

Product Data - TUFFAK SL



UV RESISTANT SIGN GRADE

TUFFAK SL Sign Grade sheet is a polycarbonate product with an advanced UV resistance technology that promotes long lasting outdoor weathering performance. It features outstanding impact strength, excellent dimensional stability, high temperature resistance, and high clarity. This lightweight thermoformable sheet is also easy to fabricate and decorate. TUFFAK SL is offered in clear, a wide range of standard sign colors, or can be custom matched to any color. The product, available in either sheet or reels, has a proven track record of outstanding performance in extreme environments and meets the UL 879 standard for electric sign components. A ten (10) year limited product warranty is available for both clear and colors for breakage resistance. Clear sheet is also covered for weathering resistance. The terms of the warranty are available upon request.

APPLICATIONS

- » Flat and formed sign faces
- » Channel letters

REGULATORY CODE COMPLIANCE AND CERTIFICATIONS

- » Florida Building Code 2023 (8th Edition)
 - High Velocity Hurricane Zone Classified
- » Miami-Dade NOA: NOA
- » UL 879: Electric Sign Components, UL File #E146154
- » UL 94: Flammability File #E87887
- » UL 746C: Suitability for Outdoor Use, UL File #E87887
- » UL 972: Burglary Resistant Glazing Materials, UL File #BP2126

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	VALUES
PHYSICAL			
Specific Gravity	ASTM D792	-	1.2
Refractive Index	ASTM D542	-	1.586
Light Transmission, Clear @ 0.118"	ASTM D1003	%	86 27
Light Transmission, B59 White @ 0.118"	ASTM D1003	%	27 73
Light Transmission, B54 White @ 0.150" and 0.177"	ASTM D1003	%	0.15
Light Transmission, B73 White @ 0.150" and 0.177"	ASTM D1003	%	0.38
Water Absorption, 24 hours	ASTM D570	%	
Poisson's Ratio	ASTM E132	-	

MECHANICAL

Tensile Strength, Ultimate	ASTM D638	psi	9,500
Tensile Strength, Yield	ASTM D638	psi	9,000
Tensile Modulus	ASTM D638	psi	340,000
Elongation	ASTM D638	%	110
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	345,000
Compressive Strength	ASTM D695	psi	12,500
Compressive Modulus	ASTM D695	psi	345,000
Izod Impact Strength, Notched @ 0.125"	ASTM D256	ft-lbs/in	18

These data are presented only as typical properties of the base resins which, to our best knowledge, are true and accurate. However, since conditions of use are beyond our control, all recommendations or suggestions are presented without guaranty or responsibility on our part. We disclaim all liability in connection with the use of information contained herein or otherwise. All risks of such use are assumed by the user. Furthermore, nothing contained herein shall be construed as an inducement or recommendation to use any process or to manufacture or use any product in conflict with existing or future patents.

Product Data - TUFFAK SL



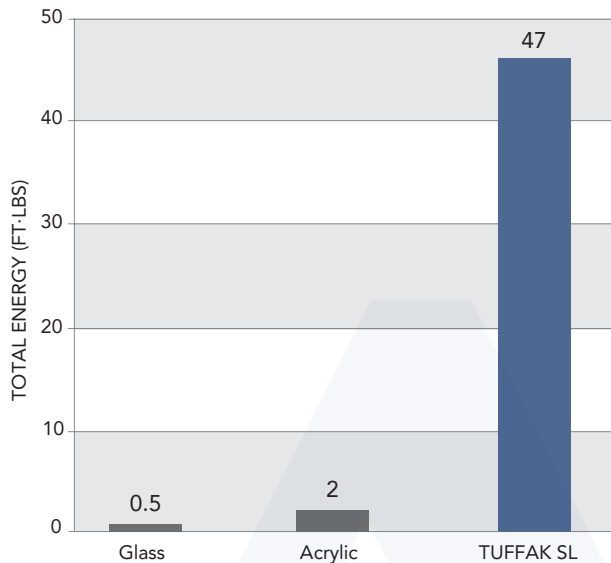
PROPERTY	TEST METHOD	UNITS	VALUES
Izod Impact Strength, Unnotched @ 0.125"	ASTM D256 ASTM	ft-lbs/in	60 (no break)
Instrumental Impact @ 0.125"	D3763 ASTM	ft-lbs psi	47
Shear Strength, Ultimate	D732 ASTM D732	psi	10,000
Shear Strength, Yield	ASTM D732 ASTM	psi	6,000 114,000
Shear Modulus	D746	-	M70 / R118
Rockwell Hardness			
THERMAL			
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	3.75 x 10 ⁻⁵
Coefficient of Thermal Conductivity Heat	ASTM C177	BTU-in/hr-ft ² -°F	1.35
Deflection Temperature @ 264 psi Heat	ASTM D648	°F	270
Deflection Temperature @ 66 psi Brittleness	ASTM D648	°F	280
Temperature	ASTM D746	°F	-200
ELECTRICAL			
Dielectric Constant @ 10 Hz	ASTM D150	-	2.96
Dielectric Constant @ 60 Hz	ASTM D150	-	3.17
Volume Resistivity Dissipation	ASTM D257	Ohm-cm	8.2 x 10 ¹⁶
Factor @ 60 Hz Arc Resistance	ASTM D150	-	0.0009 -
	-	-	10
Stainless Steel Strip electrode	ASTM D495	Seconds	120
Tungsten Electrodes	ASTM D495	Seconds	380
Dielectric Strength, in air @ 0.125"	ASTM D149	V/mil	
FLAMMABILITY			
Horizontal Burn, AEB Flame	ASTM D635	in.	<1
Class @ 0.060" Ignition	UL 94	-	HB
Temperature, Self Ignition	ASTM D1929	°F	1022
Temperature, Flash	ASTM D1929	°F	824

These data are presented only as typical properties of the base resins which, to our best knowledge, are true and accurate. However, since conditions of use are beyond our control, all recommendations or suggestions are presented without guaranty or responsibility on our part. We disclaim all liability in connection with the use of information contained herein or otherwise. All risks of such use are assumed by the user. Furthermore, nothing contained herein shall be construed as an inducement or recommendation to use any process or to manufacture or use any product in conflict with existing or future patents.

Product Data - TUFFAK SL

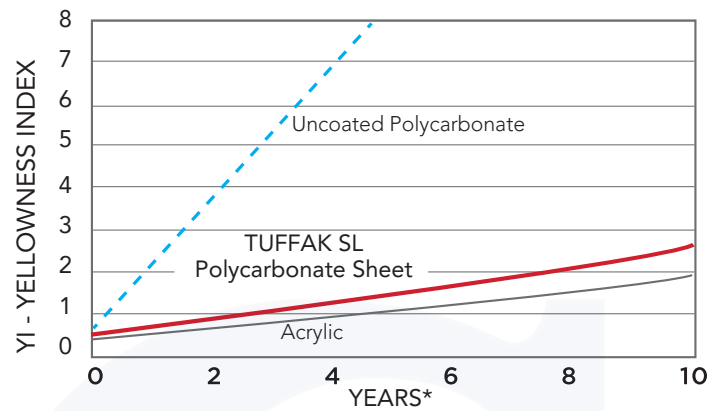


IMPACT RESISTANCE*



*Instrumented Impact per ASTM D 3763, sample thickness 0.125" nominal

UV WEATHER RESISTANCE



Visible yellowness at 8 or greater

*Based upon xenon WOM accelerated weathering for UV dose at mid-latitude location

PLASTICS, INC.

These data are presented only as typical properties of the base resins which, to our best knowledge, are true and accurate. However, since conditions of use are beyond our control, all recommendations or suggestions are presented without guaranty or responsibility on our part. We disclaim all liability in connection with the use of information contained herein or otherwise. All risks of such use are assumed by the user. Furthermore, nothing contained herein shall be construed as an inducement or recommendation to use any process or to manufacture or use any product in conflict with existing or future patents.