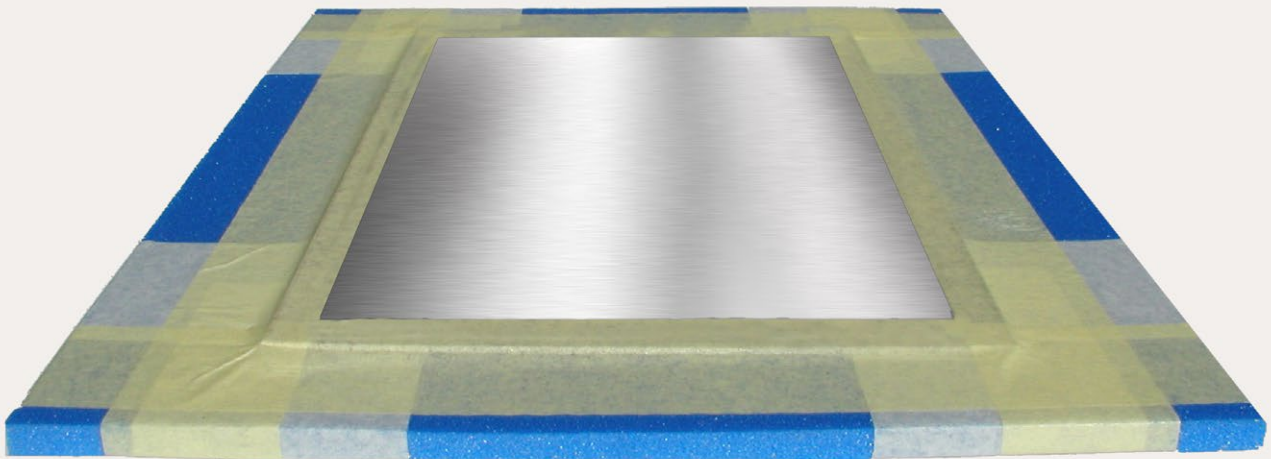




Structural bearings

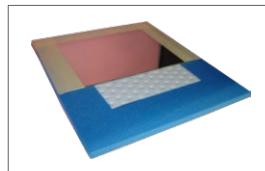
Infrastructure | Buildings | Industrial structures

# LASTO<sup>®</sup> – sliding point bearing with PTFE sliding surface



## LASTO<sup>®</sup> FLONPAD

Low-friction, durable, high-quality



**mageba**



# Properties & technical data

## Principle

The free-sliding LASTO®FLONPAD point bearing is a high-quality structural support bearing for buildings or civil engineering structures. It is used as a low-height solution for accommodating significant structural movements with minimal friction. It consists of a PTFE-coated elastomeric load-bearing core, and a separate stainless steel sliding sheet with a specially treated, highly polished surface across which it can slide. This high-quality sliding pairing offers excellent sliding properties, durably and reliably. Two types are available: GP6, with an unreinforced core of thickness 6 mm, and GP9, with a steel-reinforced core of thickness 9 mm.

## Application areas

LASTO®FLONPAD is an optimal solution in many situations where a durable, low-friction bearing solution is required. The freely definable dimensions of the bearing enable loads to always be transmitted directly and efficiently to the supporting structure.

LASTO®FLONPAD can be used to achieve high-quality bearing support for slabs on walls, columns and brackets and for prestressed slabs. It is particularly suitable for steel construction, timber construction, pipelines, machines, reservoirs and water tanks. Within the 1000 × 2000 mm maximum dimensions of the sliding plate, any shape is possible.

## Movement capacity

The standard movement capacity of a LASTO®FLONPAD sliding bearing is ±25 mm in both the longitudinal and transverse directions. The sliding plate is then 60 mm longer and wider than the elastomer/PTFE part of the bearing; the length of the sliding plate along each axis generally exceeds the length of the elastomer/PTFE part by an amount equal to the sliding capacity in that direction plus 10 mm. The installation dimensions of the fully fabricated bearing can be freely specified within certain limits, but must be at least as big as the sliding plate. To prevent the bearing from becoming displaced from its position on the supporting structure, a **minimum pressure of 0.5 N/mm<sup>2</sup> is required.**

## Rotation

The bearing's maximum permissible rotation angle,  $\alpha$ , can be calculated using the following equations:

- GP 6 (unreinforced): perm.  $\alpha = \frac{0.2 \times 3}{a} \times 1,000$
- GP 9 (reinforced): perm.  $\alpha = \frac{0.2 \times 5}{a} \times 1,000$

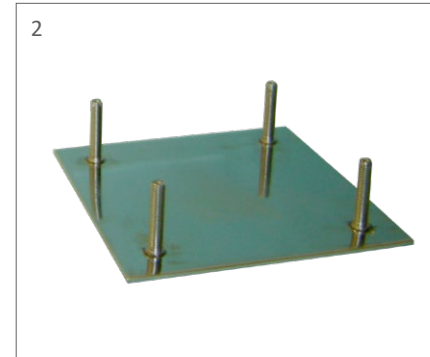
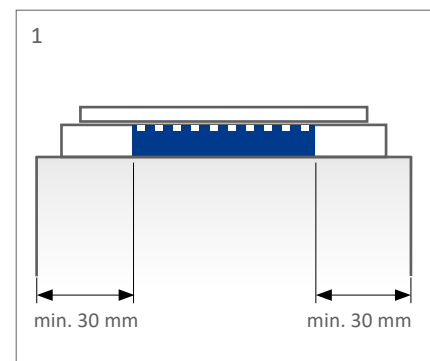
where **a** is the bearing core length [mm] perpendicular to the rotation axis. Should larger angles of rotation be required, we recommend the use of our LASTO®FLONBLOCK bearing.

- 1 Edge distance from load-bearing core: min. 30 mm
- 2 Sliding plate may be supplied with anchors, on request

## Installation

LASTO®FLONPAD sliding point bearings are supplied ready to install, and must not be disassembled. They have to be laid on a smooth, flat and horizontal mortar bed. An additional fixing is not necessary.

The sliding plate is placed, or cast in place, to leave its sliding surface flush with the surface of the superstructure.



Type	LASTO®FLONPAD GP 6	LASTO®FLONPAD GP 9
Illustration		
Description	Unreinforced bearing	Steel-reinforced bearing
Sliding surface	PTFE, smooth	PTFE, with grease pockets
Base material	CR	CR
Elastomer thickness	t = 5 mm	t = 5 mm
Core thickness	6 mm	9 mm
Sliding plate thickness	2 mm	2 mm
Installation height	8 mm	11 mm
Allowable pressure (SLS)	5 N/mm <sup>2</sup>	15 N/mm <sup>2</sup>
Weight of load-bearing core	9.61 kg/m <sup>2</sup>	27.23 kg/m <sup>2</sup>
Weight of sliding plate	15.70 kg/m <sup>2</sup>	

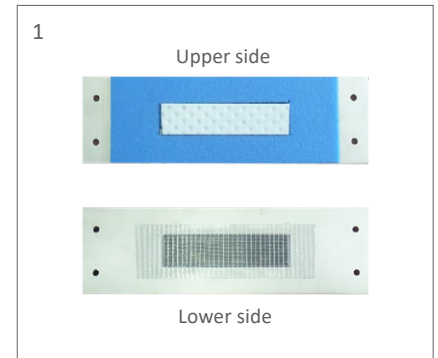
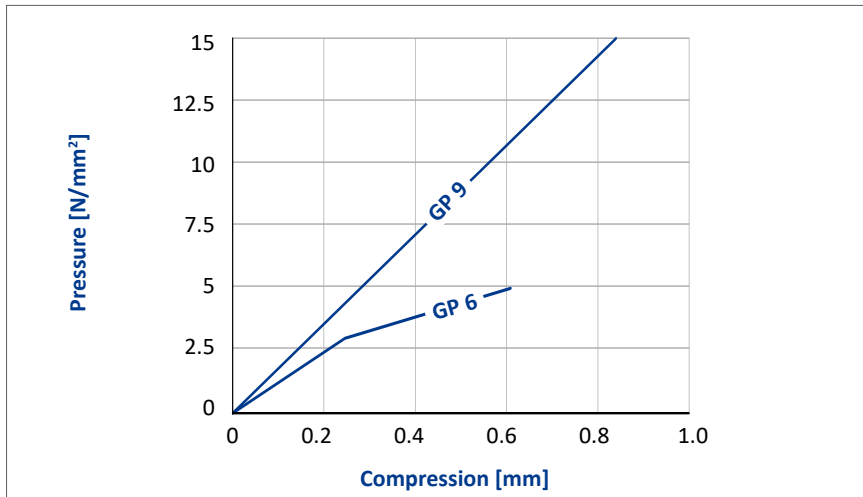
Special designs for larger sliding movements available on request

## Coefficient of friction

Pressure [N/mm <sup>2</sup> ]	5	10	15	Intermediate values may be linearly interpolated
Coefficient of friction	0.05	0.04	0.03	

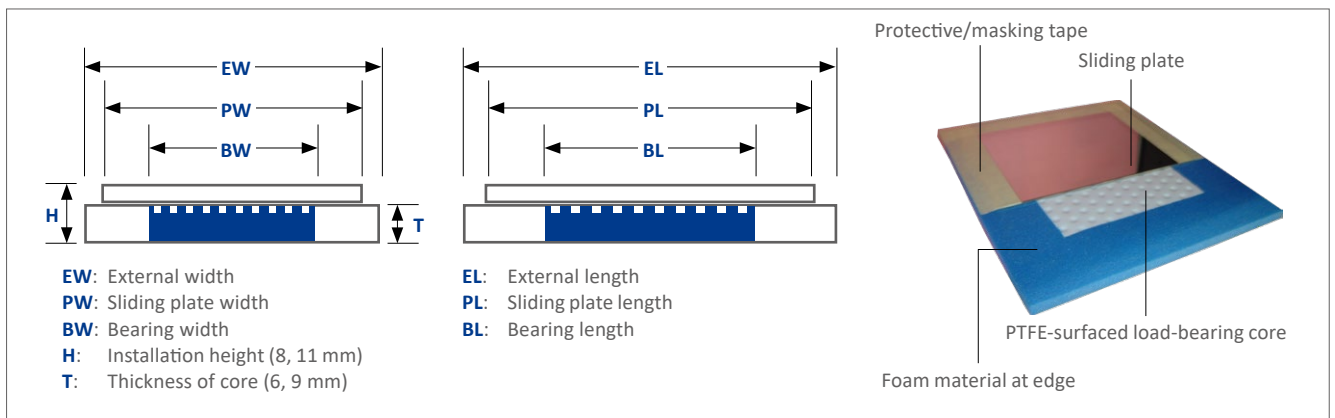
# Bearing construction and design example

## Spring characteristic



1 Bearings can be designed to prevent horizontal displacements, on request

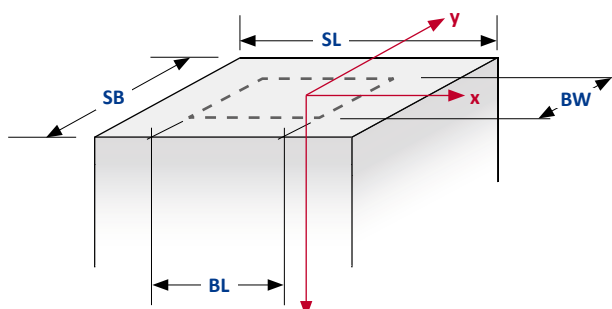
## Bearing construction



## Design example

### Specified:

Load:  $F = 320 \text{ kN}$   
 Movement capacity:  $s = \pm 20 \text{ mm}$   
 Rotation:  $\alpha = 1.5 \text{ ‰}$  over **BW** about axis **x**  
 Support structure dimensions: **SW** x **SL** =  $200 \times 300 \text{ mm}$



### Solution:

#### 1. Determine size of load-bearing core

**BW** x **BL** core dimensions as depicted should be appropriate for the support structure dimensions.  
 → Selected: **BW** = 110 mm, **BL** = 210 mm

$$p = \frac{320000}{110 \times 210} = 13.9 < 15 \text{ N/mm}^2 \text{ max. perm.}$$

→ Type GP 9 required

#### 2. Check angle of rotation:

→ perm.  $\alpha = \frac{0.2 \times 5}{110} \times 1'000 = 9 \text{ ‰} > 1.5 \text{ ‰}$  as specified

#### 3. Dimensions of sliding plate:

$$\text{PW} = 110 \text{ mm} + 2 \times 20 \text{ mm} + 10 \text{ mm} = 160 \text{ mm}$$

$$\text{PL} = 210 \text{ mm} + 2 \times 20 \text{ mm} + 10 \text{ mm} = 260 \text{ mm}$$

(10 mm extra as reserve)

#### 4. Installation dimensions:

Support structure dimensions =  $200 \times 300 \text{ mm}$

→ Installation dimensions =  $200 \times 300 \text{ mm}$  (**SW** x **SL**)



# Specification text

## Sample specification texts

Supply and install an installation-ready, free-sliding PTFE-sliding point bearing with a stainless steel sliding plate of thickness 2 mm.

Type: LASTO®FLONPAD GP 6

Movement capacity: ±25 mm  
Allowable pressure ( $G_k$ ): 5 N/mm<sup>2</sup>  
Max. load: 150 kN  
Installation height: 8 mm  
Load-bearing core (BW × BL): 150 × 200 mm  
Sliding plate (PW × PL): 210 × 260 mm  
Inst. dimensions (EW × EL): 230 × 280 mm

Supplier:

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Tel.: +41-44-872 41 52  
Email: buildings.ch@mageba-group.com  
www.mageba-group.com

Supply and install a steel-reinforced, installation-ready, free-sliding PTFE-sliding point bearing with a stainless steel sliding plate of thickness 2 mm.

Type: LASTO®FLONPAD GP 9

Movement capacity: ±25 mm  
Allowable pressure ( $G_k$ ): 15 N/mm<sup>2</sup>  
Max. load: 450 kN  
Installation height: 11 mm  
Load-bearing core (BW × BL): 150 × 200 mm  
Sliding plate (PW × PL): 210 × 260 mm  
Inst. dimensions (EW × EL): 230 × 280 mm

Supplier:

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CH-8180 Bulach  
Tel.: +41-44-872 41 52  
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## Reference projects



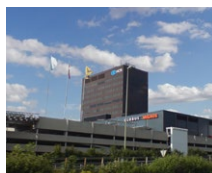
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Stuttgart City Library, DE



Convention Center, HK



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Airport Hurgada, EG



Stade de Suisse, CH

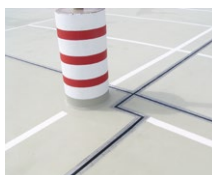
## Product groups (building construction)



Structural bearings



Vibration isolation



Expansion joints

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