

Innovative Prefabricated Fpb-Cfstc System For Seismic Isolation: Design, Fabrication And Validation Experiments

Jingcai ZHANG, Xinchun GUAN, Yong DING

An innovative prefabricated friction pendulum bearing-concrete filled steel tubular column (FPB-CFSTC) for seismic isolation was proposed. The CFSTC was selected as the main supporting structure, and spherical curvature surfaces (SCSs) manufactured with a pressing process, was attached to the CFSTC to slide the superstructure in the proposed FPB-CFSTC system. Modified ultra-high molecular weight polyethylene (M-UHMWPE) was introduced as the bearing material. The construction procedure for FPB-CFSTC was proposed, and FPB-CFSTC specimens were fabricated. Friction coefficient tests and validation experiments for a single pendulum were conducted to gain insights into the friction and mechanical properties of the FPB-CFSTC.