

## TUFFAK IR polycarbonate sheet

### WELDING FACE SHIELDS

TUFFAK IR is a polycarbonate sheet product developed to meet ANSI Z87.1, EN 169, and CSA Z94.3 standards for face shield applications. Proprietary additive systems block UV and IR light providing protection during gas flame welding and cutting operations and meeting the requirements for welding shades 3 and 5. Polycarbonate's toughness provides outstanding impact performance and state-of-the-art extrusion manufacturing delivers high optical quality needed for face shield applications.

### APPLICATIONS

Face shields for flame welding and cutting, general IR protection and welding curtains and screens

### Typical Properties\*

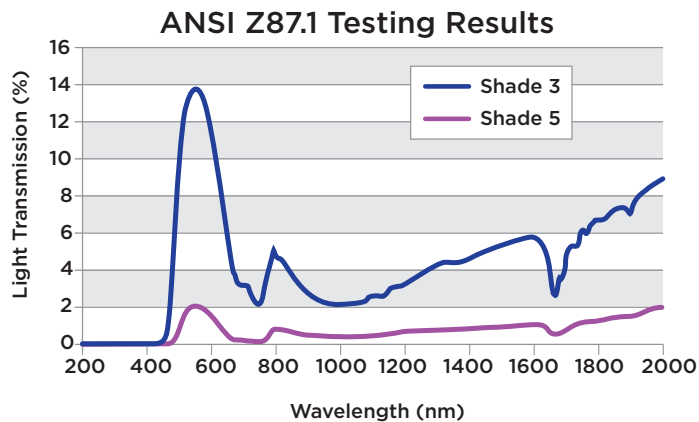
Property	Test Method	Units	Values
<b>PHYSICAL</b>			
Specific Gravity	ASTM D 792	-	1.2
Water Absorption, 24 hrs	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.35
Light Transmission, Welding shades 3 and 5	ANSI Z87.1 EN 169 CSA Z94.3	- - -	Pass Pass Pass
Welding Curtain, Grade (D) Shade 5 for LT properties	AWS F2.3M:2011	-	Pass
<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
Instrumental Impact, 0.044"	ASTM D 3763	ft-lbs	18
<b>THERMAL</b>			
Coefficient of Thermal Expansion	ASTM D 696	in/in°F	3.75 x 10 <sup>-5</sup>
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
<b>ELECTRICAL</b>			
Arc Resistance			
Stainless Steel Strip Electrodes	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>			
Ignition Temperature, Self	ASTM D 1929	°F	1070
Ignition Temperature, Flash	ASTM D 1929	°F	870

\*Typical Properties are not for specification purposes

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## Meeting Shade 3 and Shade 5 standards for maximum safety

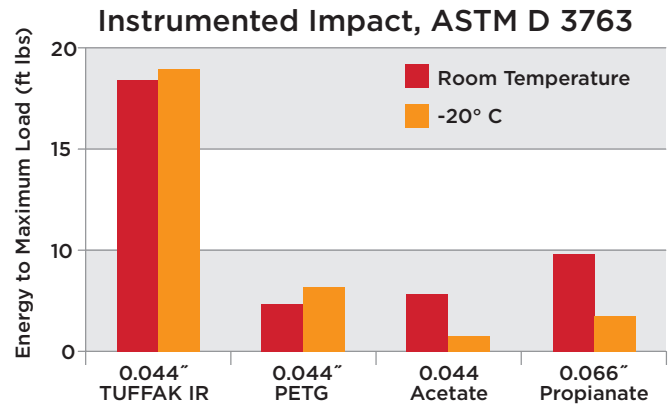
The high temperatures of flame welding and cutting emit a range of visible UV and IR light that can damage your eyes when that light is too bright. A green tint alone in any material does not indicate compliance. Plaskolite recommends only TUFFAK IR where Shade 3 and Shade 5 standards apply.



Shade 3 and Shade 5 of TUFFAK IR polycarbonate meet the ANSI Z87.1, EN 169, and CSA Z94.3 light transmission requirements for flame welding applications.

## Superior impact performance for maximum peace of mind

The high molecular weight of TUFFAK IR extrusion grade polycarbonate yields high impact strength and high toughness at a wide temperature range. TUFFAK IR polycarbonate also meets high mass, high velocity, and needle penetration requirements in standard face shield designs.



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.