

# POLYCARBONATE SHEET

## 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 2017 High Velocity Hurricane Zone Classified Miami-Dade NOA: NOA
- » UL 879: Electric Sign Components, UL File #E146154z
- » 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

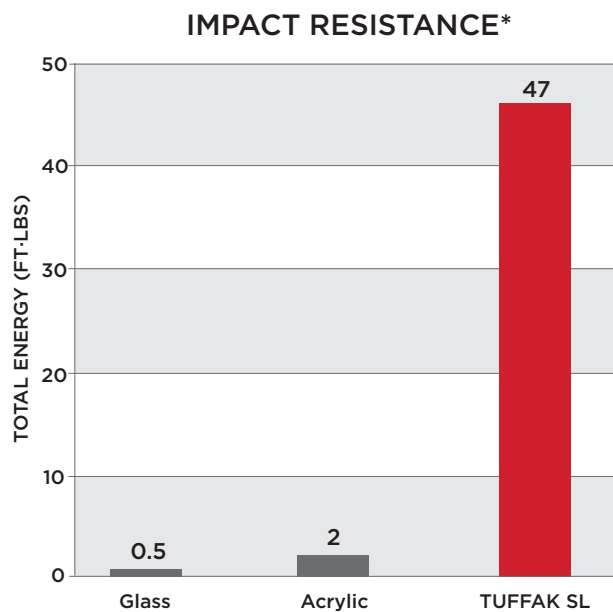
PROPERTY	TEST METHOD	UNITS	VALUES
<b>PHYSICAL</b>			
Specific Gravity	ASTM D792	-	1.2
Refractive Index	ASTM D542	-	1.586
Light Transmission, Clear @ 0.118"	ASTM D1003	%	86
Light Transmission, B59 White @ 0.118"	ASTM D1003	%	27
Light Transmission, B45 White @ 0.160" and 0.177"	ASTM D1003	%	27
Light Transmission, B73 White @ 0.060" to 0.236"	ASTM D1003	%	73
Water Absorption, 24 hours	ASTM D570	%	0.15
Poisson's Ratio	ASTM E132	-	0.38
<b>MECHANICAL</b>			
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

## TYPICAL PROPERTIES

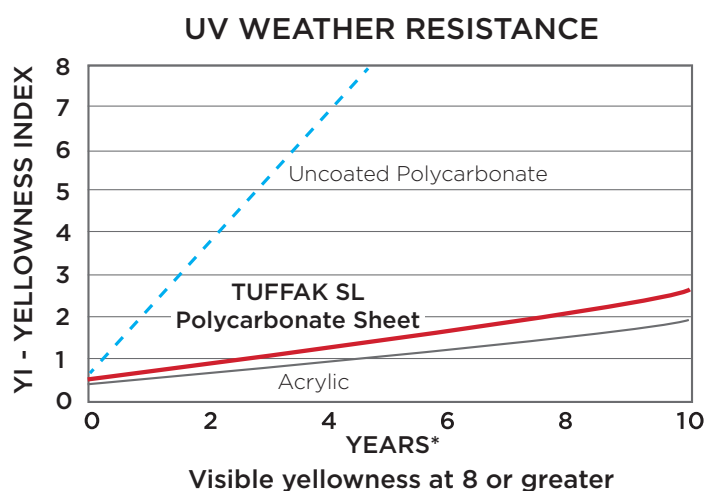
PROPERTY	TEST METHOD	UNITS	VALUES
Izod Impact Strength, Unnotched @ 0.125"	ASTM D256	ft-lbs/in	60 (no break)
Instrumental Impact @ 0.125"	ASTM D3763	ft-lbs	47
Shear Strength, Ultimate	ASTM D732	psi	10,000
Shear Strength, Yield	ASTM D732	psi	6,000
Shear Modulus	ASTM D732	psi	114,000
Rockwell Hardness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

## TUFFAK SL STANDARD COLORS

STANDARD PLASKOLITE COLOR	STANDARD INDUSTRY COLOR	STANDARD GAUGE
White/ B59 - B54	7328	0.093" - 0.236"
White/ B73	2406	0.118" - 0.236"
Red/ D96	2283	0.118" - 0.177"
Red/ D99	2793	0.118" - 0.177"
Blue/ F84	2114	0.118" - 0.177"
Blue/ F85	2051	0.118" - 0.177"
Green/ H87	2108	0.118" - 0.177"
Yellow/ M72	2037	0.118" - 0.177"
Orange/ C59	2119	0.118" - 0.177"



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



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

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determines the suitability of our materials and suggestions before adopting them on a commercial scale.

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