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LINEAR AND NONLINEAR BUCKLING ANALYSIS OF BASALT LAMINATED COMPOSITE PRESSURE HULL

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ABSTRACT

Pressure hull is the inner hull of a submarine; it holds the difference between outside and inside pressure. It is the main load carrying structure of a submarine. Submarine is a pressure vessel operating in deep waters. The objective of this work is to study the feasibility of using basalt composites as an ideal material for the construction of submarine pressure hull. The linear and nonlinear buckling analysis of the basalt laminated stiffened cylindrical pressure hull subjected to very high hydrostatic pressure is conducted.Comparative study of steel and basalt is also conducted to study the weight criteria.Finite element package ANSYS is used for modelling and analysis of the submarine pressure hull.

KEYWORDS: Pressure Hull, Submarine, Basalt