

DIS 3D Isolation System
Seismic Protection for Applications Requiring Vertical and Horizontal Acceleration Reduction

IDEAL FOR:
 -Applications where vertical as well as horizontal accelerations may be present

The Need for 3D Isolation

Seismic isolation is typically only engineered to protect against horizontal accelerations.

In some applications, however, such as a major hydroelectric dam in Canada, extreme vertical accelerations were also present.



A 3D Isolation System component ready to ship.

During a seismic event, mission critical equipment would be subjected to spectral accelerations up to 17g. These accelerations would damage sensitive equipment, causing dam controls to be inoperable.

Dynamic Isolation Systems developed a system which provides isolation from damaging accelerations in both horizontal (X, Y) and vertical (Z) directions.



Ruskin Hydroelectric Dam in Canada.

DIS 3D isolation systems reduce forces and accelerations to be within IEEE 693 High Performance requirements.

The successful development of 3D isolation allowed the project owner to incorporate vertical isolation systems in a number of additional applications.

Spectral accelerations reduced by factors of 10 to 20.

DIS' 3D isolation systems are an effective and complete solution for addressing earthquake hazards.

Dynamic Isolation Systems specializes in custom design, development and manufacturing of solutions for unique applications.



3D shake table testing of DIS' 3D isolation system at DCL.

Configuration

DIS' 3D isolation system uses a series of guided bearings, vertical and horizontal springs and dampers to achieve superior performance during a seismic event.

3D isolation system dimensions and capacities are determined on a project by project basis by DIS' team of seismic design experts.

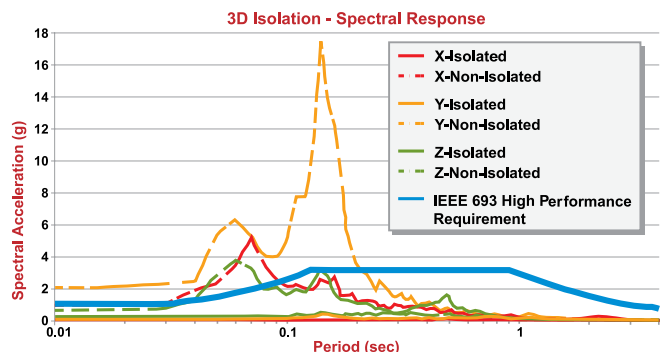
Performance

Several shake table tests were conducted at Dynamic Certification Laboratories (DCL) and the University of Nevada, Reno (UNR) .

The system performed as designed. The spectral accelerations were reduced by a factor of 18, protecting essential equipment against the most extreme seismic inputs.



System tested at the University of Nevada, Reno.



Shake table testing shows 3D Isolation reduced spectral accelerations satisfying IEEE 693 High Performance requirements.