

PRODUCT DESCRIPTION

AquaSteel® is a specially formulated thermoset material that easily replaces structural aluminum backing plates in fiberglass lamination applications. This product also does not present a reaction with stainless steel fasteners, which eliminates galvanic corrosion.

AquaSteel® offers outstanding screw retention and compression strength, which makes it ideal for either through bolted or drilled and taped fastening methods.

This Technical Guide does not address requirements for structural engineering and application testing. Due to the vast array of FRP systems, it is recommended that testing of this product be conducted in a manner consistent with that of the application.

BEST PRACTICE CUTTING GUIDELINES

- Recommended saw cutting method uses a Festool 55 REQ Plunge Cut or similar track saw or equivalent on appropriate cutting surface with a support panel
- Blade recommendation: 48-60 Tooth +15° Hooked Tooth, Triple Chip Grind (TCG), Carbide Tipped
- Square panels before cutting sheet into blocks or strips
- Make required cut
- Inspect edge for smooth finish. Chipping or burring may indicate a new blade is required.
- Cutting with jigsaw, circular saw, or table saw may also result in chipped or frayed edge

CNC MACHINING

AquaSteel® can be fabricated with computerized numeric control (CNC) machines.

The below recommendations must be monitored throughout the fabrication process to ensure optimal cutting/efficiency, as well as the quality of cut. Cutter and feed speed vary by thickness and suitable finish results.

BEAM SAW CUTTING RECOMMENDATIONS

Boom Pressure	8 Bar
Feed Rate	29 m/m
Speed	3,600 rpm
Blade	Hook Tooth Type, +15° 72 teeth, Triple Chip Grind (TCG) Carbide Tipped

CNC CUTTING RECOMMENDATIONS

Material Thickness	8mm, 10mm, and 13mm
Spindle Speed	14,000 - 18,000 rpm
Feed Rate	100-150 in/min (2.54-3.81m/m)
Bit	Onsurd Phenolic Cutter, 67-200 series

CONTACT US

800.277.7898 Toll Free | 704.597.8200
5010 W. W.T. Harris Blvd | Charlotte, NC 28269
www.piedmontplastics.com

DRILLING

AquaSteel® is generally drilled using High Speed Steel bits with diamond or carbide tips with a cutting angle of 60 degrees. Bits designed for perforating fiberglass or metal may also be used. It is recommended that all holes have an inset of 1" from the outer perimeter.

Most applications encapsulate AquaSteel® blocks between layers of fiberglass laminates. If drilling without it being captured in laminates, a supporting sheet, such as plywood, must be used under the panel to ensure a clean hole and to eliminate "breakout".

When properly drilled, there should not be any chipping around the hole. Chipping may be a sign of a worn or dull bit, or excessive feed rate into the material.

FIBERGLASS LAMINATION

AquaSteel® is engineered for easy, no prep, lamination. It requires no sanding/grinding or solvent wipe down. Simply bed AquaSteel® into wetted fiberglass for open molded parts, or replace current aluminum backing plates for close molded or infused parts.

AquaSteel® can be drilled and taped in the same manner as aluminum.

CNC DRILLING RECOMMENDATIONS

Bit Diameter	1/4" - 3/8"
Spindle Speed	4,000 - 5,000 rpm
Feed Rate	50 in/min



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