

15. Structural Performance of R/C Core Walls of Rectangular Section

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Core walls are used in increasingly many buildings these years. However, not sufficient data is available on the necessary degree of reinforcement at the edges of the walls to ensure the deformation performances of the walls. A loading test was conducted on a core wall that had a rectangular cross section using the restriction range at the edges of the wall and the amount of restraining reinforcement as factors. In the test, restraining a range of about a double of the thickness of the wall resulted in sufficient deformation performance for an axial force ratio of 0.2. The limit angle of rotation improved as the restraining reinforcement increased but was affected by the arrangement of the bars. Correlation was shown between the limit angle of rotation and restraining reinforcement index set by considering the effects. Navier's hypothesis worked even on walls of a shallow cross section. Thus, in a sectional analysis in which the confining effects were considered, the bending strength was evaluated 8 to 15% on the safer side.

Key words : reinforced concrete, core wall, structural performance, loading test