

A Study on Factors Influencing Curvature Ductility of RC Shear Walls

Dr. Hafez Al-Sadeq*

Abstract

Insuring structural system ductility is a main factor justifying the reduction made on design earthquake forces. Reinforced concrete shear wall is one of the most important systems used for earthquake resistance of buildings. In this research, many factors affecting curvature ductility of shear wall sections are studied. These factors are reinforcement ratio, reinforcement distribution (uniform and concentrated), axial force level, section length, and material properties. Results show that increasing reinforcement ratio, will reduce ductility in case of uniform reinforced shear walls, but it stays stable in case of concentrated reinforcement. As for axial force level, curvature ductility becomes lower as axial force increases and almost diminishes when it becomes more than half ultimate axial force bearing capacity.

Keywords: structural system ductility, resistance to earthquake, reinforcement ratio.

For the abstract in Arabic see pages (11-19).

* Structural Engineering Dept., Faculty of Civil Engineering-Damascus University

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