

Buckling Resistance of Basalt Fiber Reinforced Polymer Infill Panel Subjected to Elevated Temperatures

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Abstract : Performance of Basalt Fiber Reinforced Polymer (BFRP) sandwich infill panel system under diagonal compression was studied by means of numerical analysis. Furthermore, the variation of temperature was considered to affect the mechanical properties of BFRP, since their composition was based on polymeric material. Moreover, commercial finite element analysis platform ABAQUS was used to model and analyze this infill panel system. Consequently, results of the analyses show that the overall performance of BFRP panel had a 15% increase compared to that of GFRP infill panel system. However, the variation of buckling load in terms of temperature for the BFRP system showed a more sensitive nature compared to those of GFRP system.

Keywords : basalt fiber reinforced polymer (BFRP), buckling performance, numerical simulation, temperature dependent materials

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