

# Earthquake-Resistant Devices For Chile's At-Risk Wine Industry

Pontificia Universidad Católica de Chile



The Chilean wine industry lost an estimated 125 million liters due to damaged wine tanks following the February 2010, earthquake. Natural disasters such as these are an ever-present hazard faced by all production sectors in countries prone to seismic activity.

To combat the risks, a team of Pontificia Universidad Católica de Chile in Santiago researchers developed three seismic isolation and dissipation technologies for use in wine storage vats. A set of flexible devices are installed on the struts holding up the liquid containers. These devices have been designed to protect storage structures from horizontal and vertical ground displacement triggered by earthquakes. This system can be scaled to the size and weight of the tank requiring support and it is an effective solution for protecting all types of industrial equipment.

“ *The technology can be used in any liquid storage tank, with applications in the food industry as well as the petrochemical industry.* ”

Tersainox S.A., the stainless-steel manufacturer that licensed the technology, is exploring international markets,

including the wine industry in California.

It costs five percent more to install the technology on all the tanks, but researchers note “it reduces the possibility of having a failure during a major quake by four-fold.”

These devices were created by scientists in the Structural and Geotechnical Engineering, Design-Engineering and Metallurgical Mechanical Engineering departments at Universidad Católica. Tersainox S.A. plans on installing the seismic protective devices on vat support structures right on its assembly line.

Chile’s National Commission for Scientific and Technological Research (Conicyt) funded this project through the Fund for Scientific and Technological Development (Fondef).

The Tech Transfer Office at Universidad Católica — under the purview of the Office of the Vice-Chancellor of Research — is the driving force behind applied research at the Pontificia Universidad Católica de Chile. The Tech Transfer Office oversaw supporting the research team, raising public funds for the R+D projects, developing the intellectual property strategy, and led the licensing of these technologies to Tersainox.

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