GERB Viscous Wall Dampers (GVWD)

Protection of buildings & structures against earthquakes and wind-induced vibrations

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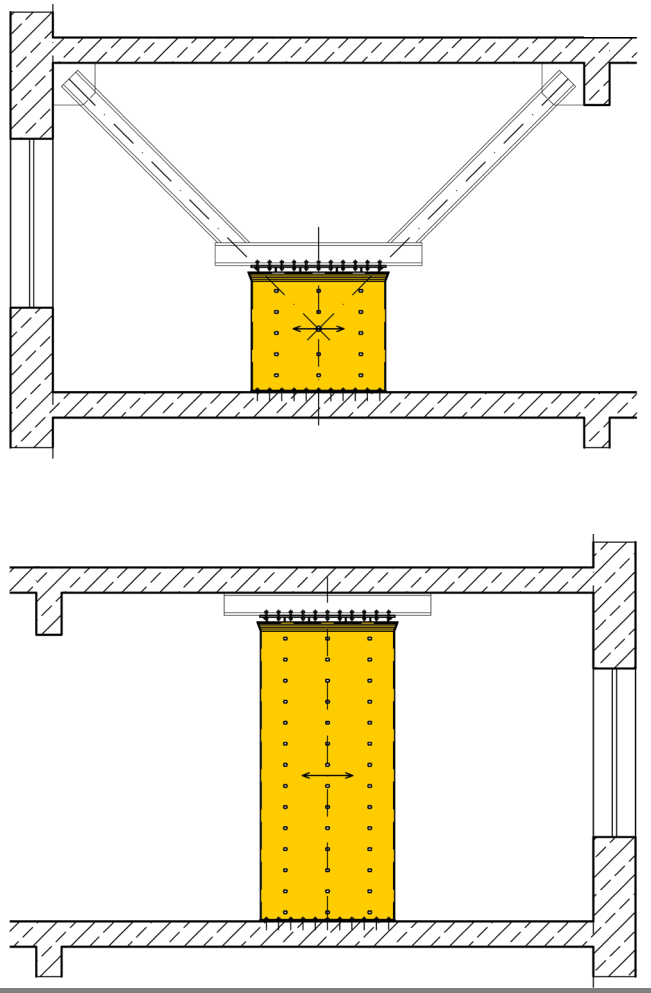
GERB Viscous Wall Dampers (GVWD) are a special design of common Viscodampers®. They are installed in buildings and structures connecting different floors. In this position they are reducing inter-storey drift ratios during wind or seismic excitation. They act in one horizontal direction and increase the overall damping of the structure. Reduced inter-storey drifts result in lower internal forces and moments improving comfort, safety and reliability.

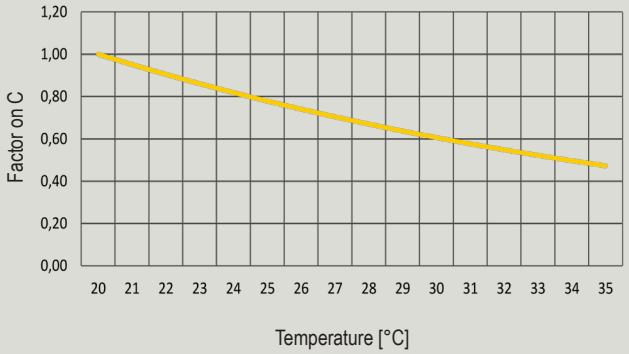
GVWDs consist of a steel housing connected to the lower floor/structure, an inner piston connected to the upper floor, and viscous liquid inbetween. During seismic and strong wind excitation, the relative displacement between upper and lower structure causes the piston moving through the viscous liquid. Damping forces are induced and yield kinetic energy dissipation. Depending on the damping required and/or to achieve acceptable relative displacements between the floors, different damper sizes with suitable performance levels can be selected. Several dampers can work in parallel, if required.

GERB Viscous Wall Dampers have been developed and designed to meet the needs of architects and structural engineers. GVWDs come in various sizes and can be installed within the regular wall structures. They are suitable for new builds but also applicable for retro-fitting measures.

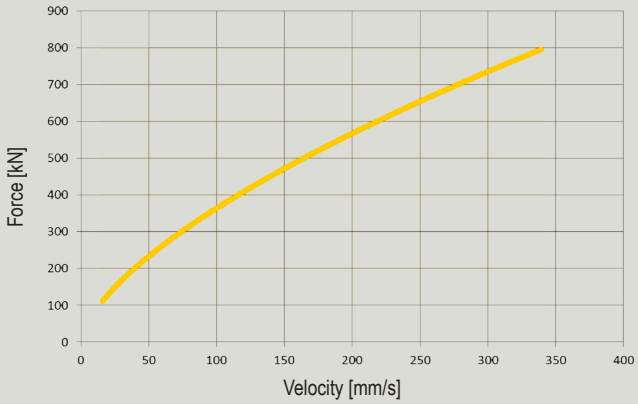


GVWDs between two floors
(two typical situations)

Temperature Dependency



Force vs. velocity



GVWD in a test rig

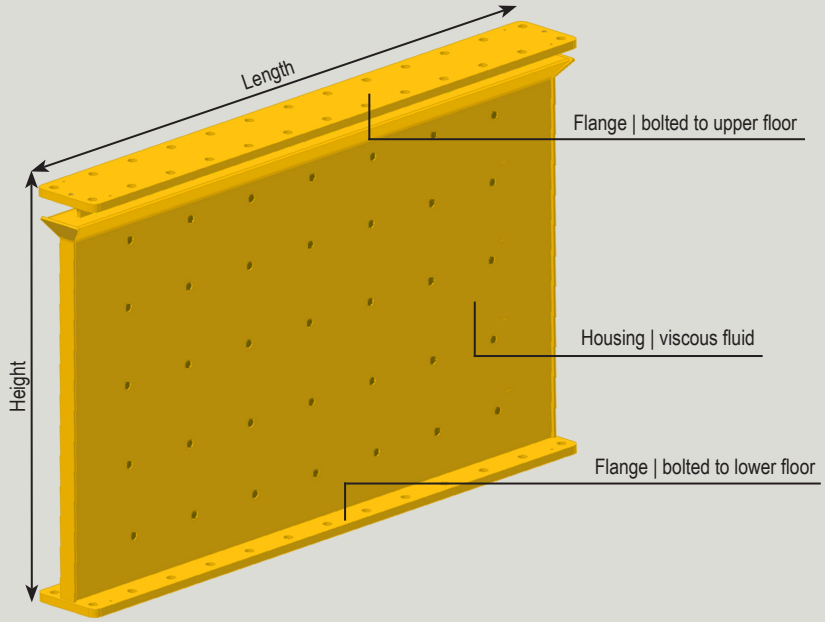
Standard GVWD types

The table below shows standard sizes of GVWDs, available as single or double chamber dampers (SD, DD). DD types provide twice the dissipation performance of SD GVWDs.

Type designation: GVWD-*SD(DD)-Length/Height*

Length (mm)	**Height** (mm)					
	750	1000	1500	1800	2100	2400
1500	SD DD	SD DD	SD DD	SD ---	---	---
1800	SD DD	SD DD	SD DD	SD DD	SD ---	---
2100	SD DD	SD DD	SD DD	SD DD	SD DD	SD ---
2400	SD DD	SD DD	SD DD	SD DD	SD DD	SD DD

Customized sizes are available upon request.



GVWD – basic assembly

Characteristics

- Technology well known and proven in all kind of structures worldwide
- Reliable technology as based on viscous shear forces
- Maintenance / abrasion free (no mechnical wear and tear)
- Working in horizontal direction of the wall
- High damping forces / increasing demands lead to increased damping forces

Fields of application

- Tall and medium to large buildings
- Flexible buildings
- Buildings with a high content value
- Buildings that require continuous operation
- Retrofitting measures

For more than 80 years GERB uses viscoelastic dampers (Viscodampers®) for vibration control solutions.

Performance and variability

- Damping fluids with different viscosities are available for different load and ambient conditions to achieve the requested damping values for given requirements and broad temperature ranges
- For applications in nuclear facilities high radiation resistance is often required whereas outside applications require damping fluids with low temperature dependency
- GERB always strives to use the optimal damping fluid for each application and tests its tailormade solutions on in-house shaking tables

Inspection of
High-performance Dampers

Certified performance

- First patent for Viscodampers 1939
- TÜV certification since 1981
- Since then multiple design approvals from international certifing bodies
- Third party performance tests at facilities like BAM, MPA Karlsruhe, Fondazione Eucentre and UC San Diego

Longlasting solutions

- GERB has significant project records for seismic protection systems, vibration control systems and tuned mass dampers
- These maintainance free components perform for more than 35 years at certain facilities

GVWD at shaking table test stand

RAMA IX BRIDGE, Bangkok with GERB Viscodamper® as components for installed TMD Systems

Vibrations can be controlled – wherever they occur

GERB

Vibration Control
Made in Germany. Since 1908. Worldwide.

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Interested in detailed information or
individual consulting service?
Please contact us!

Certified: DIN EN ISO 9001 et al.

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