

Resistance of spherical basalt roulade to seismic loads

Dr. Eng. Talal Mammoth Sharaf*

Abstract

The study of the remaining elements of the old buildings considered as an experimental search, After Analysing the work of the bearing Structural Members and method of its implementation, It turned out to be the disaster-resistant buildings come from the implementation of its wall foundations using cylinder basaltic roulade seismic dampers. The design proposes roulade spherical basaltic between the reinforced concrete buildings foundations, and its effectivity ranges in the modern buildings studies in accordance with the conditions of the region.

The use of geometric basalt seismic dampers stone foundations in historic buildings to resist lateral loads resulting from earthquakes and winds, was compared with modern computational methods of seismic dampers in modern buildings to develop and make use of them in buildings and raw materials for the local area design.

Because of the great importance of the work of dampers seismic during construction, the structural behavior of historic buildings exist in gin the Arab states(Asian and African) were analysed.

As a result of the seismic forces, and follow-up resistances tone walls hearing implementing historic buildings hundreds of years, and match them with the oretical research ande experimental portofin the modern era. Hence, to devise at heretical and experimental solutions for the implementation of seismic dampers of raw materials available in the region, and to mitigate thee conomic costs, and ensure the stability of the buildings as a result of natural disasters caused bye arthquakes.

As a result of comparison between computational and experimental methods, industrial dampers in the modern and dampers seismic in antiquity times been proposed rock basalt spherical or oval dampers seismic between superficial rules of the upper and lower buildings of reinforced concrete (preferably prefabricated) to resist the side of any kind loads.

Keywords: Seismic Dampers, stone buildings, bases, stone walls, stone walls brackets, reinforced concrete, the forces of friction between the two surfaces of the ball, high-rise buildings, horizontal loads (earthquakes, wind).

For the paper in Arabic see pages (89-101).

* Faculty member – Division of reinforced concrete – the high building – Structural-Engineering Department – Faculty of Civil Engineering – University of Damascus – Assistant Professor.