

1. The Deformability of Re-retrofitted Columns that Exhibited Large Hysteretic Deformation

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If retrofitted bridge columns are damaged due to an earthquake, it will become necessary to identify the damage conditions and properly repair or re-retrofit the columns. Few studies have, however, been made on the behavior of columns re-retrofitted after serious damage. Much needs to be done in the case of a great earthquake. In this study, a scale model of reinforced concrete rigid-framed railway viaduct that initially experiences shear failure was retrofitted and subjected to reversed cyclic loading to verify the effect of seismic retrofit. Then, the model was subjected to great hysteretic deformation involving concrete cracking and the buckling of longitudinal steel bars and repaired and retrofitted again. An experimental study was made of the model to identify the behavior and deformability after re-retrofit through another round of reversed cyclic loading.

Key words : reinforced concrete rigid-framed viaducts, reversed cyclic loading tests, repair, re-retrofit, deformability