

عنوان مقاله:

Numerical investigating of the effect of material and geometrical parameters on the static behavior of sandwich plate

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خلاصه مقاله:

Studying the behavior of sandwich panels is very important due to their widespread use in different industries. Therefore, over the past decades, various theories have been proposed to study the behavior of these panels. In this paper a higher order global-local theory with 3D equilibrium-based corrections is presented to study behavior of thick and thin sandwich plate with flexible and auxetic core. In addition to correcting the results with 3D elasticity equations, another important advantage of the presented theory is the ability to consider the transverse core deformation of the sandwich panels. It should be mentioned that to study the behavior of thick sandwich panels, especially with soft core, the existence of this feature is very necessary and has a great effect on the accuracy of the obtained results. Comparison of the obtained results with those existing in valid references showed that the formulation of the provided finite element had a very good accuracy even for thick and thin sandwich plates. Finally, the effect of different material and geometrical parameters on the behavior of sandwich plates are carefully investigated using the presented theory.

کلمات کلیدی:

Sandwich plate, Global-local theory, Higher order theory, Flexible core, Auxetic foam

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