

## TUFFAK SK polycarbonate sheet

### SKYLIGHT

TUFFAK SK sheet is a non-UV enhanced sheet with a prismatic texture. It is designed for use as an interior lens of a skylight system, protected from direct sunlight exposure by a UV-resistant outer cover such as TUFFAK SK1 sheet. The prismatic texture helps to diffuse the sun's light throughout the interior space. TUFFAK SK can be drape or thermoformed for use in contoured applications such as domed skylights. In either flat or contoured geometries, it has significantly higher impact resistance compared to acrylic, impact modified acrylic, or glass (Figure 1). TUFFAK SK sheet is offered with a five (5) year Limited Product Warranty against breakage. The terms of the warranty are available upon request.

### APPLICATIONS

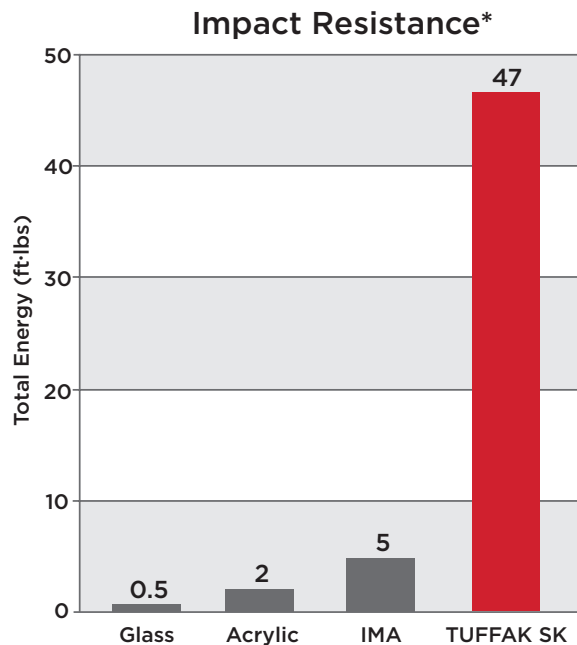
Interior light for skylights and barrel vaults

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	%	92
Haze	ASTM D 1003	%	100
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.38
<b>MECHANICAL**</b>			
Tensile Strength, Break	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	16
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, 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>FLAMMABILITY</b>			
Horizontal Burn, AEB	ASTM D 635	in	<1
Ignition Temperature, Self	ASTM D 1929	°F	1022
Ignition Temperature, Flash	ASTM D 1929	°F	824

\*Typical properties are not intended for specification purposes  
 \*\*Some properties characterized using non-textured sheet

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Figure 1.  
Impact Resistance  
Comparison



\*Instrumented Impact per ASTM D 3763, sample thickness is 0.125" nominal  
Smooth Surface - No Pattern

## Regulatory code compliance and certifications

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ANSI Z97.1-2009, 2015: American National Standard for Safety Glazing Materials Used in Buildings -  
Safety Performance Specifications and Methods of Test, Class A, Unlimited

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Florida Building Code  
High Velocity Hurricane Zone Classified  
Miami-Dade NOA: NOA

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Hail Impact Resistance (FM 4431) Class 4 Severe Rating - Pass

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IBC 2012, 2015, 2018 Rating for Horizontal Burn Rate ASTM D635-10 - CC1

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IBC 2012, 2015, 2018 Self Ignition Greater than 650°F ASTM D1929-13a - Pass

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ICC-ES Evaluation Report ESR-2728

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UL 94: Flammability File #E87887

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UL 746C: Suitability for Outdoor Use, UL File #E87887

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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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