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WABO® ELASTODEC E

Plain and laminated elastomeric bearings

Description
WABO ELASTODEC E bearings are manufactured making use of materials complying with all regulations in force, in simple layers of rubber or with several layers separated by thin sheet metal. In reinforced bearings, vulcanized rubber sheets are used to protect the steel from corrosion and to convey horizontal forces from rubber to sheet metal.
This steel sheet is smaller in size than bearing, in order to be encapsulated by the rubber, and their edges are finished in order to prevent cutting the rubber.

WABO ELASTODEC E bearings consist of rubber, which are possibly reinforced by sheet metal and may be rectangular (fig.1) or circular (fig. 2) in shape. In case of larger movement requirement, the WABO ELASTODEC EM (free sliding – fig. 3), ELASTODEC EL (guided longitudinal – fig. 4) and ELASTODEC ET (guided transversal) bearings are put forward, that are very similar to the previous models, with the option of the addition of a PTFE layer and of a stainless steel sliding surface.

Uses
WABO ELASTODEC E elastomeric bearings are used as bearings in bridges and in other civil and industrial structures. Actually, they are capable of taking up and transferring forces from an element to another in the structure and placed vertical between sections act as to absorb seismic shock.

Benefits
- Reduced thickness
- Easy installation
- Maintenance-free
- Cost-effectiveness

Product data*
Rubber used for manufacturing WABO ELASTODEC E is based on synthetic elastomers complying with UNI-CNR 10018/87 standard, featuring Shore A hardness equal to 60 ± 3.
Polymers making up the elastomer feature particularly long and flexible molecular chains, capable of being elastically deformed when developing under the vulcanization process.
Upon request, elastomers with other properties and bearings meeting different standards, such as AASHTO, DIN, BS 5400, BS EN 1337, SETRA, NBN, etc. can be supplied. Fe 430-UNI 7070 or higher grade steel is used for WABO ELASTODEC E bearing reinforcements, featuring the following specifications:

- Tensile strength: R, N/mm² ≥ 350
- Yield strength: P, N/ mm² ≥ 230
- Elongation at break, A, % ≥ 15

Sheet thickness is not lower than 2 mm.

Stainless steel is X5 Cr Ni Mo 17/12 UNI 6903/71, with mirror-finished surface to UNI13963, 2 mm thickness. Surfaces in contact with PTFE are polished and feature roughness Ra ≤0,1 mm, according to UNI 3696.

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PTFE is a virgin polytetrafluorethylene produced by free deposition instead of thickening, 4 mm minimum thickness, featuring the following specifications:

- Density,kg/m³ 2170±30
- Tensile strength (23°C), N/mm² ≥ 24
- Elongation at break (23°C): A, % ≥ 300
- Hardness, Shore D ≥ 55

Tests and approvals
Installed on behalf of ANAS (Italian Trunk Road Board) and other Italian Road & Highway Management Boards.

Packaging
WABO ELASTODEC E bearings are supplied complete with identification data indelibly engraved into their surface.

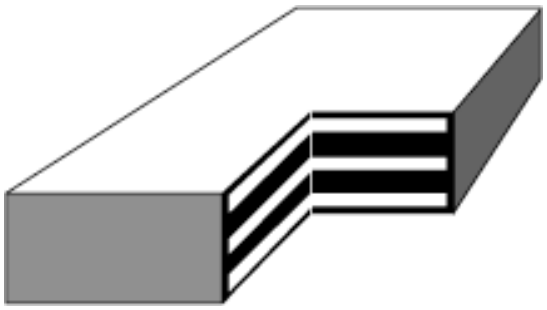

Figure 1: Rectangular laminated bearing

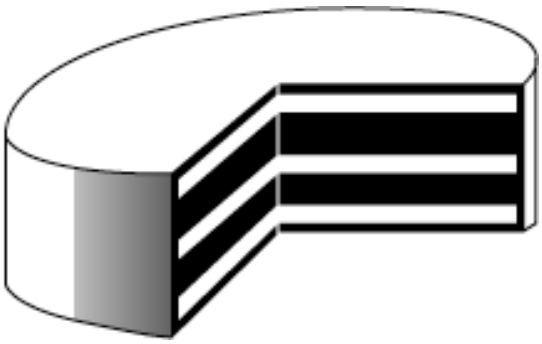

Figure 2: Circular laminated bearing

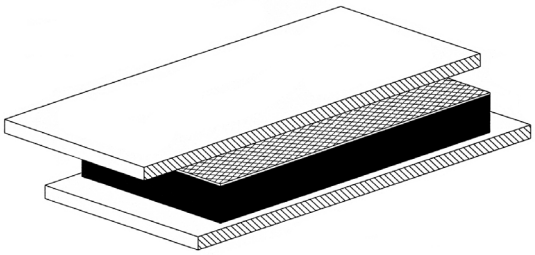

Figure 3: Cross-section of a free sliding bearing (WABO ELASTODEC EM)

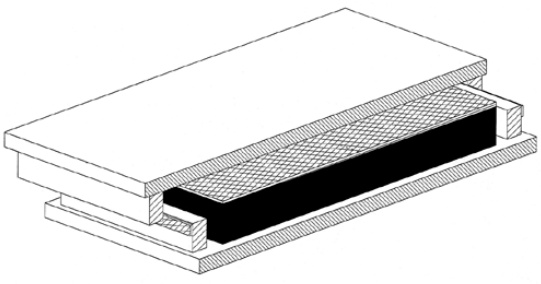

Figure 4: Cross-section of a guided longitudinal bearing (WABO ELASTODEC EL)

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Storage
When bearings are not directly installed upon supply they shall be stored in an adequate place, raised from the ground, and in such a way as to be protected from shock, dust, humidity and direct sunlight.

Installation
WABO ELASTODEC E bearings must be correctly positioned for optimum operation and long service life. The surface of contact between concrete and bearing shall be smooth, free from protruding parts and clean, to afford perfect seating of bearing. This surface shall be perfectly level and at least 5 cm greater than the bearing's size. To bond bearings to structures, mortars or epoxy resins suitable for the applied rubber type must be used.

All slopes – if any – shall be eliminated by fitting adequate levelling layers onto the pre-cast beams, or by placing a resin prism between bearing and superstructure.

Bearings shall be placed with their shorter side parallel to the beam axis, in order to allow for a greater possibility of rotation.

The WBA Representative shall be pleased to provide additional detailed information.

Health & Safety
Appropriate health and safety advice can be found in the Material Safety Data Sheets.

Users are advised to wear gloves and eye protection when installing Elastodec E bearings.

* Properties listed are based on laboratory controlled tests.

BASF_CC-UAE/ElastE_09_10/v3/10_14

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