

**IIS-070**  
**Impact on Corrugated Skin Sandwich Panels**

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**Abstract**

Corrugated sheets of various materials are used in a number of applications where low weight and high bending stiffness in one direction are required. Corrugated skins in sandwich structures are rare, but judging from preliminary analyses they appear to have some large potential benefits. The sandwich structures presently considered consist of two thin strong and stiff skins attached to each side of a thick but light and relatively weak foam core. Corrugated skins in a sandwich would increase bending stiffness of the skin and thus wrinkling strength (compression strength). Another major benefit is that the skins, due to the corrugations, can carry shear load (something that is usually left for the sandwich core to do). Since the skins are much stronger than the core, a corrugated skin sandwich may be substantially stronger than an ordinary sandwich. A third benefit is that corrugated skin sandwich structures may have better impact strength. Fabrication and impact testing of corrugated skin sandwich panels is the topic of the presently proposed research. The applications in mind are ship hull bottoms and short span composite bridges and bridge decks. A drop weight impact tower being built under a contract from NGSS will be used for impacting the panels.