NSG GROUP

Technical Bulletin

ATS-113
04/2025

FIELD APPLIED PLASTIC FILMS AND COATINGS ON VISION GLASS

On occasion, films of polyester and other materials are applied to either surface of glazed vision glass. Most often these materials are intended to control solar heat and glare. Often these films are applied onto existing annealed glass products without Pilkington North America, Inc.'s knowledge or approval. The application of a film or coating can in some circumstances cause or contribute to glass breakage or, in other cases, lead to IG seal failure. Some of the ways this may occur are as follows:

1. Films or coatings used for solar heat control typically absorb and reflect a large portion of the sun's energy. This can cause critical thermal stresses at the glass edge resulting in glass breakage. Such applications should be reviewed for thermal stress with the film or coating supplier.
2. In general, solar control films or coatings should not be field applied to **annealed, single glazed, solar control glass** because of the increased risk of thermal failure. The application of solar control films or coatings to annealed bronze, blue-green or grey heat-absorbing glass up to ¼" thick, or to clear glass thicker than ½", should be reviewed carefully with the film supplier. (Applying a solar control film to tinted glass greater than ¼" thick will typically exceed the allowable thermal stress for annealed glass). The review should include specific glazing conditions which exist on the project such as shadow conditions on the glass, thermal isolation of the glass in the glazing channel, the amount of cover on the glass edge, placement of blinds or drapes, and quality of edgework on the existing glass. Application of sun control films to a heat-treated (heat-strengthened or tempered) glass product, which has an inherent resistance to increased thermal stress, is generally acceptable from a glass strength viewpoint.

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3. Sun control films or coatings should not be field applied to the room-side surface of **any type of annealed insulating glass** without careful review and inspection by the film or coating supplier. These films/coatings cause the inboard lite of glass to absorb a significant amount of the sun's energy. This can easily lead to breakage from thermal stresses unless the glass has been heat-treated. For some types of films/coatings and glass, both lites of glass may need to be heat-treated even though the film/coating is only on the inboard pane.
4. The application of solar control films to the room-side surface of an IG unit only reduces solar glare. It does little to reduce solar heat gain, as shown by the small change in the Solar Heat Gain Coefficient.
5. The application of heat absorbing films or coatings to insulating glass will raise the sealant temperature on sunny days. Some all-butyl sealant systems are not structurally stable at high temperatures and can allow spacer movement or migration leading to IG seal failure.
6. When the application of any film is being considered, the film manufacturer or a factory-authorized dealer must be consulted for guidance. They may be able to recommend the proper choice of coating to minimize the chances of glass breakage. Good practice would be to obtain specific recommendations and assurances in writing before proceeding with the application of the film.
7. Films should never be applied to the room-side surface of IG units with a surface 4 Low-E coating. Applying a film on top of a Low-E coated surface will change the surface properties and negate the intended thermal performance benefits provided by the Low-E coating.

Clear plastic security films for glass particle retention in the event of breakage, generally do not absorb much solar energy and can often be safely applied. Note that over half the sun's energy is in wavelengths that are invisible to the human eye. A film that appears clear and colorless could still have significant solar absorption. The use of such films must be reviewed with the film supplier for thermal stress and breakage risk before application.

Since the application of a solar control film is beyond the control of Pilkington North America, Inc., Pilkington will not accept responsibility for glass performance following the application of **ANY** field-applied film or coating on Pilkington products. Pilkington does not provide a warranty against glass breakage, however caused.

The information contained in this bulletin is offered for assistance in the application of Pilkington North America Inc. flat glass products, but **IT DOES NOT CONSTITUTE A WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE**. Actual performance may vary in particular applications.

Change Summary	Date
Original	01/13
Film Application to Surface 4 Low-E	4/25

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