

CISADOR®

Vibration protection for structures and
vibration isolation for technical equipment

WITH CALENBERG

VIBRATIONS AND STRUCTURE-BORNE SOUND

REDUCE

The Cisador® model series can be used for a constant static load up to 1.7 N/mm^2 . Cisador thus ensures low natural frequencies throughout the entire load range.

Thanks to the closed-pore cell structure, the bearing absorbs virtually no water and is eminently suitable for use in groundwater. The bearing permanently maintains its dynamic properties in such locations.

HOW
KNOW



Vibration protection and vibration isolation

The increasing shortage of construction space has resulted in a more compact use of available land. In urban areas, railway lines, roads and residential areas are thus increasingly moving closer together. External sources of disturbance such as railway traffic cause vibrations and secondary air-borne sound in adjacent buildings and are detrimental to the well-being of residents. Elastomeric bearings with their insulating properties have demonstrated their effectiveness wherever people and buildings require protection from vibrations. For these use cases, our products offer effective vibration protection, ensure optimum living comfort and ultimately lead to an increase in the value of land and buildings.

Another use case consists of vibration isolation for machinery and technical equipment. Calenberg also offers different products tailored to the application in question for these scenarios. The solution used minimises vibrations from machines effectively, thus reducing troublesome structure-borne sound and ensuring a healthy working environment.

How you benefit

- Reduction of vibrations, impact sound and secondary air-borne sound
- Improved living comfort and protection of the building structure
- Increase in your property's value
- Employees protected against noise and vibrations
- Longer lifespan for isolated machines





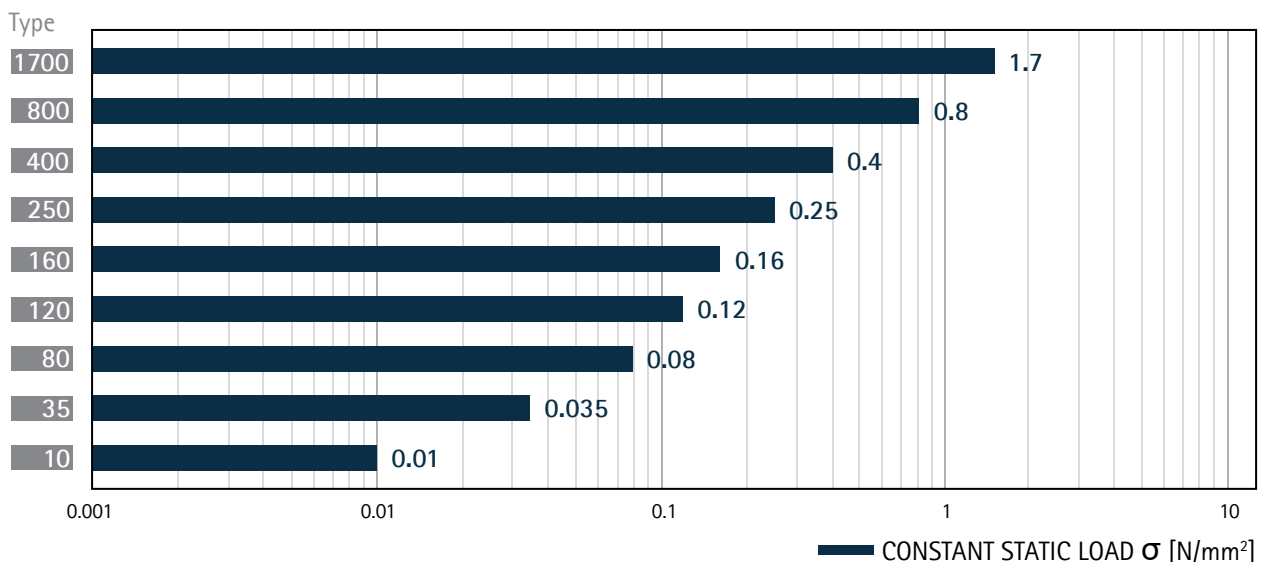
The material and its advantages

Product description

The Cisador® product series is made of closed-cell, microcellular EPDM material. There are several finely graded variants available in different densities to cover a wide range of compressive stress. Thanks to the material's properties, Cisador® offers high resistance to many chemical substances, absorbs virtually no water and can be permanently used in groundwater. The foamed, closed-cell structure ensures exceptionally high elasticity. Another advantage of this material is its excellent resistance to heat, ageing and the weather. The visible vulcanisation film protects the highly elastic bearing against mechanical impacts on its surface.

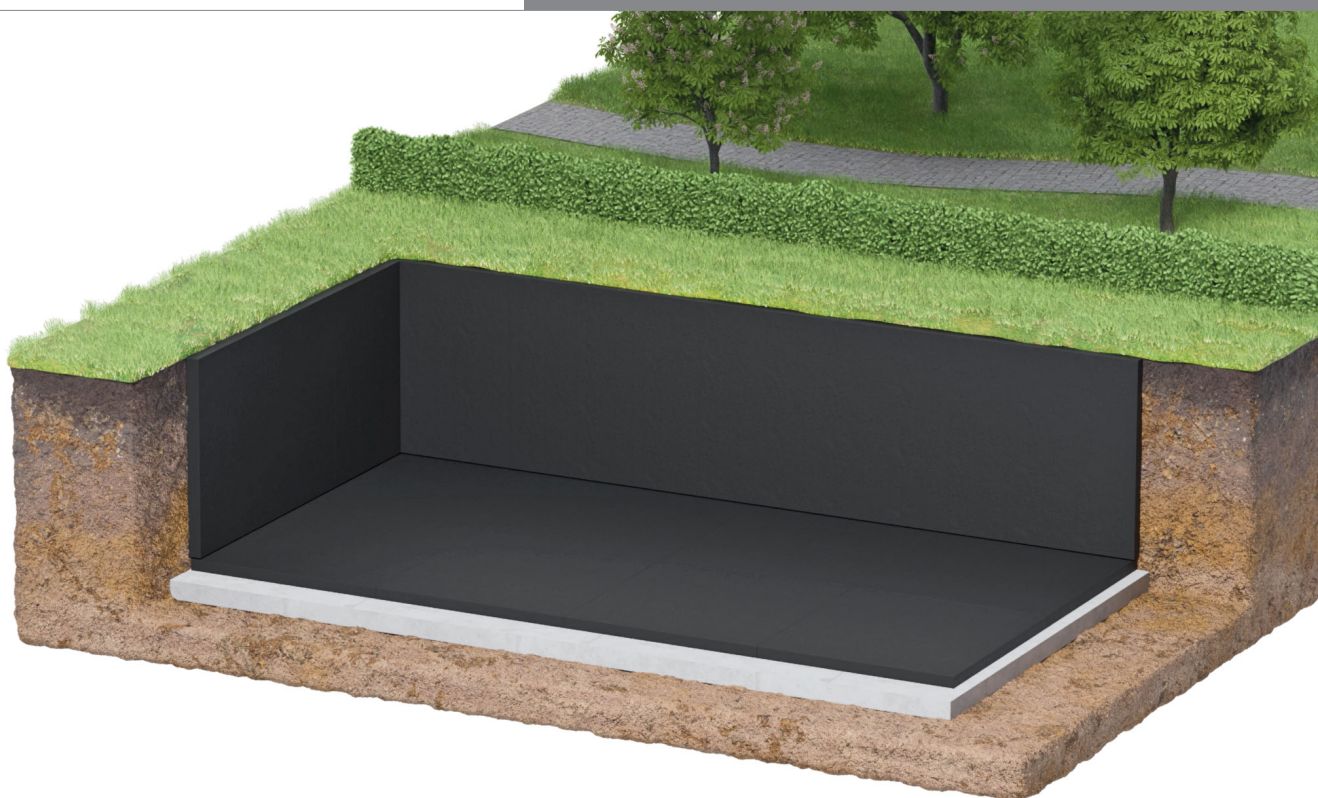
The different Cisador® variants

The following Cisador® variants cover the load range between 0.01 and 1.7 N/mm²:



Building authority approval

The approval for use as an elastomeric bearing in building construction is regulated by the standard building authority certification Z-16.32-519, issued by the German Center of Competence in Civil Engineering (DIBt).



Benefits at a glance

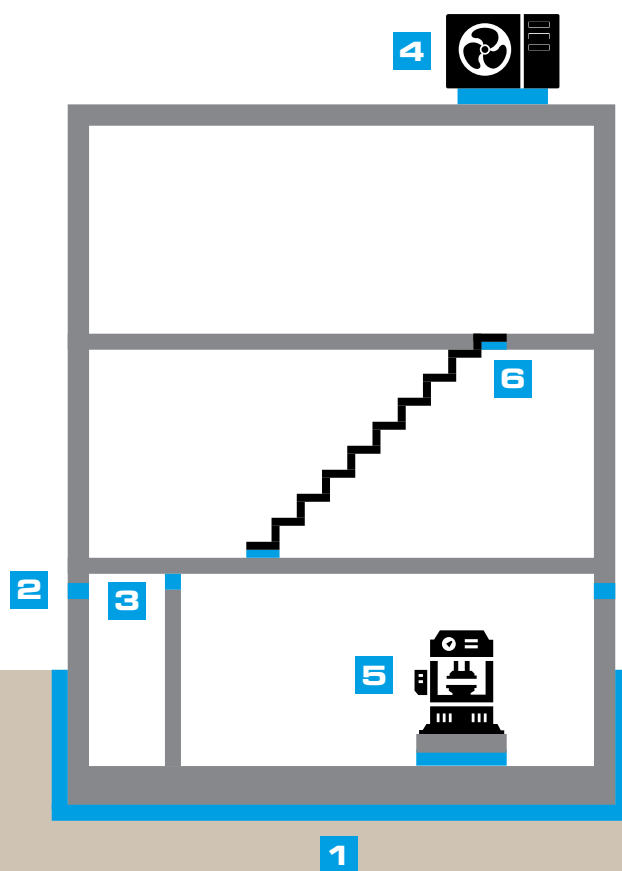
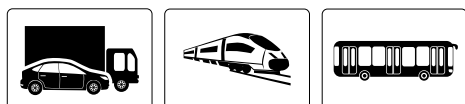
- Virtually no water absorption thanks to the closed-cell structure
- Can be used permanently in water with no changes in the product's properties
- The visible vulcanisation film protects against mechanical impacts on its surface
- Manageable panel sizes for simple installation
- Low dissipation factor
- Low tuning frequencies from about 6 Hz
- High planning reliability thanks to load-adaptive dynamic stiffness within defined load ranges
- Building authority approval





- 1** Vibration protection for buildings
- 2** Vibration protection for buildings, strip bearing for rising structural elements
- 3** Vibration protection for buildings, point mounting on columns
- 4** Vibration isolation for heat pumps and HVAC systems
- 5** Vibration isolation for technical equipment
- 6** Impact sound protection, bearing for stairways

SOURCES OF DISTURBANCE



VIBRATIONS



LEGEND

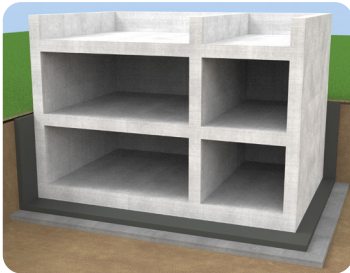
- Sources of disturbance such as road traffic, overground/underground rail traffic, building services systems
- Vibrations
- Vibration isolation measures to protect people and structures against tremors and secondary air-borne sound

Vibration protection for buildings

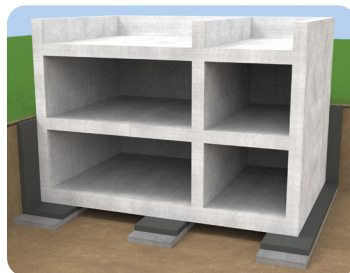
Measures

Depending on the foundation conditions, buildings can be decoupled through passive isolation with full-surface, strip-shaped or point-shaped isolation formats below the floor slab, the individual foundations or the basement ceiling on the rising walls. Vertical isolation is fitted on the side walls which are in contact with the ground. These and other measures are presented below:

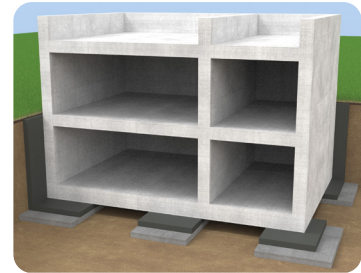
Full-surface decoupling



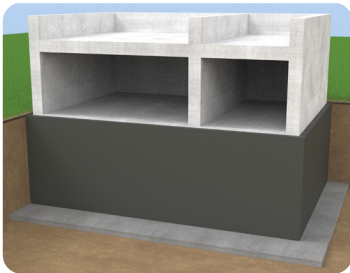
Strip-shaped decoupling



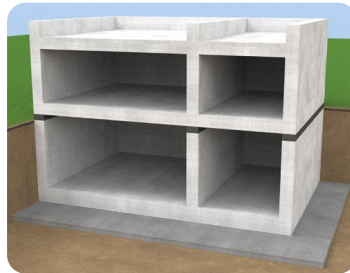
Point-type decoupling



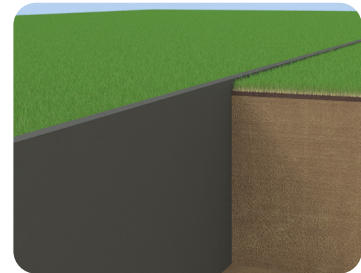
Side wall decoupling



Slab decoupling



Slurry wall



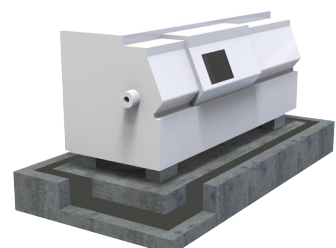
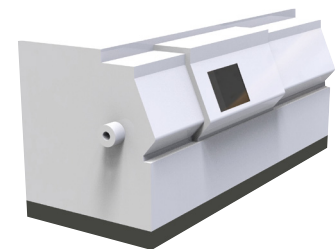
Vibration isolation for machines

Direct decoupling of machines

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

Decoupling of machine bases

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.





Examples

Installation on a shoring wall



Installation on a basement wall



Installation in multiple layers beneath floor slab



Installation on a retaining wall



Our service for your project

- Assistance in selecting the bearing
- Installation instruction on the construction site
- Preparation of installation plans

Our support tools

CIDYN support tool

Our CIDYN online calculation tool will assist you in sizing a vibration isolation solution for a machine with Calenberg elastomeric bearings.

A clear, concise summary provides all essential information regarding the effectiveness of storage, type, dimensions and quantity of bearings.

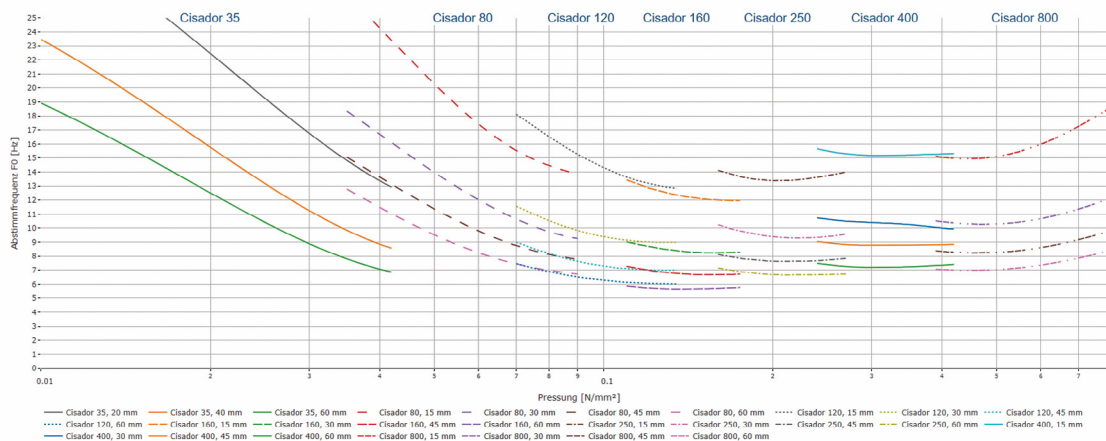
Cisador® FreqView support tool

Cisador® FreqView provides information about the natural frequency of various Cisador® variants which are commonly used together in building bearings (under the foundations).

With Cisador® FreqView, identifying suitable Cisador® products along with their natural frequencies for a known soil compaction is quick and easy.

Cisador FreqView

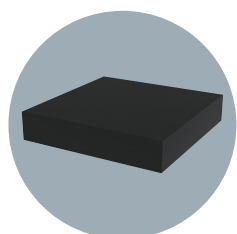
Übersicht Abstimmfrequenz*



*Die in diesem Diagramm dargestellten Informationen, gelten nur in Verbindung mit den Cisador Datenblätter.



Extract from our client reference projects



CISADOR®

SOLARIS National Synchrotron Radiation Centre	Poland	Kraków
Luitpoldviertel residential district	Germany	Nuremberg
Raiffeisen Wohnbau Versorgungsheimstrasse project	Austria	Vienna
Fragment Trigema	Czech Republic	Prague
Goldbeck modular building	Poland	
Masaryk Center	Czech Republic	Prague
PANDION 5 FREUNDE	Germany	Cologne
German Football Association headquarters	Germany	Frankfurt
Restaurant HANS IM GLÜCK	Germany	Göttingen
Scrap breaker	Germany	Halle
Palmaille apartment building	Germany	Hamburg
Lise-Meitner School	Germany	Berlin
Hampton by Hilton	Germany	Frankfurt
Congress Hall	Poland	Warsaw
Mława railway station	Poland	Mława
Congress Hall	Poland	Warsaw
Knorr-Bremse Technology Center	Germany	Munich
Hotel Puro Krakow	Poland	Kraków
Different Technical Centres, Federal Institute for Materials Research & Testing	Germany	Berlin
ICE Kraków Congress Centre	Poland	Kraków
OHROPAX	Germany	Wehrheim



Masaryk Center, Prague, Czech Republic



Photo: ©GS SCHENK GmbH

Luitpoldviertel residential district, Nuremberg, Germany



Different Technical Centres, Federal Institute for Materials Research & Testing, Berlin, Germany



Am Knübel 2-4
31020 Salzhemmendorf | Germany

Tel. + 49 5153 940 00
Fax + 49 5153 940 049

info@calenberg-ingenieure.de
www.calenberg-ingenieure.com

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