Spartech Polyester Sta-Tuf®

Thermoplastic

Spartech Plastics

Message:

Sta-Tuf® High Impact Thermoplastic Alloy.

For formed, flat or fabricated letters and other sign applications, Sta-Tuf offers an ideal combination of physical properties. This unique material provides extra-high impact resistanceover ten times tougher than conventional acrylic sheetplus outstanding weather resistance and formability. Combined with easy solvent cementing and fabrication characteristics, Sta-Tuf is value engineered for costperformance. Flat Sta-Tuf is available in 10 standard sign colors; corrugated Sta-Tuf in three standard colors.

Fabrication. Sta-Tuf can be sawed, drilled and routed with conventional equipment recommended for

acrylic sheet, and can be punched or die cut if proper procedures are followed. Painting, silk-screening, vinyl application, and other decorative techniques are easily accomplished; and Sta-Tuf can be joined to itself or other materials by adhesive or solvent bonding. Mechanical fastening with screws, rivets, etc., may be successful depending on the end use; please contact your Spartech Plastics Technical Sales Representative for guidelines specific to your custom requirements.

Cutting. Sta-Tuf can be cut with standard power sawing equipment, including table saws, band saws, jig and sabre saws, and portable circular saws. Standard hollow-ground, high-speed, cross-cut steel blades are adequate for most sawing operations, but carbide-tipped blades may be used for longer blade life. Saw blades should have a 0-10 degree positive rake angle. Depending on thickness of the material, there should be from 4 to 8 teeth per inch. All teeth should be of uniform height. Saws should be run at speeds of 8,000 to 12,000 linear feet per minute.

Metal-cutting type band saw blades, with 10 to 14 teeth per inch, should be used. Blade speeds between 4,000 and 5,000 feet per minute are recommended. In general, the thicker the material, the slower the recommended speed to avoid overheating. Speed, feed, and thickness of stock should allow each tooth to cut a clean chip.

Drilling. Sta-Tuf may be drilled with modified, standard high-speed, steel twist drills. The drills should have slow spirals and wide polished flutes. The included tip angle should be ground to 60 degrees and the cutting edge dubbed off to a zero degree rake angle. Back lip clearance angles should be ground to 12 to 15 degrees.

Cementing. Conventional solvent cements will readily join Sta-Tuf; if cementing to the back (dull) surface does not produce satisfactory results, add 25% MEK to the solvent. Polymerizable cements such as PS-30 and Weld-On 40 yield excellent results with Sta-Tuf.

Thermoforming. The broad, forgiving thermoforming "window" and unmatched resistance to inshop

breakage characterize Sta-Tuf as extremely versatile in nearly all forming operations from high-volume, multistation rotary machines to single station and shuttle presses. Forming temperatures of approximately 300-325°F are suggested as a starting point for good detail and best parts. Please contact Spartech Plastics for further suggestions on proper forming procedures.

Painting. Any standard acrylic paint such as Lacryl[®] and Grip-Flex[®] is recommended for use with Sta-Tuf. First-surface decoration with vinyl has also been proven very successful. Follow the manufacturer's guidelines for proper painting, paint removal, and vinyl application techniques as recommended for conventional acrylic sheet.

General Information			
UL YellowCard	E139482-222842		
Features	Ultra-high impact resistance		
	Sprayable		
	Machinable		
	Adhesiveness		
	Good adhesion		
	Good weather resistance		
	Heat resistance, high		
Appearance	Available colors		
Forms	Sheet		
Processing Method	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.10	g/cm³	ASTM D792

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	99		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2070	MPa	ASTM D638
Tensile Strength (Yield)	37.9	MPa	ASTM D638
Flexural Modulus	2070	MPa	ASTM D790
Flexural Strength (Yield)	57.2	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
0°C	37	J/m	ASTM D256
23°C	110	J/m	ASTM D256
Dart Drop Impact (23°C)	15.6	J	ASTM D3029
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8			
MPa, Unannealed)	85.0	°C	ASTM D648
CLTE - Flow	9.9E-5	cm/cm/°C	ASTM D696
Flammability	Nominal Value		Test Method
Flame Rating (1.57 mm)	НВ		UL 94
Optical	Nominal Value		Test Method
Gardner Gloss	99		ASTM D523
Additional Information	Nominal Value	Unit	
Thermoforming Molding Temperature	149 - 163	°C	

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