

TUFFAK WC POLYCARBONATE SHEET

WELDING CURTAINS AND SCREENS

TUFFAK WC sheet is a polished surface, transparent polycarbonate sheet product designed for welding curtain and screen applications. The sheet can also be used in applications requiring UV light blocking such as screens in tanning salons and intense sunlit areas. It features outstanding impact strength, superior dimensional stability, high temperature resistance, high clarity and it is light weight and easy to fabricate. The sheet protects individuals against intense and harmful light emitted during arc welding. TUFFAK WC polycarbonate sheet is offered with a five (5) year Limited Product Warranty against breakage. The terms of the warranty are available upon request.

APPLICATIONS

Welding curtains, screens, booths, enclosures and walkways, tanning salon screens and other extreme UV or visible light areas

Regulatory code compliance and certifications

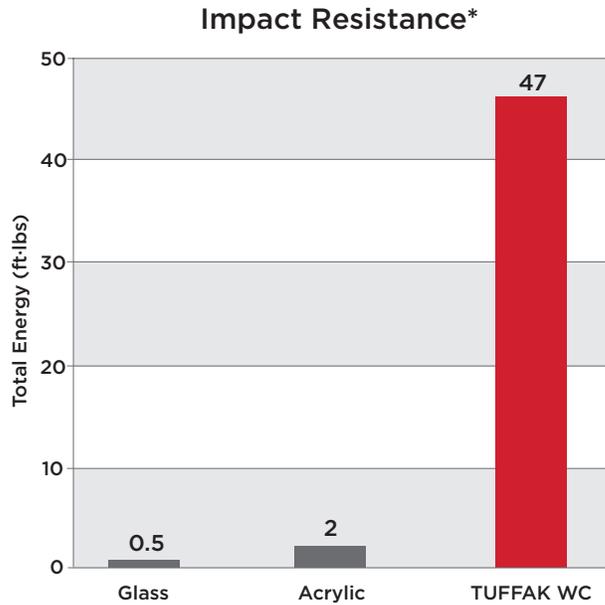
AWS F2.3M:2011 Specification for Use and Performance of Transparent Welding Curtains and Screens for light transmission properties.

TYPICAL PROPERTIES*

Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	-	1.2
Refractive Index	ASTM D 542	-	1.586
Light Transmission, M62 Yellow	ASTM D1003	%	62
Light Transmission, H07 Dark Green	ASTM D1003	%	5
Light Transmission, C30 Golden Amber	ASTM D 1003	%	17
Light Transmission, D59 Ruby Red	ASTM D 1003	%	19
AWS Welding Curtain and Screen	AWS F2.3M:2011		
M62, Yellow	Light Shade	-	Pass
H07, Dark Green	Dark Shade	-	Pass
C30, Golden Amber	Medium Shade	-	Pass
D59, Ruby Red	Medium Shade	-	Pass
Water Absorption, 24 hours	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.38
MECHANICAL			
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
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
ELECTRICAL			
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 ¹⁶
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
FLAMMABILITY			
Horizontal Burn, AEB (self-extinguishing)	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

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

Property		Polycarbonate	Acrylic	Glass
Impact Resistance	Drop Ball Test, 0.5 lb	No Break	1.75 ft/lbs	0.7 ft/lbs
Cold Bend	Bend Radius	100x material thickness	180x material thickness	Not possible
Sheet Weight	0.125"	0.78 lb/ft ²	0.75 lb/ft ²	1.60 lbs/ft ²
Thermal Expansion Rate	-	3.75 x 10 ⁻⁵ in/in/°F	4.10 x 10 ⁻⁵ in/in/°F	5.0 x 10 ⁻⁶ in/in °F
Sound Transmission Class	0.236"	29	30	27

Installation Recommendation and Guidance

TUFFAK WC polycarbonate sheets are designed to provide safe viewing for up to 8 hours from arc welding operations at a distance of one meter (3.28 feet) or greater. Transparent welding screens are not designed to replace welding face shields. This material is not intended to be used at a distance of less than one meter. For additional information reference AWS F2.3-2011.

TUFFAK WC polycarbonate sheets provide arc flash protection independent of Light, Medium, or Dark designation per the AWS standard.

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.