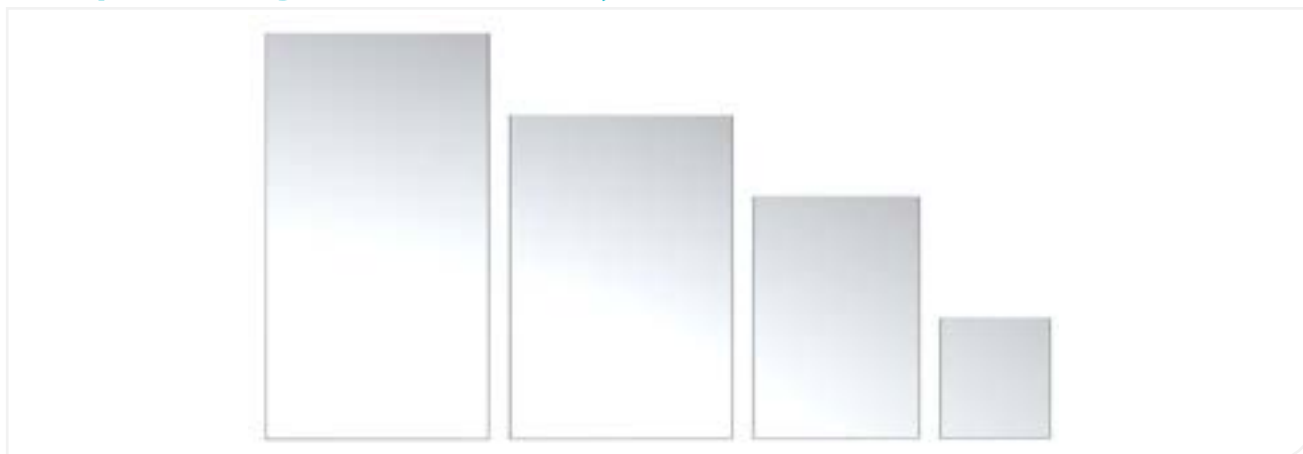


Hipac High Durability Mirrors



The Hipac range of polycarbonate mirrors is virtually unbreakable, being approximately 250 times stronger than glass. This eliminates the hazards associated with breakage. Made from optical-grade polycarbonate, the mirrors combine inherent strength and fire resistance with a best-in-class hardcoat surface treatment that provides excellent chemical, solvent, and abrasion resistance. The treatment delivers glass-like durability while weighing only half as much as glass of equivalent thickness.

The mirrors are easy to fabricate using standard woodworking tools and can be cut to size as required. A durable rear coating protects the mirror surface, while heavy-duty masking on both sides safeguards it during shipping, handling, and installation.

Applications

- mental health facilities.
- prisons.
- youth detention centres.
- correctional facilities.
- security buildings.
- public buildings.
- police stations.
- aircraft.
- sports stadiums.
- gymnasiums.
- amusement parks.
- public transport.
- mass transit.
- high traffic areas.
- abusive environments.

Applications

Property	Test Method	Units	Values
Physical			
Specific Gravity	ASTM D792		1.2
Poisson's Ratio	ASTM E132		0.38
Taber Abrasion @ 100 cycles, Delta haze CS-10F Wheel @500 g load	ASTM D1044	%	4**
Mechanical			
Tensile Strength, Ultimate	ASTM D638	psi	9,500
Tensile Strength, Yield	ASTM D638	psi	9,000
Tensile Modulus	ASTM D638	psi	340,000
Elongation	ASTM D638	%	110
Flexural Strength	ASTM D790	psi	13,500
Flexural Modulus	ASTM D790	psi	345,000
Compressive Strength	ASTM D695	psi	12,500
Compressive Modulus	ASTM D695	psi	345,000
Shear Strength, Ultimate	ASTM D732	psi	10,000
Shear Strength, Yield	ASTM D732	psi	6,000
Shear Modulus	ASTM D732	psi	114,000
Instrumental Impact @ 0.118"	ASTM D256	ft-lbs/in	30
Thermal			
Coefficient of Thermal Expansion	ASTM D696	in/in/ °F	3.75 x 10 ⁻⁵
Coefficient of Thermal Conductivity	ASTM C177	BTU·in/hr·ft ² ·°F	1.35
Heat Deflection Temperature @ 264 psi	ASTM D648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D648	°F	280
Brittleness Temperature	ASTM D746	°F	-200

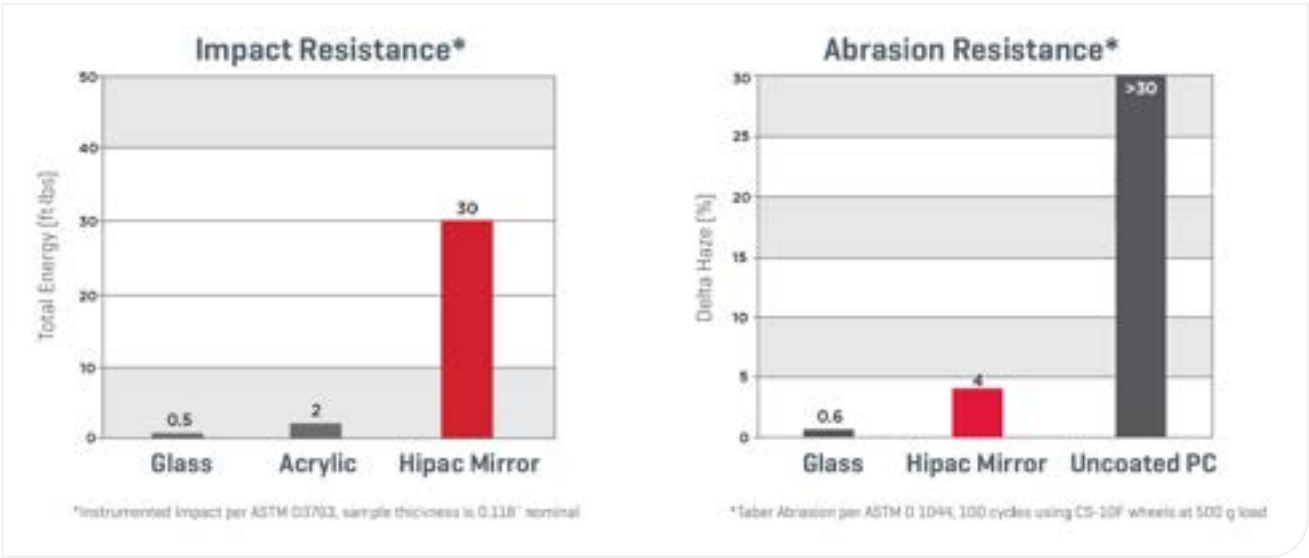
Flammability			
Horizontal Burn, AEB	ASTM D635	in	<1
Ignition Temperature, Self	ASTM D1929	°F	1022
Ignition Temperature, Flash	ASTM D 1929	°F	824

- *Typical properties are not intended for specification purposes
- **Taber performance of the abrasion resistant coating measured on clear sheet

Chemical Resistance

Test Method* (soft cloth soaked with)	Result
Ammonium Hydroxide (100%)	0% change in haze
Hydrochloric Acid	
Acetone	
Kerosene	
Toluene	

Vigorous rub for 2 minutes.



Mirrored polycarbonate is a reflective film surface applied to a substrate. When the substrate is affixed to another surface, both of these materials will in time conform to the irregularities of the supporting surface. A non-smooth, non-planar surface will cause localised bending of the mirrored sheet and distortion in the reflective image.

For best results, mirrored sheets should be mounted to a smooth, rigid, sturdy flat backing such 16mm MDF, plywood or a similar flat rigid substrate. The surface of pulp or timber based products should be coated with a high-quality paint or sealant to cover pockets and seal out moisture. The entire surface should then be covered with a mastic or another type of pressure sensitive adhesive.

Fixing of a mirror sheet with a hard-coated surface is not readily accomplishable due to the chemical resistance of the coating. Another option is to drill oversized holes in the mirror and hold it to the wall using screw fasteners. Do not over tighten the screw fasteners. Over tightening will cause dimpling and distortion.

Visual distortion is a function of viewing distance and material thickness. A thicker piece of material will be less flexible and therefore maintain better optical integrity. Correct installation and sufficient material thickness can reduce visual distortion but may not completely eliminate it.

Ceiling and overhead installations are not recommended unless the mirror is mounted in edge-engaging frames such as T-bar suspended ceiling frames or mechanical mountings.

Some adhesives may contain solvents such as toluene, ketones and hexane that can attack the back coating. Adhesives with solvents of 5% or more are not recommended. Since numerous adhesives, cements and mastics are available, they should be tested on expendable pieces prior to application. All tests should be applied at least 72 hours in advance to determine compatibility to the back coating, the reflective coating and the polycarbonate itself. The following companies manufacture adhesives that are suggested for use with Hipac mirrors.

3M Brand product suggestions: Fastbond #4323 / VHB tape / 560 polyurethane / Super 77 Spray
GE product suggestions: GE-57 Silicone

Product Suggestions: XT2000 Mastic Adhesive System (Water Based, Non-flammable, minimal VOC content) / Spray Lock Spray Adhesive System (Water Based, 0%VOC content).

Handling

All Hipac mirror sheets are furnished with a protective masking on the top side of the sheet. Do not slide mirror sheets when transporting. The masking should be left on the sheet during storage and fabrication to prevent damage. Mirrors are shipped in “ready-to-store” condition. Keep away from excessive and warm area with the original packing intact. However, this is not always practical as all or part of the shipment must be unpackaged for the customer to use. In these cases, the following guidelines should be followed:

Vertical Storage

If the mirror sheets are to be stored on end, care must be taken to avoid warping. Sheets must stand with an angle of no more than 10 degrees from the vertical. A-frame racks made of plywood can be made to give full support to the materials.

Horizontal Storage

If the mirror is to be stored flat, care must be taken to avoid warping, slipping and scratching. If different sizes are to be stored together, make sure the largest pieces are at the bottom, the smallest on top. This will prevent overhang which can lead to warping and reduce the risk of scratching if a slip occurs, or while unpacking. Pallets are packaged with a heavy poly overwrap which protects the sheet from dirt and moisture. The overwrap should be intact during storage.

Maintenance

Masking

Each mirrored product is well protected by a durable paint backing and a removable masking on the front. This masking should remain in place to protect the sheets during all phases of fabrication and installation. Hipac mirror sheets should be handled mirror side down, with the masking left on. Care should be taken not to slide sheets against each other.

Removing Masking

If there is difficulty in removing the masking, use aliphatic naphtha, kerosene, or distilled alcohol to moisten the adhesive. Do not use other chemicals or sharp objects to remove the masking.

Cleaning

Washing

Use a mild soap and a damp soft cloth to wipe the surface of the sheet with light pressure, avoiding the edges of the sheet. To remove the grease, oil, or tar deposits on the material, use hexane or kerosene to remove them. Do not use any chemicals on a painted print design. Do not use window cleaning sprays, kitchen scouring compounds, or other chemicals to clean mirrorised sheets.

Warranty

We warrant that the goods will conform (subject to variations acceptable within the industry) to the specifications provided. Hipac mirrors are provided where high impact and fire resistant characteristics are essential and are considered to have a “general purpose” mirror quality. We warrant that the products will be free from any defects in material or workmanship and will meet design life of 10 years when properly applied and installed with recommended adhesives.

Disclaimer:

All products must be fitted as per the directions detailed in the individual product Installation Instruction Document. Hipac takes no responsibility for incorrect installation/operation of the product. By purchasing this product, you are confirming that the product will be fitted as per the instructions.

Please note that Hipac offers a range of measures designed to reduce the risk of self-harm or suicide and does not offer any guarantee that it will not take place. The solutions have been designed as a deterrent only.

ABOUT HIPAC

Operating at the forefront of healthcare, we strive to redefine what's possible. We provide superior products, design expertise and total solutions to help create environments where nothing stands in the way of patient care.

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