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Investigating the Role of Shear Walls in Enhancing Seismic Performance of Buildings

Prof. K. S. Patil, Kalshetti Sanket Dayanand[1], Lavhate Ajit Niwas[2], Wadje Rohan Bhagwat[3], Gawali Pratik Mohan[4], Kundan Patil Vijay[5]

Professor, Department of Civil Engineering[1]
Students, Department of Civil Engineering[2-5]
Imperial College of Engineering, Pune, India

Abstract: *Shear walls are a crucial component of seismic-resistant building design, providing lateral strength, stiffness, and deformation capacity to structures. This study investigates the role of shear walls in enhancing the seismic performance of buildings, with a focus on reducing seismic damage and improving building resilience. A comprehensive review of existing literature and numerical analysis reveals that shear walls can significantly reduce inter-story drift, floor accelerations, and structural damage.*

The study examines the impact of shear wall design parameters, such as wall thickness, reinforcement ratio, and aspect ratio, on seismic performance. The results show that optimized shear wall design can lead to improved building performance, reduced damage, and enhanced resilience. The study also explores the effectiveness of different types of shear walls, including reinforced concrete, steel plate, and midply shear walls, in enhancing seismic performance

Keywords: Shear wall, Seismic performance, Lateral strength , Deformation capacity

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