

GUARDIAN CLARITY™ ANTI-REFLECTIVE GLASS IN ARCHITECTURAL APPLICATIONS

INSTALLATION AND MAINTENANCE GUIDELINES

INTRODUCTION

Guardian Clarity™ anti-reflective glass is a high quality coated glass product that provides minimal reflectance and maximum transmission in the visible range.

The state-of-the-art coating has chemical and mechanical durability characteristics that make it suitable for use in a wide range of exterior and interior applications. The product passed the EN-1096-4, Class A certification for coatings which may face the outside environment in architectural applications. In addition to these, Guardian applies internal procedures for mechanical and chemical durability tests with requirements exceeding the above standard. Please follow the guidelines outlined below when cleaning Guardian Clarity anti-reflective coated glass. For the recommended installation situations please consult the Guardian Clarity product brochure or Guardian's Technical Advisory Center.

TRANSPORTATION OF PROCESSED GLASS

It is recommended to use a slot-racking system that prevents glass-to-glass contact when packing Guardian Clarity for shipping with the coating exposed. It is acceptable to stack individual lites of Guardian Clarity; however, care must be taken to ensure proper interleaving is used to minimize the potential for abrasion to the coated and uncoated surfaces.

During transportation it has to be ensured that the coating is not damaged from any contaminants or outdoor elements. (rain, dirt, gravel, etc.) Therefore, it is strongly recommended to use a closed transportation vehicle.

Immediately use water or the cleaning agents (listed in this document) to remove any dirt and debris from the coated surface if Guardian Clarity comes in contact with the contaminants or outdoor elements.

INSTALLATION

Generally, glass-to-glass contact should be avoided when handling the lites. If suction cups are used during handling and installation, it has to be ensured that the cups are clean, free of lubricants, and have suitable protective textile cover.

The Guardian Clarity coated surface should also avoid contact with silicon sealants in the visible area. When it is unavoidable, the sealant should be cleaned with diluted acetone.

In order to prevent damage of the coating, avoid the use of sharp and hard tools on the coating surface.

Also avoid contact with hard objects such as glass splinters, glass edges, metallic parts, abrasive particles, etc.

Always use separator material between individual panes of glass such as adhesive-free cork pads or acid-free paper (contact supplier for confirmation of acid content).

If the installation occurs during ongoing construction, the glass surface must be protected upon installation to avoid potential impact and damage to the glass.

In case the glass is delivered to the installation site with Guardian's original Temporary Protective Film (TPF) still present on one or more surfaces, this TPF-covered glass should not be exposed to sunlight for more than 2 to 3 weeks – depending on the intensity of sunlight – as the foil may leave some residues behind that could be difficult to clean.

Guardian Clarity anti-reflective coated glass (as any other glass, float or coated) can be damaged by run-off rainwater from facades when facing an outside environment, as for example in case of ground floor applications. To prevent this, a proper rain drainage system shall be designed and installed, as dissolved alkaline from various building materials may cause irreversible staining to glass.

Various stick-on advertisement labels or paints are not allowed to be used on the coating surface. We do not recommend the use of self-adhesive foils with glue, as these may diffuse certain chemicals when exposed to direct sunlight. Compatibility tests should be conducted before any protection foils are applied. It is recommended to

use non-adhesive electrostatic labels, which do not leave residue from glue, or marks behind.

For further details please contact your local Guardian Technical Advisory Center.

Important:

Due to the high transparency of Guardian Clarity, proper precaution should be taken to indicate the presence of the glass in such applications wherein accidental impact may result. Self-adhesive labels with removable adhesives should only be applied after compatibility testing to ensure that there is no coating damage. It is not the responsibility of Guardian to perform such tests.

MAINTENANCE*

It is recommended that all responsible personnel be trained in the proper cleaning and maintenance procedures of the Guardian Clarity coated glass.

Although environmental conditions vary, regular cleaning of the glass is recommended in order to maintain the anti-reflective effect. **When the coating is facing to outside environment**, it is recommended to clean the surface of the glass regularly. The frequency of the cleaning depends on how quickly the glass becomes dirty or stained. The benefit of the anti-reflective performance is greatest when the glass is clean.

Cleaning cloths and water should be changed frequently to avoid contamination and streaking of the coated surface.

Cleaning cloths should contain a liberal amount of detergent and be applied with low pressure on the coated surface.

Use a soft, lint-free cloth for proper drying.

GENERAL CLEANING GUIDELINES*

- **Use** mild, fast-drying household spray glass cleaning solutions with ammonia and water. Ammonia concentration not to exceed 1.5% of weight. We may recommend special glass cleaners for professional cleaning of the Guardian Clarity coated surface. For more information, contact us at information@guardian.com.
- **Use** a lint-free paper cloth that is non abrasive or a soft cotton cloth without seams, buttons, plastic or metal parts. The use of microfiber cloths on the long term is not recommended.
- **Pre-moistened** glass surface with water or cleaning solution to loosen dried dirt and debris before attempting to wipe it away – never scrape with a metal blade or tool.
- **Never** use abrasive household detergents as cleaning agents or any sharp tool which may scratch the coating or glass.
- **Never** attempt to remove debris/dirt from the glass by using a scraper or razor blade.
- **Never** allow water or cleaning solution residue to dry on the glass. Long-term exposure to acidic or basic cleaners may cause damage to the coated surface.
- **Never** trap abrasive particles between the cloth and the glass surface while wiping away the cleaning solution.

Guardian can recommend you special glass cleaners for professional cleaning of the Guardian Clarity coated surface.

For more information please contact your local Guardian Technical Advisory Center. Improper cleaning could negatively affect the optical properties and could void the product's warranty.

* We strongly recommend that you include these Installation and Maintenance guidelines into your product documentation.

Important advice:

Double-side coated Guardian Clarity provides a residual reflection of less than 1% (exact number depends on glass configuration and/or thickness) and provides a viewing experience through the glass that is virtually distortion free. However, under specific natural and artificial lighting conditions and depending on the viewing angles, a slight reflection may be seen by the naked eye. It is recommended that a sample is viewed in the actual location to understand which of these factors may be present in your particular application so that you confirm that the reflection criteria required for the project are met.

WARRANTY

The Installation and Maintenance Guidelines contained herein are for information purposes only and Guardian does not assume any responsibility for the accuracy or completeness hereof, unless otherwise stipulated by applicable law. It is the sole responsibility of the user to adequately inspect the Guardian Clarity anti-reflective coated products before each step of fabrication and prior to installation. Failure to apply professional standards, customary instructions and these Installation and Maintenance Guidelines will automatically void any warranty given by Guardian regarding Guardian Clarity products and no claim in relation to Guardian Clarity products will be admissible against Guardian if 1) the user's processing capabilities have not been certified by Guardian and 2) Clarity products are damaged in fabrication, handling or due to improper storage, installation or maintenance.

Guardian reserves the right to inspect any product claimed to be defective.

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For additional information regarding storage, handling, fabrication, limited warranty coverage or use of any Guardian glass product, please contact the Guardian Technical Advisory Center.

The products in this publication are sold subject to Guardian's standard terms and conditions of sale and any applicable written warranties. It is the responsibility of the purchaser to confirm that the products are suitable for their intended application in compliance with the applicable laws and regulations. Please contact your local Guardian representative to obtain any applicable handling and fabrication guides and for the most current product information.



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