

The PALSUN
Product Group

PALTUF™ Standard flat UV stabilized polycarbonate sheet (also available as embossed, FR or matte sheets)

PALSUN® Flat polycarbonate sheet with co-extruded UV protective layer on one side

PALSUN® PLUS Flat polycarbonate sheet with co-extruded UV protective layer on two sides

PALSUN® Embossed Flat embossed polycarbonate sheet with co-extruded UV protective layer on one side (two sided UV protective layer available).

PALSUN® FR Flat polycarbonate sheet possessing a higher fire resistance rating (UL 94-V-0) with coextruded UV protective layer on one or two sides

PALSUN® Matte Flat matte polycarbonate sheet with co-extruded UV protective layer on one or two sides

PALSUN® SOLAR CONTROL **NEW** sheet that transmits selected percentages (20%, 35%, or 50%) of the light energy while keeping the undesired components of the energy spectrum, which heat, out. The solar control feature is an integral part of the sheet and will not peel away.

PALSUN® Mirror Flat UV protected polycarbonate sheets with a full mirror effect.

All the above sheets are protected on one or both sides with polyethylene (PE) film, which should be removed IMMEDIATELY after installation.

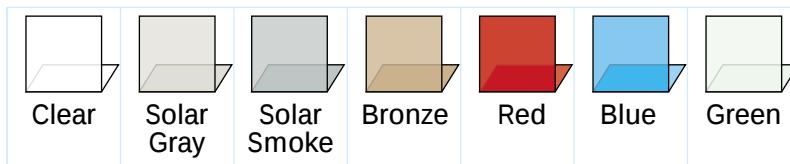
All PALSUN sheets come with a limited 10 year warranty available upon request.

Colors

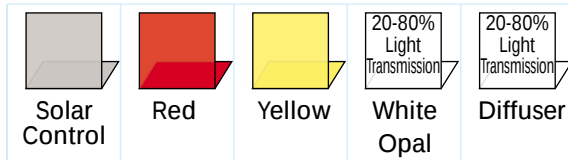
PALSUN & PALTUF sheets are available in a wide variety of transparent, translucent, and opaque colors. Opaque colors do not transmit light. Transparent colors transmit light and images (and are clear or tinted). Clear and opaque sheets may have a glossy or embossed surface on one side. Opal or translucent sheets have 20% to 40% light transmission, depending on the thickness of the sheet. PALSUN Solar Control transmits fixed amounts of light (20,35 or 50%) and will allow images to be viewed. The heat transmission is also reduced. Please refer to the table on page 14 for more detail.

A list of standard colors appears below. The colors depicted on this page are the closest reproduction of the actual color that is technically possible. Only sample chips* accurately characterize the colors in question.

Transparent



Translucent



Opaque



RAL 9001

RAL 7035

*Please consult with your local PALRAM distributor to:

- Receive a sample color chip.
- Order custom colors and/or light transmissions (subject to certain minimum quantities).



Features at a Glance

Light Weight

Less than half the weight of glass and 43% that of aluminum.

Transparent

90% light transmission, the same as for glass with the same appearance (tinted, embossed, diffusive sheets transmit less light)

Weather Resistant

PALSUN Sheets retain their characteristics for years under all conditions. PALTUF Sheets are just as resistant when not exposed to sunlight.

Thermal Insulation

PALTUF & PALSUN Sheets exhibit good thermal insulation.

Resistance to Chemicals

PALTUF & PALSUN Sheets are resistant to various chemicals and other substances. However, they should be prevented from coming in contact with certain materials, as specified by the manufacturer.

Easy to Mount

PALTUF & PALSUN Sheets are easy to work with and install.

Flexible, Formable, Machinable

PALTUF & PALSUN Sheets can be bent either hot or cold, can be thermoformed into an unlimited range of shapes, and can readily be machined and/or fabricated.

Easy to Clean

PALTUF & PALSUN Sheets can easily be cleaned with a 100% cotton cloth using generous amounts of mild detergent and water.

Applications

Safe and secure glazing or shielding:



- Safety glazing
- Protective shields for machines in factories
- Glazing in schools and public buildings
- Construction of protective enclosures for bus stops and telephone booths
- Transparent protective shields for police and security forces
- Glazing in boats, trains, busses and planes
- Windshields for cars
- Eye protection visors for helmets

Construction:



- Roofs for buildings and halls
- Glazing of windows
- Construction of ceilings in halls and shopping centers
- Pergolas (covered patios or walkways) and Conservatories
- Roofing of stadiums
- Skylights
- Attic windows
- Transparent acoustic barriers for highways



Signboards fabricated with PALSUN sheets last for years.

Light Fixtures incorporating PALSUN (PALSUN PLUS for exterior fixtures) opal, diffuser, or embossed sheets.

Thermoformed, Vacuum Formed, Bent, and Fabricated Items

Standard Dimensions

It is suggested that you refer to the Installation Section (page 23) for information that will assist you in selecting the proper sheet dimensions.

Thicknesses

1 mm (0.04 in.), 1.5 mm (0.06 in.), and unit values from 2 to 12 mm (0.08 in. to 0.5 in.)

Width x Length:

1250x2050 mm (50x80 in.) - available for all thicknesses
1220x2440 mm (48x96 in.) - available for all thicknesses
2050x3050 mm (80x120 in.) - available only for thicknesses from 2 mm (0.08 in.) and above

Intermediate thicknesses (e.g. 2.5 mm) and smaller widths or greater lengths may be requested as a special order (minimum quantity requirements may apply).

IMPORTANT! Sheets intended for thermoforming are supplied with a special polyethylene masking. Please specify when ordering PALTUF or PALSUN for thermoforming.



Characteristics

PALSUN & PALTUF sheets possess electrical, mechanical, physical, optical and thermal properties, presented in the table below, that provide comprehensive solutions for the wide variety of applications depicted previously. The combination of these characteristics qualifies PALSUN & PALTUF sheets as a first class material.

Typical Properties of PALSUN & PALTUF Sheet

(3 mm = 0.12 in.)

	Property	Conditions (U.S. Customary) ^a	ASTM Method ^b	Units - SI (U.S. Customary) ^a	Value (U.S. Customary) ^a
Physical	Density		D-1505	g/cm ³ (lb/ft ³)	1.2 (75)
	Water Absorption	24 hr. @ 23°C	D-570	%	0.15
Mechanical	Tensile strength at yield	10 mm/min (0.4 in./min)	D-638	MPa (psi)	65 (9,400)
	Tensile strength at break	10 mm/min (0.4 in./min)	D-638	MPa (psi)	60 (8,800)
	Elongation at yield	10 mm/min (0.4 in./min)	D-638	%	6
	Elongation at break	10 mm/min (0.4 in./min)	D-638	%	>90
	Tensile Modulus of Elasticity	10 mm/min (0.4 in./min)	D-638	MPa (psi)	2,000 (290,000)
	Flexural Modulus	1.3 mm/min (0.052 in./min)	D-790	MPa (psi)	2,600 (380,000)
	Flexural Strength at Yield	1.3 mm/min (0.052 in./min)	D-790	MPa (psi)	100 (14,500)
	Notch Impact Strength Izod	23°C (73°F)	D-256	J/m (ft-lbf/in.)	800 (15)
	Notch Impact Strength Charpy	23°C (73°F)	D-256	J/m (ft-lbf/in)	800 (15)
	Impact Falling Weight		ISO-6603/1 ^b	J (ft-lbf)	158 (117)
	Rockwell Hardness		D-785	R scale / M scale	125 / 75
Thermal	Long Term Service Temperature			°C (°F)	-75 to +100 (-175 to +212)
	Short Term Service Temperature			°C (°F)	-75 to +120 (-175 to +250)
	Heat Deflection Temperature	Load: 1.82 MPa (264 psi)	D-648	°C (°F)	130 (265)
	Vicat Softening Temperature	Load: 1 kg (2.2 lb)	D-1525	°C (°F)	150 (300)
	Coefficient of Linear Thermal Expansion		D-696	10 ⁻⁵ /°C (10 ⁻⁵ /°F)	6.5 (3.6)
	Thermal Conductivity		C-177	W/m ² K (Btu-in./hr-ft ² -°F)	0.21 (1.46)
	Specific Heat Capacity		C-351	kJ/kg°K (Btu/lb°F)	1.26 (0.31)
Optical	Haze		D-1003	%	<0.5
	Light Transmission		D-1003	%	89
	Refractive Index		D-542		1.59
	Yellowness Index		D-1925		<1
Electrical	Dielectric Constant	50 Hz	D-150		3.0
		1 MHz	D-150		2.9
	Dissipation Factor	50 Hz	D-150		0.9
		1 MHz	D-150		11
	Dielectric Strength Short Time	500 V/s	D-149	kV/mm (V/mil)	>30 (>770)
	Surface Resistance	Ketley	D-257	Ohm	5.1x10 ¹⁵
	Volume Resistance	Ketley	D-257	Ohm-cm	1.3x10 ¹⁷

a. Conditions, units and values in U.S. Customary units are presented in the table within parentheses.

b. All the results depicted in this table were obtained by following the indicated ASTM method except where another method is indicated by the appearance of this symbol (b).