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A Brief Review Of Using Corrugated Composite Sandwich And Hexagonal Honeycomb Plates For Helmets

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Abstract–The purpose of this study is to perform a multidisciplinary design and analysis of the materials such as Corrugated Composite Sandwich and Hexagonal Honeycomb Plates used for providing the comfort and protective padding in most of general engineering application.The primary goal of using these sandwich systems is to provide the proper absorption capacity and required safety of the system duringimpact load or pressure applications, thus preventing or reducing the failure of any engineering mechanism. The Corrugated composite sandwich structure and Hexagonal Honeycomb plates can also be used in automotive engineering. By implanting the padding using these materials the weight of the device can be reduced and highest safety concern can be optimized.

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In the present work, detailed finite element models for honeycomb panels and corrugated composite structure are studied and analysed for using as the shell padding materials from various literature journals.In a sandwich structure, the strong and stiff skins carry most of the in-plane and bending loads while the core mainly bears the transverse shear and normal loads.Honeycomb sandwich panels are increasingly used in the construction of space vehicles because of their outstanding strength, stiffness and light weight properties.

Keywords – H*oneycomb Plates, Corrugated Composite sandwich, Helmets.*

Introduction:

In mechanical structures where stiffness, strength and weight efficiency are required there the sandwich construction is commonly employed. Honeycomb plates and corrugated composite and sandwich panels constructed from light face sheet and relatively low density cores are