

A Series of New Friction Bearings for Earthquake Isolation

The study describes in detail the composition and operating principle of six movable bearings for seismic insulation, and it also emphasizes the most important features of the respective systems; for example, the economical competitiveness with all other existing conventional or base insulation systems, the considerable decrease in the absorbed seismic energy and in the psycho-physical discomfort of the inhabitants of the building during an earthquake and the ease of maintenance.

The main principles of seismic insulation systems when using the proposed movable bearings are:

- interruption of the solidarity between the building and the foundation-soil complex;
- laying of movable bearings with sliding or rolling friction.

With regards their composition and operating principle, the bearings may be classified as follows:

- mechanical
- natural
- mixed.

When the first type of bearings are used, the centering and locking of the building after an earthquake do not occur automatically because these are achieved by the activation of special electronically powered devices. Natural bearings are appropriate for performing the self-centering of the building and, finally, mixed bearings are appropriate for both centering the building automatically and also for mechanically safeguarding it against the danger of resonance.