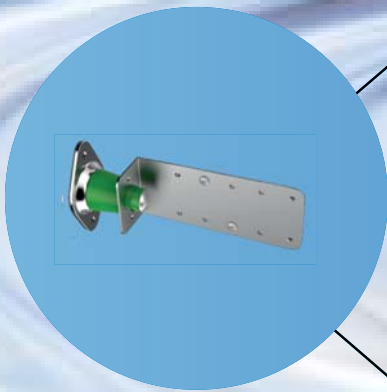
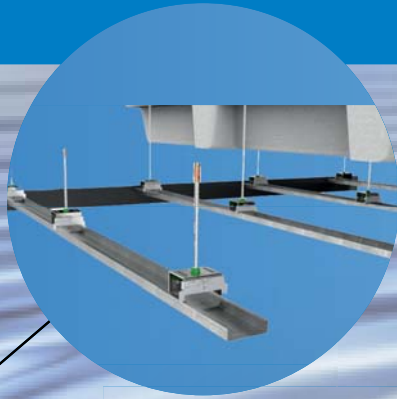


# Vibration- & Sound insulation

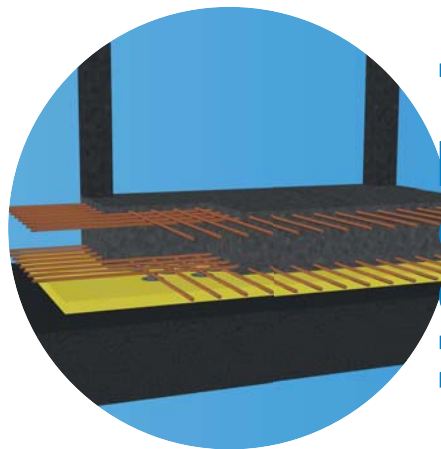
## Floor Wall Ceiling



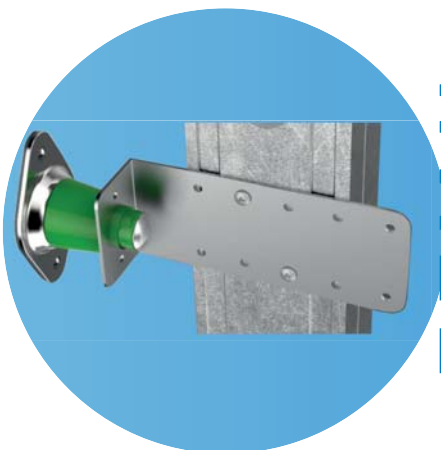
**iac acoustics**  
making the world a quieter place

Version 5.01

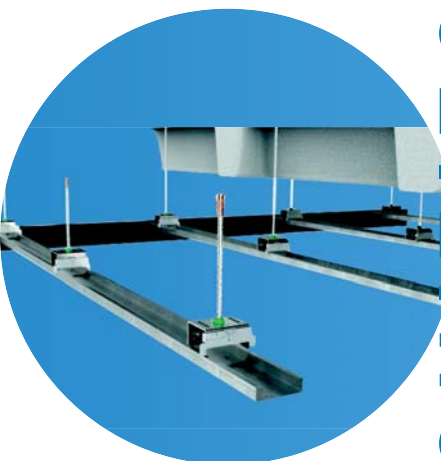
**Phone:** +45 36 77 88 00  
**Web:** [www.iac-nordic.dk](http://www.iac-nordic.dk)  
**E-mail:** [nordic@iac-nordic.dk](mailto:nordic@iac-nordic.dk)



## FLOOR



## WALL



## CEILING

### TABLE OF CONTENTS

#### 4. VIKAFoAM

Reduction of noise with floating floors in buildings and production halls.

#### 6. VIKACELL

Ideal for floating floors when vibration reduction requirements are high.

#### 8. JACK UP

VIKAS Jack Up System FZH is used in sound studios, office environments and in production halls.

#### 9. STEEL FLOOR

Low-profile steel floor on vibration dampers for best sound isolation

#### 10. VB WALL MOUNT

Used for fastening sound-insulating staggered walls.

#### 12. VBS WALL MOUNT

Used for fastening sound-insulating staggered walls.

#### 13. RR WALL TAPE

Vibration-damping underlay for sound-insulating staggered walls.

#### 10. LOH CEILING HANGER

Used for sound insulation in connection with suspended plaster ceilings.

#### 14. CHCE ELASTOMER HANGER

For sound insulation in connection with suspended plaster ceilings.

#### 15. CHCS SPRING HANGER

For the most effective acoustic insulation for suspended plaster ceilings.

## Introduction

### Acoustic solutions for floors, walls and ceilings

Floating floors are designed to reduce the effects of noise and vibration and thus increase the level of comfort in rooms adjacent to noisy or vibration-generating activities such as fitness centres, bowling alleys, restaurants, cafés, nightclubs and industrial halls.

Floating floors are also suitable for areas that require a low level of background noise such as recording studios, cinemas, concert halls, anechoic chambers, rooms for taking precision measurements and in buildings that have both office space and industrial production.

A floating floor system consists of a floor with two layers separated by a layer of elastic material. This intermediate layer insulates the floor from the substrate providing acoustic insulation as well as insulating against noisy footsteps. Sound-absorbing materials in the cavity further increase the soundproofing level.

A floating floor can be a part of a room in a whole-room solution, combined with wall mounts and ceiling hangers. In situations with little flanking transmission, elastically suspended ceilings

or elastically supported walls can be excellent self-contained solutions for sound insulation. Elastic ceiling hangers and wall mounts are used for this purpose.

In order to achieve an optimum degree of insulation, the nature of the influences at play and the requirements that need to be met are taken into consideration in each individual case.

The principle behind IAC floating floors provides a high level of acoustic insulation compared with other types of floor constructions.

The  $R'_w$  specification for airborne sound insulation and the  $L'_{n,w}$  specification for step noise levels are weighted values, where low-frequency noise is weighted very low. This means that these specifications are not descriptive in situations with loud, modern music with a lot of bass notes. The advantages of a floating floor at these low frequencies can be substantially greater than the weighted standard specifications suggest. This can be a very important consideration since bass notes can easily travel over long distances in buildings.

## PUR Foam

## VIKAFOAM

### Product description

VIKAFOAM is a cellular elastomer, manufactured from a special type of polyether urethane elastomer. The product is used in mechanical industries and in construction as vibration insulation. Floating floors are constructed of VIKAFOAM and concrete or wood, which together provide particularly effective noise attenuation and vibration insulation. The system can be used for projects large and small and it is very flexible.

### Application

VIKAFOAM is often used as a structural soundproofing material in buildings, either beneath individual building components or to separate entire buildings from their foundations.

### Attenuation

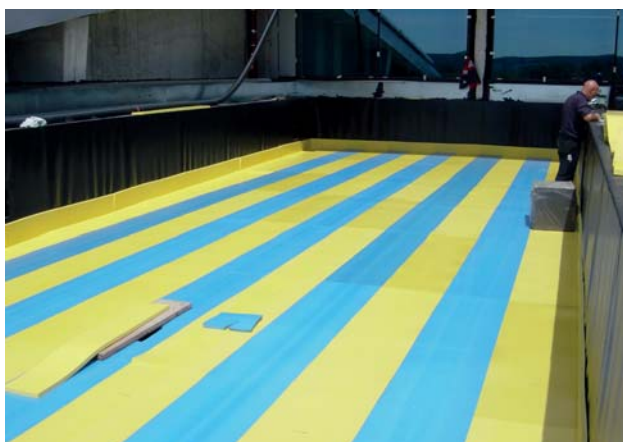
The VIKAFOAM material has a uniform and well-defined attenuation capacity. Internal attenuation for VIKAFOAM is determined by the mechanical loss factor. For VIKAFOAM, this value is between 0.1 to 0.3, depending on the density.

### Fire performance

VIKAFOAM has been tested in accordance with DIN 4102 and achieved a B2 fire rating (normal combustibility). No corrosive/caustic fumes occur in the event of a fire. In its composition, VIKAFOAM should be considered the same as wood and mineral wool.

### Resistance to weather and chemicals

VIKAFOAM is resistant to substances such as water, concrete, oil, grease, diluted acids and alkalis.

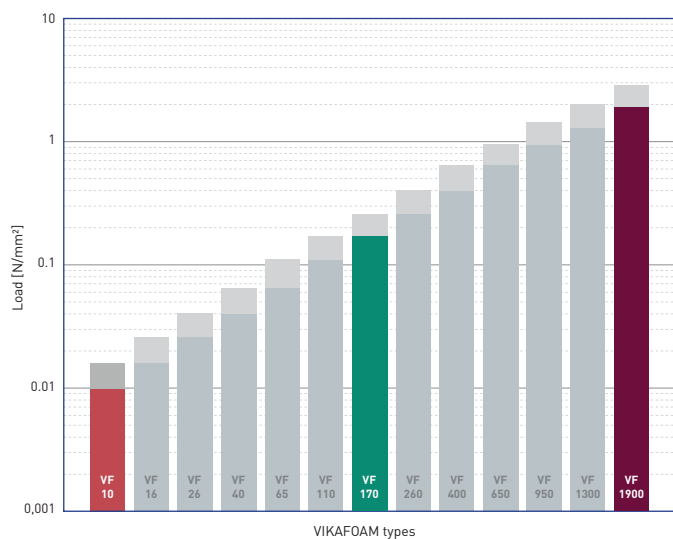


Project Photos



## PUR Foam

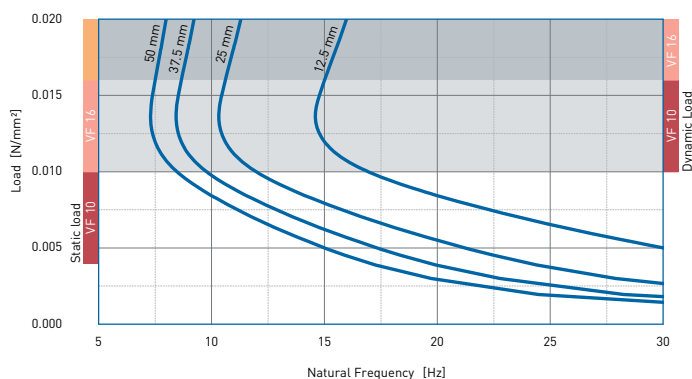
## VIKAFOAM

IAC VIKAFOAM Types  
Load range

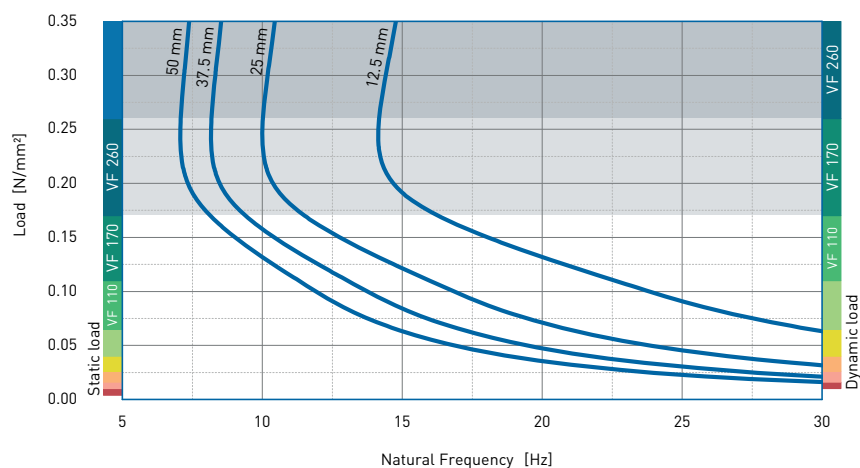
## CURVES:

3 varieties of VIKAFOAM with 13 different densities. For more information, please see our main website and VIKAFOAM

VF 10 Natural Frequency based on E-modulus @ 10Hz



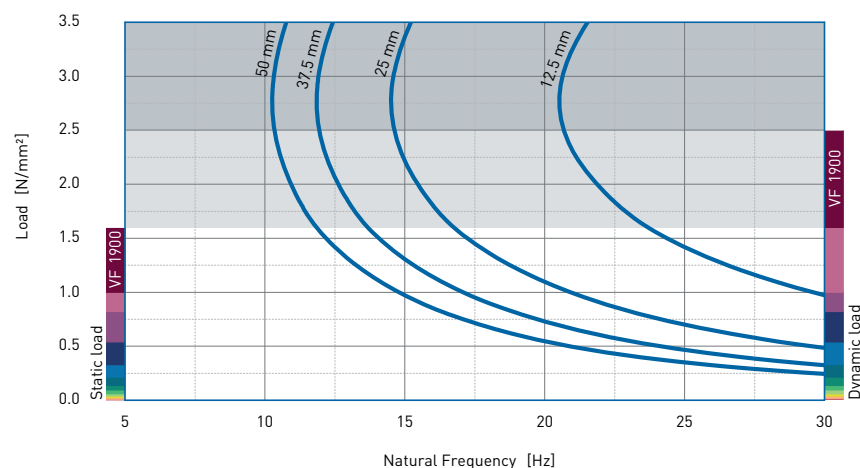
VF 170 Natural Frequency based on E-modulus @ 10Hz



Natural frequency of a single-degree-of-freedom system consisting of a fixed mass and an elastic bearing consisting of VIKAFOAM VF 170 on a stiff subgrade.

Form factor  $q = 3$

VF 1900 Natural Frequency based on E-modulus @ 10Hz



Natural frequency of a single-degree-of-freedom system consisting of a fixed mass and an elastic bearing consisting of VIKAFOAM VF 1900 on a stiff subgrade.

Form factor  $q = 1,25$

### Product description

VIKACELL is a microcellular elastomer that is especially flexible and can tolerate up to 75% - 80% compression without damage to the material.

### Application

We typically use VIKACELL 400 for floating floors where acoustic insulation requirements are high. The material can also be used to set up machinery on a floating foundation and also for general placement of machinery. The material was developed for the automotive industry where it is used as an absorber in the suspension system, so it can handle long-duration dynamic loading.

### Attenuation

The transmission of structure-borne noise with low frequencies through a floating floor can be attenuated effectively by designing the floating floor to have a very low natural frequency.

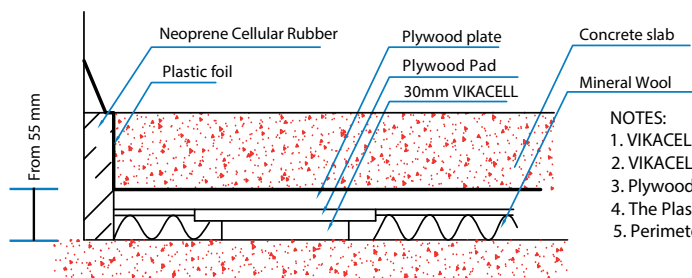
### Advantages

VIKACELL can be dimensioned for a dynamic natural frequency of 8 Hz at a height of only 30 mm, which is less than half the height that other materials need to achieve the same natural frequency.

### Installation

VIKACELL is typically used as blocks that are customized for the bearing capacity and requirements for insulation efficiency.

Normal maximal static load 0.45 N/mm<sup>2</sup>.

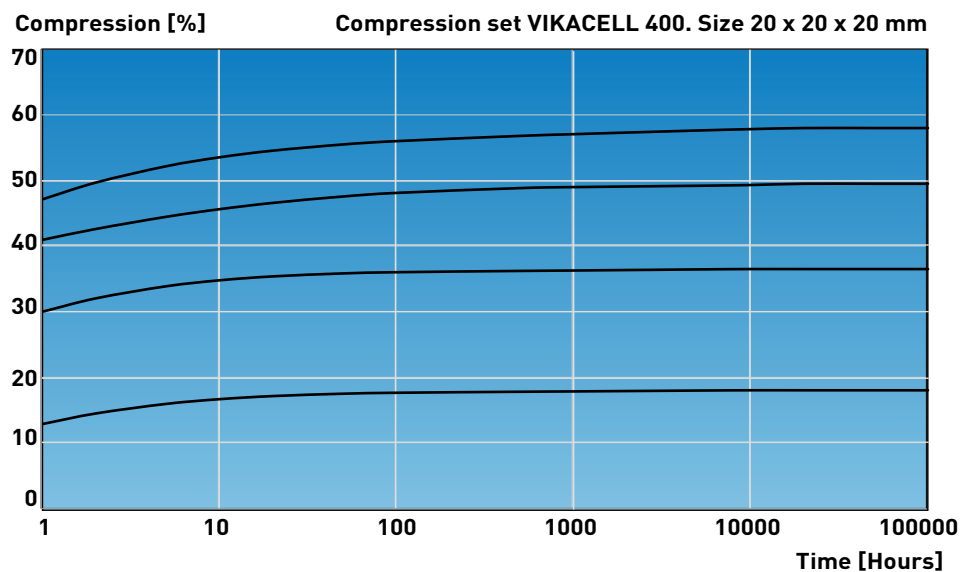
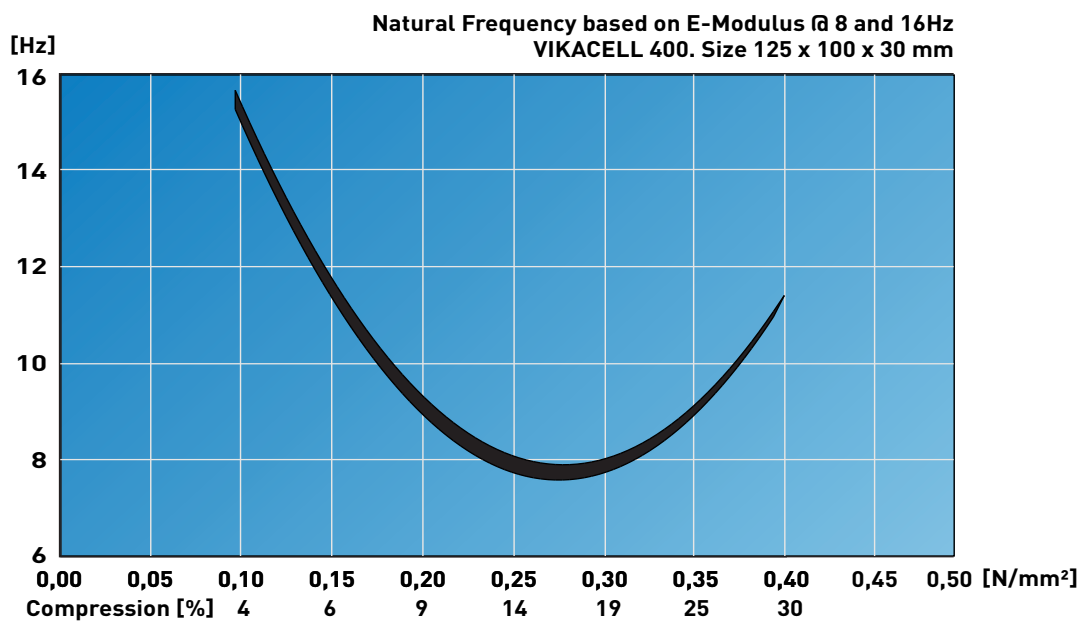


#### NOTES:

1. VIKACELL Pad
2. VIKACELL and Plywood pad are glued
3. Plywoodplate and Plywood pad are screwet together
4. The Plastic foil is to cover the entire area and is overlapped and taped
5. Perimeter isolation can be Neoprene Cellular rubber used against all building struct



Amager Slope



### Product description

FZH Jack Up System for concrete floors is used in recording studios, office environments and in production halls. There may also be other locations where you want to reduce the disturbance from noisy footsteps or other structure-borne noise from entering a room. The system also works in the other direction, so that noisy footsteps or the sound of a drum set inside a studio is optimally deadened in the rest of the building.

### Application

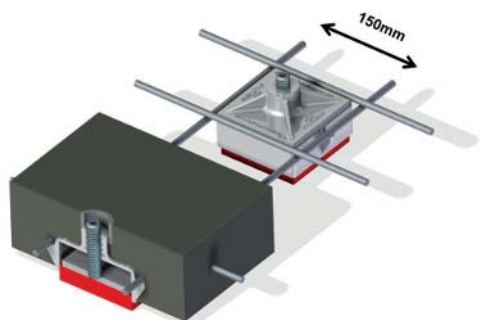
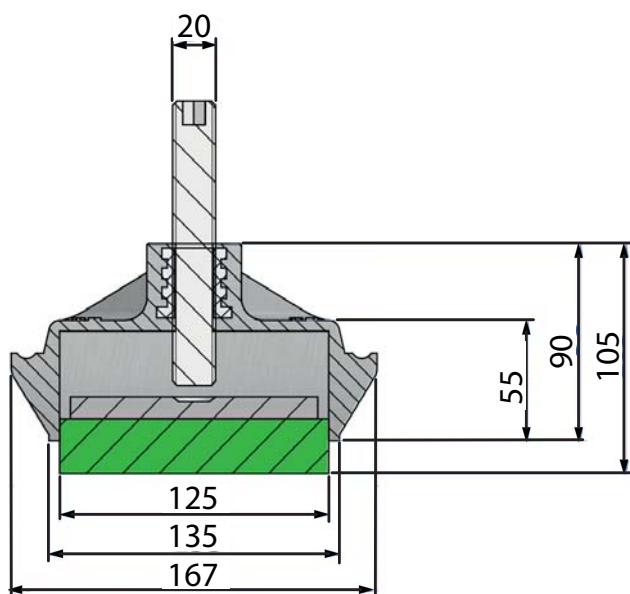
You can choose between 10 different attenuators depending on the load they are subjected to and the natural frequency of the floor you want. See the chart with the various attenuators below.

### Usage

Usage is about 1.12 attenuators per m<sup>2</sup>, which varies slightly in relation to the thickness of the concrete and the amount of reinforcement.

### Advantages

The system's clear advantage is that it ensures that there is no interference, because when the floor is raised, there is no contact with the sub-floor.



Type	Load [Kg]	Natural frequency [Hz]
FZH140-25	140	11.3
FZH140-37	140	8.9
FZH240-25	240	11.2
FZH240-37	240	8.6
FZH490-25	490	10.5
FZH490-37	490	8.2
FZH800-25	800	11.9
FZH800-37	800	9.1
FZH965-25	965	11.7
FZH965-37	965	8.4



### Product description

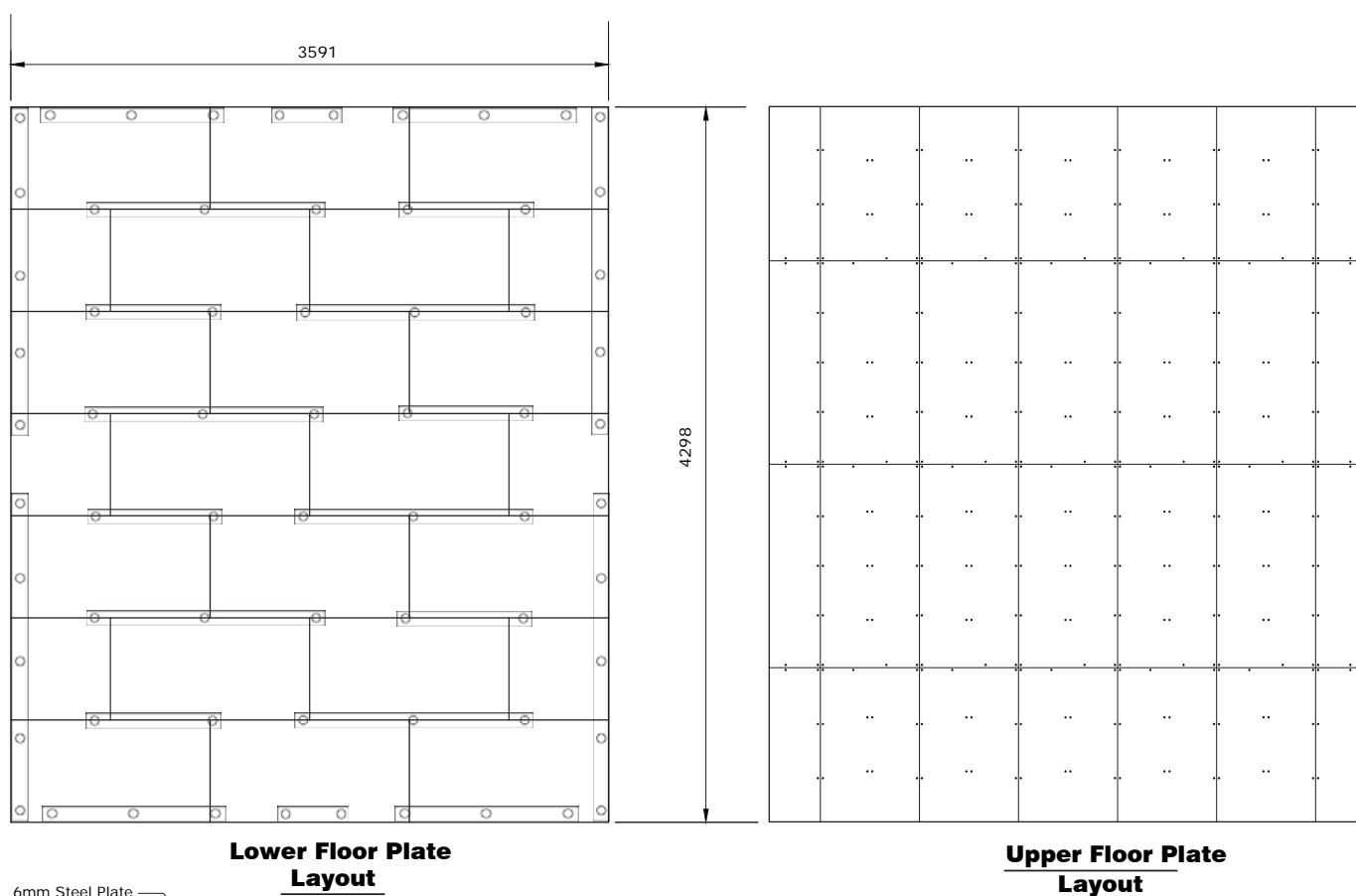
Low profile Steel Floor, constructed of two 6 mm thick steel plates separated by Neoprene rubber, which rests on either VIKAFoam or VIKACELL vibration absorbers. These ensure effective vibration insulation against noise from the building's concrete floors. Noise from the building's concrete floor can originate from vibrations caused by noisy footsteps or machines located in other parts of the building. Noise can also come from nearby train or subway lines, and from nearby roads with heavy traffic.

The floating steel floor prevents airborne and structure-borne noise from entering the room.

### Application

The total floor structure is 50 mm high and the resonant frequency for vibrations in the room is less than 11 Hz. Attenuation at 60 Hz is at least 30 dB and at 120 Hz it is more than 45 dB. The floor height can be increased to achieve a lower resonant frequency.

The relatively low installation height of the floor makes it easier to accommodate access for wheelchair users and it can be incorporated in most rooms while keeping a comfortable ceiling height.



### Product description

Two electro-galvanised steel brackets separated by a vibration absorber. The ceiling hangers and wall mounts effectively insulate against vibrations/sound transmissions in the audible frequency range.

### Application

Ceiling hangers are used for sound insulation in connection with suspended flat plaster ceilings. The hangers are constructed to bear the load and to vibration-proof the plaster ceiling from the existing ceiling. Wall mounts are used for fastening sound-insulating staggered walls.

### Attenuation

Field measurements show that the sound-insulating ceiling improves sound insulation in upper-storey floors by up to 10 dB. The sound reduction index  $R'w$  is typically 58 - 60 dB after proper installation of the ceiling, but depends on the existing ceiling construction.

A sound-insulating staggered wall reduces airborne transmitted noise by 8-12 dB, depending on the existing wall construction.

### Advantages

- The ceiling hanger and wall mount insulate optimally against airborne noise.
- Fireproof construction. Cladding class 1 (DS 1065.2)
- Easy to install and can cover up irregularities in the existing ceiling and wall



### Installation

The sound ceiling should hang freely without direct contact with the existing ceiling, walls, pipe penetrations, etc. The sound-insulating wall is mounted without direct contact with existing walls, ceiling and pipe penetrations, etc. Joints between the acoustic ceiling and walls, pipes, wires, etc. are sealed with an elastic sealant.

### Usage

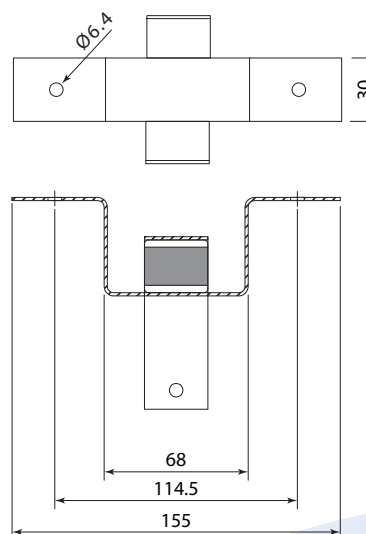
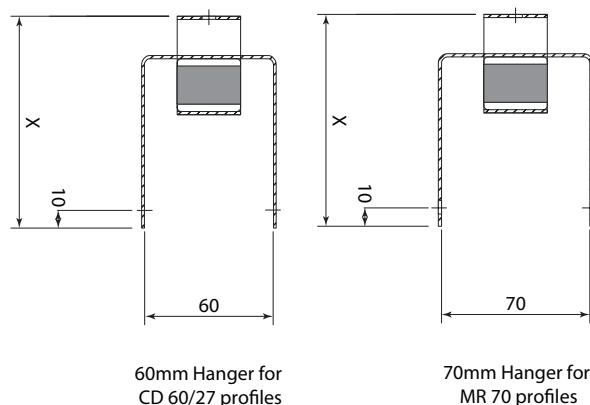
Approx. 1.4 ceiling hangers per m<sup>2</sup> of ceiling with 2 layers of plasterboard (~Load: approx. 18 kg/hanger).

Approx. 1.5 ceiling hangers per m<sup>2</sup> of ceiling with 3 layers of plasterboard (~Load: approx. 23 kg/hanger).

Approx. 4.5 wall mounts per linear meter of wall (ceiling height 2.5 – 3.1m).

### Note

Dimension X can be between 65 and 1200mm



## Vikas Ceiling hanger Wall mount

LOH-VB

### General

The fittings are delivered unassembled and consist of the following components:

Ceiling hangers: 1 Ceiling brace, vibration absorber incl. 2 screws and strap with a length from 65 - 1200mm

Wall mounts: 1 wall brace, 2 vibration absorbers incl. 1 screw, 1 set-screw and strap with a length from 65 - 1200mm

It is also important to include the following in the design:

All joints must be soundproof at walls and penetrations.

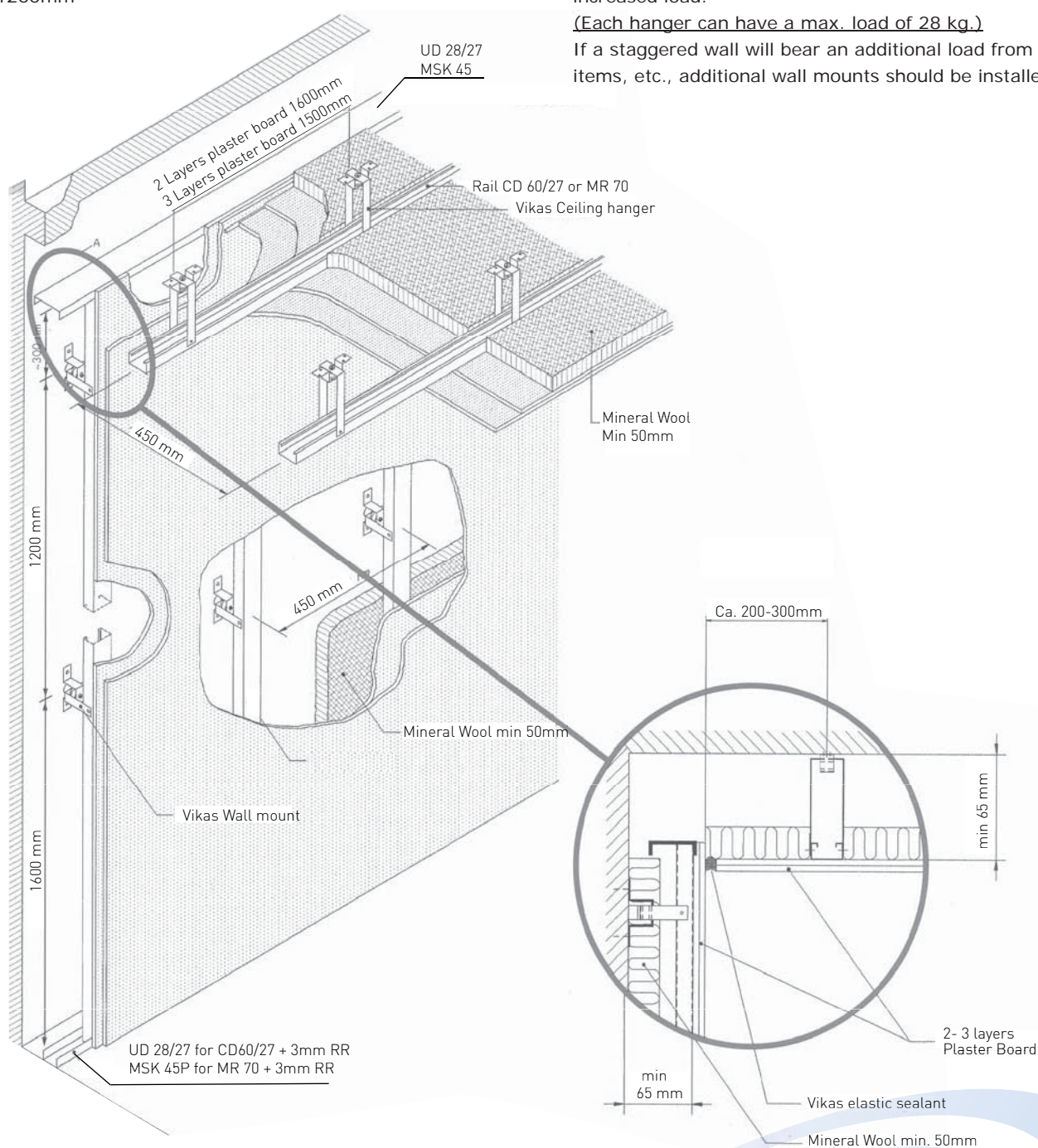
Joints are sealed with an elastic sealant.

Light fixtures and the like, which penetrate the ceiling, need to be fitted with a soundproof superstructure.

If heavier items are suspended from the ceiling, additional ceiling hangers need to be installed to accommodate the increased load.

(Each hanger can have a max. load of 28 kg.)

If a staggered wall will bear an additional load from heavier items, etc., additional wall mounts should be installed.



### Product description

Sound-insulation wall mount. The fittings are electro-galvanised steel with vibration insulators of thermoplastic elastomer.

### Application

Wall mounts are used for fastening sound-insulating staggered walls. The fitting is not designed to bear the wall but to support it. They are designed to work for both compression and tension:

Compression: under varying loads up to 40 kg.

Tension: under varying loads up to 30 kg.

Mechanically fireproof

### Attenuation

A sound-insulating staggered wall reduces air-transmitted noise by 8-12 dB depending on the existing wall construction.

### Advantages

The wall mounts provide good mid-range audio insulation. A special version with a steel spring provides optimal insulation for lower frequencies.

The wall fitting is quick and easy to install and can be used with various types of steel profiles.

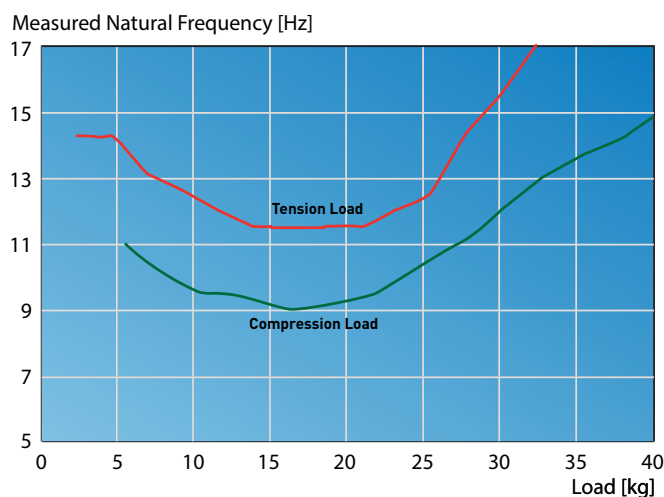
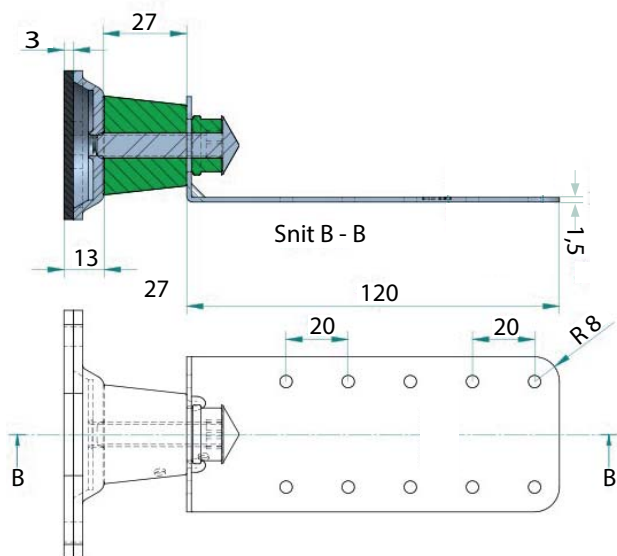
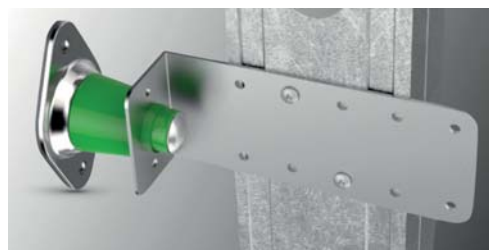
### Installation

The wall can be erected on VVB (3 mm thick wall tape, p 13) without a fixed connection to the existing walls, ceilings and pipe penetrations, etc.

During installation, joints between the acoustic ceiling and wall, pipes, wires, etc. are sealed with an elastic sealant (acoustic sealant).

### Usage

Approx. 6 wall mounts per linear meter of wall at a ceiling height of 2.4 – 3.2 m





## Wall tape

RR

### Product description

Acoustic insulation for wall bottom rails. Wall tape is self-adhesive on one side and is made of SBR fibres and granular rubber. Wall tape provides good structure-borne noise insulation despite being relatively thin.

### Application

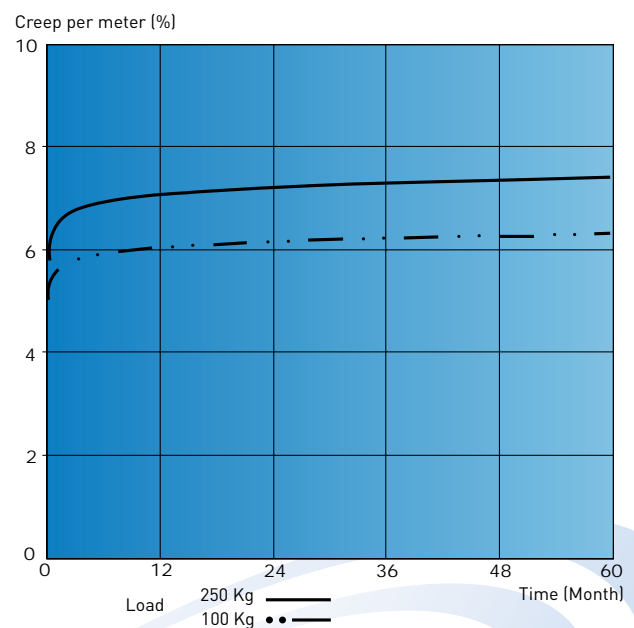
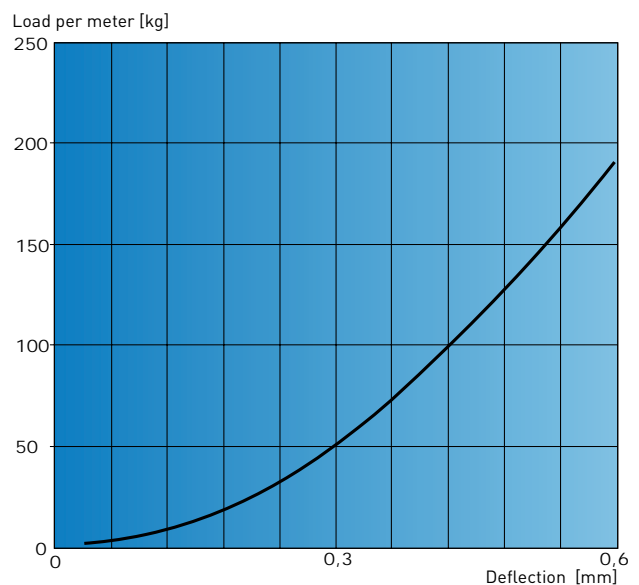
Wall tape is used as a structural soundproofing material under plaster walls in buildings. Wall tape acoustically separates plaster wall bottom rails from the floor. Wall tape is affixed under the bottom rail of plaster walls.

### Fire performance

Wall tape has a B2 fire rating according to DIN 4102.

### Specifications

- |                                      |           |
|--------------------------------------|-----------|
| • Thickness                          | 3 mm      |
| • Width                              | 50 mm     |
| • Roll length                        | 20 m      |
| • Dynamic stiffness per linear meter | 3500 N/mm |
| • Typical bottom rail                | MSK 45    |





### Product description

Sound-insulating click bracket for suspended plaster ceilings. The fittings are electro-galvanised steel with vibration insulators of thermoplastic elastomer.

Click brackets come in two types:  
GREEN for loads between 10 kg and 32 kg.  
BLUE for loads between 22 kg and 57 kg.

Click brackets are available for M6 and M8 threaded rods. Safety device withstands pressures exceeding 326 kg. The service life is 30 years. EN 13964-2006.

### Application

Click brackets are used for sound insulation in connection with suspended flat plaster ceilings. The brackets are designed to bear the gypsum ceiling and make it vibration-proof from the existing ceiling. It is suitable for loads between 17 kg and 57 kg.

### Attenuation

Field measurements show that sound-insulating ceilings improve sound insulation in upper-storey floors by up to 10 dB. The sound reduction index  $R'$  is typically 58 - 60 dB after proper installation of the ceiling, but depends on the existing ceiling construction.

### Advantages

Click brackets provide good mid-range audio insulation. A special version with a steel spring provides optimal insulation for lower frequencies. Click brackets are quick and easy to install.

### Installation

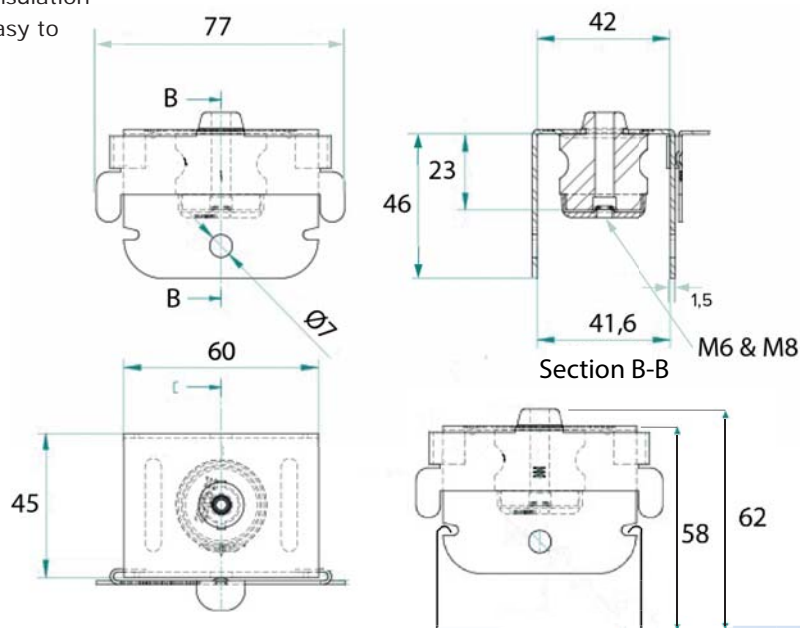
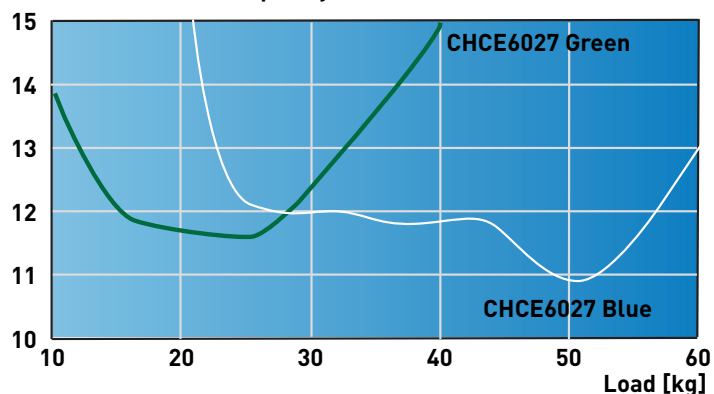
Installation with the click system is quick and easy. Mount the brackets at the correct height on the threaded rods and click the profiles in place. Push the safety device into place with your finger, and the ceiling is finished.

The sound ceiling should hang freely without direct contact with the other walls, ceiling, pipe penetrations, etc.

### Usage

The decisive factor for choosing the type and number of ceiling brackets will often be the deflection of the 60/27 profiles. So the choice will often go to the green type.

Measured Natural Frequency [Hz]



Dimensions including rail

### Product description

Sound-insulating ceiling hangers for plaster ceilings suspended with 60/27 profiles. The fittings are electro-galvanised steel with steel springs of thermoplastic elastomer as vibration insulation.

Click hangers are available in four types:

GREY for loads between 3 kg and 15 kg  
 GREEN for loads between 15 kg and 30 kg  
 BLUE for loads between 30 kg and 51 kg  
 RED for loads between 50 kg and 76 kg

Click hangers are available for M6 and M8 threaded rods.

Safety device withstands pressures exceeding 326 kg. The service life is 30 years. EN 13964-2006.

### Application

Ceiling hangers are used for sound insulation in connection with suspended flat plaster ceilings. The hangers are designed to bear the gypsum ceiling and make it vibration-proof from the existing ceiling. It is suitable for loads between 3 kg and 76 kg.

### Attenuation

Laboratory measurements show that sound-insulating ceilings with spring hangers improve sound insulation in upper-storey floors by up to 30 dB. The sound reduction index  $R'_w$  is typically 72 - 84 dB after proper installation of the ceiling, but depends on the existing ceiling construction. In practice, the improvement will be

somewhat less, depending on the ceiling construction and flanking transmission through the walls.

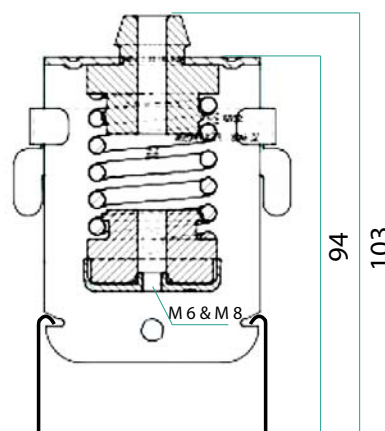
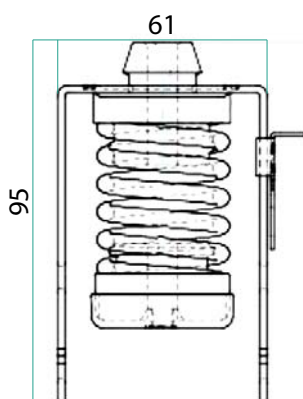
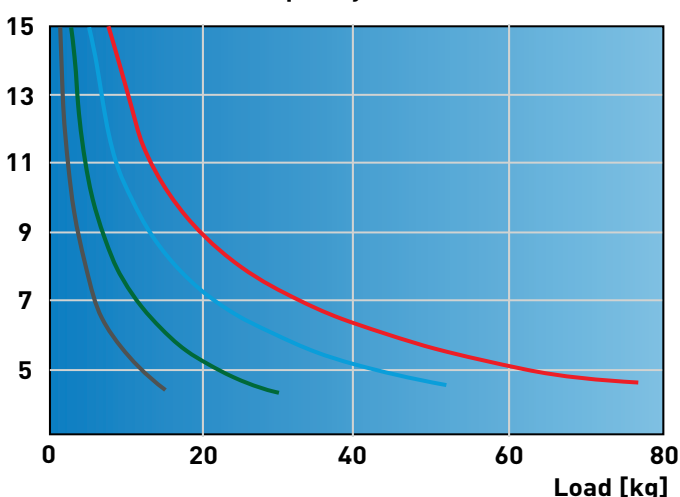
### Advantages

The ceiling hangers insulate well throughout the audible frequency range - even against low tones. The ceiling hangers are quick and easy to install.

### Installation

Installation with the click system is quick and easy. Mount the hangers at the correct height on the threaded rods and click the profiles in place. Push the safety device into place with your finger, and the ceiling is finished. The sound ceiling should hang freely without direct contact with the other walls, ceiling, pipe penetrations, etc.

Measured Natural Frequency [Hz]



Dimensions including rail



IAC Acoustics also carry a large stock selection of Anti vibration mounts, Rubber pads, Rubber Bearings, Shock Isolators and much more.

So call us and make use of our more than 30 years of experience in noise and vibrations attenuation

IAC Acoustics  
Jernholmen 44  
DK-2650 Hvidovre  
Phone: +45 36 77 88 00

[www.iac-nordic.dk](http://www.iac-nordic.dk)  
[nordic@iac-nordic.dk](mailto:nordic@iac-nordic.dk)

Office hours  
Monday - Thursday 8-16  
Friday 8-15