

# Vibratec Akustikprodukter AB

## Civil Engineering

*Vibratec*<sup>®</sup>  
akustikprodukter



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## Civil Engineering

Vibratec supplies solutions for Civil Engineering applications such as floating floors, elastically suspended ceilings, building base isolation, tuned mass dampers and suspension of rotating machinery such as fans, coolers and similar.

We provide:

- Engineering
- Custom designs
- Manufacturing and stock
- Installations
- Documentation
- Control measurements



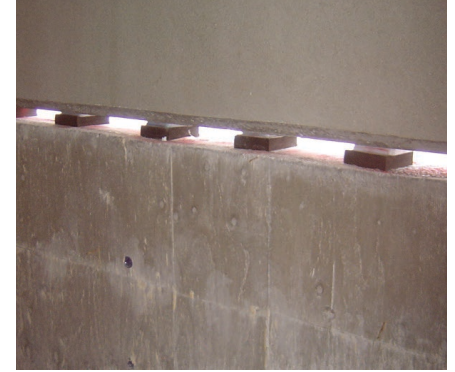




Pre-compressed Spring Isolators



Elastic Pads on Pillar

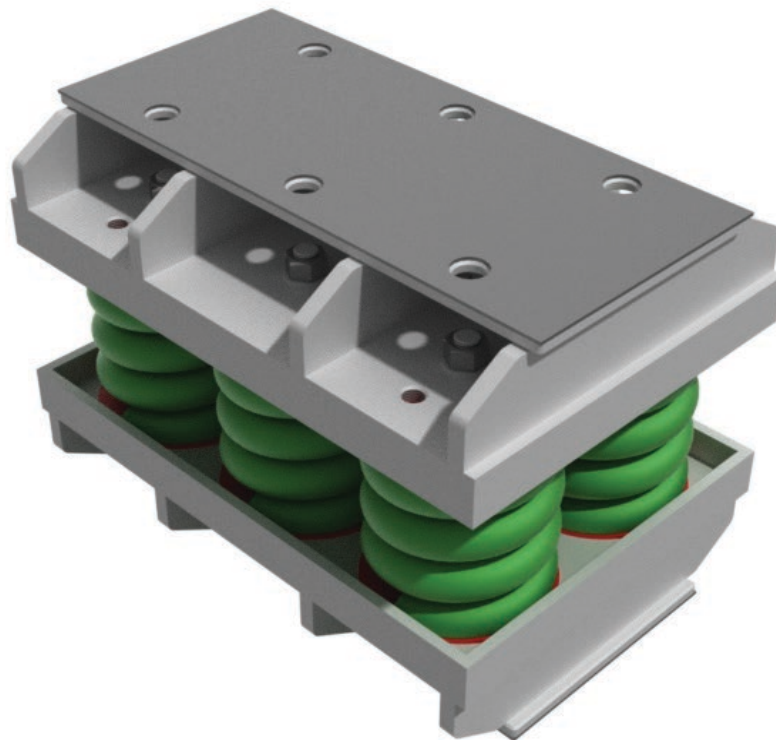


Wall on Elastic Pads

## Building Base Isolation

Vibration isolation of complete buildings can be done with mats, discrete pads or steel springs. Vibrattec can support with everything from calculations, design and tests to delivery, installation and measurements of the vibration isolation. We also give solutions for elevator guiding rails, stairs, piping, cables and other typical sources of acoustic bridging. With discrete pads we reach down to 6 Hz in resonance frequency and with springs 2 Hz can be achieved. Low frequency solutions often call for pre-compressed packages to minimize the deflection during construction.

Vibrattec can also design and supply earth quake dampers in addition to standard vibration isolators.



### Selected references:



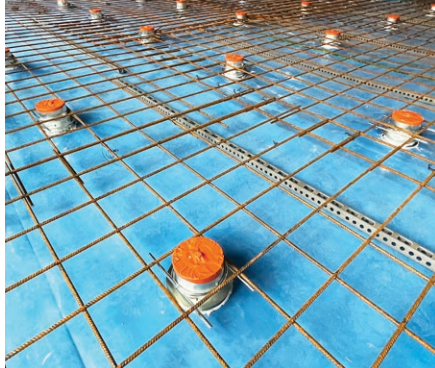
Byporten (Oslo)



Traversen 18 (Stockholm)



Teglnholmen (Copenhagen)



VT-JFS - Jack-Up Floor System



VT-dBlock - Raised Floor System



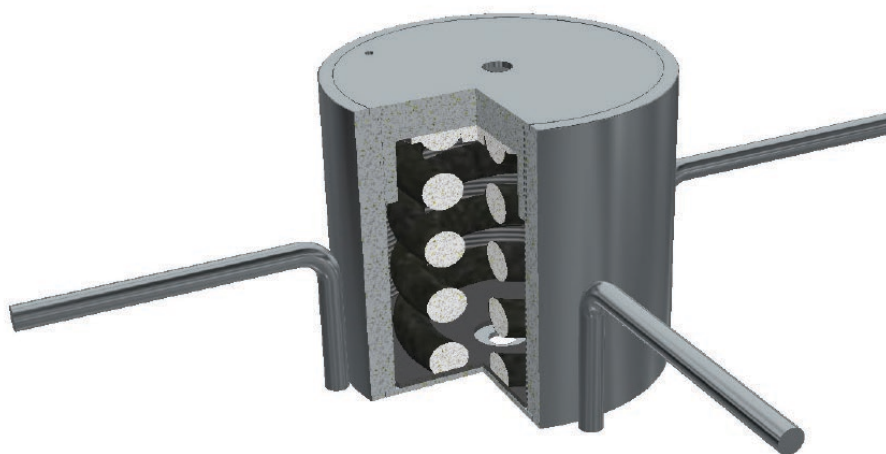
VT-BAT - Floor Batten System

## Floating floors

Floating floors work by isolating the working floor from the supporting structure via elastic mats, pads or springs. Good structural isolation in the building design and adding mass to the structure are important steps to ensure an appropriate level of airborne sound isolation. Adjustable systems for both light weight and concrete floors are available as well as different discrete pad/spring systems.

Vibratec's floor systems can be designed and manufactured to any needs whether it is a domestic, commercial or industrial application:

- Floors for discotheques, bowling halls, gym, cinemas
- Floors for ballet, music studios, rehearsal rooms
- Floors for washing machines and different types of industries
- Residential upgrading of existing timber joist floors to meet acoustic requirements



### Selected references:



TV4 Studios (Stockholm)



Sats Gym (Stockholm)



Imperial Lanes (Stockholm)





VT-CBC - Ceiling System



VT-AWS Wall System



VT-SFC - Ceiling System

## Ceilings and walls

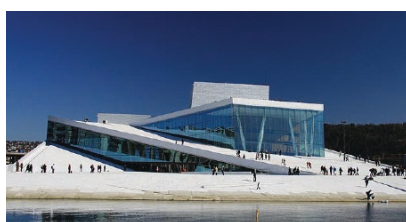
Creating a gap and inserting an elastic barrier prevents noise from vibrating through joists and ceiling. In effect, a second, separate ceiling is added which is suspended elastically.

The sound is also entering through the walls (flanking noise). The inner ceiling thus must be elastically decoupled from the walls, but at the same time be air tight. Vibratec can offer several complete ceiling and wall systems with springs or rubber elements.

Fully isolated walls are often required to prevent noise travelling between adjacent rooms or from the structure of the building. The sound insulation and vibration isolation can be improved by introducing resilient fixings to decouple the walls from each other and/or resilient strips to isolate the walls from the supporting structure.



### Selected references:



Oslo Opera house



Stockholm Academy of Dramatic Arts



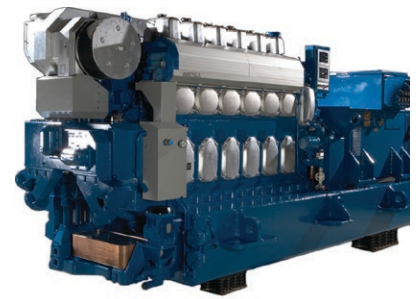
SF Bio (Vällingby)



Adjustable spring mounts



Marine spring isolator VT41

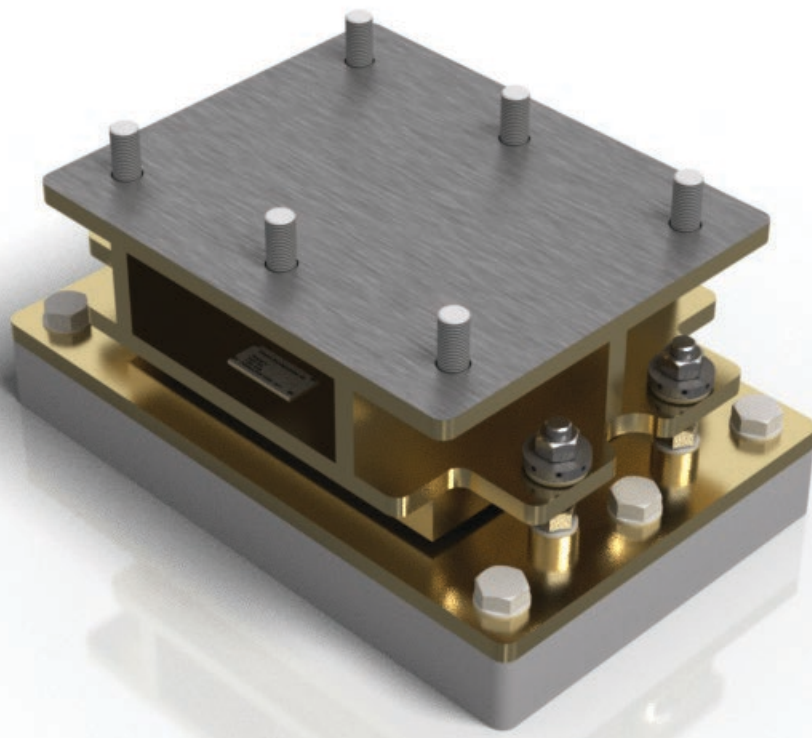


Spring Package Solution

## Vibration isolation

Whether it is a rotating or punching machinery Vibrattec can design a solution by carefully choosing dynamic and damping properties. The final result is highly depending of the stiffness of the sub-structure and the skid, when available we can add the point mobility into our calculations. For high requirements of insertion loss we design 2-mass vibration isolation.

Typical applications: coolers, fans, compressors, generator sets, elevator machinery



### Selected references:



MAN Energy Solutions

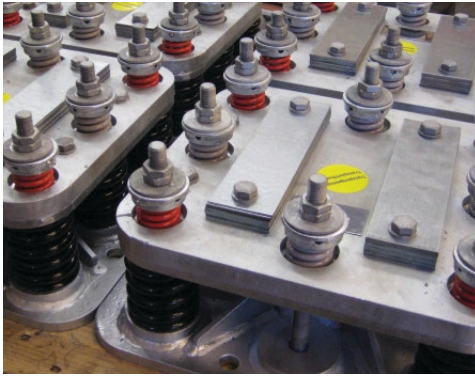


Wärtsilä Power Plants



Siemens Turbomachinery

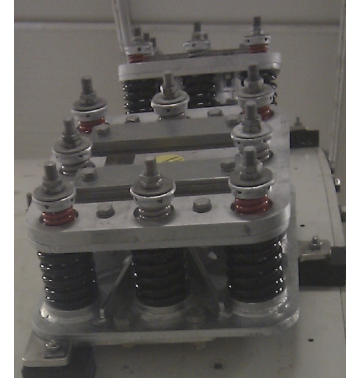




TMD in production



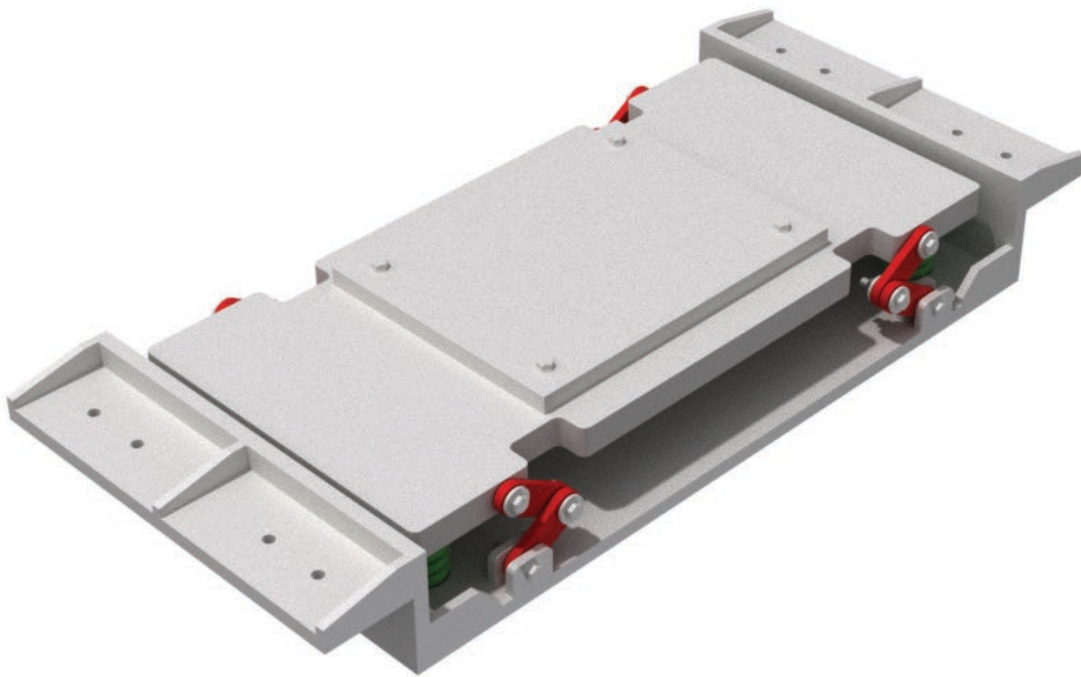
Installation under bridge



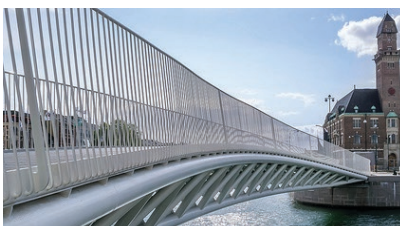
On rotation machinery

## Tuned Mass Dampers

Tuned mass dampers stabilize against motion caused by harmonic vibration. A TMD is tuned to move the main mode away from a troubling excitation frequency and to add damping. TMD's are typically concrete blocks or steel bodies mounted elastically by means of springs, and tuned to move in opposition to the resonance frequency of the structure to be damped. Vibratec designs and manufacture TMD's for both low and high harmonic vibrations. Typical low frequency applications are pedestrian bridges and skyscrapers whereas wind turbines are considered a high frequency application. Vibratec can also support with installation and measurements if wanted.



### Selected references:



Bagers Bro (Malmö)



Siemens Wind Power



