

### 13. Seismic Strengthening Methods by Shear Walls with Adhesive Joints - Horizontal Loading Tests of Shear Walls with Epoxy Resin Joints -

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We developed seismic strengthening methods by two types of shear walls with epoxy resin adhesive joints. The reinforcement elements are adhered to the existing frame of reinforced concrete structures or steel reinforced concrete structures without installing dowel anchors. As reinforcement elements, we use precast blocks of ultra high strength fiber reinforced concrete or precast concrete panels with built-in steel plate braces. As a result of horizontal loading tests of the shear walls using reduced-scale models, these methods were effective as a seismic strengthening wall. And their ultimate shear strengths of the shear walls can be calculated by considering the shear failure of the reinforcement elements or adhesive joints, according to the guideline of the Japan Building Disaster Prevention Association for seismic retrofit design of existing reinforced concrete buildings (2001 version).

**Key words** : seismic strengthening, epoxy resin, ultra high strength fiber reinforced concrete, steel plate brace, precast concrete panel