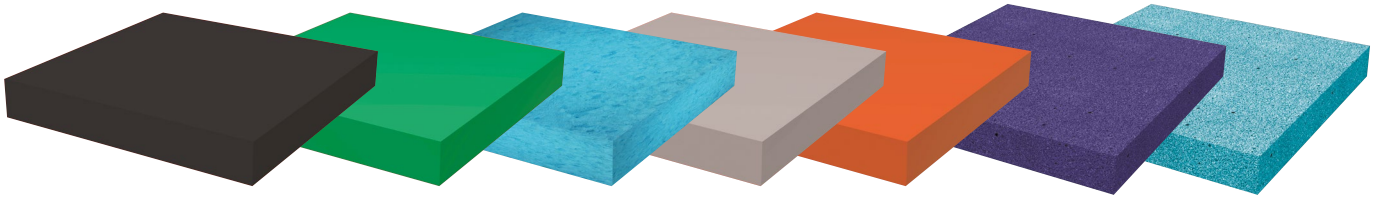
CALENBERG



CIFLEX Vibration isolation and structure bourne noise insulation

A LISEGA Group Company

WITH CALENBERG

REDUCE VIBRATIONS

AND ENHANCE LIVING AND WORKPLACE COMFORT

Ciflex is an elastomeric bearing made of polyurethane foam with excellent spring and damping properties. Ciflex reduces vibrations and structure bourne noise effectively. The Ciflex series comprises different versions for different applications and load ranges and can be used in the construction, railway and industry sectors. Type N does not absorb water and can also be used in groundwater.

KNOW HOW

Vibration isolation in buildings

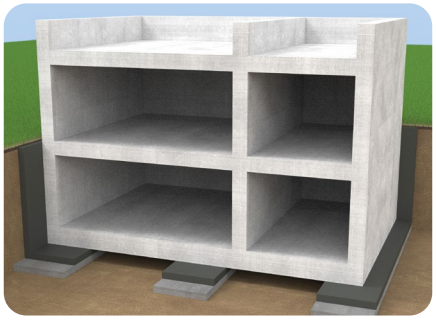
Above-ground and underground railway lines, roads, residential areas and adjacent industrial zones are moving ever closer together in urban areas. Buildings located in the immediate vicinity of such external sources of disturbance are particularly affected by mechanical vibrations. These vibrations continue inside buildings, where they are perceived as tremors and secondary air-borne sound by occupants and are detrimental to living and workplace comfort. That is why effective measures are required to protect against structure-borne sound and vibrations.

The following solutions can be provided using Calenberg Ciflex elastomeric bearings:

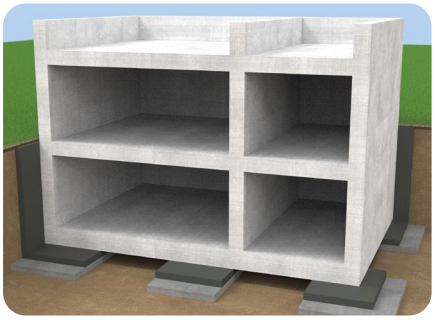
- Horizontal and vertical decoupling of structural elements in contact with soil (base plates, underground walls)
- Decoupling of building components in contact with the ground
- Slurry walls between the building and source of emission

Full-surface decoupling

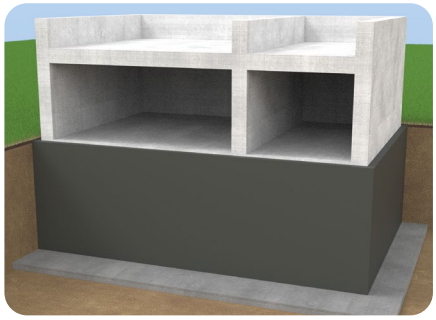
Strip-shaped decoupling



Point-type decoupling

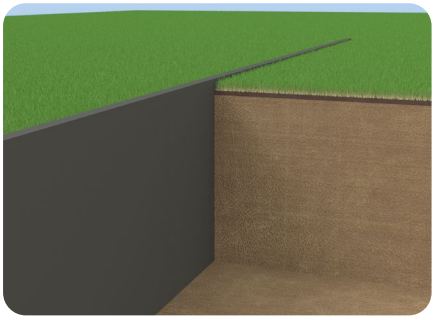


Side wall decoupling



Slab decoupling

Slot wall



Vibration isolation for machines

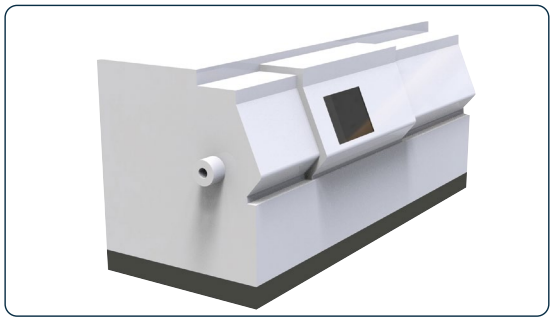
Impacts cause unwanted vibrations and excitations from machines, ventilation and air conditioning units and other engineering systems while they are in operation. The energy this generates carries structure-borne sound waves into building structures and produces noticeable tremors and secondary air-borne sound, impairing living and work environment quality in adjacent spaces.

Calenberg offers customised bearings for machine vibration isolation (source isolation).
Another area of use is isolation for highly sensitive installed systems against tremors and vibrations in surrounding areas (passive isolation). Calenberg also offers tailor-made solutions for such applications.

Calenberg's dynamic bearings can be used to provide solutions such as the following:

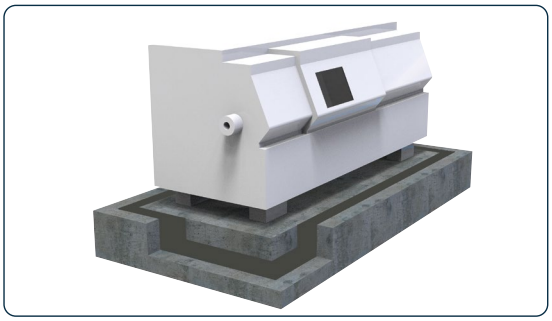
- Direct decoupling of machines (without machine base)
- Decoupling of machine bases

Direct decoupling of machines



This measure reduces the structure-borne sound entering the building structure (source insolation). This prevents the transmission of machine vibrations into the machine anchorage or the ground.

Decoupling of machine foundations



This measure is used if vibrations from the foundation have an adverse effect on a sensitive machine's operation, for example. Elastomeric bearings are designed as a soft-sprung intermediate layer over the whole surface.

GENERAL ADVANTAGES OF VIBRATION ISOLATION

- Reduction of impact, air-borne and structure-borne sound
- Enhanced living and workplace quality
- Employees protected against noise and vibrations
- Properties increase in value
- Longer service life and quieter running behaviour for machines

Ciflex

Product description

The long-lasting material in the Ciflex range is made of the versatile polyurethane (PUR). The PUR foam is used to reduce structure- and ground-borne vibrations with a wide variety of loads and frequency ranges in the construction, railway, machinery and HVAC sectors. Thanks to the material's properties, elastomer is unaffected by short-term spikes in load since the polymer structure allows the material to return to its original position even after short-term high spikes in load.

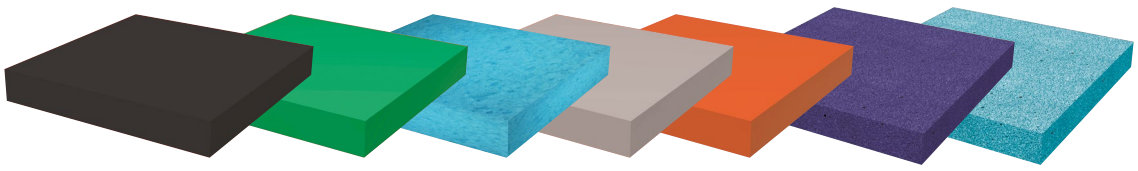
Use and areas of application

Ciflex can be used in all areas where vibrations and structure-borne sound need to be reduced. Thanks to its special spring and damping properties, Ciflex is eminently suitable for applications with intense dynamic loads. Ciflex is used to decouple machine bases, protect buildings directly next to railway tracks against tremors and isolate vibrations in track structures and mechanical and plant engineering installations. Eight versions of Ciflex are available for almost all areas of use. Suitable Ciflex versions, support surfaces and installation heights can be chosen to ensure that the specified requirements are easily met.

N versions have a closed-cell pore structure and feature excellent dynamic properties with low damping. The material absorbs practically no water and can be used permanently underwater (e.g. elastic building bearing in groundwater). The material is also used in other areas of vibration isolation.

R versions have a mixed-cell pore structure and unite excellent spring and damping properties. This model series can be used in all areas of vibration isolation.

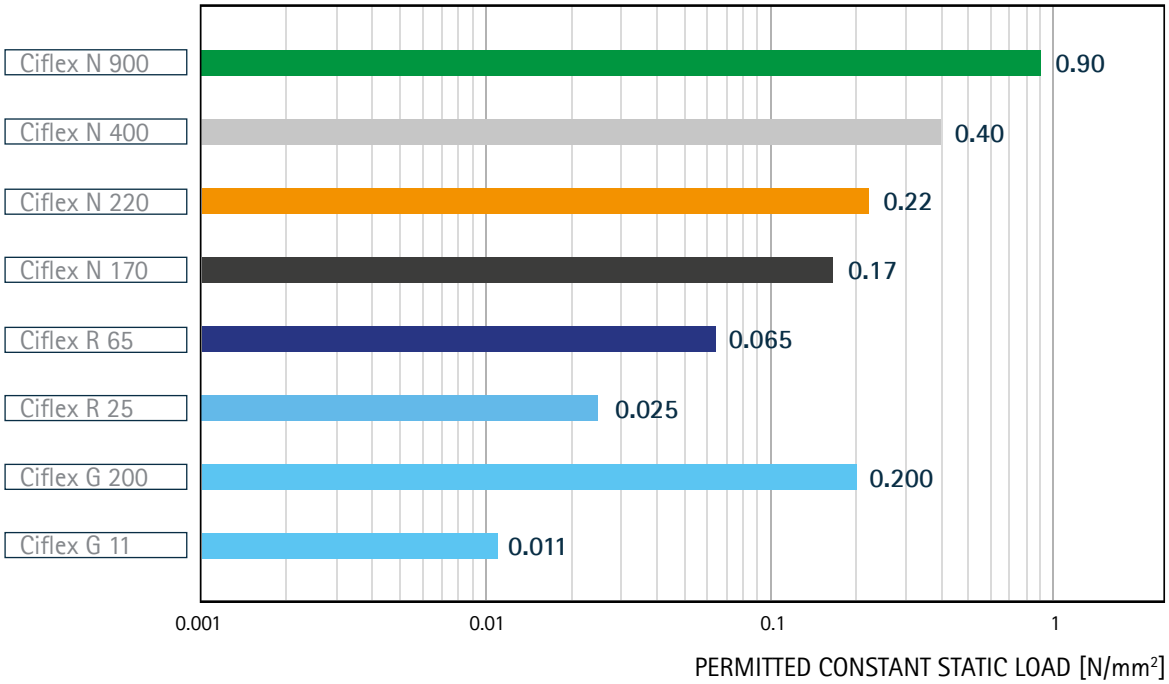
G versions are manufactured from recycled PU foam to help protect the environment. The material features a mixed-cell pore structure and good dynamic properties. These products are used in all areas of vibration isolation.



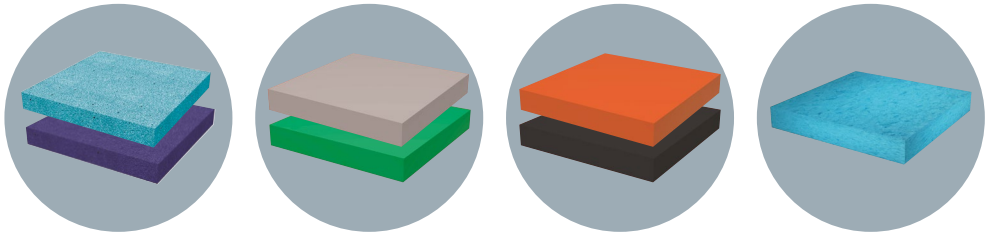
Overview of Ciflex types

Ciflex versions	Bearing thickness [mm] * Other thicknesses on request	Dimensions * Cut to size on request	Permitted constant static load [N/ mm^2]
Ciflex N 900	12.5 and 25	500 x 500 mm	0.90 N/mm^2
Ciflex N 400	12.5 and 25	1000 x 500 mm	0.40 N/mm^2
Ciflex N 220	12.5 and 25	1000 x 500 mm	0.22 N/mm^2
Ciflex N 170	12.5 and 25	1000 x 500 mm	0.17 N/mm^2
Ciflex R 65	12.5 , 25 to 200	2000 x 1000 mm	0.065 N/mm^2
Ciflex R 25	12.5 , 25 to 200	2000 x 1000 mm	0.025 N/mm^2
Ciflex G 200	12.5 and 25	1200 x 800 mm	0.200 N/mm^2
Ciflex G 11	12.5 and 25	2000 x 1000 mm	0.011 N/mm^2

Overview of maximum allowed permanent loads



Extract from our client reference projects



CIFLEX

- Structure-borne vibration control in stairway
  Archaeological Collection of the Bavarian State, Munich
- Decoupling of machine bases
  Elbe Hospital, Buxtehude
- Decoupling of a CHP unit base, TS Aluminium new building
  Coating and assembly workshop, Grossefehn
- Decoupling of machine bases
  Novum Hotel, Hamburg
- Vibration isolation on a CHP unit roof

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