

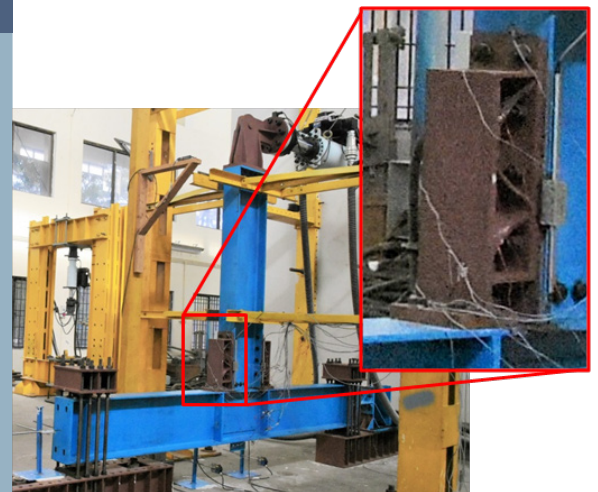
ENERGY-DISSIPATING REPLACEABLE FUSE ELEMENTS FOR STEEL BEAM-COLUMN CONNECTION

A resilient and cost effective earthquake resistant steel lateral load resisting system

CSIR-Structural Engineering Research Centre (CSIR-SERC), Chennai has developed a novel easily replaceable fuse elements of beam-column connection (in the form of two fuse link components) for earthquake resistant steel special moment resisting frames (SMRFs). The fuse links are simple to design and cost-effective, and can be fixed and dismantled easily.

FEATURES / HIGHLIGHTS

- Simple and easy to design
- Links act as fuse and be the primary energy dissipating system in SMRFs during strong earthquake shaking
- Damage is confined within the fuse links
- Reduced cost of repair after strong earthquakes with no considerable increase in initial cost
- Damaged fuse links - easy to identify and replace



TECHNICAL DETAILS

- Satisfies all the requirements for steel SMRFs according to ANSI/AISC:341-16 (2016)
- Demonstration of the performance by eight full-scale sub-assembly tests on exterior beam-column connections under monotonic and cyclic loading
 - Beam, column and shear tab were intact, in spite of the joint moment reaching more than 80% of beam yield capacity
- Damaged link can be replaced within about 20 minutes

PATENT DETAIL

- Energy-dissipating replaceable fuse elements for steel beam-column connection, Patent number 201811047609



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