

## Mechanical Behaviours of Ti/GFRP/Ti Laminates with Different Surface Treatments of Titanium Sheets

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**Abstract :** Interface properties of fiber metal laminates (FML) affects the integrity and deformation failure modes. In this paper, the mechanical behaviours of Ti/GFRP/Ti laminates were experimentally investigated through low-velocity impact tests. Two different surface treatments of Titanium (Ti-6Al-4V) alloy sheets were prepared to obtain the composite interface properties based on annealing and sandblast surface treatment processes. The deformation failure modes, impact load sustaining ability and energy absorption capacity of FMLs were analysed. The impact load and modulus were shown to be dependent on the surface treatments of Titanium (Ti-6Al-4V) alloy sheets. It was demonstrated that the impact load performance was enhanced when titanium surfaces were annealed and sandblasted. It has also been shown that the values of the strength and energy absorption were slightly higher when the tests conducted at relatively higher loading rate, as a result of the rate-sensitive effects on the damage resistance of the FML.

**Keywords :** fiber metal laminates, metal composite interface, indentation, low velocity impact

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