

Abrasion Resistant Optical Quality Acrylic Coatings (HMR/AR)

Continuously Manufactured Acrylic • Cell Cast Acrylic • Molded Acrylic



Description

The highest level of scratch resistance is available with our state-of-the-art, silicone hard coatings. Our coatings are applied under stringent clean-room conditions, and are specifically formulated to match each material. Chemical resistance and UV (ultraviolet) light protection for long-term exposure to harsh weather conditions are two additional benefits of these coatings. These coatings can be applied to molded, formed or fabricated as well as flat sheet substrate, on one or both sides. Our coatings are designed to protect and improve the optical quality characteristics of plastic substrates. Our HMR/AR hard coatings provide a clear, abrasion-resistant film when applied to suitably prepared plastic surfaces. These coatings can be applied in our flow, spray, or dip coating process which meet ISO 14644-1 Certified Class 100 clean-room conditions. Our coatings are designed for use on cell cast, continuously manufactured, or molded acrylic parts.

Applications for Plaskolite's HMR/AR

Coatings include:

- Menu boards
- Public transportation for buses, trains, taxis
- Safety window glazing for the building industry
- Injection molded gasoline pump LCD displays

Key Properties

- Abrasion and mar resistance • Solvent/chemical resistance • Ultraviolet light protection
- Superior optical clarity • Thermal resistance • Anti-graffiti properties

Typical Property Values*

Property	Test Method	Units	Value
PHYSICAL:			
Specific Gravity	ASTM D792	---	1.19
Water Adsorption, Equilibrium, 24 hrs	ASTM D570	%	0.4
Optical Refractive Index	ASTM D542	---	1.49
Film Thickness		mil	0.2 (5)
Abrasion Resistance***			
Taber Abrader, 100 cycles, CS-10F Wheel, 500g Load	ASTM D1044	%	<2
Taber Abrader, 500 cycles, CS-10F Wheel, 500g Load	ASTM D1003	%	<10
MECHANICAL:			
Tensile Strength - Max	ASTM D638	psi	11,030
Tensile Modulus	ASTM D638	psi	490,000
Elongation	ASTM D638	%	5.8
Flexural Strength (gauge dependent)**	ASTM D790	psi	17,000
Flexural Modulus (gauge dependent)**	ASTM D790	psi	490,000
Izod Impact Strength (gauge dependent)**			
Molded Notch	ASTM D256A	ft-lbs/in	.40
Milled Notch			.28
THERMAL:			
Coefficient of Thermal Expansion, -30 to 30°C	ASTM D696	in/in/°F	3.0 X 10 ⁻⁵
Heat Deflection Temperature @ 264 psi	ASTM D648	°F	203
FLAMMABILITY:			
Flame Spread Index	ASTM E84		115
Smoke Developed Index			550
Solvent Properties		Result	
Acetone		Good	
Windex®		Good	
Methylene Chloride		Good	
Toluene		Good	
Sulfuric Acid		Good	
Nitric Acid		Good	
Isopropanol		Good	
Kerosene		Good	

*These are typical properties and are not intended for specification purposes **Reported values based on .125" gauge thickness

***Humidity during testing and Taber wheel variability will affect final values



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