

Analytical Investigation of Replaceable Links with Reduced Web Section for Link-to-Column Connections in Eccentrically Braced Frames

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Abstract : The use of eccentrically braced frame (EBF) is increasing day by day as EBF possesses high elastic stiffness, stable inelastic response under cyclic lateral loading, and excellent ductility and energy dissipation capacity. The ductility and energy dissipation capacity of EBF depends on the active link beams. Recently, there are two types EBFs; these are conventional EBFs and EBFs with replaceable links. The conventional EBF has a disadvantage during maintenance in post-earthquake. The concept of removable active link beam in EBF is developed to overcome the limitation of the conventional EBF in post-earthquake. In this study, a replaceable link with reduced web section is introduced and design equations are suggested. In addition, nonlinear finite element analysis was conducted in order to evaluate the proposed links.

Keywords : EBFs, replaceable link, earthquake disaster, reduced section

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