

Field Application of Materials to Glass

Vitro Architectural Glass, (formerly PPG Industries, Inc.) reaffirms its longstanding policy of not recommending the field application of any material, film, or coating to glass. *The application of such materials will void any and all applicable Vitro glass and coating warranties.*

The field application of any material to the surface of the glass may have deleterious effects on both the appearance and performance of the glass. These effects include, but may not be limited to:

- Damage to the surface or edge of the glass that can lead to glass breakage.
- Increased glass temperature due to the absorption and reflection of the applied material that can lead to glass breakage due to thermal stresses.
- Increased glass and airspace temperatures that can negatively affect the performance of insulating glass units.
- Aesthetic issues related to peeling, cracking, or other changes in the applied material.

Questions regarding specific materials that are being considered should be referred to the manufacturer of that material.

Temporary Applied Materials to Protect Glass during Construction:

Preventing foreign materials from contacting the glass throughout the construction process is the best solution to achieve pristine installed glass. Historically, prevention of contact of foreign materials and resulting glass damage has been managed throughout the construction process without the use of temporary applied materials; however, in today's architectural construction environment the parties responsible for the success of a given project may choose to provide additional protection of glass surfaces via a temporarily applied material. There are both pros and cons to be considered by the responsible parties of the project prior to the use of temporary applied materials to protect glass at construction sites. These materials include, but are not limited to: plastic films and spray-on peel-off materials. Vitro has limited experience with temporary applied materials designed to protect glass during construction and therefore cannot recommend any specific products in this use.

The intended benefit of the use of temporary protective films is to provide a layer of sacrificial protection of the glazing from exposure to dust, dirt or other elements related to the construction environment.

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The responsible parties must weigh the protection benefit against potential negative effects and take steps to mitigate against these effects as directed by the film or material manufacturers. The effects to be considered include, but may not be limited to:

- Thoroughly evaluate the impact of the applied material on safe glass handling procedures. I.e. Glass may not be able to be handled in a safe manner via the surface with the material applied.
- When temporarily applied materials are utilized, all construction trades must continue to follow good construction practices, including preventing foreign materials from contacting the glass.
- Increased glass temperature due to the absorption and reflection of the applied material that can lead to glass breakage due to thermal stresses. While all protective films will elevate the risks of differential thermal stress breakage, opaque and colored films will introduce elevated thermal stress loads in association with their levels of solar absorption and reflection.
- Increased glass and airspace temperatures that can negatively affect the performance and or longevity of insulating glass units.
- Temporary applied materials that remain on the glass for too long may become embrittled and be very difficult to remove.
- Moisture of any type between the film and glass can quickly lead to permanent glass staining. Be aware that bubbles, gaps, wrinkles, etc. in temporary applied materials may provide areas where moisture can collect near the glass.
- Compatibility of protective films, film adhesives or other protective materials with all elements of the glazing system and adjacent construction materials should be verified in order to prevent potentially adverse chemical interaction issues. The burden of proof regarding compatibility or fitness for use lies with the manufacturer of the applied material.
- Certain glass types, such as but not limited to glass with an exposed first surface coating, may require differential procedures and care. Here again, the burden of proof regarding compatibility or fitness for use lies with the manufacturer of the applied material.

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In addition to taking steps to mitigate the above potential effects, if temporary protective films are implemented, it is recommended that:

- They be as clear as possible to help limit the extent to which they intensify the differential thermal stress loading of the glazing that can lead to glass breakage.
- Follow the material manufacturer's recommendations for application and removal of the material.
- Once the construction exposure conditions related to the use of temporary protective films are no longer present, the films must be immediately removed.

The use of Temporary Applied Materials to Protect Glass during Construction will not, of itself, impact the Vitro Float Glass or Sungate® / Solarban® Coated Glass Warranty.

Vitro assumes no responsibility for glass breakage, improper usage, failure of Product on account of faulty installation or building construction or design, improper handling or failure to follow Vitro's instructions regarding the Vitro glass. Further, Vitro assumes no responsibility for scratches or abrasions of any kind, including without limitation, those which may occur as a result of abnormal weather conditions, if abrasive cleaners are used on the surfaces, or if acids, alkalis or other chemicals are used to wash the glass or surfaces around the glass.

Additional glass cleaning recommendations are offered by Vitro Architectural Glass in Technical Documents: *TD-142 Glass Cleaning Recommendations & TD-107 Residue on Glass*. Further recommendations from the Glass Association of North America, GANA and the International Window Cleaners Association, IWCA are available in the joint GANA – IWCA bulletin: *Proper Procedures for Cleaning Architectural Glass Products* available from both the GANA and IWCA web-sites.

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HISTORY TABLE		
ITEM	DATE	DESCRIPTION
Original Publication	10/15/1975	Technical Services Memo
Revision 1	07/26/2005	Transferred to TD-139
Revision 2	02/02/2017	Added Temporary Applied Materials Section and updated to Vitro Format

This document is intended to inform and assist the reader in the application, use, and maintenance of Vitro Flat Glass products. Actual performance and results can vary depending on the circumstances. This document or information contained within is not a modification of standard warranties or an additional warranty of any kind. **Vitro makes no warranty or guarantee as to the results to be obtained from the use of all or any portion of the information provided herein, and hereby disclaims any liability for personal injury, property damage, product insufficiency, or any other damages of any kind or nature arising from the reader's use of the information contained herein.**