



VIRACON®
GLASS IS EVERYTHING™



T E C H T A L K

F I E L D - A P P L I E D C O A T I N G S
A N D F I L M S O N G L A S S

FIELD-APPLIED COATINGS AND FILMS ON GLASS

This Tech Talk provides you with information on field-applied films and coatings for architectural glass to help prevent glass breakage. For more information on this subject, call Viracon's Technical Services Department at 800-533-2080.

Effects on Glass

SOLAR CONTROL FILMS AND COATINGS

There are times when the type of glass selected for a building does not adequately control solar heat gain or provide thermal or visual comfort. To address these issues, reflective or heat-absorbing films or coatings are often applied to the glass after it is installed. The most commonly used materials are polyester films.

These films and coatings are always applied to the roomside glass surface. They can be very effective in improving thermal comfort and reducing objectionable glare by altering the thermal characteristics of the glass to which it is applied. Reflective films absorb a high percentage of solar radiation and reflect a portion of solar radiation.

The increased absorption caused by the film increases the thermal stresses within the glass under sunlit conditions. Since the glass characteristics have been altered, the adequacy of the glass must be reevaluated based on its modified properties.

For example, if a pane of 1/4" gray annealed glass is installed in a curtainwall or window application and heat-reflecting or absorbing coating or film is applied to the inboard surface, increased thermal stresses may cause glass breakage. This "new" product would need to be heat-strengthened or tempered.

SECURITY/BLAST-RESISTANT FILMS

Building owners are increasingly looking for products that provide their building an added level of "attack" resistance. Penetration resistance and anti-shatter characteristics are critical when looking at the glass component of a building envelope. Shrapnel, such as flying broken glass, can often cause the most damage and injury in a blast or impact attack.

To address these issues, security/blast-resistant films are often applied to the roomside glass surface after it has been installed. The most common is polyester film, which can be effective in improving penetration-

resistance, as well as reducing the probability of flying glass.

Like solar control films, applied security films can also alter the thermal characteristics of the glass, making it necessary to reevaluate the glass.

Installers of security films need to carefully evaluate the performance specifications of the applied film. In some cases where highly explosive devices are a threat, film may not provide the desired protection or results. Whether applied to the daylight opening or anchored to the framing system, film will influence the performance characteristics.

Guidelines

APPLICATION GUIDELINES

Because of risks associated with field application of films and coatings, Viracon discourages their use without careful consideration. The supplier and applicator of the film or coating is responsible for evaluating the applied material and its possible adverse effects on the glass. Viracon does not assume responsibility for problems created by or associated with the application of after-market coatings or films.

The following items should be evaluated:

1. All glass plies within the unit should be heat treated in order to resist potential increased thermal stresses placed on the glass with the addition of an applied coating or film.
2. The film should only be applied to an uncoated glass surface and the film's adhesive must be compatible with the glass surface. Specifically, alkaline adhesives must be avoided.
3. The film should allow the glass to deflect normally under wind loads and temperature changes.

Field applied coatings or films on uncoated glass do not affect Viracon's standard warranties.

Adherence to the precautions noted in this Tech Talk will help minimize the chances of field problems. However, there may be other reasons than those cited for limiting field application of films and coatings. There also may be further exceptions for special circumstances. If either of these appear likely, contact Viracon's Technical Services Department.

Glass Solutions

THE LEADER IN GLASS FABRICATION

As an international company, Viracon offers the most complete range of high-performance architectural glass products available worldwide. Since 1970, Viracon has expanded its facilities to perform more glass fabricating processes at a single site than any other fabricator in the world. Our state-of-the-art tempered, laminated, security, insulating, silkscreened and high-performance coated products give you the choices you need from one single source. This single-source responsibility is evident in our complete line of product offerings, technical expertise, design assistance and responsive customer support.



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800 Park Drive, Owatonna, MN 55060
800.533.2080

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VTT-004C VRJC0604_Rev.0515