

Glass Cleaning: Marine Vessel Owners

Area Affected: Marine Laminated Glass. Marine Vessel Owners routine cleaning practices.

Dates Affected: After glass installation have been completed

Summary: Vessel owners/managers must follow glass manufacturers cleaning instructions when maintaining clean glass conditions. If routine cleaning of marine laminated safety glass occurs with a wrong product, damage to the sealant can occur that will eventually cause delamination through failure of the sealant material. Cleaning products need to be compatible with the laminated glass window system and sealants protecting the weather tightness of the system. Exposure to various solvents may lead to degradation in the sealant, delamination of the glass or other aesthetic issues.

Description: The majority of glue-in place window systems installed on marine vessels use a sealant that is applied around the glass perimeter known as a tip-out. This material serves to protect the glass edges and shields the window system primary caulk from direct contact with water. Laminated glass exposed to moisture against the interlayer material is likely to delaminate in a shorter time period due to this harsh marine environment.

Negative Interactions: There are some observed signs that show when a tip-out sealant is not resistant due to a certain cleaner or solvent that it came in direct contact with. If the tip out sealant shows any of the signs listed below, it must be replaced immediately to avoid eventual damage to glass in a compromised window system:

- Sealant shows less gloss than at its original state
- Sealants surface becomes chalky or begins to crack
- Sealant begins to turn spongy or tacky
- Sealant begins to discolor





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Qualified Installer: If any of the conditions listed above are seen in the tip-out sealant on your vessel, either contact ProCurve to arrange for an on-site inspection to assess the tip-out sealant condition or connect with a qualified installer that is familiar with your needs and concerns to address what should be done.

Maintenance Recommendations: In order to ensure that the glass cleaner is a safe product to use on both the laminated safety glass and the tip-out sealant, always contact either the sealant manufacturer or ProCurve Glass before proceeding with the product. ProCurve Glass also recommends that an annual or semi-annual tip-out inspection be performed to be certain that the tip-out sealant is functioning properly. For further details regarding this maintenance inspection, please refer to our *Caulk/Sealant Service Maintenance Inspection* bulletin.

GLASS CLEANING MATERIALS APPROVED WITH LAMINATED GLASS: As dirt and residue appear, interior and exterior glass surfaces should be thoroughly cleaned. Visible staining from various materials should be washed off as soon as possible. Before proceeding with cleaning, determine whether the glass is clear, tinted, reflective, or low-E. Surface damage is more noticeable on reflective glass as compared with the other glass products. If the reflective surface is exposed, either on the exterior or interior, special care must be taken when cleaning, as scratches to the reflective glass surface can result in coating removal and a visible change in light transmittance. Cleaning tinted and reflective glass surfaces in direct sunlight should be avoided, as the surface temperature may be excessively hot for optimum cleaning. Cleaning should begin at the top of the glass to reduce the risk of leaving residue and cleaning solutions on glass. Cleaning procedures should also ensure that the wind is not blowing the cleaning solution and residue onto already cleaned glass.

Cleaning should begin with soaking the glass surfaces with clean water that is not hard water. A soap solution to loosen dirt or debris should be used. It is okay to use a mild, non-abrasive window washing solution along with a brush, strip washer or other non-abrasive applicator so long as it does not create marks on the glass. Immediately following the application of the cleaning solution, a squeegee should be used to remove all of the cleaning solution from the glass surface. Care should be taken to ensure that no metal parts of the cleaning equipment touch the glass surface and that no abrasive particles are trapped between the glass and the cleaning materials. Make sure that all water and cleaning solution residue are dried from the window caulk/sealant perimeters to avoid the potential for deterioration of these materials as the result of the cleaning process.

It is strongly recommended that when cleaning the glass that you start in a small area first, then stop and examine the surface for any damage to the glass and/or reflective coating. The ability to detect certain surface damage, i.e. light scratches, may vary greatly with the lighting conditions. Direct sunlight is needed to properly evaluate a glass surface for damage. Scratches that are not easily seen with a dark or gray sky may be very noticeable when the sun is at a certain angle in the sky or when the sun is low in the sky.



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Quick Reference Guide to Cleaning Glass – The following Do's and Do Not's are offered as a supplement to the Glass Association of North America (GANA) Glass Information Bulletin – Proper Procedures for Cleaning Architectural Glass Products:

The following are things to DO:

- DO clean glass as soon as dirt and residue appear visible.
- DO determine if coated glass surfaces are exposed
- DO exercise special care when cleaning coated glass surfaces
- DO avoid cleaning tinted and coated glass surfaces in direct sunlight
- DO start cleaning at the top and continue to the bottom.
- DO soak the glass surface with a clean di-ionized water and dilute soap solution to loosen dirt and debris
- DO use a mild, non-abrasive commercial window cleaning solution
- DO use a squeegee to remove all of the cleaning solution
- DO dry all cleaning solution from window gaskets, sealants and frames
- DO clean one small window area and check to see if procedures have caused any damage
- DO be aware of any follow the glass supplier's specific cleaning recommendations
- DO caution other workers against allowing other materials to contact the glass
- DO watch for and prevent conditions that can damage the glass
- Do read the entire GANA bulleting on glass cleaning before starting to clean glass

The following are things to NOT do:

- DO NOT start cleaning without reading the entire GANA Bulletin on glass cleaning
- DO NOT use scrapers or any size or type for cleaning glass
- DO NOT allow dirt or residue to remain on glass for an extended period of time
- DO NOT begin cleaning glass without knowing if a coated surface is exposed
- DO NOT clean tinted or coated glass in direct sunlight
- DO NOT allow water or cleaning residue to remain on the glass or adjacent materials
- DO NOT begin cleaning without rinsing excessive dirt and debris
- DO NOT use abrasive cleaning solutions or materials.
- DO NOT allow metal parts of cleaning equipment to contact the glass.
- DO NOT trap abrasive particles between the cleaning materials and the glass surface
- DO NOT allow other workers to lean tools or materials against the glass surface
- DO NOT allow splashed materials to dry on the glass surface.