

## عنوان مقاله:

Application of Superelastic Nitinol in Seismic Retrofit of Steel Structures

## محل انتشار:

پنجمین کنگره بین المللی عمران ، معماری و توسعه شهری (سال: 1396)

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## خلاصه مقاله:

This study presents the utilization of shape memory alloys in steel structures for retrofitting purposes in order to bring them to the state of the current specifications. Shape memory alloys with the super-elastic behavior can be exploited in order to operate as a suitable passive seismic control device in structural systems. This article presents the results of a numerical study in which the seismic behavior of a damaged steel moment resisting frame is improved using shape memory alloy braces. Super-elastic model of shape memory alloy and plasticity model of steel are incorporated into the nonlinear finite element program particularly developed for this research. Also, to compare the behavior of the proposed energy dissipative system, the behavior of the steel frame with shape memory alloy braces is compared with the behavior of the buckling restrained bracing system which is to date considered to possess the best performance among the existing concentrically braced frames. Results proved that using shape memory alloy braces .for the retrofitting purposes is preferred to buckling restrained braces; particularly in high levels of seismic damage

## کلمات کلیدی:

Shape Memory Alloys; Super-Elastic; Energy Dissipation; Steel Structure; Finite Element Method; Seismic Control

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/736177>

