



TECHNICAL TOOLING
MOLD | FIXTURE | MATERIAL

RAVIN™

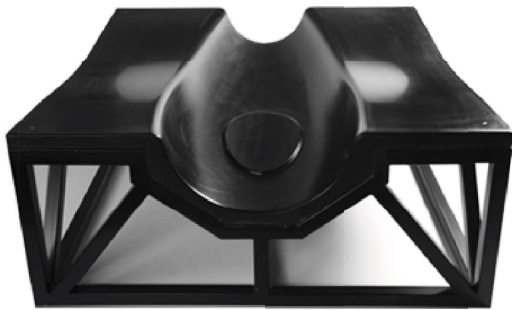
**LAYUP
MOLDS**

U.S. Patent No. 10,933,594

Utilizing our proprietary material as a base structure, Technical Tooling designs layup tools with **CTE'S EQUIVALENT TO INVAR.**

BENEFITS

- Direct to mold, shortest production times in the market
- Reduces costs, machine time & material waste
- Scalable: our material can be applied to meet any part size requirement
- Autoclave capable up to 350°F
- Tolerance of 0.003" or better
- RMS of 32 or better



Density	lbs/ft³	62.5
Coefficient of Thermal Expansion (CTE)	in/in/°F	3.3×10^{-6}
Service Temperature	°F	350°F
Tg by DMA	°F	415°F

All of our tools begin in a malleable state, which allows us to place material only where needed, using inexpensive materials to form near net shape, eliminating unnecessary scrap and reducing machine time.



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VACU-GRIP™

**VACUUM
FIXTURES**

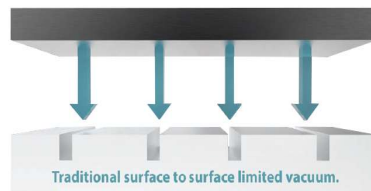
U.S. Patent No. 10,300,569

Technical Tooling's composite vacuum fixtures deliver reduced scrap rates through stronger holding force. Using its porous granular media, Vacu-Grip provides consistent contact area support while simultaneously pulling full vacuum across the greatest surface area of any tool on the market.

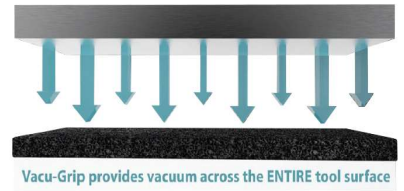
BENEFITS

- Reduce part movement & chatter
- Reduce delamination & bruising
- Tolerance of +/- 0.003" or better
- Repairable and modifiable surface
- Eliminates need for clamps and holds
- 10 second part change over & tool change over
- Conforms to complex geometries
- Through holes/blind holes

2x the sheer strength over traditional vacuum tools



Traditional surface to surface limited vacuum.



Vacu-Grip provides vacuum across the ENTIRE tool surface



How it Works: Vacu-Grip® begins in a malleable state and easily conforms to match any complex 3-dimensional geometry. It's packed into the desired fixture cavities to near net shape, instead of building with blocks of tooling board, wasting valuable material and machine time. Post-cured structural rigidity is commensurate with aluminum and machines easily to achieve final surface tolerances.

Density	lbs/ft ³	95
Coefficient of Thermal Expansion (CTE)	in/in/F°	5.5 x 10 ⁻⁶
Service Temperature	°F	250°F