



# Composite Solutions

## Rhino™ 1310T Composite Systems

Rhino™ 1310T epoxy composites are non draining, 100% solids systems that provide maximum flexibility for a variety of reinforced epoxy composites. Whether performing fiberglass infrastructure reinforcement, seismic retrofits, or the repair of failing conventional concrete/rebar structures, Rhino™ 1310T forms a matrix; in which carbon or glass fiber is saturated then woven together to add structural reinforcement.



### Fiberglass Infrastructure Reinforcement

Rhino fiberglass infrastructure reinforcement and seismic retrofit last longer and incur a fraction of the cost and time it takes to achieve the same results using conventional materials and techniques.

Rhino carbon fiber wrap and blast mitigation solutions are currently being used in numerous concrete, masonry, steel, and wood structures to increase strength and durability.

### Features & Benefits

- Less weight / lower thermal expansion
- Greater fatigue resistance & strength reinforcement
- Flexible carbon fiber wrap conforms to any shape

### Applications

- Civil Infrastructure - seismic upgrades / blast mitigation (concrete, beams, columns, pipes)
- Carbon wrap of fiber or glass filament winding (pressure tanks, vessels)
- Construction equipment
- Bridges and piers
- Fuel tank sealers



In the Vacuum Assisted Resin Transfer Molding (VARTM) composite manufacturing process, dry fibers are laid on the tool and vacuum sealed while Rhino™ 1310T liquid resin and hardener are then drawn through with a vacuum pump.



Vacuum Assisted Resin Transfer Molding

### Vacuum Assisted Resin Transfer Molding (VARTM)

Rhino's VARTM is a closed process; in which resin is pulled into the mold by negative pressure and impregnates the fibers already laid out in the mold. This liquid resin technology provides for lower cost and lower cure temperatures.

Since the liquid resin techniques do not require curing cycles over 140°F (60°C), the tooling for the blades is much easier to construct. Liquid resin infusion forms a uniform composite of nearly ideal 65% fiberglass to 35% resin by weight.

### Features & Benefits

- Increased flexibility and reduced process time
- Reduces installation time (eliminating heavy equipment)
- Fabrication of large scale composite structures
- Better control of glass to resin content
- Smaller crew for lamination steps
- Consistent production
- Less odor during curing
- Uses simple tooling

### Applications

- Manufacture wind energy rotor blades
- Manufacture water crafts (power boats, jetskis, kayaks)
- Manufacture sporting equipment (snow boards, tennis rackets, motorcycle helmets)



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