

TUFFAK LD



Light Diffusing

TUFFAK LD sheet is a polycarbonate product designed with an advanced light diffusion technology that provides excellent light uniformity without sacrificing light transmission. The proprietary diffuser technology eliminates visible hot spots from pinpoint LED lights in typical flat and formed sign applications. LD is available in a range of standard sign colors and can be custom matched to any color. TUFFAK LD is easy to form, fabricate, and decorate, and has excellent impact strength and dimensional stability. The product's UV resistance technology assures long lasting outdoor weathering performance.

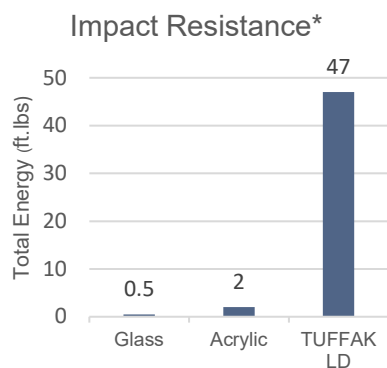
Applications

Flat and formed sign faces, channel letters, and lighting fixture covers.

Regulatory code compliance and certifications

UL 879: Electric Sign Components, UL File #E146154

UL 94: Flammability File #E87887



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

Typical Properties

Property	Test Method	Units	Values
PHYSICAL			
Specific gravity	ASTM D 792	-	1.2
Light transmission, B27 white @ 0.118"	ASTM D 1003	%	27
Light transmission, B48 white @ 0.118"	ASTM D 1003	%	50
Water absorption, 24 hours	ASTM D 570	%	0.15
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	16
Izod impact strength, unnotched @ 0.125"	ASTM D 256	ft-lbs/in	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 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

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FLAMMABILITY

Ignition temperature, self	ASTM D 1929	°F	1070
Ignition temperature, flash	ASTM D 1929	°F	870
Flame class @ 0.060"	UL 94	-	HB

TUFFAK LD Standard Colors

Standard TUFFAK Color	Standard Industry Color	Standard Gauge
White / B48	2447	0.093" – 0.236"
White / B27	7328	0.093" – 0.236"
Red / D96	2283	0.118" – 0.177"
Red / D99	2793	0.118" – 0.177"
Blue / F84	2114	0.118" – 0.177"
Blue / F85	2051	0.118" – 0.177"
Green / H87	2108	0.118" – 0.177"
Yellow / M72	2037	0.118" – 0.177"
Orange / C59	2119	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 determines the suitability of our materials and suggestions before adopting them on a commercial scale.