Royalite R722

Acrylic (PMMA) + PVC

Spartech Plastics

Message:

ROYALITE® R722 thermoplastic sheet is specifically formulated to meet the stringent requirements of FAR Part 25, Appendix F as it relates to plastics used in the interior of aircraft. It consistently meets FAA guidelines for flammability, heat release and smoke density using methods set forth in FAR Part 25, Appendix F, Parts I, IV, and V, respectively, at thicknesses down to 0.040in.
APPLICATIONS:
The unique formulation of ROYALITE® R722 not only allows it to meet the FAA guidelines, but gives specifiers, engineers and thermoformers a material that surpasses all others in its class in processability and durability. This material 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 aircraft components as interior walls, window surrounds, seats, trays, partitions, galley and lavatory panels. Its high rigidity and toughness allows for weight reduction by supporting thinner-walled parts.
PROCESSING:
ROYALITE® R722 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 predraw 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°F-160°F. Care must be taken in forming so as not to overheat the sheet because ROYALITE® R722 is a PVC/acrylic alloy. Stock temperatures of approximately 325°F-355°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 Royalite for data relating to a specific application or equipment.
COLORS & TEXTURES:
ROYALITE® R722 is offered in a tremendous range of colors with a multitude of textures ranging from smooth to deep-textured. This Royalite product is capped with calendered film, which provides exceptional color and gloss control, plus outstanding grain retention after forming.
FINISHING:
With conventional plastic fabricating tools, it is possible to machine, saw, drill, rout and grind this rigid Royalite sheet. It can be punched and die-cut, sanded and polished easily. As long as proper procedures are followed, this material can be joined to other materials, or itself, by adhesive bonding, ultrasonic welding and by mechanical fasteners such as screws and rivets. Please contact Royalite for specific recommendations.
CHEMICAL & STAIN RESISTANCE, CLEANABILITY:
ROYALITE® R722 is resistant to a wide range of concentrated chemicals, including aqueous acids and bases, alcohols, lubricating oils and greases and motor fuels. It also exhibits very good stain resistance to common staining agents. Therefore, it is easily and safely cleaned with mild detergents or multi-purpose cleansers such as Fantastic® or Formula 409®. As with all plastics, extreme care should be taken when selecting a cleaning agent; some solutions may leave a residue or discolor the material. Contact Royalite for suggested guidelines.
AVAILABILITY:
ROYALITE® R722 is available in various custom colors, grain textures, gauges and blank sizes subject to normal production scheduling. Maximum width available is 58". The available gauge range is 0.040"-0.250". Widths and gauges outside the standard are available with some restrictions.

General Information	
Features	Ultra-high impact resistance
	Ultrasonic weldable
	Low smoke
	Rigidity, high
	Rigidity, high
	High tensile strength
	stain resistance
	Workability, good
	Machinable
	Cleanable
	Adhesiveness
	Good adhesion

	Low temperature resistance
	Good chemical resistance
	Heat resistance, high
	Durability
	Flame retardancy
Uses	Thin wall parts
	Airplane trim
	Bracket tray
	Seat
Agency Ratings	FAA 14 CFR Part 25 App. F Parts I, IV & V
	FAR 25-25853A
	FAR 25-25853B
Forms	Particle
Processing Method	Thermoforming

Physical	Nominal Value	Unit	Test Method
Specific Gravity [1]	1.49 - 1.55	g/cm³	ASTM D792
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	105		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength - Flow (Yield)	41.4	MPa	ASTM D638
Flexural Modulus	2690	MPa	ASTM D790
Flexural Strength	68.9	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-10 Wheel)	30.0	mg	ASTM D1044
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (22°C)	430	J/m	ASTM D256
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load (1.8 MPa, Annealed)	73.9	°C	ASTM D648
Flammability	**Nominal Value**	**Unit**	**Test Method**
FAA Flammability			FAR 25.853
1.02 mm [2]	Passes		FAR 25.853
1.02 mm [3]	Passes		FAR 25.853
OSU peak heat release rate			ASTM E906
1.02 mm	35.0	kW/m²	ASTM E906
3.18 mm	50.0	kW/m²	ASTM E906
OSU total heat release-2 min			ASTM E906
1.02 mm	50.0	kW·min/m²	ASTM E906
3.18 mm	45.0	kW·min/m²	ASTM E906
Smoke Density			ASTM E662

1.02 mm	140	ASTM E662
Ds @ 4min : 3.18 mm	100	ASTM E662

NOTE	
1.	Color Dependent
2.	FAR Part 25, Appendix F, Part I, Section (a)(1)(ii)
3.	FAR Part 25, Appendix F, Part I, Section (a)(1)(i)

Recommended distributors for this material

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WECHAT