

# "Spartech. The Leader In Sign Plastics."

• **A Leader In Quality.** Our customers are the focus of everything we do. We are dedicated to deliver a first class product on time, every time, to each of our customers.

• **A Leader In Service.** Regionally located manufacturing plants make Spartech Plastics the most responsive resource for plastic sheet in North America.

• **A Leader In Commitment And Support.** We stock the most complete signface sheet material product line in the industry.

• **A Leader In Technology.** Spartech Plastics' 40+ year reputation for innovation in thermoplastics is unsurpassed.

• **A Leader In The Industry.** With annual sales of over \$600 million, Spartech Plastics is the largest custom sheet extruder in the world.

• **ISO 9002 Certified Plants.** Spartech's full line of sign plastics are manufactured in ISO 9002 certified facilities.

## Sign Products Division Manufacturing & Sales Office

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# Sta-Tuf<sup>®</sup>

*High Impact  
Thermoplastic Alloy*



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## 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 resistance—over ten times tougher than conventional acrylic sheet—plus outstanding weather resistance and formability. Combined with easy solvent cementing and fabrication characteristics, Sta-Tuf is value engineered for cost-performance.

Flat Sta-Tuf is available in 10 standard sign colors; corrugated Sta-Tuf in three standard colors.

Sta-Tuf	Very High	High	Average
Impact Strength	●		
Flexural Modulus		●	
Heat Deflection Temperature		●	
Formability	●		
Weather Resistance	●		

**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.

Thickness in inches	Number of teeth/inch
.100 to .125	6 to 8
.125 to .187	5 to 6
.187 & thicker	4 to 5

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 in-shop breakage characterize Sta-Tuf as extremely versatile in nearly all forming operations from high-volume, multi-station 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.

## Physical Property Summary

Property	Test Method	Value	Unit
Specific Gravity	ASTM D-792	1.10	g/cc
Tensile Modulus	ASTM D-638	300,000	psi
Tensile Strength @ Yield	ASTM D-638	5,500	psi
Flexural Modulus	ASTM D-790	330,000	psi
Flexural Strength @ Yield	ASTM D-790	8,300	psi
Izod Impact	ASTM D-256 (73° F)	2.0	ft-lbs/in
	(32° F)	.7	ft-lbs/in
Falling Dart Impact	ASTM D-3029 (G) (73° F)	138	in-lbs
Heat Deflection Temperature	ASTM D-648 (264 psi, (unannealed))	185	°F
Coefficient of Thermal Expansion	ASTM D-696	5.5	in/in/°F
Hardness (Gloss Surface)	ASTM D-785	99	Rockwell "R"
Flammability	UL Subject 94	HB	.062"
Gardner Gloss	ASTM D-523	99	%

These typical results are based on test procedures which are believed to be reliable. Due to variable conditions or methods of processing, NO GUARANTEES OR WARRANTIES ARE EXPRESSED OR IMPLIED INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, nor any recommendations made to infringe on patents.

Only the glossy surface of Sta-Tuf should be exposed to the elements to assure maximum weatherability and retention of properties.

## Flat Sta-Tuf.

Standard colors:

600 white (7328)	219 orange (2119)
200 yellow (2037)	120 red (2793)
206 ivory (2146)	400 dark blue (2114)
700 brown (2418)	420 light blue (2648)
500 black (2025)	300 green (2108)

Numbers in parentheses represent the industry standard colors we have selected for Sta-Tuf; however, Sta-Tuf colors will not be an exact match to industry standards and are indicated here for reference only. Actual color samples should be tested in the application when necessary.

Custom colors and opaque colors available upon request. Contact your Spartech Plastics sales representative for details.

Paper masking available upon request.

Standard sizes:

52" x 102"	76" x 102"
52" x 126"	76" x 126"
52" x 152"	76" x 152"

Standard thicknesses:

.100" & .150"

## Corrugated Sta-Tuf.

Standard corrugation: V-3

Standard colors:

600 white	200 yellow	206 ivory
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Standard sizes:

(96") x 48 1/4"	(120") x 48 1/4"
(144") x 48 1/4"	(48") x 96"
(48") x 120"	(48") x 144"

( ) = Corrugation direction

Standard thickness: .070"

Standard amplitude: 15/16"

**Note:** Sta-Tuf® is a stocking item, maintained through production runs made at different times. Therefore, you can expect slight variation in color from pallet to pallet. These variations are within normal industry standards. If your project entails large volumes over time, you would be advised to order a special production run to ensure consistent color when backlit.

