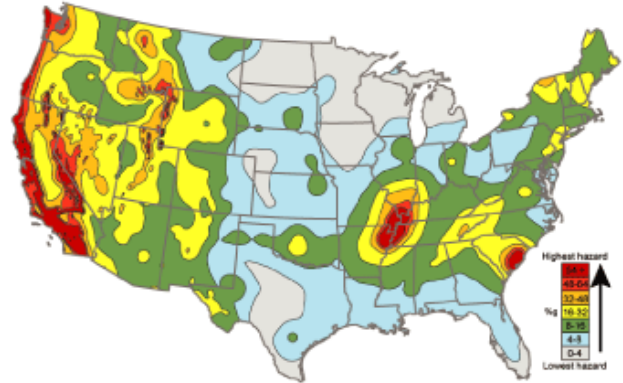


PRODUCT APPLICATION SHEET

Much of the United States is at some degree of risk for earthquake activity. Code changes over the last decade reflect this risk and require the use of seismic bracing on specific non-structural equipment. These measures protect not only the occupants from heavy falling objects, but also the building owners from significant repair costs. Equipment is often required to be operational both during and after an earthquake event.



Most buildings are designed with some degree of noise control – especially where large vibrating equipment is located near occupied spaces. Vibration isolators are typically installed to mitigate structure-borne noise by allowing the equipment to move freely. This, however, creates a problem where equipment needs to be restrained to minimize movement from seismic activity. If some type of rigid restraint is used, the equipment vibrations are transmitted into the structure and create audible noise.



For large suspended equipment, spring hanger vibration isolators (Vibro-Acoustics Type SH) are used on each support rod to absorb the equipment vibrations. To deal with the anticipated seismic forces, both lateral and vertical bracing must be installed in such a manner as not to hinder the effectiveness of the isolators.

In the application shown here, 1" deflection spring hanger vibration isolators have been installed on the supports for a vaneaxial fan in combination with ¼" diameter wire rope cable sway bracing (Vibro-Acoustics Type SRK) and vertical limit stops (optional with Type SH). The limit stop is typically a large washer-type element under the hanger box which will keep the equipment from "jumping" off the spring support. The support rods in this example are thick enough and short enough to prevent buckling failure. In other cases, supplemental rod bracing using steel angles and clips (Vibro-Acoustics Type VAC) may be necessary to restrain the equipment movement during an event.

The cable sway bracing shown here is positively connected to the structure above with a through-bolt in the flange of a nearby beam. Vibro-Acoustics' engineers provide guidance to the contractor on acceptable methods for attachment to the structure, including anchor bolts, welding and special beam clamps. The cable is splayed out from the equipment at 45 degree angles on all four corners to restrain it from moving in any lateral direction. The sizes of the cable, anchor bolts and brackets are determined by calculations required by the building code.

Vibro-Acoustics can provide all of the vibration isolators and seismic restraint components, and documentation necessary – including in-state Professional Engineer review, stamping and on-site inspection to meet local code requirements – for all of your projects.