

We're focused, we're efficient,
and we're at our best when
we're challenged to think
outside the box — critical
traits when our customers'
success depends on how
quickly we can take their
visions from the sketchpad
to the marketplace.

Advanced Composites- Engineering Services

Turnkey Design, Engineering, Analysis and Manufacturing Capabilities

Roush Composite Engineer Services provides high performance engineering service for a variety of applications. Starting innovative concept creations, Roush Engineering Services includes composite and vacuum thermoforming design, high quality material selection and complete analysis. Roush produces proven results by utilizing the extremely precise engineering and testing techniques. From concept creation to technical analysis, Roush's experienced technical staff is trained and ready to serve your engineering needs.

Design Offerings:

- Complete Composite Design
- Modification of Existing Design to Composites
- Focus on Continuous Fiber Unidirectional and Woven Composites
- Incorporation of Core Materials
- Design of Bonded Composites Monocoques
- Complete Vacuum Thermoforming Design
- Complete 3D Composite Printing Design

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ROUSH[®]
INGENUITY ON DEMAND



Material Evaluation:

- Laminate Schedule Design
- Engineered Laminate Databases
 - Tensile
 - Compression
 - Flexural
 - Fatigue
 - Sandwich Construction Flexural
- Prediction of Laminate Properties using LPT or CLT
- Laminate Mass Prediction

Testing and Analysis:

- Coupon Level Testing
 - Tensile – Compression – Flexural – Fatigue – Sandwich Construction Flexural
- Structure Based Testing
- Test to Failure of Composite Parts and Assemblies
- Stress and Strain Prediction at Laminate, lamina and Fiber Matrix Levels
- Bonded Joint Performance Analysis

Quality and Inspection:

- Blue light dimensional scanning for tooling and assemblies
- Romer Arm – 2 meter reach with integrated laser scanning head
- CMM – Automated process for high precision, accuracy and increase in reporting.

Tooling Services:

- High temperature epoxy composite tooling: Prepreg and Wet Laid, using fiberglass and carbon reinforcements
- High quality molds for thousand of cycles and low-cost temporary tooling for prototypes to minimize cost/lead time.
- High stiffness egg crate tooling backing structures
- CNC Master Models
- Model Materials: High density tooling board, aluminum
- CNC Cut Metallic Tooling – Steel, Aluminum, Stainless

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