11. Experimental Study on Structural Performance of RC Shear Walls with L Shaped Section

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Recently, high-raised reinforced concrete buildings are increasingly designed to have frames in which center core walls and external frames are combined. However, few tests have been conducted on the strength and deformation performances of L-shaped core walls, and thus the available data is insufficient for appropriate evaluation of the performances and proper designing of the structures. A loading test was conducted using four reduced-scale model specimens and changing the amount of confinement steels at the corner pilasters and loading directions. The test showed that a L-shaped core wall that had a confinement steel amount of 0.94% at the corner pilaster was sufficiently tough and always kept the limit angle of rotation of at least 1/50 against all loading directions and that the bending strength can be accurately estimated by sectional analysis using fiber models.

Key words : L-shaped core wall, reinforced concrete, varying axial force, structural performance, fiber model