



FilmFastener LLC

SECTION 08873 SAFETY AND SECURITY GLASS ATTACHMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Safety and security film attachment systems.
- B. Glass attachment systems.

1.2 RELATED SECTIONS

- A. Section 08300 - Specialty doors: Glass and glass with security film to receive frame attachment.
 - 1. 08396 - Hurricane resistant doors
 - 2. 08398 - Blast resistant doors
- B. Section 08400 - Entrances and Storefronts: Glass and glass with security film to receive frame attachment.
 - 1. 08415 - Aluminum entrances and storefronts
 - 2. 08420 - Steel entrances and storefronts
 - 3. 08425 - Stainless steel entrances and storefronts
 - 4. 08430 - Bronze entrances and storefronts
 - 1. 08450 - All-glass entrances and storefronts
 - 1. 08485 - Impact-resistant aluminum-framed entrances and storefronts
- C. Section 08500 - Windows: Glass and glass with security film to receive frame attachment.
 - 1. 08505 - Metal windows
 - 2. 08520 - Aluminum windows
 - 3. 08589 - Hurricane resistant windows
 - 4. 08590 - Window restoration and replacement
- D. Section 08600 - Skylights: Glass and glass with security film to receive frame attachment.
- E. Section 08800 - Glazing: Glass and glass with security film to receive frame attachment.
 - 1. 08810 - Glass
 - 2. 08845 - Blast resistant safety glazing film
 - 3. 08873 - Safety films
 - 4. 08874 - Security films
- F. Section 08900 - Glazed Curtain Walls: Glass and glass with security film to receive frame attachment.
- G. Section 12490 - Window treatments: Specialty extruded plastic

1.3 REFERENCES

- A. American Society for Testing Materials (ASTM)
- B. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
- C. Association of Industrial Metallizers, Coaters and Laminators (AIMCAL)
- D. American National Standards Institute (ANSI)
- E. International Standards Organization (ISO)
- F. International Window Film Association (IWFA)
- G. Government Services Administration (GSA)
- H. Consumer Products Safety Commission (CPSC)
- I. Code of Federal Regulations (CFR)
- J. Underwriters Laboratories Inc (UL)

1.4 PERFORMANCE REQUIREMENTS

- A. Storm testing: 8 mil security film with Dow Corning 995 or GE SCS2000 Silpruf structural silicone the BondKap Attachment System should be capable of meeting the following tests. NOTE: Film manufacturer specifications may differ.
 - 1. ASTM E-1886, Standard Test Method for Missile Impact and Cycling On Exterior Windows, Shutters, Doors and Curtain Walls - Large Missile C.
 - 2. ASTM E-1996, Standard Specification for Missile Impact and Cycling On Exterior Windows, Shutters, Doors and Curtain Wall - Large Missile C
 - 3. ASTM E-330-02 Test Method for Structural Performance of Exterior Windows, Shutters, Doors and Curtain Walls by uniform Static Air Pressure Difference.
 - 4. ASTM E-331-00, Test Method for Structural Performance of Exterior Windows, Shutters, Doors and Curtain Walls by uniform Static Air Pressure Difference.

- B. Bomb Blast Simulation: Testing may differ with safety film from varied manufacturers.
 - 1. GSA TS-01-2003, GSA Performance Condition with a minimum blast pressure of 4 psi-28 psi-msec when applied with Dow Corning 995 and BondKap on 1/4 inch (6 mm) single pane annealed glass: 3A.
 - 2. GSA TS-01-2003, GSA Performance Condition with a minimum blast pressure of 4 psi-28 psi-msec when applied with GE SCS2000 Silpruf and BondKap on 1/4 inch (6 mm) single pane tempered glass: 2.
 - 3. ISO 16933 Hazard Rating with a minimum blast pressure of 7 psi-36 psi-msec when applied with GE SCS2000 Silpruf and BondKap on 1/4 inch (6 mm) double pane tempered glass: "Hazard Rating B (EXV33(B))".

4. UFC 4-010-01 Protection Level with a minimum blast pressure of 7 psi-36 psi-msec when applied with GE SCS2000 Silpruf on 1/4 inch (6 mm) double pane tempered glass: "High Level of Protection".

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Installation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Physical properties and independent testing agency reports showing compliance with specified tests.
- C. Detailed installed specifications.
- D. Manufacturer's warranty information.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All products specified in this section will be supplied by a single manufacturer with a minimum of five years experience.
- B. Installer Qualifications: Documented in the installation of structural silicones with the BondKap Attachment System.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 1. Install attachment to designated window.
 2. Do not proceed until workmanship is approved.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Store products at room temperature. DO NOT allow products to be exposed to direct sunlight, product will warp.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. At project close, provide to Owner or Owners Representative an executed current copy of the manufacturer's standard limited warranty outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: FilmFastener LLC, 8206 Copeland Rd, Odessa, FL 33556
Telephone: 813-926-8721
Web: www.filmfastener.com www.bondkap.com

2.2 BONDKAP ATTACHMENT SYSTEM

- A. BondKap Attachment System. Weatherable Rigid PVC secured using approved structural silicones such as Dow Corning 995 or GE SCS2000 "Wet Glaze" type attachment. BondKap aids in the integrity of the silicone to maintain proper alignment and increases the tensile/tear strength of the silicone, while provided and aesthetic cover to an unsightly large bead of silicone.
1. BondKap, BK 2001.
 - a. Width: 1.516 inches.
 - b. Typically used for commercial storefront applications where added protection is necessary such as high profile faculities.
 2. BondKap, BK2002.
 - a. Width: 0.83 inch.
 - b. Typical uses residential windows and patio doors.
 3. BondKap, BK 2003.
 - a. Width: 0.825 inch.
 - b. Typical uses residential windows and patio doors.
 4. BondKap, BK 2004.
 - a. Width: 1.30 inches.
 - b. Typically used for commercial storefront applications.
 5. BondKap, BK2005.
 - a. Width: 2.588 inches.
 - b. Typically used for commercial storefront doors.
 6. BondKap, BK 2006.
 - a. Width: 1.78 inches.
 - b. Typically used for commercial storefront doors.
 7. BondKap, BK 2006 BV.
 - a. Width: 1.90 inches.
 - b. Typically used for commercial storefront doors.
 8. BondKap, BK2008.
 - a. Width: 0.668 inch.
 - b. Typical uses residential windows.
 9. BondKap, BK 2009.
 - a. Width: 0.995 inch.
 - b. Typical uses residential windows.
 10. Material properties.
 - a. Full cure of silicone 30 to 60 days depending on BondKap profile.
 - b. strength and elongation dependent upon silicone used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Film examination.
 - 1. Assure film has been installed to manufacturers specifications and is free of defects and debris.
 - 2. Assure film extends sufficiently to edges of frame.
- B. Glass examination.
 - 1. For installations securing impact or laminated glass to frames, assure glass is free of defects or edge cracks and is properly sized for the opening.
- C. Frame examination.
 - 1. Assure frame is clean and free of debris and is prepared according to silicone manufacturers specifications.
- D. Structural silicone examination.
 - 1. Assure silicone is within the recommended "use by" dates. If the silicone is out of date, DO NOT USE. Contact the appropriate personnel and continue when replacement silicone has been acquired.
- E. BondKap examination.
 - 1. Assure the BondKap is the correct length, color and profile for the installation.
 - 2. Assure the BondKap has not been subject to direct sunlight and has warped. If damage has occurred replace as necessary. BondKap will not warp once properly installed and has full adhesion with the structural silicone.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation. Use primers as necessary following silicone manufactures specifications.
- B. Pre-cut the BondKap strips as directed from the manufacturer.

3.3 INSTALLATION

- A. Film Installation:
 - 1. Install in accordance with manufacturer's instructions.
- B. Silicone and BondKap installation:
 - 1. Install as specified by silicone manufacturer and BondKap manufacturer.
 - 2. Cut the tip of the silicone the appropriate size for the BondKap in use.
 - 3. Apply the silicone to the frame and glass or on the BondKap depending on which profile is in use.
 - 4. Place the BondKap on the silicone at the specified angle to achieve maximum contact with silicone frame and glass.
 - a. If alternative BondKap selection is used and silicone has been applied to the BondKap, press the silicone BondKap combination to the desired position on the glass and frame.

5. Apply sufficient pressure to assure silicone is mated to BondKap, glass and frame. You should be able to perceive the silicone under the BondKap. If not lift the BondKap and apply more silicone. If an excess of silicone is protruding past the BondKap see 3.4 cleaning and protection.

3.4 CLEANING AND PROTECTION

- A. Remove exposed silicone with plastic razor blades. denatured alcohol or other cleaner recommended by silicone manufacturer may also be used. Be aware not to damage the window film.
- B. Protect installed product until completion of project.
- C. Where installed film could be damaged by subsequent construction provide tape warning strips or barricades to prevent contact.

END OF SECTION