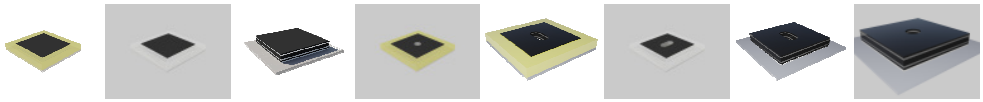

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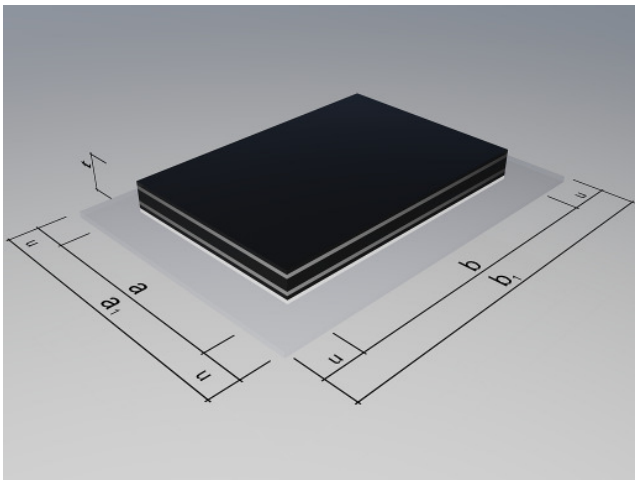
ESZ Fosta sliding bearing

Steel-reinforced sliding bearing
with supervisory certificate

INFORMATION FOR IMPLEMENTATION IN STEEL AND STEEL REINFORCED CONCRETE CONSTRUCTION

The ESZ Fosta sliding bearing and the Fosta sliding bearing HP allow safe sliding between structural elements made of concrete and/or steel with high permissible bearing compressions. The dimensionally stable sliding plates always remains parallel and the functions 'compression compensation' and 'sliding' are separated from one another. The steel reinforced elastomer compression compensation pad consists of a CR rubber in a quality in accordance with DIN EN 1337-3 and is coated with a PTFE material in accordance with DIN EN 1337-2. The sliding plate can alternatively be manufactured from a POM material or a stainless steel plate in accordance with DIN EN 1337-2. Four bearing thicknesses are available as standard:

Fosta sliding bearing with
t= 12 and 18mm ($_{perm.}$ σ = 15 N/mm²)
Fosta sliding bearing HP with t= 14 and 20mm ($_{perm.}$ σ = 25 N/mm²)



Implementation in steel construction:

When used in steel construction, both parts - the elastomer cushion and the sliding plate – should each be undisplaceably connected to the adjacent structural elements.
This additional fixing is necessary because steel has a lower static friction than concrete. Fixing examples for use with steel contact surfaces are illustrated on page 3 of this information. If there is a structural danger of the bearing slipping out, it must be fixed.

Implementation in steel reinforced concrete construction:

With steel reinforced concrete contact surfaces there is generally sufficient static friction between the cushion and the concrete surfaces, as a result of which positional security is not required. However, in the case of low compression (< 3 N/mm²), in particular in connection with low temperatures (< -20 °C), it is necessary to fix the sliding plate to the concrete element using a suitable construction adhesive.

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INFORMATION ON THE COEFFICIENTS OF FRICTION OF THE FOSTA SLIDING BEARING

The friction coefficient of a sliding bearing is not a constant variable. Apart from the properties of the contact surfaces, the friction between materials is determined by the following physical laws:

- Temperature: friction coefficients increase with decreasing temperatures

- Average compression: friction coefficients increase with decreasing average compression

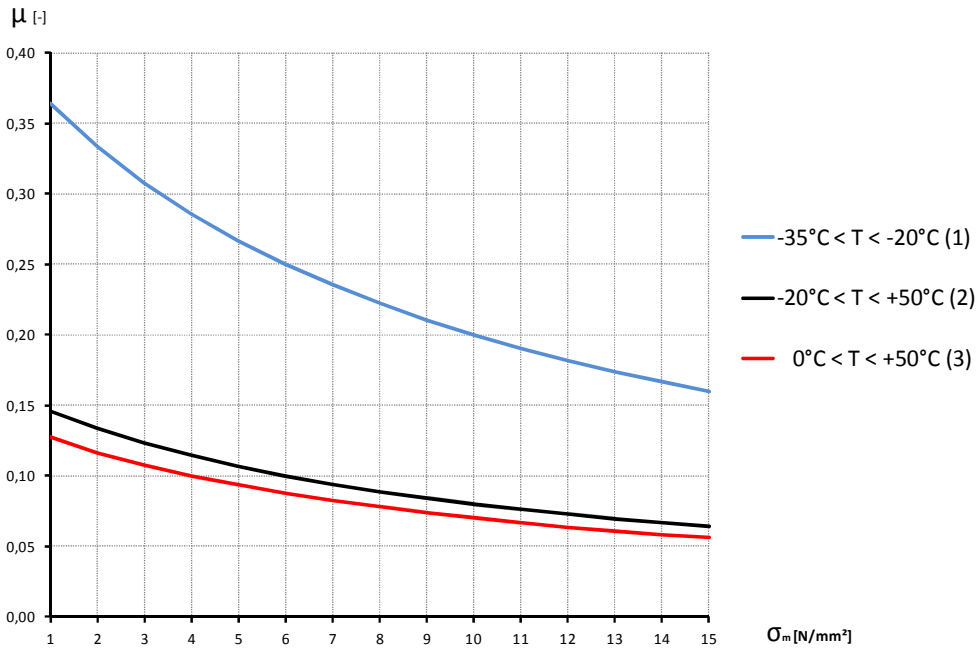
- Total displacement: friction coefficients increase due to wear of the mating faces

- Movement interruptions: high starting friction due to plastic deformation of the mating faces.

These laws are accounted for in the test program for bridge bearings in accordance with DIN EN 1337-2 2004, Appendix D. Since there are presently no standardised requirements for a test program for sliding bearings in building construction, the ESZ Fosta sliding bearing and the Fosta sliding bearing HP have been tested on the basis of the test program mentioned above:

Temperature: 0 / -10 / -20 / -35 / +35 / +21 °C
Average compression: 1/5/10/15 (25) N/mm²
Total displacement: 110 m
Movement interruptions: 1 h between the test sections.
Testing: MPA Stuttgart, order no. 946011000 - 2 and 3 as well as 9910037011-42 and 46.

Friction coefficients μ depending on T and σ_m*

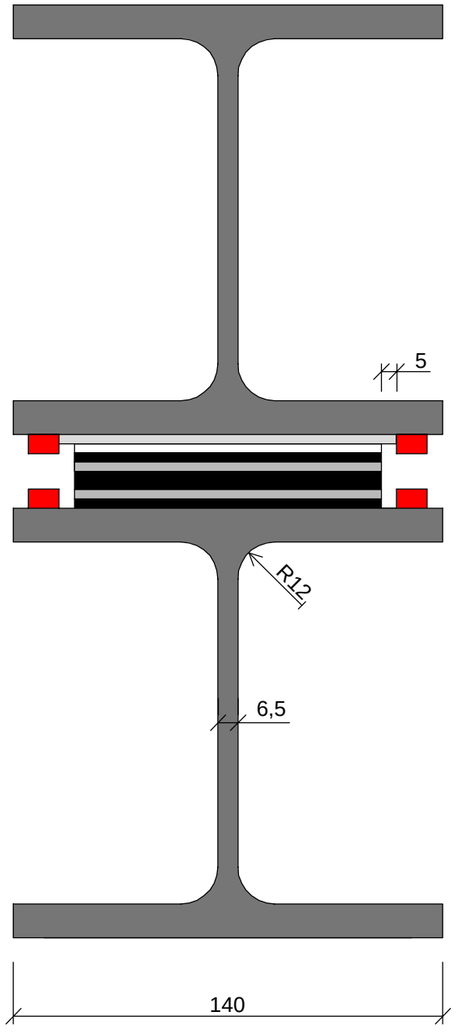


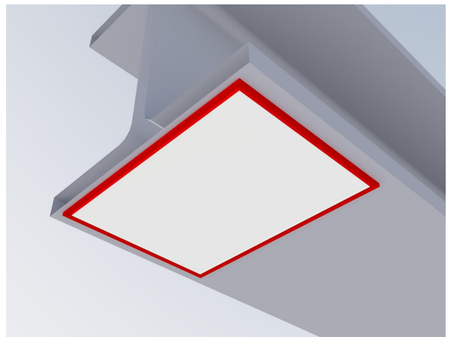
Design formulae:
(1) $4{,}0/(10 + \sigma_m)$
(2) $1{,}6/(10 + \sigma_m)$
(3) $1{,}4/(10 + \sigma_m)$

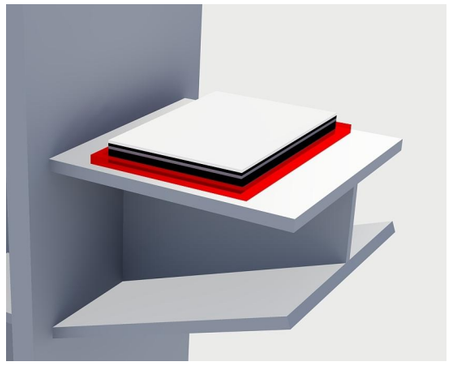
Fosta sliding bearing on steel mating faces

Scale 1:2

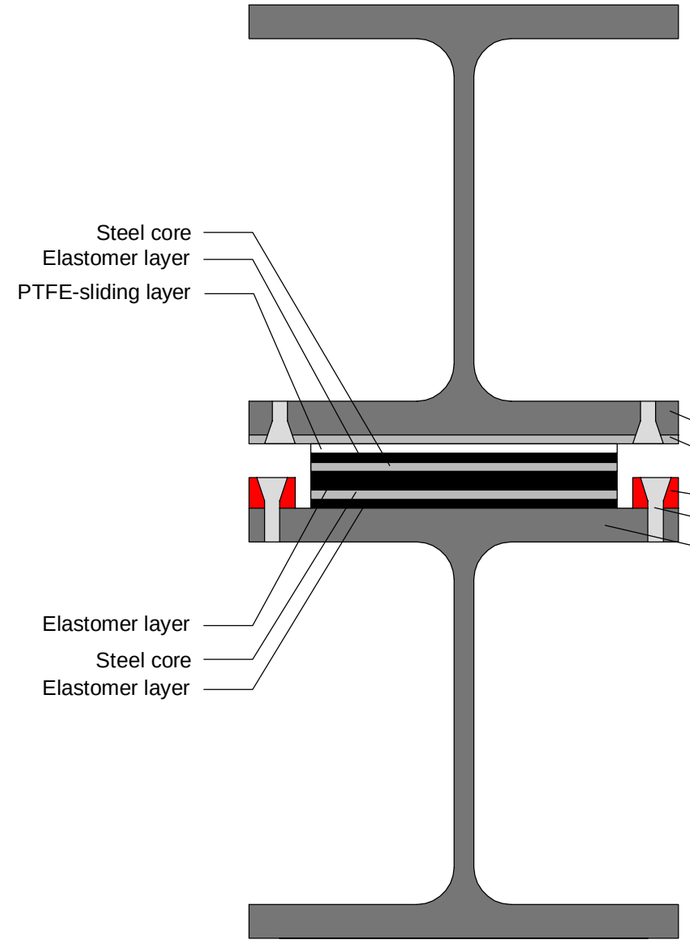
Section I







Section II



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Sketches with labels

Date: 02.08.2012