



Proper Procedures for Fabrication of Flat Glass Mirrors

Silvered flat glass mirror products can be fabricated to provide additional aesthetic appeal such as beveled edges and surface accents. As additional fabrication features are applied, it is critical to ensure proper fabrication conditions and techniques are utilized during every step of fabrication in order to protect and maintain the integrity of the mirror backing and edges and to reduce the chances of black edge developing. When fabricating silvered flat glass mirror products, the members of the Mirror Division of the Glass Association of North America (GANA) recommend consideration of the following guidelines:

- Whenever possible, mirror fabrication should take place in the environment of a fabrication shop or glass distribution facility.
- Mirror fabrication operations should be located in an area away from exposure to solvents, heavy-duty cleansers and other materials or chemicals that can damage the mirror backing.
- Fabrication areas and equipment should be frequently cleaned to prevent exposure to dirt, grit solvent or other contaminants that can damage both the glass and mirror backing surfaces.
- All cutting table and fabrication equipment surfaces that contact the glass and/or mirror backing surfaces should be frequently vacuumed or swept to prevent scratching or other surface damage.
- Glass handling gloves should be worn by all individuals handling mirror products before, during and after fabrication. Gloves prevent skin oils, body salts and chemicals from contaminating the edges.
- Clean, fresh water with a coolant is the best lubricant for grinding and polishing operations. The solution should be pure with the pH maintained between 6 and 9. If coolant tanks are used, the water should be changed often enough to prevent biological growth. The solution temperature should be maintained below 100 °F (38 °C)
- Fabrication wheels should be centered over the edge to minimize excessive grinding on the mirror backing.
- Diamond wheels should always be dressed and maintained in good cutting condition.

- When using a belt sander for manual grinding and polishing operations, it is preferable to use a wet operation.
- When manually dry-belt sanding, caution should be given to the fact that some belt lubricants contain chloride contaminants.
- Both dry- and wet-belt seaming should be in a direction from back (paint surface) to front. Grinding or polishing wheels should be used in one direction only, either parallel with the edge (such as with a peripheral wheel) or from back (paint side) to front.
- Heat generated by sanding and swiping should be minimized to prevent damage to the mirror backing.
- If product applications call for the use of heat-treated mirror products, glass surface and edge fabrication must take place prior to the heat-treating in order to maintain proper surface and edge compression required for the safety glazing material. Silvering operations take place after heat-treating.
- As mirrors are handled following fabrication, do not slide mirror or glass surfaces over each other as permanent scratching or other damage may occur.
- Following fabrication, all mirror backing, edges and glass surfaces should be thoroughly and promptly washed and dried. It is very important that ALL traces of coolant and polishing compound are removed from the edges. If left in place, they are a contaminant that can cause black edge.
- For vertical wall applications whenever possible, retain at least one factory cut edge of the fabricated mirror for installation at the sill (bottom) where the mirror may be subject to condensation puddling.

Additional information on mirror products and applications including the Mirror Informational Bulletin - *Proper Procedures for Cleaning Flat Glass Mirrors*, are available on website of the Mirror Division (www.mirrorlink.org) and official website of the Glass Association of North America (www.glasswebsite.com).

The Glass Association of North America (GANA) developed this Mirror Informational Bulletin solely to provide general information as to proper procedures for fabricating silvered flat glass mirrors. The Bulletin does not purport to state that any one particular type of fabrication process or procedure should be used in all applications or even in any specific application. The user of this Bulletin has the responsibility to ensure the mirror fabrication guidelines from the mirror manufacturers are followed. GANA disclaims any responsibility for any specific results related to the use of this Bulletin, for any errors or omissions contained in the Bulletin, and for any liability for loss or damage of any kind arising out of the use of this Bulletin.

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