

The Technical Department of Gougeon Brothers, Inc. is comprised of expert Chemists, Engineers, Laboratory Technicians and Technical Advisors. These talented people have degrees and experience in chemistry, composites, mechanical engineering, professional composite repair, and manufacturing small and large composite parts.



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# Technical Department



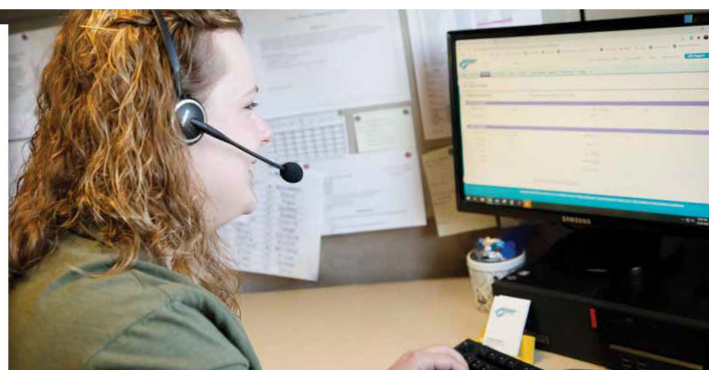


## Testing Services

We offer WEST SYSTEM, PRO-SET, and ENTROPY RESINS customers an array of testing services. Some examples:

- Measuring shear strength at -60°F and 140°F to assist a cutting edge aerospace manufacturer with the design of their wing assembly
- Stud extraction testing for a highly respected custom boat builder to fulfill the customer's insurance company's requirements
- Adhesion testing to specific aluminum alloy for a megayacht builder so they could develop a manufacturing process for attaching FRP superstructures to aluminum hulls

For a fee, we offer testing services as well as subcontracted services from Saginaw Valley State University Independent Test Lab



## New Formulations

- Meeting ISO 9001:2015 8.3 Design and development of products and services
- We custom formulate products to meet unique customer requirements and for private-label

## Quality Control Standards

- Our quality control process fulfills ISO 9001:2015
- We test every batch to product-specific limits
- We keep a retain from every batch in-house

## Technical Support for Customers

- Our Technical Department provides technical service to all WEST SYSTEM, PRO-SET, and ENTROPY RESINS customers.
- We answer approximately 13,500 technical inquiries every year
- We offer customers product training at our facility or yours



## Instruments

### Thermal Analysis

- TA Instruments Modulated DSC (Model Auto Q20)
- Mettler-Toledo DSC (Model 822E)
- TA DSC 25 Discovery

### Mechanical Testing

- MTS 810 Material Test Systems with 110-kip and 55-kip load frames and fixtures for Compression, Tension, Fatigue, Hydromat, Climbing Drum Peel, Short Block Shear, Facing Cleavage, Flexure, and other.
- 4-Station Dead-Pull Creep Apparatus with LabVIEW/NIDAQ data acquisition and temperature control
- Sandwich Panel Impact Test Fixture with edge-support frame
- SEMicro PATTI JR Adhesion Testing Instrument (ASTM D4541)
- Elcometer Model 106 Adhesion Tester (ASTM D4541)
- Paint Adhesion Test Kit (ASTM D-3359)
- Hardness Testers [Shore D Durometer (ASTM D-2240), Barber- Coleman Model GYZJ934-1, Pencil Hardness (ASTM D=3363)]

### Viscosity Characterization

- Brookfield Viscometers (Models RVF, RVT, LVDV-E) with adapters and accessories
- Brookfield Rheometer (Model R/S-CPS+)
- Leneta Precision Sag Meter (ASTM D-4400)

### Cure Profile Characterization

- Gardco Electronic Drying Time Recorders
- Gardco Standard Gel Timer
- 6-Station Peak Exotherm Test Apparatus with LabVIEW data acquisition for time and temperature

### Molecular Characterization

- Thermo Scientific/Nicolet is50 FT-IR

### Other Laboratory Equipment

- Analytical Balances (readable to 0.0001g)
- QUV accelerated weather tester
- Ovens (up to 1,100°C)
- Compound Microscope (1000x) and Stereo Photo Microscope (40x)
- Pycnometer
- Glossometer
- Hegman Gauge (ASTM D-1210)
- Konica Minolta Spectrophotometer cm- 2600D

All instruments are calibrated to industry accepted standards that fulfill the requirements of ISO 9001:2015 7.1.5 Monitoring and measuring resources