

TM
**3M Ultra Safety & Security Window Film and Ultraflex Attachment System:
Visual Specification Standards for Fragment Retention Film and Anchoring System
Applications**

**STANDARDS for ASSESSING SECURITY FILM INSTALLATIONS as ADOPTED BY 3M COMPANY
and the IWFA**

1. Film should be viewed from a minimum of ten feet and at an angle not to exceed 45 degrees. Any defects seen from a closer viewing distance or lesser angle are not to be considered.
2. A typical safety film application may have hazy appearance immediately following the application. Allow seven days for the haze to dissipate, (longer for double film applications).
3. Small water pockets or bubbles are common after application. Allow thirty days for water pockets to evaporate, (longer for double film applications).
4. Foreign material is unavoidable when applying safety film in a construction area. Particles that are visible from greater than ten feet shall be no more frequent than one for every five square feet of window area. For film applied in a non-construction environment, the frequency shall be no greater than one particle per ten square feet of window area.
5. Minor irregularities in the film can be exacerbated by fine, dark lines and high-contrast transitions in the background viewing area. Distortion associated with these background features shall not be considered cause for rejection.
6. It is common for tempered glass to have distortion from the manufacturing process, especially when viewed at an angle. Tempered glass will still show this distortion with Safety film applied to it.
7. Defects in the film including scratches, peeling, flaking and discoloration are covered under warranty.

**STANDARDS for ASSESSING ULTRAFLEX INSTALLATIONS as DEFINED and ADOPTED by 3M
COMPANY, DOW CORNING COMPANY and the IWFA**

1. Ultraflex structural sealant is a hand applied and hand tooled caulk. While every attempt is made to furnish a “rubber gasket” appearance, factors such as temperature, humidity, age of the caulking material and the large size of the caulk joint can have a negative effect on the outcome.
 - a. With this in mind, there will likely be minor defects in the applied caulk. These minor defects, however, will not affect the structural integrity of the caulk bead.
 - b. The caulk bead shall extend ½” onto the film and ½” onto the frame, excluding the width of any pre-existing gasket
2. There shall be no surface voids in the caulk bead greater than 1/8” diameter.
3. There shall be no caulk on the frame or film that is not part of the bead.
4. Minor surface irregularities shall not be cause for rejection.
5. Caulk edges that have a “squared off” appearance shall not be cause for rejection.

PREPARATION AND PRECONDITIONS FOR INSTALLING ULTRAFLEX as DEFINED and ADOPTED by DOW CORNING COMPANY

DOW CORNING PRODUCT SPECIFICATIONS

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Dow Corning® 995 SILICONE STRUCTURAL GLAZING SEALANT

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PART 3 - EXECUTION

3.1 GENERAL

***** Structural silicone glazing can be site or factory installed. There are two methods: two-sided and four-sided, depending on how many edges are adhered to metal support framing with sealant. *****

- A. [Site] [Factory] install glass panels specified in Section 08 88 00 - Glazing to [aluminum] [stainless steel] [_____] curtain wall framing specified in Section 08 40 00 - Entrances, Storefronts, and Curtain Walls. Bond glass to metal support members with structural silicone sealant using [2-sided] [4-sided] method as detailed on drawings.
- B. To ensure compatibility and correct sizes, coordinate provision of glass, support framing, and sealants.
- C. Prepare substrates and apply silicone sealant in accordance with manufacturer's instructions and reviewed shop drawings.
- D. Handle, store, and apply materials in compliance with applicable Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), volatile organic compound (VOC), and other regulations and manufacturer's material safety data sheets (MSDSs).
- E. Use structural silicone sealant only in applications recommended by manufacturer. Do not use sealant for:
 - 1. Below-grade applications
 - 2. Surfaces to be immersed in water for prolonged time
 - 3. Materials bleeding oils, plasticizers, and solvents
 - 4. Surfaces to be painted
 - 5. Surfaces subject to abrasion and abuse
 - 6. Surfaces in direct contact with food
 - 7. Medical and pharmaceutical applications
- F. Do not apply in totally confined spaces without ventilation for curing.
- G. Structural silicone joint design: Install sealant to meet these general requirements. Any variations shall be approved by sealant manufacturer.
 - 1. Glueline thickness: [1/4 inch] [6 mm] minimum
 - 2. Structural bite: [1/4 inch] [6 mm] minimum and equal to or greater than glueline thickness
 - 3. Bite-to-glueline ratio: Between 1:1 and 3:1.
 - 4. Joint shall be designed to be filled with standard sealant application procedures
 - 5. Avoid three-sided sealant adhesion by use of backer rod or bond breaker tape

3.2 PREPARATION

- A. Inspect substrates to receive silicone sealant. Ensure:
 - 1. Metal framing surfaces to receive glazing are flat and smooth without slots, serrations, and other irregularities.

***** Due to graphite lubricant used in extrusion process, which affects adhesion, mill-finish aluminum is not an acceptable substrate for structural silicone sealant. *****

- 2. Verify aluminum framing has alodine, anodized, fluorocarbon paint, or polyester powder coat finish. Mill-finish aluminum is not an acceptable substrate for structural silicone sealant
- 3. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, mildew, and other contaminants which might affect adhesion

ULTRAFLEX BEAD INSPECTION: VISUAL STANDARDS FOR SITE MITIGATION/INSPECTION

1. Acceptable



2.

ULTRAFLEX BEAD INSPECTION (continued)

1. Unacceptable

