

**JOINT DEVELOPMENT REPORT # 12-1134**

**HENROB SELF-PIERCE RIVETING**

**FOR**

**- *ECAPS Corp.* -**

*D. J. Coldwell*

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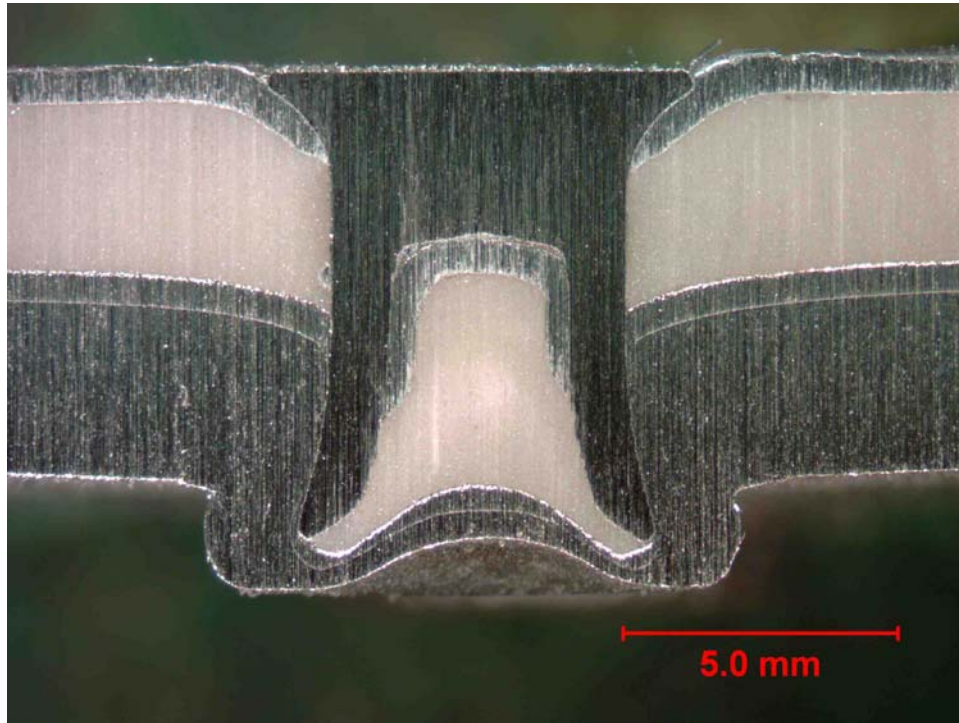
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## ECAPS Corp. (12-1134)



### Joint Configuration

Top material: 4.08 mm aluminum composite panel  
Bottom material: 3.12 mm aluminum extrusion (6063-T5)

### Rivet Setter Configuration

Rivet type: K50944A (Ø5 x 9 mm, countersunk head)  
Die type: DP10-200  
Setting pressure: 100 bar (with protective film)  
Head height: 0.2 mm under flush

### Shear Strength

Peak load: 676.2 lbf  
Energy: 196.2 in-lb  
Failure mode: Tearing of composite panel

Shear Strength Data

Sample #	Pressure setting	Head height	Peak load (lbf)	Energy (in-lbf)	Failure mode
1	100 bar	- 0.2 mm	676.2	196.2	Tearing of composite
2	90 bar	- 0.1 mm	636.4	205.7	Tearing of composite
3	80 bar	+ 0.3 mm	625.6	187.0	Tail pull-out of extrusion



Shear samples after tensile test