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STUDY OF HONEYCOMB SANDWICH STRUCTURE FOR TANK BEARING LOAD

**Abstract**

Integrated technology of tank bearing load is one of the important methods for lightweight and multifunctional design of spacecraft. The tank bearing load will be overweight if fully metal structure used, which is induced by the high inner pressure of tank usually used in the spacecrafts of our country. A new technology for tank bearing load is proposed in this study, in which the fiber reinforced composite laminates honeycomb sandwich structure is designed in the outside of the inner metal structure of tank. The advantages of the new structure, such as lightweight and high stiffness, are studied theoretically. The advantages are also verified by an engineering example. The results show that the fiber reinforced composite laminates honeycomb sandwich structure of tank bearing load is light weighted than the traditional design obviously.