

## TUFFAK SL-V polycarbonate sheet

### UV RESISTANT SIGN GRADE

TUFFAK SL-V Sign Grade sheet is a polycarbonate product with an advanced UV resistance technology that promotes long lasting outdoor weathering performance. SL-V is a flame retardant grade, UL 94 V-2 rating at 0.094" and greater, and V-0 rating at 0.236" and greater. Other properties include 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-V 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 and channel letters

### Regulatory code compliance and certifications

Florida Building Code 2017, 6th Ed.  
High Velocity Hurricane Zone Classified  
Miami-Dade NOA: NOA

UL 879: Electric Sign Components,  
UL File #E146154

UL 94: Flammability, UL File #E351891

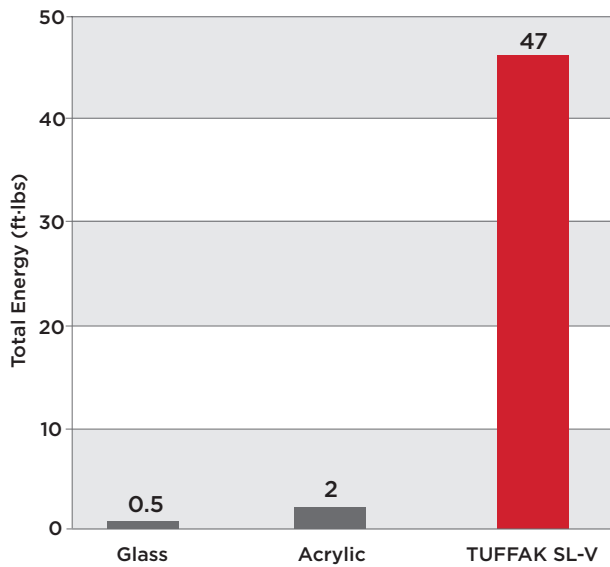
UL 972: Burglary Resistant Glazing  
Materials, UL File #BP2126

### Typical Properties\*

Property	Test Method	Units	Values
<b>PHYSICAL</b>			
Specific Gravity	ASTM D 792	-	1.2
Refractive Index	ASTM D 542	-	1.586
Light Transmission, Clear @ 0.118"	ASTM D 1003	%	86
Light Transmission, B59 White @ 0.118"	ASTM D 1003	%	27
Light Transmission, B54 White @ 0.150" and 0.177"	ASTM D 1003	%	27
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.38
<b>MECHANICAL</b>			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Compressive Strength	ASTM D 695	psi	12,500
Compressive Modulus	ASTM D 695	psi	345,000
Izod Impact Strength, Notched @ 0.125"	ASTM D 256	ft-lbs/in	18
Izod Impact Strength, Unnotched @ 0.125"	ASTM D 256	ft-lbs/in	60 (no break)
Instrumented Impact @ 0.125"	ASTM D 3763	ft-lbs	47
Shear Strength, Ultimate	ASTM D 732	psi	10,000
Shear Strength, Yield	ASTM D 732	psi	6,000
Shear Modulus	ASTM D 732	psi	114,000
Rockwell Hardness	ASTM D 785	-	M70 / R118
<b>THERMAL</b>			
Coefficient of Thermal Expansion	ASTM D 696	in/in/°F	3.75 x 10 <sup>-5</sup>
Coefficient of Thermal Conductivity	ASTM C 177	BTU-in/hr-ft <sup>2</sup> -°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
Brittleness Temperature	ASTM D 746	°F	-200
<b>ELECTRICAL</b>			
Dielectric Constant @ 10 Hz	ASTM D 150	-	2.96
Dielectric Constant @ 60 Hz	ASTM D 150	-	3.17
Volume Resistivity	ASTM D 257	Ohm-cm	8.2 x 10 <sup>16</sup>
Dissipation Factor @ 60 Hz	ASTM D 150	-	0.0009
Arc Resistance	-	-	-
Stainless Steel Strip electrode	ASTM D 495	Seconds	10
Tungsten Electrodes	ASTM D 495	Seconds	120
Dielectric Strength, in air @ 0.125"	ASTM D 149	V/mil	380
<b>FLAMMABILITY</b>			
Horizontal Burn, AEB	ASTM D 635	in.	<1
Flame Class, Clear @ 0.094"	UL 94	-	V-2
Flame Class, Clear @ 0.236"	UL 94	-	V-0
Ignition Temperature, Self	ASTM D 1929	°F	1040
Ignition Temperature, Flash	ASTM D 1929	°F	824

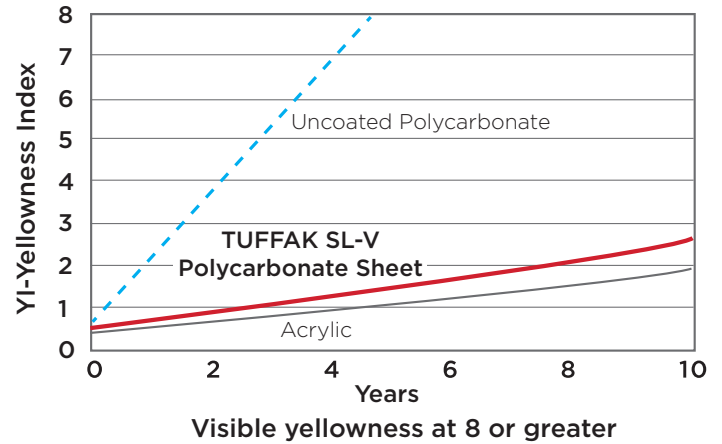
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**Impact Resistance\***



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

**UV Weather Resistance**



## TUFFAK SL Standard Colors

Standard Covestro Color	Standard Industry Color	Standard Gauge
Clear/ A00	-	0.093" - 0.236"
White/ B59	7328	0.093" - 0.118"
White/ B54	7328	0.150" - 0.236"
Red/ D92	6192	0.118" - 0.177"

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 determine the suitability of our materials and suggestions before adopting them on a commercial scale.