



TECHNICAL TOOLING

MOLD | FIXTURE | MATERIAL

Capability Statement

CORE COMPETENCIES

Proprietary material technology for tooling applications:

1) composite layup molds and 2) vacuum trim fixtures and tables.

Our material begins in a malleable state, placed only where needed and form to near net shape, eliminating unnecessary scrap & machine time.

Duns: 117058998

CAGE: 965F8

AS9100 D Certified

NAICS Codes:

333511- Industrial Mold mfg.

333514 Tooling, Jigs & Fixtures

332710 Machine Shop

ITAR Registered

Certified Small Business

Ultra-Low CTE Layup Molds

- Proprietary Ravin™ LM base material
- Autoclave capable up to 350°F
- Direct to mold, shorter lead times
- Coefficient of thermal expansion of 3.3×10^{-6} in/in/°f
- Fraction of the price of Invar tooling with comparable performance.

Vacuum Workholding

- Even vacuum across entire contact surface
- Meets any complex, 3-Dimensional geometry
- Stronger sheer holding force over grooved fixtures
- Repairable and modifiable surfaces
- Fast part change over
- No Tool Path interference

Contact Info:

Technical Tooling, LLC
1118 East D Street
Tacoma, WA 98421
www.technicaltooling.com

POC:
Jake Matthaei, Exec. Manager
253-327-1149
jakem@technicaltooling.com

EXPERIENCE

Layup Molds and Vacuum Trim Fixtures for:

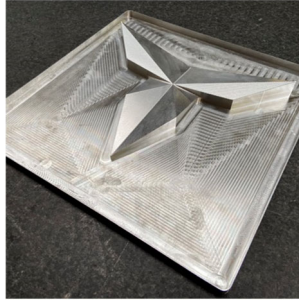
Private Jet Interior Panels • Drones/UAV's • Military Aircraft
Fuselages Panels • Nose Cones • Radomes • Winglets
Nacelles • Assembly Jigs • Wing Skins • Heat Shields
Secondary Bonding • Co-Curing Tools • Green Cure Forming Tools
Large Envelope Vacuum Tables • Autobody • Marine • Space

Unique Vacuum Applications

Metal Machining

- Achieve thin walls and floors on flat fixtures without toolpath interference or distortion caused by traditional vices/clamps.
- Extensive holding force allows for more aggressive machining.
- Works with complex contoured parts.
- Vacu-Grip™ is not impacted by liquids or coolant.

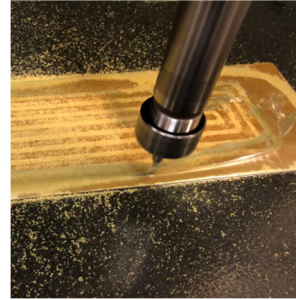
Alum Plate: 0.030" Wall and Floor Thickness



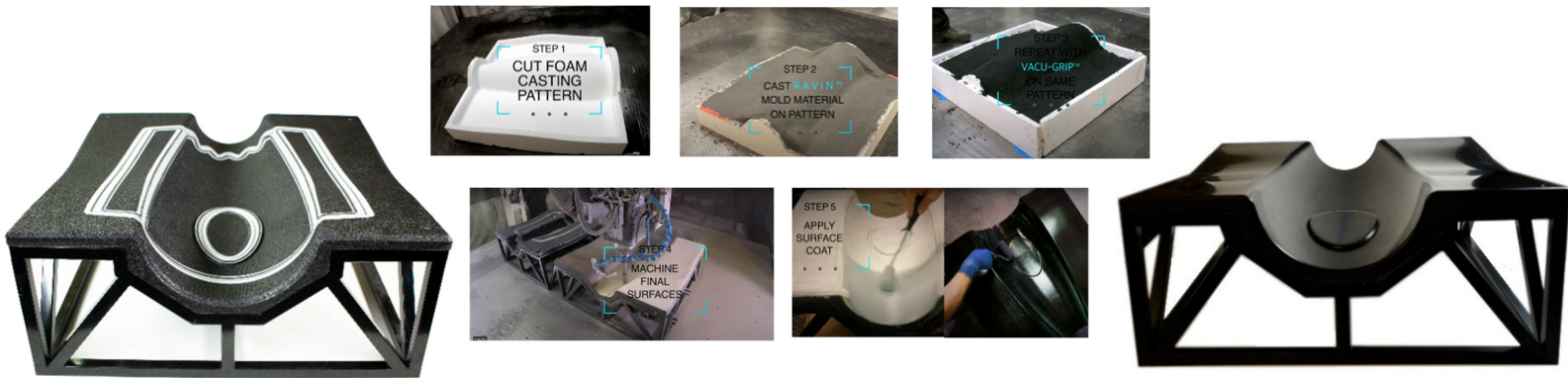
Thin Material

- Use as the "no-spoil" spoil board
- No need for damaging double sided adhesives.
- No bruising or tool path interference caused by toggle clamps.
- No part deflection or delamination caused by vacuum channels.

0.020" Thick Phenolic



Process Efficiency



- Material begins in a malleable state and is casted directly onto a frame or into an inexpensive styrofoam to achieve near net shape, eliminating most of the unnecessary scrap and reducing machine time.
- The scalability of tools is nearly limitless.
- Repair and modification of tools use the same process, making it far easier than any available alternative.
- After final machine, the tools only require their respective surface finishes and then they are ready for inspection

Secondary Capabilities

- Composites:** Composite Mold Making • Composite Vacuum Fixtures • 5-axis Composite Machining • High Temp Oven Curing • Layup & Infusion
- Metal Working:** Metal Milling (3 & 4-axis) • Turning/Lathe Work • Laser Etching • Welding • CAD Design • 5-Axis Programming
- Technical:** Laser Inspection • Surface Coating • Painting / Powder Coating



Complex Layup Molds and Vacuum Fixtures