INTERNATIONAL WINDOW FILM ASSOCIATION®

# Architectural Visual Inspection Guideline For Applied Window Film

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1. Installed film on flat glass surfaces is not expected to have the same level of visual quality as glass. The following criteria apply to the installed film only and not to any defect inherent in the glass.

2. Installed film has a discrete time for full adhesion to be effected since installation utilizes a detergent solution in the water to float the film onto the glass: the excess water is squeegeed out, but inevitably residual water will remain between the film and glass. The time to achieve full adhesion is often referred to as "the adhesive cure time". Adhesion will be increasing from a lower value during this time. Visual and adhesive cure time is related to thickness of the film and various metallic coating on the film. Typical visual cure times may be extended or shortened according to climatic conditions.

3. Inspection for optical quality can be made before full visual cure is attained. Table 1 provides a guide for typical visual cure times. It should be noted that effects during cure, such as water bubbles, water distortion, and water haze are not to be regarded as defects.

4. The glass with applied film shall be viewed at right angles to the glass from the room side, at a distance of not less than 6 feet (2 meters). Viewing shall be carried out in natural daylight, not in direct sunlight, and shall assess the normal vision area with the exception of a 2 inch (50mm) wide band around the perimeter of the unit.

5. The installation shall be deemed acceptable if all of the following are unobtrusive (effects during visual cure should be disregarded): Dirt Particles, Hair and Fibers, Adhesive Gels, Fingerprints, Air Bubbles, Water Haze, Scores and Scratches, Film Distortion, Creases, Edge Lift, Nicks and Tears. Inspection may by made within 1 day of installation. Obtrusiveness of blemishes shall be judged by looking through the film installation under lighting conditions described in 4.

6. The 2 inch (50mm) wide band around the perimeter shall be assessed by a similar procedure to that in 3 and 4, but a small number of particles is considered acceptable where poor frame condition mitigates against the high quality standards normally achieved.

7. Edge gaps will normally be 1/32 – 1/16 inch (1-2mm). This allows for the water used in the installation to be squeegeed out. This ensures that film edges are not raised up by contact with the frame margin. Contact with the frame margin could lead to peeling of the film.

8. For thicker safety films the edge gaps will normally be 1/32 – 1/16 inch (1-2mm), with 1/32 – 1/8 inch (1-3mm) being acceptable for films of (7 mil (175)). Combination solar control safety films will also fall within this standard. An edge gap of up to 1/16 inch (2mm) is recommended, especially for darker (tinted, metallized, tinted/metallized, and sputtered) films, to minimize the light line around the edge of the installed film.

9. Splicing of films is necessary when larger panels of glass are treated, where both length and width of the glass exceed the maximum width of film. The splice line itself should not be viewed as a defect. This line should be straight and should be parallel to one edge of the frame margin. The two pieces of film may be butt jointed. Film may be overlapped, spliced or butt jointed.

10. Certain films with special high performance coating may have lengthened cure times. Consult the manufacturer for cure times of these films.

Table 1 – Typical Cure Times

| Film thickness in mils | Film thickness in microns(μ) | Typical Cure Time (days) |
|---|---|---|
| Up to 4 | Up to 100 | 30 |
| 4 to 8 | 100 to 200 | 60 |
| 8 to 12 | 200 to 300 | 90 |
| Over 12 but not more than 17 | Over 300 but not more than 425 | 140 |

*Special adaptation of information received from the Glass and Glazing Federation; reproduced with their permission.