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A Study on the Numerical Analysis of Curtain Walls with 3-Axis Displacement Absorption

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ABSTRACT

Recently, the frequency and scale of domestic earthquakes are gradually increasing. In particular, in September 2016, a strong earthquake of 5.8 magnitude occurred in Gyeongju. As a result, the building exterior material was damaged and the glass facade fallout causing secondary damage to the vehicle. Considering the seriousness of these problems, it is necessary to develop a seismic curtain wall with seismic performance for non-structural elements.

In this study, through the structural vulnerabilities analysis of the existing curtain wall, a curtain wall module with a 3-axis mobile fastener capable of absorbing the external displacement caused by the earthquake was devised. Structural performance was evaluated based on the numerical analysis results comparing the developed curtain wall with the existing curtain wall system. The results, it was confirmed that the structural stability obtained to compare to the existing curtain wall.

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