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**Sign grade acrylic
flat sheet and roll stock
that weather the
tests of time.**

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ACRYLIC THAT WEATHERS THE TESTS OF TIME

Processing and Handling Tips Plaskolite Sign Grade Acrylic Sheet

Forming
SG Sheet forms at approximately 50° to 60°F lower than that of cast acrylic with optimum range between 280° to 320°F.

Orientation
When heated to forming temperature, SG sheet will exhibit mild shrinkage in the extrusion direction, but not in the cross-extrusion direction. Cast sheet, depending on the manufacturer, may exhibit 0% to 2% in both directions.

Sheet		Shrinkage (%)	
Thickness	Extrusion Direction	Cross Extrusion Direction	
3/16"	2±1	0±0.5	
1/4"	1±1	0±0.5	

Painting
SG Sheet can be easily painted, however, it is more susceptible to attack by aromatic solvents such as Toluene, Xylene, or Ketones.

Recommended Paint Systems:

Grip Flex	Lacryl
FR-1 (Screen)	800 Series (Screen)
FR-2 (Spray)	400 Series (Spray)
T-2003, T-2004, T-2005 (Thinner)	200-T, 201-T, 205-T (Thinner)
T-4000 (Cleaner)	206-T (Cleaner)

Prolonged contact with thinners and cleaners may cause crazing.

Recommended UV Ink:
Nazdar - Phone: (800) 767-9942

Recommended Adhesives
Adhesives listed below are recommended for use with SG Sheet products. However, adhesives should be tested prior to full scale use.

Weld-On #3 Quick-set, good bond strength, most aggressive. Avoid use in high stress areas.

Weld-On #16 Fast-drying, high strength.

Weld-On #40 Reactive gluing system. Good for bonding SG Sheet to other materials such as cell cast acrylic, polystyrene, PVC, butyrate and wood.

Colors:	Clear, 2447 White & 7328 White
Thickness:	.118" - .236"
Available Widths:	30" - 105"
For custom sign grade materials call for availability, quotation and delivery information.	

SIGN GRADE ACRYLIC SHEET

Property	ASTM	UNITS	OPTIX [®]	DURAPLEX [®]	
			SG	SG-05	SG-10
Optical					
Light Transmission	D-1003	%	92	92	90
Percent Haze	D-1003	%	2	2	<3
Mechanical					
Izod Impact Strength	(73°F) D-256	ft.-lbs./in.	0.4	0.7	1.1
	(0°F) D-256	ft.-lbs./in.	0.2	0.2	0.5
Tensile Modules of Elasticity	D-638	PSI	490,000	340,000	250,000
Tensile Strength @ Yield	D-638	PSI	11,030	8,000	5,600
Flexural Strength @ Yield	D-790	PSI	17,000	12,000	8,300
Rockwell Hardness	D-785		95	68	46
Thermal					
Deflection Temperature (264psi)	D-648	°F	203	194	185
Coefficient of Thermal Expansion	D-696	in./in.-°F	3 x 10 ⁻⁵	4 x 10 ⁻⁵	5 x 10 ⁻⁵
Self Ignition Temperature	D-1929	°F	833	>850	>850
Burning Rate	D-635	in./min.	1.019	1.25	1.97
Smoke Density Rating	D-2843	%	3.4	8.50	16.5
Processing					
Density	D-792		1.19	1.17	1.15
Moisture	D-570	% wt. gain	0.4	0.3	0.3
Dimensional	D-955	Molding Shrinkage	2 - 6	3 - 6	3 - 6

SUGGESTED THERMOFORMING CONDITIONS

Condition	UNITS	OPTIX [®]	DURAPLEX [®]		Cast Acrylic
		SG	SG-05	SG-10	
Thermoforming for Sheet Thickness 0.100" to 0.375"					
Optimal Forming Temperature	°F	320	315	310	380
Forming Temperature Range	°F	270-350	270-350	270-350	350-390
Heating Time	Minutes	1 - 10	1 - 10	1 - 10	2 - 25
Two Sided Infrared					
Cooling Time	Minutes	0.5 - 4	0.5 - 4	0.5 - 4	1 - 7
Optimal Mold Temperature	°F	180	175	170	190
Free Shrinkage at Forming Temperature					
Machine Direction	%	1 - 3	1 - 3	1 - 3	0 - 2
Transfer Direction	%	0	0	0	0 - 2

GENERAL COMPARISON CHART FOR RIGID SIGN PLASTICS - PRINCIPLE PHYSICAL PROPERTIES

Properties	OPTIX [®]		DURAPLEX [®]			Poly-Carbonate
	General Purpose Acrylic Optix SG	Cell Cast	Impact Modified Acrylic Duraplex SG-05	Duraplex SG-10		
1) Optical Appearance	Superior	Superior	Very Good	Very Good	Very Good	Very Good
2) Optical Appearance After Weathering	Superior	Superior	Very Good	Very Good	Very Good	Fair
3) Impact Resistance	Fair	Fair	Good	Good	Excellent	Superior
4) Scratch Resistance	Excellent	Excellent	Very Good	Good	Fair	Fair
5) Chemical Resistance	Fair	Excellent	Good	Fair	Good	Very Good
6) Machining (Route/Saw)	Good	Excellent	Very Good	Good	Superior	Good
7) Heat Resistance	Very Good	Excellent	Very Good	Good	Fair	Superior

GENERAL COMPARISON CHART FOR RIGID SIGN PLASTICS - THERMOFORMING

Properties	OPTIX [®]		DURAPLEX [®]			Poly-Carbonate
	General Purpose Acrylic Optix SG	Cell Cast	Impact Modified Acrylic Duraplex SG-05	Duraplex SG-10		
1) Optimal Forming Temp	Low	High	High	Low	Low High	Very
2) Processing Window	Wide	Wide	Narrow	Wide	Wide	Narrow
3) Predrying	No	No	No	No	No	Always
4) Melt Strength	Low	High	Moderate	Low	Moderate	Low
5) Hot Sticking	High	Low	Low	High	Moderate	Moderate
6) Shrinkage	Linear Low	Symmetrical Very Low	Symmetrical Very Low	Linear Low	Linear Low	Linear High
7) Heating Time (I.R.)	Short	Moderate	Long	Short	Short	Long
8) Stiffening Rate for Part Removal	Very Fast	Slowest	Slow	Fast	Fast	Fastest
9) Vacuum Definition	High	Lowest	Low	High	High	High

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.