



## Unisub® Cutting / Machining Information

**Hardboard** – 1/8” and 1/4” hardboard, coated (1) or (2) sides.

SAWS – conventional carbide tipped woodworking saw blades work well. It can also be cut on tabletop safety saws using smaller diameter, multiple tooth blades.

LASER ENGRAVERS – cuts well with 25-watt system; faster with 50-watt system.

ROUTERS – a bull-nose or slightly rounded profile is suggested for all hardboard that has been straight cut with a saw, as the edges are very vulnerable to damage and chipping. However, this is not necessary for laser cut items as the edge generated by the heat “seals” the paper fibers. (Look at a Unisub Tile edges – these were cut on a 1,000-watt laser for example.)

SHEARERS- not recommended.

**Medium Density Fiberboard** – 1/4” – 1 1/4” M.D.F., coated (1) or (2) sides.

SAWS – conventional carbide tipped woodworking saw blades work well.

LASER ENGRAVERS – cuts OK with 35-watt system, but 100 watt recommended.

ROUTERS – carbide tipped, fluted, down-shear bit works best to minimize chipping – always puts pressure going down, not up.

SHEARERS- not recommended.

**Fiberglass Reinforced Plastic** - .090 nominal, +/- .015 thickness tolerance.

SAWS – same as hardboard.

LASER ENGRAVERS – not recommended.

ROUTERS – solid carbide 2 - flute straight cutter. A bull-nose or slightly rounded profile is suggested on (FRP) that has been cut with a saw or router as the edges are vulnerable to chipping. This would not be necessary for parts whose edges are covered or encapsulated (i.e. desk name plate that slides into a frame).

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FRP continued

**Antares Tooling for Sheet Stock (Antares is a company name 800355 5250).**

- Use a quarter round tool with profiling angles for a 15-degree bevel that will provide the clearance needed for Unisub.
- An ADA Cut-Out Letter tool may be used if a steeper bevel is desired.
- The addition of the Antares' "Clean-Cut" tool or bit has a clearance that will provide the best results.
- Use a tool with a tip size of at least .060". Good results have been obtained using a .100" tip.

**Industrial Router Specs:**

CNC routing Unisub one-sided and two-sided FRP (and Hardboard products)

- Single flute bit
- With a Downward spiral
- That provides a bull-nosed or slightly rounded edge profile (like a clipboard's edge)
- Use the Onsrud (<http://www.onsrud.com/>) brand bit
- Carbide bits are better than diamond bits – they're sharper providing a smoother edge. These two benefits outweigh its shorter life.
- We buy longer Carbide bits - 4" - for sharpening. When you can't sharpen it anymore, cut it off and start again.

SHEARERS – not recommended.

Aluminum - .025 and .045 (add .005 for coating) (1) side only.

SHEARERS – shear cut only. Keep edge sharp to minimize chipping.

Phenolic Laminate - .050 coated (1) side only.

SAWS- same as hardboard.

SHEARERS – not recommended.

LASER ENGRAVERS – not recommended.

ROUTERS – only when laminated to substrate such as particleboard or fiberboard, otherwise vulnerable to chipping.