

ACRYLIC MIRROR

STORAGE

Horizontal storage: If mirror sheets are stored flat, care must be taken to avoid warping, slipping and scratching. If different sizes are stored together the largest panels should be at the bottom and smallest on top. This will prevent overhang which can lead to warping and slipping during movement.

Preventing chips or dirt from settling between the sheets will reduce the risk of scratching if a slip occurs or while unpacking.



MAINTENANCE

Masking: Each mirrored sheet is well protected by a durable paint backing and removable masking on the front. This mask should remain in place in place to protect the sheets during all phases of fabrication and installation. Mirror sheets should be handled mirror side down with the masking left on. Do not slide sheets against each other.

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

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CLEANING

Washing: Use a mild detergent, water and soft cloth to wipe the surface - apply light pressure only. To remove a grease, oil or tar deposit on the material use hexane, kerosene or aliphatic naphtha. Do not use any chemicals on a painted print design. DO NOT use window-cleaning sprays, kitchen scouring compounds or other chemicals used to clean glass mirror.

Polishing: A surface gloss can be maintained by occasionally using a soft flannel cloth and a good plastic cleaner or polish. Follow the instructions for polishing on the product.

Removing Scratches: Fine scratches can be removed by hand polishing with a plastic scratch remover or compound cleaner. Remove all residues and polish with a soft flannel cloth. Deep scratches may need to be lightly sanded.

INSTALLATION, FABRICATION, DRILLING, FORMING AND SURFACE DECORATION TECHNIQUES

Mirror may be easily drilled with any commercial power-driven drill available.

It is recommended to use a drill bit offered especially for plastics. If a drill bit for plastic is not available a metal-working drill bit with a high-speed twist can be used with some modification. Metal-working drill bits are designed to push through metal, make the following modifications to prevent chipping or other damage of the mirror.

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- 1) The tip angle is usually about 120°, this is too flat to cut through Mirror without damage and must be ground to a sharp angle of 60° - 90° to allow the bit to enter and exit easily without chipping.

- 2) The cutting edge must be ground to a rake angle of 0°-4°. This "flat" cutting edge will scrape the Mirror without gouging it.

- 3) The surface behind the cutting edge must be ground away to clearance angles of 12°-15°. This will allow back relief for reduced metal to plastic contact and heat build-up. When drilling the actual Mirror it would be wise to back up the surface with a durable surface such as plywood, so the drill bit will continue into a solid material, this will prevent chipping the opposite side of the Mirror. A slow feed rate should be used when the bit enters or exits the Mirror.

Holes of 25mm or larger may be cut with a circle cutter. To accommodate the material properties of Mirror the cutter bit must be modified so the tip scrapes the material without gouging it. Use a cool air mist system to avoid heat build-up, leaving the walls of the hole with a smoother cutting edge. Use a drill press for uniform pressure and constant vertical positioning.

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EDGE and SURFACE FINISHING

The extent of finishing needed to produce a smooth transparent edge is based upon the quality of the cutting tool used to machine the edge. A properly designed cutting tool with a sharp cutter will reduce the amount of finishing needed. Finishing is also reduced when a spray coolant is used along with the cutting tool to reduce excess heat build-up.

POLISHING

A polished edge is the best possible finished edge but requires the most preparation. Prior sanding is necessary if the edge is sharp from a saw-cut. Sanding is not necessary on a well milled edge. A jointer, sharper, or hand-scraped edge can be used in place of sanding. A stationary polishing head produces the best polished surface. Bleached muslin wheels with a diameter of 200mm to 355mm with bias strips. The finished quality of the polished edge is determined by the polishing compound used. To produce a high lustre finish the use of a fast cutting compound first will remove all sanding marks followed by a high lustre compound for the final buffing. To achieve a fairly good finish in one operation, a medium cutting compound would be best. Polishing prior to sanding is not necessary when the scratches or machining marks are not too deep. A surface polishing wheel should be from 150 mm to 300 mm in diameter built up to a width of 40 mm to 100 mm. For the initial polish use a soft, bleached muslin wheel followed by soft flannel wheel for the finishing. Depending on the depth of scratches use a medium-course polishing compound or a fine compound.

Mirror sheets may soften when over-heating is a result of excessive pressure, keep the mirror in motion at all times during the polishing procedure. Using a diamond polishing machine is recommended for polished mirror acrylic edges.

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CHEMICAL RESISTANCE

Like all plastic materials Mirror will react when exposed to many chemicals. Below is a partial list of chemicals known to react with Mirror - exposure to them should be avoided. Factors such as fabrication stresses, exposure to loads or changing temperatures and the method of application can all influence the possible reaction. In all cases care should be taken with dry chemicals or solvents used near Mirrors.

Chemicals that affect mirrored acrylic:

- Benzene
- Carbon Tetrachloride
- Ethers
- Ethyl Alcohol
- Esterstoluene
- Ketones
- Lacquer Thinners
- Methyl Alcohol

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CEMENTING

Mirrored acrylic like mirrored glass is a reflective film applied to a substrate. When the substrate is affixed to another surface both of these materials will conform to all the irregularities of the supporting surface. A non-smooth, non-planar surface will cause localised bending of the mirrored sheet and distortion in the reflected image. For best results, mirrored acrylic should be mounted to a smooth rigid, sturdy, flat backing such as 5 to 7 ply, 16 mm or 19 mm plywood. The surface should be coated with a good 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.

Anglosol Evo-Stick Mirror Adhesive is designed to be used with mirror acrylic and will bond to timber, bricks, concrete, glass etc. Some adhesives may contain strong solvent contents which can attack the back coat. Since numerous adhesive cements and mastic tapes are available they should be tested on expendable pieces prior to application of the adhesive. All tests should be applied at least 24 hours in advance to determine compatibility to the backside, the reflexive coating and the acrylic itself.

Another option is to drill oversized holes in the mirrored acrylic and hold it to the wall using screw fasteners. Do not over tighten as it 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.

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

Again we stress before using any adhesives, mastics or cements please test expendable samples for at least 24 hours to determine suitability.