

Centering and Locking Aseismic Bearing

The bearing proposed for seismic isolation is characterized by the double function of centering and locking the building after an earthquake.

The vertical displacement to which the building is subjected during an earthquake is caused by the curvature of the sliding surface of the bearing.

This is negligible for horizontal displacements of the soil amounting to a few millimeters, and minor for displacements of about 150 millimeters.

Moreover, if the bearing is with sliding friction, the horizontal inertial force in the building is almost constant and amounts to about 1% of the building weight, varying both the horizontal displacement of the soil and the curvature radius of the sliding surface.

If, on the other hand, the bearing is with rolling friction, the horizontal inertial force is negligible.

The psycho-physical effects on the inhabitants are negligible, both because of the considerable decrease of seismic energy in the building and because of the almost total absence of motion in the building during an earthquake.

Another notable aspect of the proposed bearing is that it is equipped with a system of two or more electromagnets, electronically started up, which permit the building to lock at the end of an earthquake and ensure that it remains motionless to wind action.