

Seismic Enclosures Provide an Extra Measure of Protection

The use of seismic-rated enclosures is called for in areas where earthquake activity is possible. In addition, power plants, railroads, airports, and other critical installations use rack mounted electrical and electronic equipment that is subjected to vibration and other motions that can over-stress equipment framework, components, and connections. Adequate frame strength and rigidity should be part of your plans when choosing enclosures to be used in these conditions.

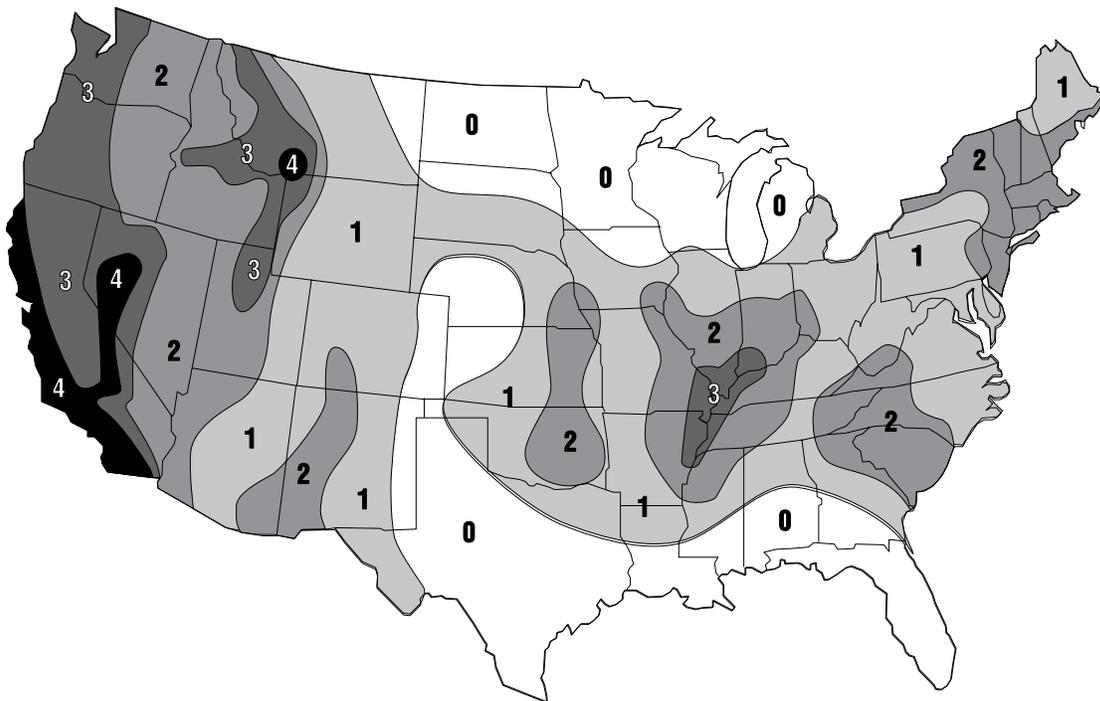
Seismic Enclosure Standards

Industry standards define global geographical areas as earthquake-risk zones. Referring to the seismic zone map on this page, zones are numbered from 0 to 4 with Zone 4 corresponding to the highest risk areas. Geographic areas designated as Zone 0 present no substantial earthquake risk.

Conditions Other Than Earthquakes

Equipment may need to withstand the effects of movement or vibrations in areas close to railways, airports, or areas such as power plants and other areas subject to similar conditions.

Telcordia Seismic Zones (U.S.)



Zone 4 is the highest risk area, Zone 3 the next highest, and so on. No earthquake requirements are provided for Zone 0.

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Hoffman Seismic Products

At Hoffman we performance-test our seismic products according to Telcordia (formerly Bellcore) GR-63-CORE Network Equipment Building System (NEBS™) requirements for physical protection. These enclosures can also be made to comply with all applicable national and international standards, such as the Uniform Building Code (UBC) and the International Electrotechnical Commission (IEC).

Seismic Certification

A Telcordia GR-63-CORE compliant test must be conducted by a Nationally Recognized Testing Laboratory (NRTL) or other recognized independent laboratory before certification will be issued. This test is conducted on an installation-specific basis with customer-installed equipment and cabling mounted inside the enclosure. In other cases or in addition to, a licensed structural engineer must certify the installation. Contact Hoffman for more information or for assistance in coordinating testing.

Hoffman Seismic Testing Capability

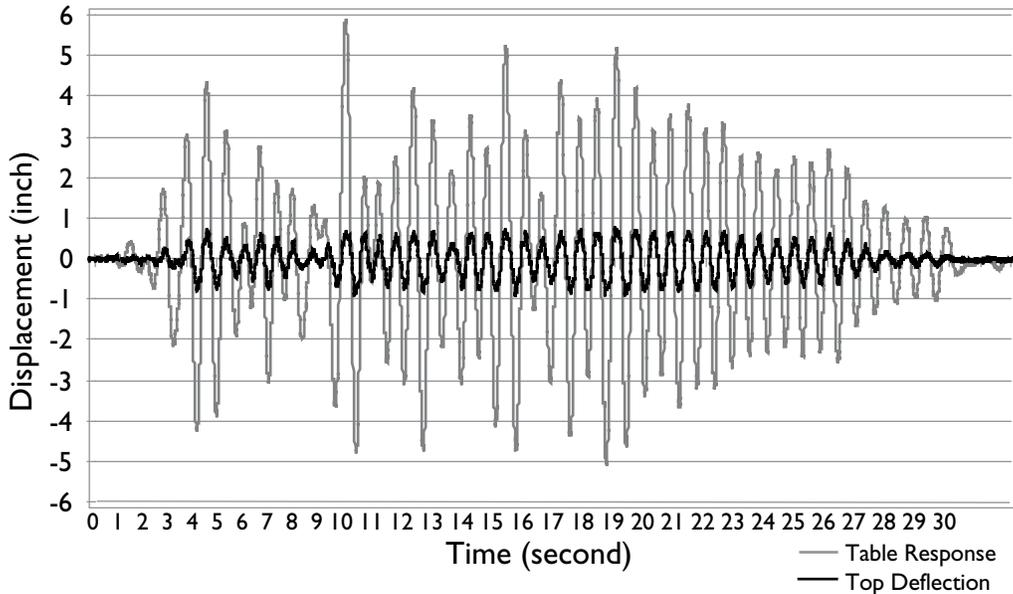
Hoffman has, in-house, the capability to test the seismic response of a product in accordance to the Telcordia GR-63-CORE seismic zone 4 standard. This gives Hoffman the ability to work with our customers to recommend and develop product solutions that will have the ability to reach seismic certification by a recognized test laboratory with minimal time and cost.

Hoffman's seismic testing apparatus consists of a rigid shaker table powered by a 22 KIP hydraulic piston with servo valve control and auxiliary control components that subject the enclosure to a synthesized Earthquake Waveform (called the VERTEQII) as defined in the Telcordia GR-63-CORE standard. The enclosure is anchored at all four corners to the shaker table by means of 1/2-inch Grade 8 bolts and loaded with simulated equipment to match the placement of the dynamic loads.



Enclosure mounted on shaker table

The photograph above shows a seismic enclosure mounted on Hoffman's shaker table ready for a Telcordia GR-63-CORE seismic Zone 4 test. The graph below shows an example of the time-motion history generated during the seismic test. Tests are verified by comparing this table response to the input standard VERTEQII waveform. A test is successful when the enclosure's top single amplitude deflection does not exceed 3 inches.



Time-motion history generated in front to back seismic enclosure test

NEBS™ is a trademark of Telcordia.