

TUFFAK SK1 smooth polycarbonate sheet

SKYLIGHT SMOOTH

TUFFAK SK1 Sheet is engineered with a UV-resistant cap layer which provides outstanding weatherability in applications directly exposed to sunlight. SK1 is available in smooth sheet and can be drape or thermoformed for use in contoured applications such as domed skylights.

The SK1 sheet family of products is tougher than acrylic, impact-modified acrylic or glass. This exceptional toughness makes SK1 polycarbonate sheet particularly suitable for skylight applications to avoid breakage from hail and hurricane driven debris.

TUFFAK SK1 polycarbonate sheet has a ten (10) year limited product warranty against breakage, yellowing and loss of light transmission. The terms of the warranty are available upon request.

APPLICATIONS

Skylights, sloped, vertical and curved glazing, glazed archways, covered pedestrian walkways, barrel vaults, awning and entryway canopies

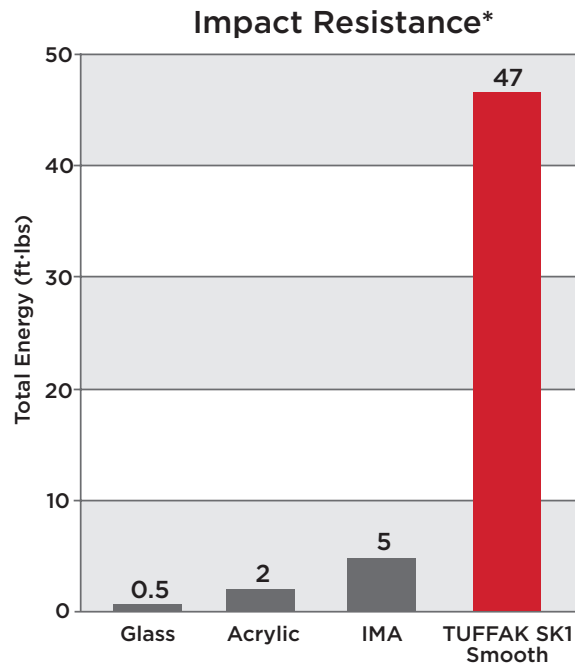
Typical Properties*

| Property | Test Method | Units | Values |
|--|-------------|-------------------------------|-------------------------|
| PHYSICAL | | | |
| Specific Gravity | ASTM D 792 | - | 1.2 |
| Refractive Index | ASTM D 542 | - | 1.586 |
| Light Transmission, Clear @ 0.118" | ASTM D 1003 | % | 90 |
| Haze | ASTM D 1003 | % | 100 |
| Water Absorption, 24 hours | ASTM D 570 | % | 0.15 |
| Poisson's Ratio | ASTM E 132 | - | 0.38 |
| MECHANICAL** | | | |
| 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 |
| THERMAL | | | |
| Coefficient of Thermal Expansion | ASTM D 696 | in/in/°F | 3.75 x 10 ⁻⁵ |
| Coefficient of Thermal Conductivity | ASTM C 177 | BTU-in/hr-ft ² -°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 |
| FLAMMABILITY | | | |
| 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

Regulatory code compliance and certifications

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

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

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

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

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

UL 94: Flammability File #E87887

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

UL 972: Burglary Resistant File #BP2126

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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