

Royalite R66

Acrylic (PMMA) + PVC

Spartech Plastics

Message:

ROYALITE® R66 thermoplastic sheet is specifically formulated to meet the stringent smoke and fire specifications by the Federal Transit Administration. R66 meets the guidelines for flammability and smoke emission as measured by ASTM E-162 and ASTM E-662 at thickness' of .060 and above. Additionally, R66 carries a Dmax smoke density rating of less than 200 at .090.

APPLICATIONS:

The unique formulation of Royalite® R66 not only allows it to meet the FTA guidelines, but gives specifiers, engineers, and thermoformers a material that surpasses all others in its class in processability and durability. It offers a superior range of physical and mechanical properties over other related materials, and its ease in thermoforming and machining make it the new material of choice for such rail and bus components as seat backs, overhead storage bins, trays, side panels, and window surrounds.

COLORS & TEXTURES:

Royalite® R66 sheet can be supplied in a variety of colors and various grain patterns from matte to a deep textured finish, in order to meet your specific aesthetic requirements. Royalite R-66 is capped with calendered film, which provides exceptional color and gloss control, plus outstanding grain retention after forming.

PROCESSING:

Royalite® R66 thermoplastic sheet can be processed on most standard thermoforming equipment using conventional forming methods. For some complex shapes and deep draw parts, it may be necessary to use pre-draw boxes and/or plug assists. It is suitable for use with aluminum and epoxy molds, and fine-grain wood molds such as mahogany. Temperature-controlled molds are recommended with the temperature maintained between 140-160°F. Because Royalite® R66 is a PVC/acrylic alloy, care must be taken in forming so as not to overheat the sheet. Stock temperatures of approximately 330 - 380°F (IR measured) are recommended for proper forming. Best results are achieved by "soaking" the sheet with heat, utilizing lower power settings and longer cycle times. As with any thermoplastic material, care should be taken to account for the coefficient of thermal expansion when considering design parameters. Please contact Spartech for data relating to your specific application and equipment.

CHEMICAL & STAIN RESISTANCE, CLEANABILITY:

Royalite® R66 is resistant to a wide range of chemicals, and also exhibits very good stain resistance to common staining agents. It is safely cleaned with mild soap and water. As with all plastics, extreme care should be taken when selecting a cleaning agent; as some solutions may leave a residue, or discolor the material. Contact your Spartech representative for suggested guidelines.

FINISHING:

You can machine, saw, drill, rout and grind this rigid sheet with conventional plastics fabricating equipment. It can be punched and die-cut, sanded and polished easily. So long as proper procedures are followed, you can join it to itself, or other materials, by adhesive bonding, ultrasonic welding, and mechanical fasteners.

AVAILABILITY:

Royalite® R66 is available in various custom colors, grain textures, gauges, and blank sizes subject to normal product scheduling. Maximum width available is 60" in gauges .060" - 0.250.

General Information	
Features	Ultrasonic weldable
	Low smoke
	Rigidity, high
	Rigidity, high
	High tensile strength
	stain resistance
	Impact resistance, good
	Workability, good
	Sprayable
	Machinable
	Cleanable
	Adhesiveness

Good adhesion

Good chemical resistance

Durability

Flame retardancy

Uses	Automotive Window Encapsulation		
	Bracket tray		
	Seat		
Agency Ratings	ASTM E 162		
	ASTM E 662		
Appearance	Available colors		
Forms	Particle		
Processing Method	Thermoforming		
Physical	Nominal Value	Unit	Test Method
Specific Gravity ¹	1.35 - 1.45	g/cm ³	ASTM D792, ISO 1183
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (grade r, 31.8mm)	95		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (yield, 31.8mm)	40.7	MPa	ASTM D638, ISO 527-2
Flexural Modulus (31.8 mm)	2210	MPa	ASTM D790, ISO 178
Flexural Strength (31.8 mm)	65.5	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C, 31.8 mm)	160	J/m	ASTM D256
Dart Drop Impact (23°C, 31.8 mm)	36.2	J	ASTM D5420
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
1.8 MPa, annealed, 31.8mm	76.7	°C	ASTM D648
1.8 MPa, annealed	76.7	°C	ISO 75-2/A
Flammability	Nominal Value		Test Method
NBS Smoke Density			ASTM E662
1.5 min : 1.52 mm			ASTM E662
1.5 min : 2.29 mm			ASTM E662
1.5 min : 3.18 mm			ASTM E662
4 min : 1.52 mm			ASTM E662
4 min : 2.29 mm			ASTM E662
4 min : 3.18 mm			ASTM E662
Dmax : 1.52 mm			ASTM E662
Dmax : 2.29 mm			ASTM E662
Dmax : 3.18 mm			ASTM E662

Radiant Panel Flame Spread Index (3.18 cm)		ASTM E162
Flammability (3.18cm)	Passes	FMVSS 302
NOTE		
1.	Color Dependent	

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