

CIPARALL SLIDING BEARING TYPE GRP

14 mm thick

Reinforced point sliding bearing can withstand loads up to 21 N/mm²

SECURELY AND PERMANENTLY BEDDED

ENHANCING LIVING COMFORT WITH CALENBERG

The combination of elastomer deformation and sliding bearings ensures that larger displacements, angular rotations and imperfections are absorbed while centring the load at the same time. The high-grade rubber material in our elastomeric bearings guarantees a long service life, no need for maintenance and, consequently, absolutely no damage to structures.

KNOW



Prevention of structural damage

Deformations in structural components are caused by permanent loads, such as a structure's dead load, variable influences, such as wind, and constraint forces due to factors such as creep, settling, temperature changes and component tolerance. Displacements which cannot be absorbed by a deformation bearing are absorbed by our Ciparall sliding bearing.

Without the use of suitable elastomeric bearings, the aforementioned stresses and forces will cause damage to structures. Besides cracks and spalling, they can also inflict major permanent damage to adjacent components, which will then need to be repaired at considerable expense in terms of time and cost. The structural bearings' elastic effect transfers forces into connections between structural elements centrally while also compensating for deviations in plane parallelism.

Advantages for our customers

The sliding bearings' exceptionally high load capacities make it possible to build cost-effective, filigree structural designs. Sliding bearings do not require maintenance and do not need to be replaced if dimensioned and installed correctly. Designers also ensure there is extra capacity in the material to absorb any unforeseen

load cases. The service life of sliding bearings matches or exceeds that of adjacent components. Our sliding bearings increase the value of the building by preventing structural damage and eliminating renovation and maintenance costs. The static sliding bearings permanently channel forces into adjacent components without causing damage while absorbing rotations and displacements as intended.



BENEFITS FOR OUR CUSTOMERS

- Load capacity of up to 21 N/mm², regardless of format
- GRP-reinforced, heavy-duty, combined sliding and deformation bearing
- Dimensionally, stable sliding surface
- High-grade elastomer materials (CR)
- Absorption of vertical loads, horizontal displacements and angular rotations
- Virtually force-free thanks to excellent coefficient of friction
- Very low creep behaviour
- Maintenance-free
- Weather- and ozone-resistant
- Simple dimensioning
- Building authority approval
- Long service life

The Ciparall sliding bearing type GRP

Product description

The Calenberg Ciparall sliding bearing type GRP is a combined sliding and deformation bearing. The main component of the bearing body is an ageing- and ozone-resistant CR material with a hardness of 70 ± 5 Shore A, a vulcanised reinforcement made of glass-fibre reinforced composite (GRP) and a PTFE coating. The sliding plate is also made of glass-fibre reinforced composite (GRP). The material is weather-resistant and quality-controlled.

Performance characteristics

The Ciparall sliding bearing type GRP allows structural components to move virtually free of any constraints. Thanks to the low friction coefficients, no restoring forces are generated during displacement. Ciparall sliding bearings type GRP allow exerted forces to be transferred without causing damage while also centralising the load. Component tolerances, rotations and uneven bearing surfaces are not channelled into the sliding layer. The dimensionally stable slide level remains flat and parallel and the sliding properties remain intact. These are fundamental conditions required to ensure correct, reliable function.

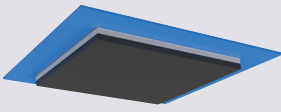
Building authority approval

The approval for use as a construction bearing in building construction is governed by the standard building authority certification Z-16.22-525, issued by the German Center of Competence in Civil Engineering (DIBt).

Fire behaviour

Fire safety report no. 3799/7357-AR by the Technical University (TU) of Braunschweig must be taken into account for fire safety requirements. The report describes minimum dimensions and other measures that fulfil the requirements specified in DIN 4102-2.

EXCERPT FROM THE TECHNICAL DATA

	Bearing designation	Type of bearing	Bearing thickness [mm]	Compressive stress	Approval
	Ciparall sliding bearing, GRP-reinforced	Reinforced point sliding bearing	14	max. $\sigma_{R,d} = 21 \text{ N/mm}^2$	Z-16.22-525

Delivery forms

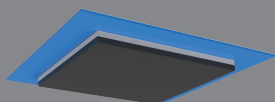


Ciparall sliding bearings can be supplied in almost any size to meet your project's requirements. The bearings can be provided with holes, cut-outs, slots and similar.

The bearings are embedded in polystyrene at the factory and equipped with a watertight plastic cover for in-situ concrete construction.

If necessary, a Ciflamon fire protection board with a width of at least 30 mm is provided to meet fire protection requirements, which is positioned on the sliding plate.

STANDARD CUT-OUTS



Hole



Corner notch



Slot



Rectangular notch



Slit notch



Rectangular hole



Diagonal cut



DIMENSIONS

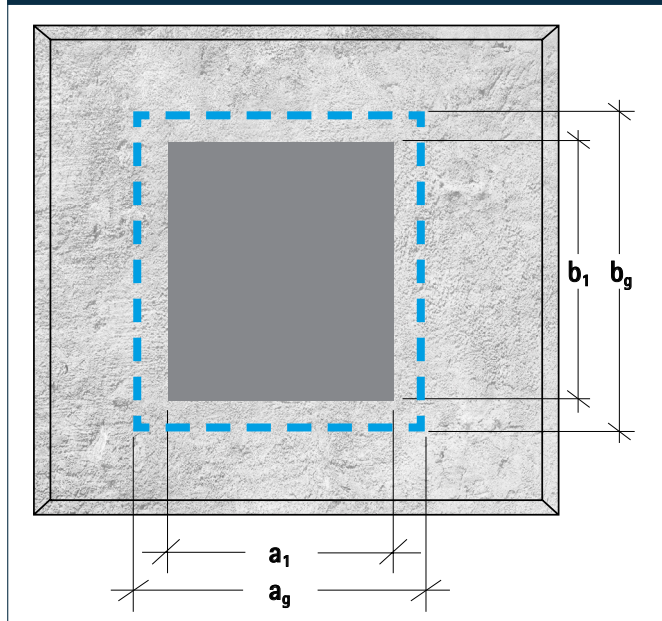
	Thickness	Maximum cut size	Minimum cut size
Sliding plate	2.6 mm	2000 mm x 1000 mm	Larger than the bearing body around the displacement path
Elastomer body	11.4 mm	600 mm x 600 mm	$a \geq 50 \text{ mm}$, $b \geq 100 \text{ mm}$



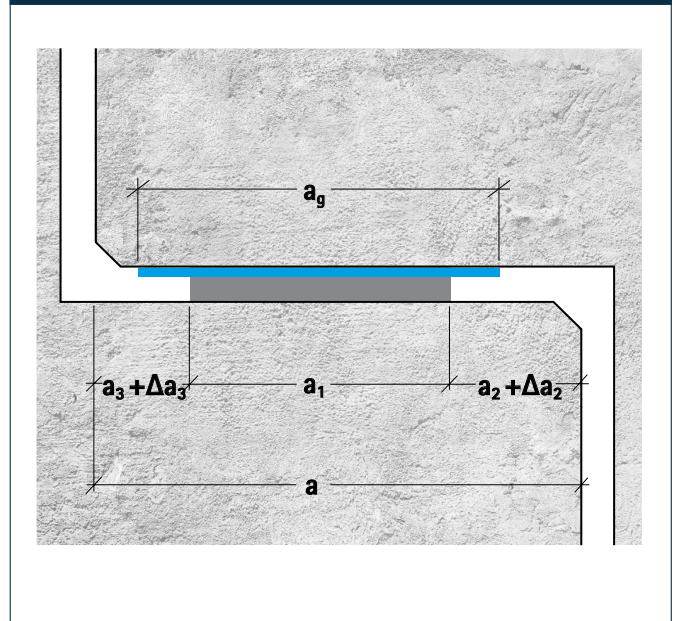
Constructive design

The bearing sections must be designed in line with the structural specifications and standards. The required edge distances shall be taken into account as specified in EN 1992-1-1 (2011-01). The elastomeric bearing body must be located within the reinforcement to allow the bearing to deform as designed and prevent spalling at the edge.

EDGE DISTANCE TOP VIEW



EDGE DISTANCE SIDE VIEW



LEGEND

Values for determining the required edge distances according to DIN EN 1992-1-1

a | a_1 | a_2 | Δa_2 | a_3 | Δa_3 | b_1 | a_g | b_g

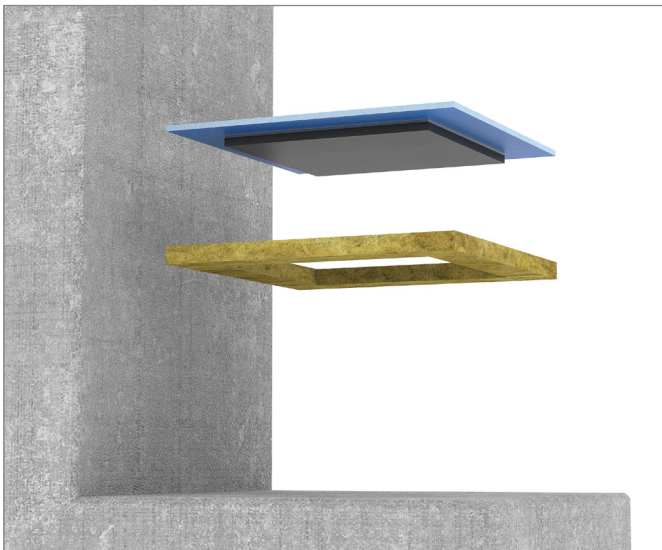
 Sliding plate



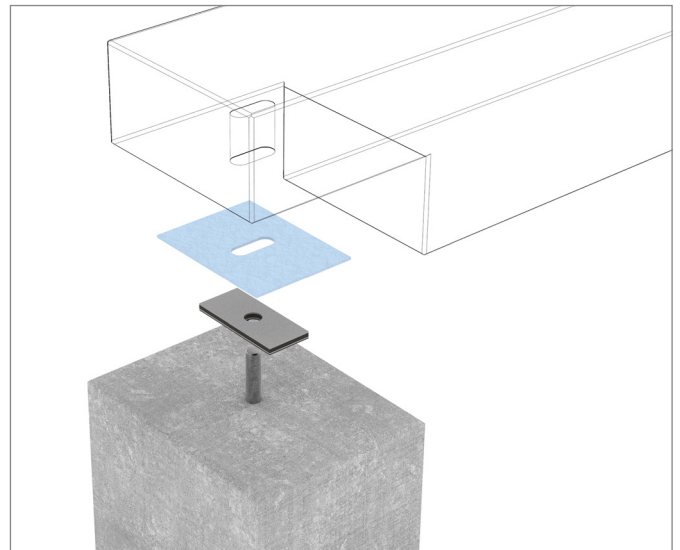
Installation

Prior to installation, it must be ensured that the elastomer bearings and bearing surfaces are free of dirt, ice, snow, grease, solvents, oils or separating agents.

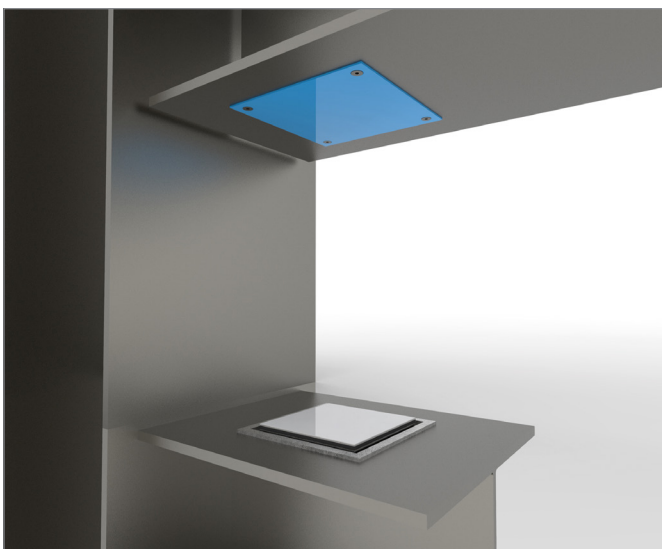
In the case of in-situ concrete construction, the bearing joints must be filled and covered so that no concrete slurry can penetrate them. The spring action and displacement capacity must be guaranteed.



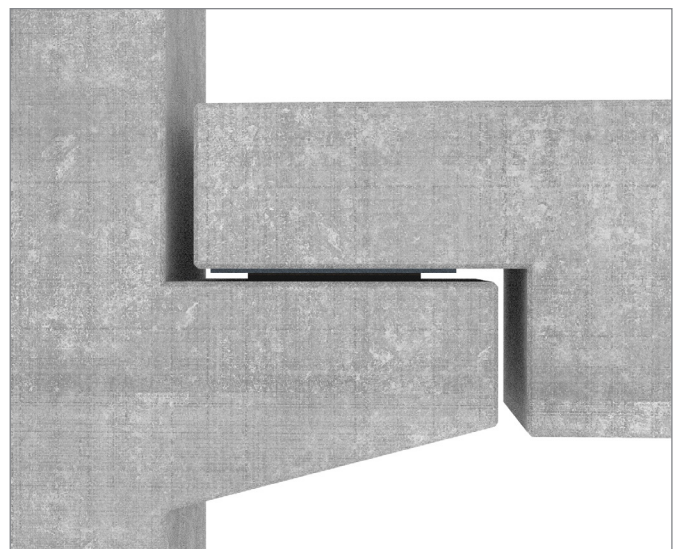
F90/F120 version



Drill/elongated hole design

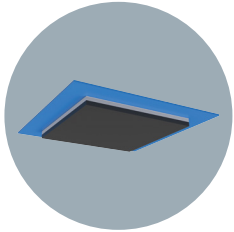


Position fixation in steel construction



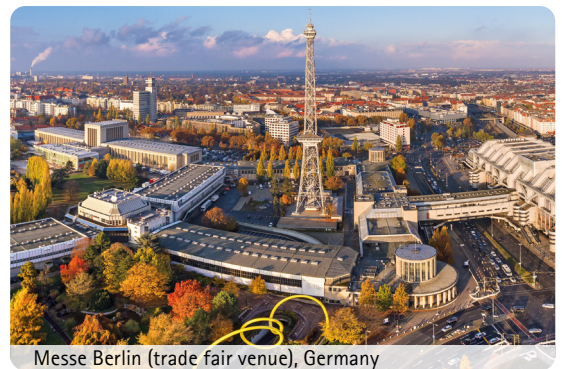
Installation in a prefabricated construction

Extract from our client reference projects



CIPARALL SLIDING BEARING TYPE GRP

- Schule am Ried, Frankfurt am Main, Germany
- EDEKA supermarket, Neumünster, Germany
- Atletikai Stadium, Budapest, Hungary
- Messe Berlin (trade fair venue), Germany
- Netto, supermarket, Germany
- BMW Group plant, Munich, Germany
- OVT Breda, Breda, Netherlands
- Waschmühle Valley Bridge, Kaiserslautern, Germany



Messe Berlin (trade fair venue), Germany



BMW Group plant, Munich, Germany



Waschmühle Valley Bridge, Kaiserslautern, Germany



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