



RONCELLI PLASTICS

FAST | CLEAN | PRECISE

AEROSPACE

PRECISION PLASTIC MACHINING FOR COMMERCIAL, SPACE, AND DEFENSE APPLICATIONS

1-800-250-6516
WWW.RONCELLI.COM

MANUFACTURING CAPABILITIES

CNC MACHINING (TEMPERATURE CONTROLLED MACHINING CENTER)

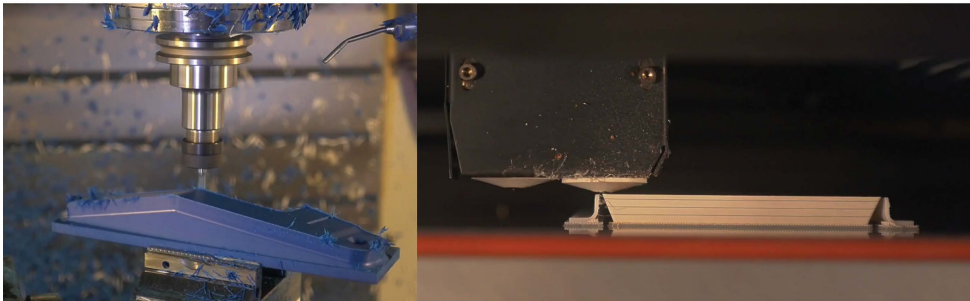
- 5 Axis CNC Milling (up to 21")
- 3 Axis CNC Milling (up to 30"x60") with Pallet Automation
- CNC Turning (up to 18" in diameter)
- CNC Swiss (30mm in diameter)
- Small Hole Drilling (.004" capable)
- Die Cutting / Stamping

RAPID PROTOTYPE MANUFACTURING (RPM)

- Quick Turn Machining Cell
- 5 Axis CNC Mills
- Tolerances +/- .0005"
- Turnaround time < 1 week
- 3D Printing (FDM)
- 3D printed precision parts from Ultem® & Polycarbonate
- Tolerances +/- .0015"
- 2-3 day turnaround time

QUALITY PRACTICES & ASSEMBLY

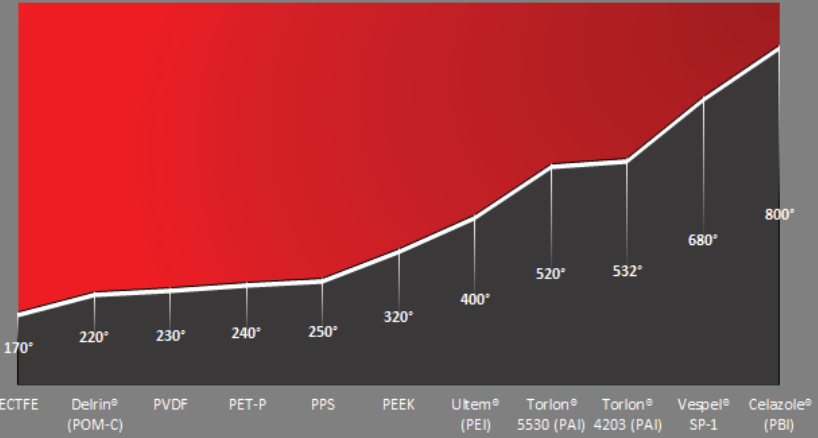
- AS9100C
- ISO 9001:2008
- ITAR Registered
- Class 1000 Clean Room packaging & assembly
- Class IV laser part marking
- Copy Exact
- First article, in-process, and final inspections on all part orders



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AEROSPACE MATERIALS

HEAT DEFLECTION TEMPERATURE 264 PSI (F°)



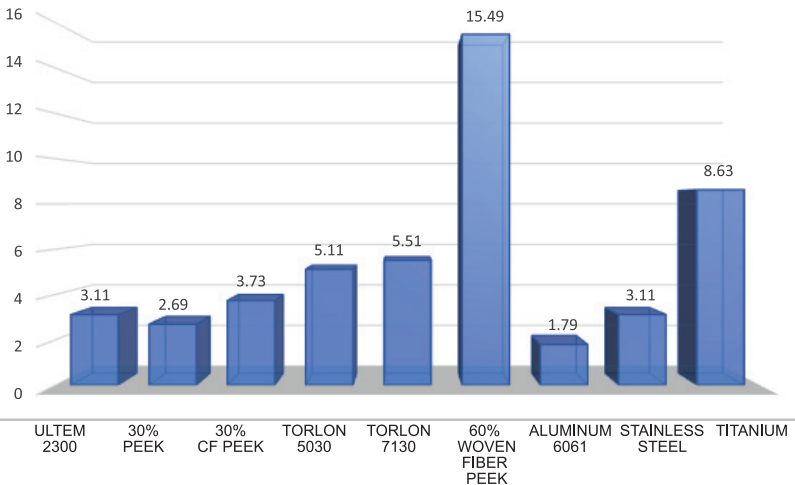
MATERIAL

Coefficient of Linear Thermal Expansion (40°F - 300°F) Units = in/in/F°

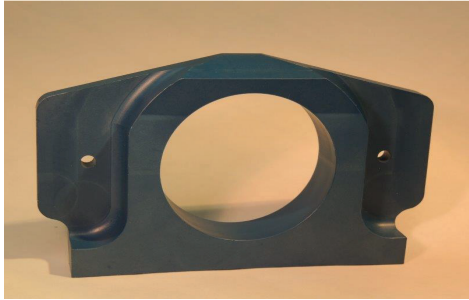
Delrin® (POM-C)	5.4×10^{-5}
PET-P	3.3×10^{-5}
Ryton® (PPS)	2.8×10^{-5}
PEEK	2.6×10^{-5}
Ultem® 1000 (PEI)	3.1×10^{-5}
Vespal® SP-1	3.0×10^{-5}
Celazole (PBI)	1.3×10^{-5}
ECTFE	6.6×10^{-5}
PVDF	6.6×10^{-5}
Radel® R (PPSU)	3.1×10^{-5}
UHMW	11×10^{-5}
Nylon®	3.5×10^{-5}
Polycarbonate (PC)	3.9×10^{-5}
Torlon® 4203 (PAI)	1.7×10^{-5}

SPECIFIC STRENGTH

(10⁶ in lb./lb)



AEROSPACE APPLICATIONS COMMERCIAL SYSTEMS



Commercial aerospace manufacturers seek every opportunity to enhance their customers' inflight experiences through innovative designs and application development support from industry experts. With industry requirements like increased payload capabilities, improved fuel efficiency, weight reduction, zero galvanic corrosion with carbon fiber composites, reduced friction on wear surfaces, and chemical resistance to common aircraft fluids, commercial aerospace manufacturers rely on material selection experts like Roncelli Plastics. As a trusted commercial aerospace supplier, Roncelli Plastics utilizes extensive material knowledge and manufacturing know-how to machine the precise positional tolerances required for every component while also providing guidance on designing for manufacturability.

INTERIORS

- Applications
 - Brackets, handles, frames, gaskets
- Materials
 - Ultem® (PEI), PEEK, Nylon® (PA), Radel® (PPSU)
- Key Requirements
 - Flame, smoke, toxicity (FST), noise reduction, lightweight

PROPULSION

- Applications
 - High temperature bushings, thermal insulators, valve seals, gaskets, bearings
- Materials
 - Vespel®, Torlon® (PAI), Celazole® (PBI), PEEK, Delrin® (POM), Ryton® (PPS)
- Key Requirements
 - High operating temperature, chemically resistant, excellent wear resistance

STRUCTURAL

- Applications
 - Landing gear, braking systems, sensor systems, actuator systems
- Materials
 - Vespel®, Torlon® (PAI), PEEK, Teflon® (PTFE), UHMW, Nylon® (PA), Ryton® (PPS)
- Key Requirements
 - Dimensional stability, wide range of operating temperature, self-lubricating, vibration resistant, chemically resistant, anti-static



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SPACE SYSTEMS

As a premier supplier of precision machined components for Space applications, Roncelli Plastics utilizes extensive experience with advanced engineering polymers like Vespel®, Torlon®, Ultem®, and PEEK, to overcome challenges such as extreme thermal shifts, low out-gassing requirements, and reduced launch weight.

Whether a customer requires prototyping services or full production support, Roncelli Plastics' commitment to speed-to-market service in conjunction with world class inspection processes and equipment allows Roncelli Plastics to ensure mission success for customers in the Space industry.



STRUCTURAL

- Applications
 - Satellite booms, gears, brackets, window frames, manifolds
- Materials
 - Vespel®, Torlon® (PAI), PEEK, Ultem® (PEI), G10, G11, G3
- Key Requirements
 - Low outgassing, high strength to weight ratio, thermal & dimensional stability, thermal expansion, extreme rigidity

PROPULSION

- Applications
 - Thrust washer, bushings, brackets, valve seals, gaskets
- Materials
 - Vespel®, Torlon® (PAI), Ultem® (PEI), Delrin® (POM)
- Key Requirements
 - Excellent chemical resistance, wide range of operating temperatures, self-lubrication, excellent bearing & wear resistance

LANDING

- Applications
 - Skid plates, saddle bearing, bump stop, bushings
- Materials
 - Torlon® (PAI), PEEK, Ultem® (PEI), Delrin® (POM)
- Key Requirements
 - Impact resistance, compressive strength, bearing & wear properties, wide range of operating temperature

Since 1969, Roncelli Plastics has specialized in Precision Fabrication, CNC Machining, Die Cutting, Rapid Prototyping and Clean Room Assembly of plastic and non-metallic components. Our highly experienced staff of machinists, quality personnel, and supervisors is dedicated to delivering the best quality plastic and non-metallic components in the industry. We're proud to deliver finished components to some of the largest and most well-known organizations in the world.

DEFENSE SYSTEMS



As a valued supplier for the Defense industry, Roncelli Plastics' dedication to precision manufacturing coincides with our customers' mission critical requirements to provide the latest, and most reliable technologies on the battlefield.

Roncelli Plastics' deep understanding of military grade material specifications and proprietary manufacturing methods creates supply chain efficiencies for Defense customers that improve delivery timetables while enforcing stringent quality standards.

AIRCRAFT

- Applications
 - Valve seals, brackets, bearings, bushings, wear pads
- Materials
 - Vespel®, Torlon® (PAI), PEEK, Ultem® (PEI), G10, Delrin® (POM)
- Key Requirements
 - Dimensional stability, high heat deflection, reduced weight, chemically resistant

BALLISTICS

- Applications
 - RMS, guide rails, terminal boards, insulators, fixtures, gaskets, panels
- Materials
 - Vespel®, Torlon® (PAI), Ultem® (PEI), Teflon® (PTFE), G10, G11
- Key Requirements
 - High specific strength, thermal stability, extreme rigidity, volume resistivity, surface resistivity

SENSORS, IMAGING, & COMMUNICATIONS

- Applications
 - Radomes, camera gimbals, lens frames, lens holders, radar systems
- Materials
 - Torlon® (PAI), Ultem®(PEI), PEEK, Ryton® (PPS)
- Key Requirements
 - Extreme tight tolerance requirements on hole diameters (+/- .0001"), extreme stiffness, insulative, radio-frequency properties

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AEROSPACE INQUIRIES
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