



Proteus Polypropylene Fabricating

Sawing

When sawing Proteus polypropylene, it is very important to keep friction heat to a minimum. This will prevent chips from melting and gumming up the blade, as well as leaving a much more desirable finish.

We have found that blades with as few teeth as possible give the best results. Our trimming department uses a 12 diameter blade with only 12 carbide tips.

We also add 4 cooling slots to each blade.

The travel speed is set to move as fast as possible and not bog down the motor. A stream of compressed air helps clear the chips away from the blade.

Welding

Proteus polypropylene can be easily welded with commercially available welding equipment. Our technical staff conducts welding trials using Wegener hot air welders. Using the Wegener hand welders, best results were attained with temperature settings of 290 C (554 F). Temperatures were taken with a pyrometer at the welder tip. Air pressure was set at 60 liters/minute. Welding rod supplied by Prime Plastics and V&A Process both give satisfactory results. As in all welded products, joint design, edge preparation, clean air supply, and operator proficiency play a major role in the quality of the joint.

Milling

Machining trials were conducted on Shoda CNC router. A 2-flute end mill manufactured by Fast-Cut Tool company was used. Feed, speed and the resulting surface are charted below.

| Spindle Speed | Feed Rate | Finish |
|---------------|------------|--------|
| 9,000 RPM | 350 In/Min | 208 > |
| 9,000 RPM | 175 In/Min | 204 > |
| 12,000 RPM | 175 In/Min | 124 > |
| 12,000 RPM | 250 In/Min | 180 > |
| 15,000 RPM | 250 In/Min | 191 > |

A stream of compressed air directed at the contact point of the tool and the Proteus polypropylene will help keep the bit cool and will assist in keeping the chips clear. As in sawing, it is important to keep the frictional heat from building up.

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