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Comparison of Wind Fragility for Window System in the Simplified 10 and 15-Story Building Considering Exposure Category

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Abstract : Window system in high rise building is occasionally subjected to an excessive wind intensity, particularly during typhoon. The failure of window system did not affect overall safety of structural performance; however, it could endanger the safety of the residents. In this paper, comparison of fragility curves for window system of two residential buildings was studied. The probability of failure for individual window was determined with Monte Carlo Simulation method. Then, lognormal cumulative distribution function was used to represent the fragility. The results showed that windows located on the edge of leeward wall were more susceptible to wind load and the probability of failure for each window panel increased at higher floors.

Keywords : wind fragility, window system, high rise building, wind disaster
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