

# EARTHQUAKE ISOLATION SELF-CENTERING SYSTEM WITH SIDE RIGID LINK-RODS

Federico Bartolozzi  
Civil Engineer & Independent Researcher  
Varese, Italy  
ciuciuza@iol.it

The proposed system concerns the earthquake isolation of a construction characterized by the laying of multidirectional movable self-centering bearings and of side rigid link-rods.

The link-rods have a double function:

1. to unlock a construction at the beginning of an earthquake, allowing the foundation-soil complex to move horizontally with respect to the construction, which remains almost motionless during the earthquake;
2. to lock the construction at the end of an earthquake and to hold it permanently locked in the state of soil quiet.

The negligible pendulous effect in the construction during an earthquake is due to the very small inclination of the sliding surface, which is present in each bearing in order to allow the spontaneous self-centering of the construction.

The seismic energy in the construction is very low, if the bearings are with sliding friction (teflon); it is negligible, if the bearings are with rolling friction (steel balls).

The device, which allows links rod to unlock and to lock the construction, respectively at the beginning and at the end of an earthquake, consists of: an electro-magnet, an accelerometer or a seismometer, a control electronic station, an electric circuit connected to a small generator of electric current.

The cost for making the bearings and the side link-rods in this proposed system balances the highest cost of the structures in the other existing aseismic systems characterized by total absorption of seismic energy.

Nevertheless, the proposed system is certainly to be preferred with respect to the aseismic systems due to the absence of the psycho-physical discomfort for the inhabitants during an earthquake.

## References

- [1] F. Bartolozzi, "Opera Omnia: Earthquake Isolation & Soil Mechanics Systems", *Die Blaue Eule, Essen, Germany*, 220-227, 2005

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