عنوان مقاله:

Buckling of Shell Panels Made of Fiberglass and Reinforced with an Orthogonal Grid of Stiffeners

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خلاصه مقاله:

The paper presents an approach to the stress-strain and buckling analysis in fiberglass cylindrical and conical panels reinforced from the concave side with an orthogonal grid of stiffeners. A mathematical model of the Timoshenko (Mindlin–Reissner) type is used. Transverse shears and geometric nonlinearity are taken into account. The stiffeners are introduced in two ways: using the method of refined discrete introduction and the method of structural anisotropy. We use a computational algorithm based on the Ritz method and the best parameter continuation method. We also provide buckling load values and make a comparison between two types of approaches to account for stiffeners, which shows good convergence.

کلمات کلیدی:

Shells, cylindrical panels, conical panels, Buckling, Ritz method