The Japanese 5 Story Full Scale Reinforced Concrete Masonry Test – Pseudo Dynamic and Ultimate Load Test Results

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Abstract:

The response of the 5-story full-scale reinforced concrete masonry building, tested at the Building Research Institute (B.R.I.) in Tsukuba City, Japan, is described during the ultimate loading phase. The ultimate loading phase which followed the maximum lateral load limit state at an overall building drift of 0.5% consisted of a pseudo dynamic test and subsequent increasing cyclic load testing to the ultimate deformation limit state. The pseudo dynamic test was on-line driven by a 5-degree of freedom lumped parameter model and a segment of the Taft EW 1952 ground acceleration record. The ultimate deformation limit state was marked by rapid strength degradation at an overall building drift of 0.875%. The complete hysteretic behavior of the test building during the ultimate loading phase is described and a summary of the key findings of the Japanese 5-story full-scale reinforced concrete masonry test is presented.

DOI: 10.70803/001c.142865

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