

Royalite[®] R21



Royalite[®] R21 thermoplastic sheet is an economical, rigid ABS product that provides an ideal balance of properties not available in most low cost ABS sheets. It combines high impact strength and outstanding formability with high tensile strength, high stiffness and excellent low and high temperature performance.

TARGET MARKETS & APPLICATIONS

The truly exceptional formability of Royalite[®] R21 sheet has made it the fabricator's choice for difficult parts. Applications range from office furniture and specialized cases to machine guards and housings.

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 AND TEXTURES

Royalite[®] R21 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 calendered film, which provides exceptional color and gloss control, plus outstanding grain retention after forming. An optional weatherable cap sheet may be requested to provide the extra benefit of outdoor weatherability.

AVAILABILITY

Royalite[®] R21 rigid ABS sheet is available in a wide variety of economy, standard and custom colors, grain textures, gauges and blank sizes subject to normal production scheduling. Widths and gauges outside the standard are available with some restrictions.

Sheet Size – maximum width is 54", uncapped 88"

Gauge – maximum is 0.375



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PROCESSING

Royalite[®] R21 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. This material is also good for pressure forming applications. Stock temperatures of approximately 340°F-390°F are recommended for proper forming. Please contact Royalite for data relating to a specific application or equipment.

TYPICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	DATA
Specific Gravity	D-792		1.02 – 01.08†
Tensile Strength, machine direction	D-638	(psi)	4,800
Flexural Strength	D-790	(psi)	8,000
Flexural Modulus	D-790	(10 ⁵ psi)	2.7
Impact Strength @72°F Notched Izod @ -20°F	D-256	(ft-lbs/in notch) (ft-lbs/in notch)	7.0 2.5
Hardness	D-785	Rockwell Scale R	96
Heat Deflection @264 psi Temperature (annealed)	D-648	(°F)	208
Thermal Conductivity	C-177	(BTU/in/hr/ft ² /°F)	1.7 – 2.1
Coefficient of Thermal Expansion	D-696	(in/in/°F/x10 ⁻⁵)	4.2 – 5.6
Thermoforming Temperature Range	Machine	Low (°F) High (°F)	340 390
Mold Shrinkage		(in/in)	0.005 – 0.007

FLAMMABILITY RATING*

Motor Vehicle Standard	FMVSS 302	Passes
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† Color Dependent

* 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.

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.

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