movement is required, a virgin PTFE layer is bonded to the elastomer to reduce the friction coefficient with the stainless steel welded to the top steel plate.



bridge elastomeric bearings



## Friction of the bearings

The reaction of the bearing to the movement can be mathematically calculated by considering friction coefficient between stainless steel and PTFE to be 0,03.

The exact friction coefficient between stainless steel and PTFE is determined in according to EN 1337-2.

## Quality

Agom E-Link bearings are designed and manufactured in accordance with the requirements of the new European standard EN 1337-3 and have the qualification of the CE mark. Agom can also supply E-Link bearings complying with other standards. Every single component is moulded, mechanically worked and assembled by fully qualified and trained workers at the Agom factory with regular external inspections according with EN 1337 and under strict ISO 9001:2000 quality control standards.



All the elastomeric bearings are manufactured using only high-quality materials:

## Materials

### Elastomer material:

The elastomer used in the moulding process can be polychloroprene (neoprene) or natural rubber depending on the specifications requested.

### Ferrous material for steel plates:

All the steel plates are manufactured from ferrous material in accordance with EN 10025 standard

### Austenitic steel sheet:

The austenitic steel used for sliding surfaces is X5CrNiMo17-12-2 in accordance with EN 10088-2 1.4401 with a minimum thickness of 1.5 mm

The roughness is  $Ry5i \leq 1 \mu m$

The hardness  $\geq 150 HV1$  and  $\leq 220 HV1$

### PTFE

Agom uses only virgin PTFE without regenerated or filler materials.

The minimum thickness of PTFE is 1.5 mm and varies in according with the bearings size and type.



Characteristics	Test method	Requirements
Tensile strength (MPa)	ISO 527-1/3	$\geq 29$
Elongation at break (%)	ISO 527-1/3	$\geq 300$
Hardness	EN ISO 2039-1	H132/60=23 to 33 MPa

## Corrosion Protection

Steel components exposed to the elements are protected against corrosion. Agom adjusts the corrosion protection in accordance with the aggressiveness of the environment in which the bearings are to be installed and each customer's requirements.

The standard corrosion protection according EN 1337-9 is as follows:

- sandblasting SA2.5 grade
- two components high thickness epoxy zinc paint: 250  $\mu m$

The high resistant corrosion protection (metallization) is as follow:

- sandblasting SA 2.5 grade
- Metal spraying to 85  $\mu m$  with Zn/Al 85/15
- Sealing: Epoxy sealer 20-25  $\mu m$
- Top coat: Polyurethane paint 100  $\mu m$



## Comprehensive Labelling

All bearings with external steel plates are provided with a metal label detailing the properties of the bearing :

- bearing type
- maximum vertical and horizontal loads
- rotation
- order number
- date of manufacture
- CE Mark



All E-Link bearings are provided with a non-fading mark directly moulded on the rubber outlining

- the properties of the bearing
- international standards
- order number
- date of manufacture
- CE Mark



The top face of the bearing gives information on the type of the bearing, the direction of the axis of the bridge, the presetting (if any), the position.

On customer request, a special sliding label gives the information about the movement condition of the bearing.



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