Monolithic Composite Cylindrical Sandwich Shells Process

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed Monolithic Composite Cylindrical Sandwich Shells which are structurally efficient composite sandwich cylinders, for all satellite structure applications.

Salient Features

Light weight CFRP (Carbon Fiber Reinforced Plastic) composite sandwich cylinder.

Description

- Composite Sandwich Shell is used as main thrust cylinder of satellite structures, made up of composite skins bonded to Aluminium core through manual layup and autoclave curing process.
- Manufacturing Process: Cylinder is of sandwich construction. Top and bottom skins of the cylinder are made up of prepregs made up of ultra-high modulus carbon fibre. The layup of prepreg upon the tool surface is done manually. The skins are bonded to the honeycomb core through film adhesive and through vacuum bagging and autoclave curing process.
- Types: Specified by the inner diameter of the component which is the outer diameter of the tool. Two types according to the outer diameter of the tool are 886 mm and 1162 mm. Length of the cylinder is limited by the length of the tool and autoclave size.
- Facilities required : Cold stores, clean room, degreasing bath, autoclave.

Technology Transfer

URSC-ISRO offers to transfer this technology Monolithic Composite Cylindrical Sandwich Shells Process developed by URSC to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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