

## **Monitoring The Seismic Behavior Of A Scaled Rc Frame Of Intermediate Ductility In A Shaking Table Test**

**Mohammad VASEF, Seyed Sina SHID-MOOSAVI, Peng "Patrick" SUN, Mohammad Sadegh  
MAREFAT**

One of the commonly used seismic force-resisting systems in structures is intermediate reinforced concrete moment frames (IMF). Although using the IMF is not allowed in high seismic hazard zones according to ASCE 7-10, using this type of frame is permitted in Iran's 2800 Seismic Standard and New Zealand's Seismic Code. This study investigates the seismic behavior of an intermediate reinforced concrete moment frame subjected to earthquake excitation using the shaking table test on a 2D RC structural model (one-bay wide and three-story high) which is designed under the regulations of ACI318-19. The scale factor of 1/2.78 is selected for RC frame fabrication due to the size limit of the shaking table. The tests are planned to be conducted at the University of Tehran and in stages with gradually increasing peak ground acceleration (PGA) till the failure of the frame. For this purpose, Sarpol-E-Zahab earthquake seismic record will be adopted. The structure's dynamic properties, displacements, longitudinal bars' strain, crack propagation, and accelerations are the structural responses that will be monitored during the test using conventional sensors. The constructed model has three stories with a height of 115 cm for each story, the clear length of beams is 151 cm, dimensions of columns and beams are 11×11 cm and 12×11 cm, respectively. The whole structure is supported by a foundation that is 173 cm long, 52 cm wide, and 22 cm deep. Columns and beams are reinforced with 8 mm diameter longitudinal ribbed bars and stirrups of 6 mm diameter. In addition to conventional sensors, computer vision techniques will also be used to monitor the health state and to analyze the structural dynamics of the scaled RC frame structure.