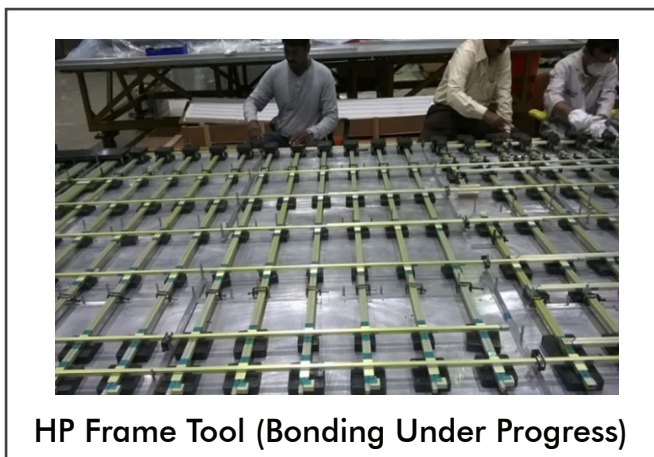


## Heat pipe Embedded Honeycomb Sandwich Panels – Special Tooling and Process

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed Heat pipe Embedded Honeycomb Sandwich Panels – Special Tooling and Process for all satellite structure applications.



HP Frame Tool (Bonding Under Progress)

### Salient Features

- ✦ Manufacturing Process for HP Embedded Aluminium honey comb sandwich panel.
- ✦ Provides better/easier thermal management for satellite equipment panels.

- ✦ Types of Heat-pipe network configuration – Criss-cross type, Multi-bend type & Straight type with single or dual core or combination.

### Major Specifications

Achieving Stringent Specification in terms of Thickness, Location, Flatness, Orientation Control of each embedment

- |  |                           |
|--|---------------------------|
| ✦ Flatness                               | : 0.1mm /100mm(inboard)   |
| ✦ Flatness                               | : 0.2mm /200mm(out board) |
| ✦ Flatness                               | : 0.5mm /1000mm           |
| ✦ HP Joint height control                | : 25.75 + / - 0.05 mm     |
| ✦ Bond line thickness between heat pipes | : 0.15mm                  |
| ✦ Parallelism b/w HP axes to Panel edge  | : ≤0.5mm                  |
| ✦ Perpendicularity between I/b & O/b HP  | : ≤0.5mm                  |
| ✦ SPHD Positional tolerance              | : ≤0.5mm                  |
| ✦ Perpendicularity between I/b & O/b HP  | : ≤0.5mm                  |
| ✦ SPHD Positional tolerance              | : ≤0.5mm                  |

## Technology Transfer

URSC/ISRO offers to transfer this technology Heat pipe Embedded Honeycomb Sandwich Panels – Special Tooling and Process developed by URSC to industries in India with adequate experience and facilities. To manufacture, industries must have the knowledge of composite structure manufacturing, clean room, cold storage and autoclave facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

Technology Transfer & Industry Coordination Division (TTID),  
Programme Planning and Evaluation Group (PPEG),

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