



RTM Core™

RTM Core technology is a water soluble tooling system engineered to meet the rigorous demands of resin transfer molding (RTM). RTM processes can subject mandrels/cores to hot, high pressure resin. Existing mandrel/core materials can crush, deform, or be infused with resin under these conditions. RTM Core is a high strength, impermeable mandrel/core material that withstands these conditions yet can be removed with tap water.

RTM Core key properties:

- Room temperature compressive strengths ~85 MPa (12,000 psi)
- Room temperature hardness ~85 Shore D
- High temperature stability 176°C / 350°F:
 - Compressive Strength ~60 MPa (8,000 psi)
 - Hardness ~70 Shore D
- Impermeable and Non-Porous
- Highly machinable or injection moldable
- Recyclable (machining chips from machining and regrind from injection molding can be reused)
- Self-releasing surface
- Water soluble



Figure 1. RTM Core mandrel and composite nozzle.



Table 1. Typical properties and attributes of ACM tooling systems.

Tooling System	Compressive Strength @ 25°C [psi/MPa]	Compressive Strength @ 176°C [psi/MPa]	Shore D Hardness @ 25°C / 176°C	Composite Processing Window [°C / (°F)]	Density [g/cm³]	CTE [ppm/°C]
RTM Core	12,000 / 85	8,000 / 60	85 / 70	25-176 / (75-350)	1.86	~100-120*

*Under development