

Royalite™ R21

Rigid High-Performance ABS

PRODUCT DESCRIPTION

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

VALUE SOLUTION

Control costs while achieving excellent performance and versatility

Fabricators are often faced with forming difficult parts. Royalite R21 sheet provides exceptional formability without high cost. This versatile, rigid sheet can be punched and die-cut, and paints can be applied by spray, silk-screen or roller coating. With conventional plastic fabricating tools, it is possible to machine, saw, drill, rout and grind this sheet as well. With a wide range of colors and a multitude of textures ranging from smooth to deep-textured, Royalite R21 sheet also gives thermoformers a full complement of choices that help to satisfy customer demands.

KEY CHARACTERISTICS

- Ideal for high-impact applications
- High-impact strength
- Versatility in processing on all types of thermoforming equipment
- Outstanding formability
- Readily hand-formed for prototyping
- Compatible with pressure forming applications

TARGET MARKET AND APPLICATIONS

Exceptional formability and impact strength of Royalite R21 sheet has made it the fabricator's choice for difficult parts and for high-impact applications. Typical applications range from office furniture and hospital beds to machine guards and housings. An optional weatherable cap sheet may be requested to provide the extra benefit of weatherability for exterior applications.

PolyOne™

TECHNICAL PROPERTIES

PROPERTY	TEST METHOD	UNITS	R21
Specific gravity	D-792		1.02–1.08†
Tensile strength, machine direction	D-638	(psi)	4,800
Flexural strength	D-790	(psi)	8,000
Flexural modulus	D-790	(10^5psi)	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 “R” scale	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

† 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.

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