SOLAR INNOVATIONS®
ARCHITECTURAL GLAZING SYSTEMS
22 YEARS
1998-2020

Maintenance & Care

Maintenance & care of the glass in your structure, windows, and doors will keep the view clear and maintain the aesthetics, but it will also help keep the aluminum clean by eliminating another outlet for dirty run-off to streak the finish. We recommend cleaning the glass on a cloudy or mild day to minimize streaking.

Build-up of dirt and pollutants on the surface can accelerate the weathering and corrosion of your structure's aluminum finish. Keeping the finish clean can help limit further and more costly maintenance in the future.

Glass Maintenance

The mixture includes:

- 1 gallon of water
- 2 ounces of vinegar (more or less may be needed based on the mineral content of your water)
- 1-2 drops of dish detergent (adding more will make the water too foamy and will not provide the desired result)

Apply the mixture with a soft sponge, and wash away the dirt. Use a rubber squeegee once washing is finished to remove excess moisture. It is not necessary to rinse the glass after washing, as this will only create streaks.

Maintenance & Care of cleaning your glass and finishes will vary according to your geographic location. Dirt and pollutants are more prevalent in urban areas than in rural areas and require more frequent cleaning. Avoid cleaning in extreme weather conditions, such as intense heat or intense cold.

Read the AAMA's Cleaning and Maintenance Guide to Glass Products

ATTATCHED TO END OF THIS DOCUMENT

Preventing Moisture

Properly maintaining a system can help eliminate the presence of moisture. Regularly checking and replacing the sealant within the system can ensure moisture remains outside the structure and prevent moisture issues before they occur.

Regular lubrication with a silicone spray or white lithium grease can help lubricate actuators and hinges in operational equipment. Tracks for operable doors and windows should be vacuumed out when dirt collects in the track and then lubricated with a Teflon or silicon spray.

Mold can be further controlled by taking the following precautions:

- Fix all leaks and seepage
- Put a plastic cover over dirt in crawlspaces to prevent moisture coming from the ground
- Use exhaust fans to move moisture to the exterior
- Turn off appliances, such as humidifiers or kerosene heaters, if moisture is present on glass
- Use dehumidifiers and air conditioners to reduce moisture in the air

Mold thrives when an organic food source is present, such as dirt, dust, or moisture. When mold becomes apparent, the first step is to find the source of growth and eliminate it. Mold can grow back in 72 hours under the right conditions. Controlling the moisture level in your environment will control mold growth and other unsightly conditions, such as condensation and water marks.

Aluminum Cleaning

Maintenance & Care of the aluminum should be done on a cloudy, mild day and preferably at the same time as the glass. First, flush the surface of the structure with clean water to remove loose debris and assist in loosening debris that is on the structure.

After flushing the surface, wash the aluminum using a sponge and mild soap or detergent that is safe for bare hands. A nylon cleaning pad may be necessary if the metal is heavily soiled. Be sure to thoroughly rinse the surface with clean water after washing.

Mineral spirits may be used to remove grease, sealants, or caulking compounds from the surface. Use a dilute solution of under 10% muriatic acid to remove concrete that is on on the aluminum.Remove excess silicone with a razor blade, following an isopropyl alcohol wipe down to remove residue.

Read the AAMA Aluminum Cleaning and Maintenance Guide

Care for your Finishes

A structure's finish requires cleaning and maintenance prior to, during, and after installation. The buildings themselves are highly durable to withstand severe environmental elements; however, their surface finishes can deteriorate over time. To prevent this, Solar Innovations®has compiled the following care and maintenance guide for the preservation of your finish.

Anodized Aluminum

Anodized aluminum is exceptionally resistant to corrosion, discoloration, and wear; however, its surface finish can be marred by harsh chemicals, abuse, or neglect.

— Cleaning Schedule

Clean the aluminum as soon as the product is installed to remove construction and environmental soils and discolorations. All exterior surfaces collect varying amounts of soil and dirt, depending on their finish and environmental conditions of their location. These factors determine the type and frequency of cleaning required.

— Cleaning Procedures

To clean your anodized structure, start at the top, and proceed downward. Rinse areas the width of the stage or scaffolding with a forceful water spray.

— Removing Light Soils

- Flush the surface with water using moderate pressure.
- If soil is still present after the surface dries, scrub the surface with a brush or sponge while continuously spraying it with water.
- If dirt persists, use a mild detergent with a brush or sponge.
- Thoroughly rinse the surface with clean water.
- Use MEK (Methyl Ethyl Ketone) or a similar solvent to remove oil, wax, polish, etc.

— Removing Heavy Soils

- Thoroughly soak the pad with clean water or mild detergent.
- Hand scrub the surface with uniform pressure in the direction of the metal grain.
- Scrub with a nylon-cleaning pad with a surface protecting material for stubborn stains.
- Thoroughly rinse the surface with clean water.
- Let the surface air dry or wipe it down with a lint-free cloth.
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— Removing Extreme Soils

- When using power tools, continually flush the surface with clean water or a mild detergent to provide lubrication and a medium for carrying away the dirt.
- Rinse the area with clean water, and thoroughly scrub it with a stiff bristle brush after it has been washed by a machine.

- Air dry or dry wipe the surface.

— Cleaning Precautions

- Never use aggressive alkaline or acid cleaners.
- Avoid cleaning hot or sun-heated surfaces, since chemical reactions will be highly accelerated and cleaning non-uniformity could occur.
- Strong organic solvents may extract stain-producing chemicals from sealants and may affect the function of sealants.
- Do not use strong cleaners on glass and other areas where the cleaner may come in contact with the aluminum.
- Excessive abrasive rubbing should not be used, since it could damage the finish.
- Never use MEK or similar solvents on anodic finishes protected by clear organic coatings unless the coating has deteriorated.
- Be sure to exercise extreme caution when using solvents, because they have the potential to damage organic sealants, gaskets, and finishes.
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Powder Coatings

Over time, powder coatings may show signs of weathering, such as loss of gloss, chalking, and slight color change from being exposed to the elements. Cleaning these structures must be according to the outlined specifications in order to maintain their finish.

— Cleaning Schedule

Regular cleaning is required at least once a year. A simple regular cleaning will minimize the effects of weathering and remove dirt, grime, and other build-up. Regular cleaning frequency depends on factors including location, atmospheric pollution, and building protection.

— Cleaning Procedures

Clean the product as soon as installation is complete to ensure construction materials, such as concrete, plaster, and paint splashes are gone before they have a chance to damage the surface. Failure to remove these materials at this early stage will require the use of potentially damaging aggressive cleaning materials and techniques.

— Clean according to the following guidelines:

- Use clean water with slight additives of neutral washing agents (pH 5-8) with the aid of non-abrasive soft cloths, rags, or industrial cotton.
- Use mineral spirits free of aromatics (chemical compounds) and alcohol to remove greasy, oily, or sooty substances. Adhesives, silicone cartouche, and adhesive tapes can also be removed this way.
- Joint sealants and other aids that come into contact with coated surfaces must be pH-neutral and free of paint-damaging substances, and they must first be subject to a suitability test.
- Rinse with clean cold water immediately after every cleaning process.
- The entire cleaning process can be repeated if necessary after 24 hours.
- Take a suitability test for metallic powder coatings due to the danger of changes in a color tone.
- Avoid strong rubbing when cleaning the surface.
- Do not use detergents at temperatures higher than 77 degrees Fahrenheit.
- The maximum exposure period of detergents must not exceed one hour.

— DO NOT USE:

- Solvents containing ester, ketones, alcohol, aromatics, ethylene glycol, or halogenated hydrocarbon.
- Scratching or abrasive agents.
- Strong acids, alkaline detergents, or similar products.
- Detergents of unknown composition.
- Stream-jet devices/power cleaning tools.

— Cleaning Precautions:

- Wash with plain water using hose or pressure spray equipment.
- Use heavy duty dry powdered detergent combined with 1/3 cup of water when surfaces are heavily soiled.
- Use soft bristled brush to make cleaning easier.
- Rinse with clean, cold water immediately after cleaning.
- Avoid strong solvent and abrasive-type cleaners.
- Remove heavy soils, such as oil, grease, tar, wax, etc., by wiping with a cloth soaked in mineral spirits. Wipe only contaminated areas; follow with detergent cleaning and rinse thoroughly.

Each coating is different; therefore **it is essential to follow the exact specifications outlined for each type of finish**. Properly cleaning and maintaining your structure’s surface will minimize the need for touch-ups in the future and extend the lifetime of the building.

If you have any questions about the care of your Solar Innovations® system, please contact customer service for more information.

Designed to drain water

Windows, doors and skylights often have a simple drainage system or "weep" system designed into the frame and/or weather seal system to allow for accumulated water to drain to the exterior of the building. These water drainage pathways must be kept clear and clean for the window or door to operate correctly.

- Some products are designed with sloped sills to allow for water evacuation. It's normal for water to accumulate in the sill or track area with wind-driven rain. As water builds up or outside wind pressure subsides, the product is designed to allow water to drain to the exterior as long as the weep system is clear.
- Keep sill or track areas clean of dirt or debris.
- Make sure that outside and inside weepholes and sill area are kept clear of any dirt, sand, stucco, paint, sealants, roofing cement or any other building materials. Use a small, soft bottlebrush or dry paint brush to clear openings.
- If the weepholes contain insect screening consult your manufacturer's cleaning instructions.
- Baffles on weepholes should move freely, to allow water drainage and help reduce air infiltration.

Understanding moisture

Moisture condensation on interior window, door and skylight surfaces (glass/glazing, frame, etc.) is a natural occurrence if the interior relative humidity is too high, particularly in very cold climates.

- Condensation on the inside surfaces of a window, door or skylight is the result of interior air with a high moisture content (relative humidity – RH) contacting lower temperature surfaces on the glass or frame. The higher the interior air RH and/or the lower the temperature of the interior surfaces, the greater the potential for condensation to occur.
- Today's buildings are built "tighter" to reduce extraneous air exchange between the interior and exterior. This can lead to excessive moisture being trapped within the building envelope.
- Excessive interior humidity can lead to structural damage and health concerns if high moisture levels are sustained inside wall cavities. Wall deterioration, mold and mildew can result.
- Integrated window ventilators and air exchange devices can increase building air changes and help vent excessive humidity. Open windows, doors and skylights whenever practical or possible to allow interior moisture to escape.
- On rare occasions, a window, door or skylight in a cold climate may have condensation on the exterior of the unit. This is due to radiant cooling of the exterior lite of glass in very high performing products and is not a cause for concern. In extreme conditions, moisture may freeze to form ice that can limit operability of the unit. In hot, humid climates, exterior condensation may also be prevalent, particularly in the early morning, due to the cooling of the glass from interior air conditioning. If you are experiencing this, replacing the product with a higher performing alternative may lessen or prevent further occurrence.

Understanding color retention

Many factors can affect the color and finish of windows, doors, skylights and hardware. AAMA has established an industry color variation standard for factory applied paints and coatings on aluminum (excludes anodizing), fiberglass, vinyl, wood and cellulosic composites and other materials. The AAMA standard provides a method of measuring your window, door and skylight products' compliance with color variation requirements.

AAMA/Industry Color Standard

Some degree of color variation is allowed for by industry standards. These standards take into account natural aging due to sunlight, weathering and other factors describing the allowable change in color in ways that can be scientifically measured.

As an example, in the chart below, the potential color variation along one spectrum shows the point at which the AAMA standard for white vinyl is set. Vinyl frames, cladding or components may be affected by solar radiation or chemicals that can cause color variation. The chart below shows color variations when vinyl window, door and skylight frames are exposed to the intense sunlight and dry climate of the Arizona environment. The left side of this chart shows color variations within AAMA standards.

Additionally:

- Chemicals can cause discoloration of materials.
- In dry climates with high levels of solar energy, a color variation (see comments above) may sometimes occur.
- A color variation has no effect on strength or structural integrity of the frame material.

Caring for your plastic glazed skylights

Plastic skylight glazing can be made from a number of different materials. Just like the plastic lenses in eyeglasses, plastic skylight glazing requires special care for best performance. Follow the manufacturer's instructions for cleaning.

- Plastic glazing is susceptible to scratching, abrasion and other damage by certain solvents and cleaning chemicals. Avoid the use of gasoline, acetone, ammonia, carbon tetrachloride or denatured alcohol. Also avoid the use of abrasives, abrasive pads, paper towels or high alkaline cleaners, scrapers, squeegees or razors as they can cause damage.
- Start the cleaning process by rinsing the plastic glazing with clean, warm water.
- To remove loose dirt or light soil, use a solution of mild soap and water. Apply with a soft cloth and rinse well with clean lukewarm water. To avoid water spots, blot dry with a chamois cloth.
- To remove foreign material like protective paper, glazing compound, caulking, roofing tar, grease or fresh oil paint, carefully use cleaners or solvents approved by the skylight manufacturer and apply with a soft cloth to the affected area.
- Apply cleaners or solvents away from direct sunlight and avoid cleaning at elevated temperatures. Then, immediately clean the skylight with mild soap and water as outlined above. Dispose of cleaning materials safely and properly.

Please note: Skylights are designed to withstand typical environmental conditions. Skylights are not intended to withstand human impact or falling objects. While some skylights are more impact resistant than others, never walk on and always exercise caution when near them. Access should be restricted only to authorized individuals who have been adequately cautioned as to the location of the skylights and informed of the warning above. You may also choose to provide protective guardrails or screens around the skylights.

AAMA–an innovative industry leader

AAMA is the source of performance standards, product certification and educational programs for the window, door and skylight industry.[SM]

Since 1936, the American Architectural Manufacturers Association (AAMA) has become recognized for the development of standards that provide third-party validation of product performance and quality. Today, AAMA's active membership includes innovative window, door and skylight manufacturers, component and material manufacturers and service and consulting companies dedicated to creating standards that help ensure that AAMA-certified products perform to the needs and expectations of home and business owners.

AAMA's gold label – a mark of certified quality

Look for the AAMA gold label as your standard for windows and doors and their components. Those items earning the AAMA gold label have been certified to meet rigorous performance standards. You can be confident when you choose AAMA certified products and components; a sample of each product design is tested and has proven to meet stringent AAMA standards.

AAMA provides this information as a general guide to caring for your windows, doors and skylights to enable you to receive the most enjoyment and best performance from these products.

Consult and follow your manufacturer's warranty, owner's manual or website for details on caring for your specific products and materials.

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Caring for Your Windows, Doors and Skylights

Windows, doors and skylights enhance your view of the world. They also let in daylight and fresh air, as well as protect you from the elements. Proper care and maintenance will help with optimal performance of these products.

American Architectural Manufacturers Association

How long will your products last?

How long will a window, door or skylight last?

The lifespan and performance depend upon many factors including but not limited to:

- Component and manufacturing quality
- Building design, construction practices and product installation
- Climate conditions and exposure
- Proper care and maintenance
- Replacement of worn parts

Tips on caring for your products

It's important to read and understand your manufacturer's warranty and have your windows installed according to the manufacturer's instructions for best performance.

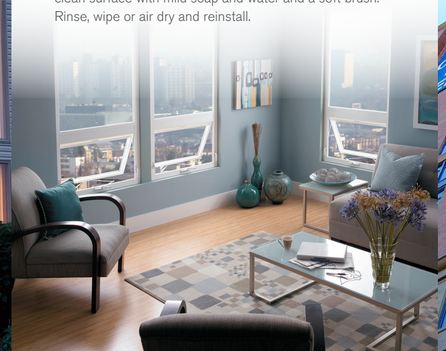
- **Consult with the manufacturer's specific instructions, especially before using potentially abrasive or caustic cleaners or solvents.**
    - Generally, when cleaning glass, it's a good idea to use a vinegar-based glass cleaner or mild dish soap and water with a soft, lint-free cloth or paper products. You may carefully use a squeegee to dry.
    - Petroleum-based cleaners or solvents should not be used as they can streak the glass and weaken the seal between the glass and frame.
- Applied film should only be added with approval from the window, door or skylight manufacturer. The addition of after-market products may void the original manufacturer's warranty or alter product performance.
- Carefully clean the frame surfaces as directed by the manufacturer. If you live in an area with saltwater or acid rains, it's a good idea to hose off the exterior of your windows and doors several times a year with water to help protect them from the harsh elements. The use of a razor blade, steel wool, putty knife or abrasive pad may damage your window.
- Clean tracks and weepholes using a dry paint brush or vacuum brush attachment. The use of oil-based lubricants can damage the weephole. Weepholes help channel water out of the window door or skylight, so be sure they are free of debris.
- Check weatherstripping, hardware and caulking and replace broken, worn or damaged parts. Poor performing components can decrease security or energy efficiency.
- Reduce the risk of an unsecure environment or loss of energy efficiency by leaving windows, doors and skylights closed and locked when not in use for ventilation.
- Choose windows, doors and skylights designed and sample-tested to meet stringent air, water, structural, forced entry and thermal performance standards. Look for the AAMA Gold Label to verify this testing and certification.

Tips for cleaning glass

Glass care today is more important than ever.

Insulating, low-e or heat reflective glass requires proper maintenance to ensure best performance over the life of the product.

- Never use a razor blade, putty knife, steel wool, abrasive pad or anything that may scratch the glass surface.
- Never use a pressure washer or high-pressure sprayer to wash or rinse windows, doors or skylights as this can dislodge seals and gaskets and damage frame components.
- Clean glass with a vinegar-based cleaner or mixture of a mild soap or detergent and water. Rinse completely with clear water, then wipe dry with a soft cloth or a squeegee to help avoid water spots. Always test cleaners in an inconspicuous area first.
- Avoid washing glass in direct sunlight to reduce streaking of the glass.
- Avoid abrasive, petroleum-based or caustic cleaners because they may cause permanent damage to the finish or the glass.
- When painting, staining or finishing sash or frame components adjacent to glass surfaces the use of masking tape on the glass is recommended to protect it from splatter or overcoat that may require excessive clean-up.
- Clean screens by gently vacuuming with a brush attachment. Or, remove for cleaning and gently vacuum or wash on a flat, clean surface with mild soap and water and a soft brush. Rinse, wipe or air dry and reinstall.



Frame cleaning tips

Keeping your windows, doors and skylights clean applies to more than just the glass.

Try these helpful cleaning and maintenance tips for your window, door and skylight frames.

- Vacuum dirt from sill and track areas before washing.
- Rinse completely with clear water and wipe dry.
- Avoid abrasive or caustic cleaners or solvents that might cause permanent damage to the frame finish.
- As with glass, a mild, nonabrasive soap or detergent is usually safest for most dirt and stain removal. Always test cleaners in an inconspicuous area first.
- Check to ensure that drainage or weepholes are always clear of dirt or obstructions—both inside and outside the window or door in the bottom of the frame. Note: If the window is "stacked," there may be weepholes between units.
- Windows, doors and skylights can be vulnerable to water leakage at the corners if not properly maintained. If a crack appears, it should be sealed according to the manufacturer's instructions.

Additional maintenance tips

To help ensure that your windows, doors and skylights smoothly and easily open, close, lock and unlock for years to come, refer to your owner's manual or manufacturer's website. In addition, follow these helpful maintenance tips.

- Moving hardware parts, tracks and rollers should be lubricated periodically in accordance with the manufacturer's maintenance instructions. In salt-air environments this may need to be done more frequently. Consult your manufacturer's warranty for specific details.
- Inspect your product regularly according to manufacturer's recommendation. Repair or replace broken, worn or damaged parts. Poor performing components can decrease security or energy efficiency. Some examples are:
    - Cracks, dents or marred surfaces (for cracked or broken glass/glazing call your local supplier for replacement)
    - Moisture or fogging between glass panes (call your local supplier for replacement)
    - Weatherstripping and caulking that is missing, cracked, brittle or discolored should be replaced
- Rolling screen doors may be adjusted to run smoothly. Use a screwdriver—often in all four corners—to make adjustment. You may also adjust the lock strike placement by loosening screw fasteners, moving the strike plate and retightening to check for proper lock operation.