

Low Cost Fast Schedule Carbon/Epoxy Tooling Durable for Low-cycle

Carbon/Epoxy tooling is a high quality tooling system for the aerospace prototype requirement. It is an infused carbon mold that can be accurately machined to complex geometry. We developed our carbon tooling family for an optimum balance of cost, schedule and durability for low-cycle, high-temperature tooling. It is the best solution for low run parts and prototypes.

Application

Janicki has over 15 years experience and successful history providing Carbon/Epoxy Tooling.

- ▶ AFP Compatible
- ▶ Simulates performance of production composite tools
- ▶ Fastest tool delivery in the market due to inventory, and standard practices and patterns.
- ▶ Full JI design or modify customer's provided design.
- ▶ Size Range up to 2,000 sq ft



Carbon/Epoxy Prototype Tooling

Optional Features:

- ▶ High Temp Casters
- ▶ Proof Loading
- ▶ Fork Tubes
- ▶ Custom Hoist Points
- ▶ First Article Verification



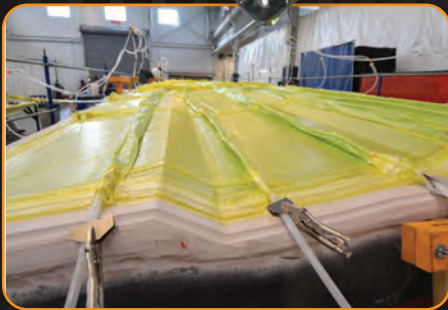
Layup Carbon/Epoxy

Description

- ▶ Carbon/Epoxy Facesheet (Infused)
- ▶ Machined Surface + / - 0.005"
- ▶ Carbon/Epoxy Plate Substructure
- ▶ 15 Cycles @ 350°F
- ▶ Autoclave compatible.



Carbon/Epoxy Panel Eggrate



Carbon Fiber with Epoxy Infusion



Nadcap AC7118 CERTIFIED

ISO 9001:2008 CERTIFIED

AS9100C CERTIFIED

AWS D1.1, D1.2 and D17.1 CERTIFIED

ASME Section VIII and IX CERTIFIED

Boeing Digital Product Definition
Approved Supplier

Boeing approved processor to
D1-4426 requirements

Carbon/Epoxy material excellent for Prototypes

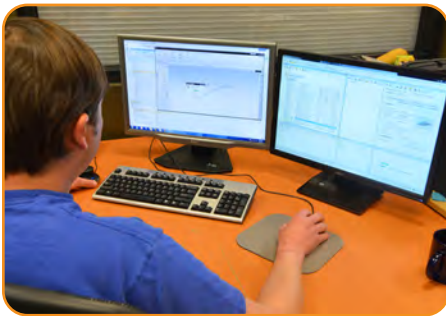
Prototype Tooling

Capabilities | Experience | Equipment

Janicki invests in facilities and equipment to optimize fabrication of large and accurate composite and metal tools. Janicki has the capabilities and experience to build prototype and production tooling for major OEMs, Tier 1 and Tier 2 suppliers across several industries.

Capabilities

- ▶ Engineering Design & Analysis
- ▶ 5-Axis NC Milling (+/- 0.005")
- ▶ Large-scale Facilities
- ▶ R&D Lab
- ▶ Metrology
- ▶ Tool leak testing w/ Helium / Autoclave



Engineering Design & Stress Analysis



Large Cure Oven

Program Experience

- ▶ Large collapsible Fuselage Mandrels for Aerospace OEM
- ▶ Complex Wing-to-Body Fairing Tools
- ▶ 80 ft carbon fiber lay-up mold for a commercial jet wing
- ▶ Fuselage molds for UAV
- ▶ Long, curving stringer & beam molds
- ▶ Fuselage molds for helicopters

Equipment

- ▶ 9 Large 5-Axis CNC Mills (100' x 20')
- ▶ Machine Shop (4 & 5-Axis Mills & Lathes)
- ▶ Ovens (100' x 24' x 14')
- ▶ Weld Shop (Certified Welders)
- ▶ Water & Plasma Cutter (14' x 42')
- ▶ Autoclave (12' x 50')
- ▶ Annealing Furnace (24' x 72')
- ▶ 25 Ton Overhead Cranes
- ▶ Grit Blasting & Paint Booth (60' x 16' x 10')
- ▶ 1,100 Ton Forming Press



Waterjet Cutter



Large-Scale, Precision 5-Axis NC Mill



12' X 50' Autoclave

our
quality promise

- ▶ Dedicated Continuous Improvement
- ▶ Deliver Quality Products
- ▶ Exceed Customers' Requirements

Sedro-Woolley, WA

160,000 ft²

325
Employees

Hamilton, WA

254,000 ft²

361
Employees

Layton, UT

100,000 ft²

100+
Employees



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