

2. Development of Vibration Control System with Connecting Damper

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An attempt was made to develop a vibration control system using connecting dampers for high-rise reinforced concrete apartment houses. The system controls seismic responses by efficiently absorbing seismic energy using dampers installed for connecting multi-story shear walls positioned at the center of the building to external structure and using the difference in vibration property between the two structures.

Shaking table tests were conducted using a frame model to grasp the basic properties and effectiveness of vibration control with connecting dampers. A seismic response analysis was also made using a vibration control system for a 50-story building model that simulated a full-scale building. As a result, it was verified that the vibration control system with connecting dampers could reduce seismic response regardless of the type of seismic wave and minimize the damage to the frame even during a great earthquake.

Keywords: high-rise buildings, core walls, vibration control with connecting dampers, shaking table tests, seismic response analysis, damage control