

3. Development of a Method of Seismic Strengthening of Existing Shear Walls by Spraying Polymer Cement Mortar

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A seismic Strengthening method was developed for placing additional concrete in existing Shear walls by spraying polymer cement mortar instead of placing concrete. The objective was to solve such problems as the noise involved in concrete placement, need of large construction space for mobile concrete pumps and piping and a prolonged construction period because of the installation of formwork. Another method was also developed for attaching additional walls to existing frame using epoxy resin in order to reduce the noise and vibration caused by driving dowel anchors. As a result of structural experiments, it was verified that the proposed seismic retrofit method was effective for constructing additional walls and that additional walls could be designed using a formula for calculating the ultimate strength in shear while considering the effect of retrofit.

Key words: seismic-resistant walls, additional walls, spraying, polymer cement mortar