

Royalite[®] R57



Royalite[®] R57 thermoplastic sheet is a fire-rated*, rigid ABS/PVC product specifically developed to meet Federal Aviation Administration requirements. It passes FAR 25.853b at 0.047" and above. It combines lightweight with very high impact strength, high tensile strength and stiffness, and excellent formability and ductility.

FEATURES AND BENEFIT

- Lightweight
- Fire-rated*
- Very high impact strength
- High tensile strength
- Excellent formability

TARGET MARKET & APPLICATIONS

Lightweight, toughness and beauty, plus the ability to achieve almost any shape in a wide range of thicknesses are some of the reasons why fire-rated* Royalite[®] R57 sheet is found in many small aircraft applications. It is used for tray tables and armrests in smaller commuter and private airplanes; additionally, it is used for interior ceiling and side panels in many helicopters.

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, and paints can be applied by spray, silk screen or roller coating. For optimum performance, paints formulated for plastics must be used. 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.

COLORS & TEXTURES

Royalite[®] R57 is offered in a tremendous range of colors with a multitude of textures ranging from smooth to deep-textured. This Royalite product is normally capped with calendared film, which provides exceptional color and gloss control, plus outstanding grain retention after forming.

AVAILABILITY

Royalite[®] R57 is available from our warehouse with standard dimensions of 54" x 94" in a variety of colors in a haircell or level haircell finish in gauges ranging from 0.047" to 0.187". Specific blank sizes can be cut to order for an extra charge. For a specific listing of our warehouse offerings, please contact us or our nearest distributor. Warehouse material can normally ship within 72 hours of receipt of the order. Other standard and custom colors, grain textures, gauges and blank sizes are available subject to normal production scheduling. Sheets Size – maximum width 76" uncapped, 54" capped"
Gauges – 0.047 – 0.312

* This term and any corresponding data refer to typical performance in the specific tests indicated and should not be construed to imply this material's behavior under actual fire conditions.





PROCESSING

Royalite[®] R57 rigid, fire-rated* thermoplastic sheet can be processed on virtually all thermoforming equipment from high-volume, multi-station rotary machines to hand-operated presses. It is readily hand-formed for prototyping and is suitable for use with aluminum and epoxy molds and fine-grain wood molds such as mahogany. Care must be taken in forming so as not to overheat the sheet since Royalite[®] R57 is an ABS/PVC alloy. Stock temperatures of approximately 325°F-400°F are recommended for proper forming. 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.

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	DATA
Specific Gravity			1.18-1.26 †
Tensile Strength, machine direction	D-638	(psi)	4,800
Flexural Strength	D-790	(psi)	7,700
Flexural Modulus	D-790	(10 ⁵ psi)	2.8
Impact Strength Notched Izod	D-256	@ 72°F	(ft. lb/in notch) 8.0
		@ -20°F	(ft. lb/in notch) 1.6
Hardness	D-785	Rockwell Scale R	93
Heat Deflection Temp (annealed) @ 264 psi	D-648	(°F)	175
Thermoforming Temperature Range	Machine	Low (°F)	325
		High (°F)	400

FLAMMABILITY RATING*:

Motor Vehicle Standard	FMVSS 302	Passes
Underwriters Labs	UL 94 V-0	Passes ⁽¹⁾
FAA 12s vert burn	FAR 25.853b	Passes ⁽²⁾

† Color dependent - R57 sheet is not listed with UL ⁽¹⁾ At 0.085" ⁽²⁾ FAR Part 25, Appendix F, Part 1, Section (a)(1)(ii)

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NOTE: The data listed herein reflect typical sheet properties. They are the latest available at the time of publication and are reliable to the best knowledge of Royalite. The properties are listed solely to give general guidance and are not to be construed as a warranty or representation for which Royalite assumes responsibility. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own test to determine the safety and suitability of each such product or product combination for their own purposes. We sell the products without warranty. Buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of our products, whether used alone or in combination with other products.

CONTACT INFORMATION

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For additional information, please contact Spartech Corporation at (888) 721-4242 or visit our web site at www.spartech.com.

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