

DIS Viscous Wall Dampers

Damping Devices and Seismic Protection for Medium and High-Rise Structures

IDEAL FOR:

- Hospitals
- Structures requiring continuous operation
- Buildings with high-value content
- Retrofits

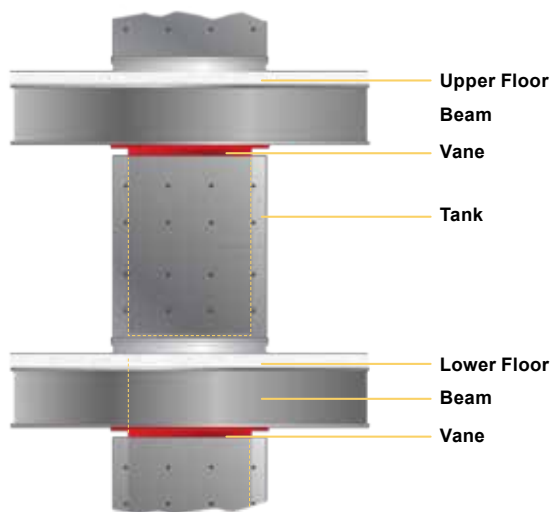
Viscous Wall Dampers (VWDs)

Viscous Wall Dampers reduce by up to 50% wind-induced oscillations and inter-story drifts caused by seismic accelerations.

Reduced superstructure stresses lessen the amount of required steel. This savings alone more than off-sets the cost of the VWDs plus results in a better performing building.

VWDs are maintenance free. They have no seals and the viscous fluid is not under pressure.

They have been used extensively in Japan and Taiwan for over 25 year in more than 100 projects. Outside of Japan, only Dynamic Isolation Systems is licensed to provide Viscous Wall Dampers.



How Do Viscous Wall Dampers Work?

Each wall damper consists of a narrow steel tank connected to the lower floor that contains a highly viscous fluid. Within the tank, connected to the upper floor, is an inner steel plate (or vane).

During seismic excitation, or in strong winds, the relative floor movement causes the vane to move through the fluid.

The damping force from the shearing action of the fluid is dependent on the displacement and velocity of the relative motion.

Viscous Wall Dampers may also be constructed with two vanes, which provide twice the damping force with only a small increase in the thickness of the VWD.

Viscous Wall Dampers can be designed to fit typical building openings.

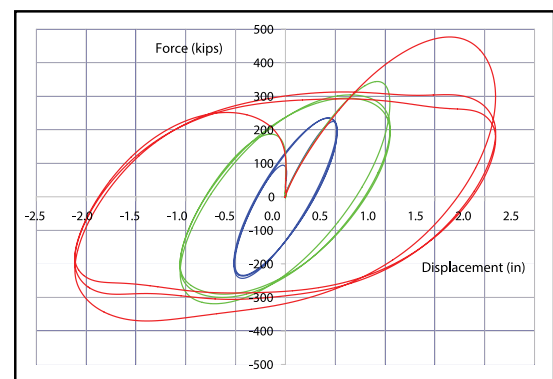


Geary Van Ness Medical Center in California was the first structure in North America to use Viscous Wall Dampers.

VWD Testing

As part of a rigorous OSHPD review, prototype tests on 4/5 dampers were performed at UC San Diego's SRMD testing facility. The dampers were tested to a variety of displacements and velocities (sinusoidal and earthquake motion) in uni- and bi-directional conditions.

Over 100 cycles of seismic displacement tests demonstrated stable performance. Further, a 2000-cycle wind displacement test per ASCE 7-05 was performed to confirm the adequacy of the damper in wind conditions.



Test results for a 7' x 9' VWD.

VWD Benefits

Cost Savings: Less structural steel required.

Better Performance: Inter-story drifts reduced up to 50%.

Maintenance Free: Non-pressurized. No seals.

Architectural Flexibility: Compact shape easier to accommodate than diagonal braces or dampers.

Retrofits: Easy to install. Beam-column joints do not need strengthening in retrofits.