

## Mirrors

### Special Handling Instructions

A mirror, even though it is a combination of hard and durable components, the very nature of this blending creates a number of weakness that can ultimately lead to problems.

#### Receiving, Storage and Transportation

- The very first - and important - step in maintaining mirror integrity is to check your shipments on arrival. If there appears to be moisture present, the mirrors should be unpacked and allowed to dry by separating each lite.
- Be sure that your mirror storage areas are in dry, adequately ventilated spaces. Don't store mirrors in areas of high humidity, where exposed to chemical fumes, or near high heat such as steam or water pipes.
- Mirrors should be unpacked as soon as possible to allow moisture caused by condensation to dissipate, especially if the mirrors have been subject to temperature changes during shipment.
- Store mirrors vertically. Do not lay mirrors flat. Glass exhibits more strength, fewer strains when stored vertically.
- Don't store mirrors outdoors or in unheated areas. The mirror can be affected not only by the moisture prevalent under these conditions, but also by excessive expansion and contraction caused by cyclic temperatures.
- Block mirror cases up off floors and away from walls. This will assist in proper ventilation of the storage area and prevent any water damage to the bottom of the cases. Also, do not store crates or mirrors on uneven surfaces. This can lead to stresses and strains on the glass, which can lead to cracks and breakage.
- Mirrors should not be placed touching cinder block wall or other concrete material.
- Protect cases and mirrors from falling objects. Even a small impact could cause cracks and ruin a mirror.
- Be certain to rotate your mirror stocks. Consume older stocks first. Many experts believe that "aging" helps in the curing of the paint backing and thus results in a more durable installation. Be certain that handling equipment is strong enough to handle the weight of the mirror. A dropped mirror is usually a ruined mirror.
- Do not ship partially unpacked mirror cases without proper repacking. Movement within the case can cause damage or breakage.

If mirrors are transported in an open or exposed condition and become spattered or come in contact with foreign elements such as road salt, they should be washed with warm water and dried with a soft rag.

## Fabrication

- Always use gloves when handling mirrors.
- Vacuum or sweep the cutting tables with a stiff brush regularly to keep dust down and to eliminate glass grit and particles which could scratch mirrors.
- Locate fabrication areas away from parts of the shop where mirrors could be exposed to solvents, heavy-duty cleaners, etc. which could affect the backing.
- Be sure that mirrors - especially backs and edges - are thoroughly washed after fabrication.
- You may use edge sealer to seal the edge only if the edge is clean and dry after edging.
- Depending on the geographical location, the glass shop may apply an approved sealant to all edges after fabrication and thorough edge cleaning with diluted rubbing alcohol.
- When grinding and polishing edges, remember that a wet belt sander is the recommended tool.
- Diamond wheels should always be dressed and maintained in good cutting condition.
- Try to retain at least one factory edge when trimming, preferably at the bottom where mirror is subject to puddling.
- Don't slide mirror lites one over another. Scratching of the surfaces will result.
- Be sure mirrors are inspected before and after fabrication and that adequate light is provided in the inspection areas.
- If questions arise concerning approved coolants, cutting oils, sanding belts or cutting tools, contact the mirror manufacturer or other suppliers for specific instructions.
- Use clean water or neutral water to wash the edge after ending.
- Dry the mirror and mirror edge after washing immediately.
- Do not put too much pressure on mirror edge against edge machine while edging.
- Do no edge too fast which will also cause the chipped edge easily.
- Add some "cutting fluid" to edger while beveling.

## Preventing Black Edge

1. The method to avoid mirror getting black when installation:
  - After ending work must wash the mirror in time. The washing water for washing machine must be new water or ionized water. Cerium Oxide must be washed in time, washing thoroughly one time and dry. Use neutral water when washing to avoid the erosion on the paint. Working in ventilation and dry environment. Use neutral paper between mirror and pack.
  - After wash and dry if used the edge protection solution, moisture can be avoided.
2. The main reason may cause the mirror getting black after edging work is as following:
  - Did not wash the mirror on time after edge work.
  - Use the washing water for a long time or the PH data of washing water is too high.
  - The edging speed is too fast or grinding wheel's pressure is too high to hurt the back paint.
  - The surface paint thickness is less than 20 micron.
3. The method to avoid chipped edge:
  - The grinding wheel must be suitable; #140 is the best diamond wheel to use in the 1<sup>st</sup> position.
  - Grinding depth: When make FE edge, add 2mm for both sides. When make DE edge, add 1 mm for both sides.
  - Grinding speed: FE edge  $\leq$  4M/Min, BE edge  $\leq$  2.5M/Min.

## Installation

- As with fabrication, always use gloves when handling any mirror on the job site to prevent damage to the face or backing from skin-borne salts or chemicals.
- Never install mirrors on new plaster, new or old masonry or on a freshly painted wall without proper sealing.
- In humid climates, wait until the air conditioning is operating before installing mirrors.
- In newly constructed buildings that include concrete floors or cinder block walls, do not install mirror until floor or wall have been covered or sealed.
- Never install mirrors outdoors without additional engineered protection for the backing of the mirror.
- Set mirrors off the wall with an air space behind to provide ventilation for the backing whenever possible.
- If mastic must be used, be sure it is approved for mirror use.
- Be certain that the room or space in which the mirror is to be installed is properly ventilated during and after installation
- Never permit edges of the mirror to be exposed to “puddling” conditions such as on back splashes.
- Be sure that there are adequate tolerances between installed mirrors to avoid later problems as the building settles.
- Mirrors should be one of the last items installed in new construction after final cleanup.
- Consult with mirror manufacturers or other suppliers for recommendations on mastics, silicones (for trim out), belt lubricants, and other installation materials and tools.
- A light seam of clear (not acid based) silicone could be placed across the face of the mirror between the glass face surface and splash or J molding.

## Cleaning

The “final touch” on any outstanding mirror installation is proper cleaning. The techniques described here are good practices for you and should be passed on to your customers so they can maintain the mirror for the life of the job.

- The safest cleaner for a mirror is clean, warm water used with a soft cloth. An approved glass cleaner such as Hi Sheen or similar products may be used. Be careful not to allow the edges of the mirror to get or remain wet over a period of time.
- Do not use any acid or alkali cleaners for mirror cleanup after installation.
- Do not use cleaners with heavy ammonia bases like Windex.
- Never spray any cleaner directly on to a mirror.
- Always use soft, grit-free cloths when cleaning a mirror to reduce chances of scratching the surface.
- Be sure to dry all joints and edges thoroughly to be certain no cleaner comes in contact with the edge and backing.
- Be sure to let your customers know that routine cleaning maintenance can be accomplished simply and effectively by washing, rinsing and drying the mirror.