



## 4M CLEAR SSF-400

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes safety film product applied to various surfaces

#### 1.2 REFERENCES

- A. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials.
- B. ASTM E-84: Test Method for Surface Burning Characteristics of Building Materials
- C. GSA-TS01-2003: Standard Test Method for Glazing and Window Systems Subject to Dynamic Overpressure Loadings.
- D. ASTM D 882: Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
- E. ASTM D 3330: Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape
- F. ASTM D 1004: Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting
- G. ASTM D 1044: Test Method for Resistance of Transparent Plastics to Surface Abrasion.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Performance Properties: Provide window films with the following performance properties (on 1/8 inch clear glass) at a minimum:
  - a. Visible Light Transmittance: 86%
  - b. Solar Transmittance: 78%
  - c. Solar Reflectance: 9%
  - d. Solar Absorbance: 13%
  - e. U-Value (winter median): 1.09
  - f. Ultraviolet Rejection: 95%
  - g. Shading Coefficient: .93
  - h. Solar Energy Rejected: 19%
  - i. Solar Heat Gain Coefficient: 0.81
- B. Scratch Resistance: Provide films that have 5.0 % average haze increase when tested to ASTM D 1044, using 100 revolutions, a CS-10F Taber abrading wheel and 500 g weights.
- C. Average Puncture Strength of 93 lbs under ASTM D4830.
- D. Average Peel Strength of 1000g/in under ASTM D3330.
- E. Average Tear Strength of 12.1 lbs under ASTM D1004.





- F. Surface Burning Characteristics: Provide films that shall have an average flame spread index of 10 and an average smoke density index not of 40 when tested in accordance to ASTM E 84.
- G. Tensile Properties: In accordance with ASTM D 882
  - a. Average Tensile Strength: >32,000 psi.
  - b. Average Elongation at Break: >100%.
  - c. Average Break Strength: 136 lb/in.

#### 1.4 SUBMITTALS

- A. Product Optical Data (on 1/8 inch clear glass): Manufacturer's data sheets on each product to be used.
- B. Samples for Verification: (2) 12-inch square samples of each finished product specified.
- C. Qualification Data: Manufacturer and Installers specified in Quality Assurance section are required to include lists of completed projects with project names, addresses and installation dates.
- D. Closeout Submittals: Upon completion of the Work, installers are required to submit:
  - a. Completed warranty.
  - b. Cleaning and replacement instructions.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Window film manufacturer with verifiable manufacturing facility and proven track record in window films for minimum of 10 years.
- B. Mockups: Apply specified films in locations as directed to obtain approval on installer execution and aesthetic appearance of films selected. .

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Products to remain in manufacturer's original, unopened packaging to prevent damage by condensation, abnormal temperature changes, prolonged exposure to sun, or other causes, until ready for installation.
- B. All materials and solvent based materials to be disposed of in accordance with local jurisdiction requirement.





## 1.7 PROJECT CONDITIONS

- A. Installation of products must be in accordance with manufacturer's guidelines. Abnormal shifts in temperature, outside temperature below 40°F, condensation on glass, frost or other conditions need approval from manufacturer.

## 1.8 WARRANTY

- A. Manufacturer's warranty to cover films against crazing, cracking, delaminating or adhesive failure agreeing to replace films that fail within 2 years from date of original installation.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Shatter Safe Security Window Films; Tel: 888-948-8468; Website: [www.shattersafe.com](http://www.shattersafe.com)
- B. Product Description: 4 mil clear window film, to be applied to interior glass surfaces, consisting of:
  - a. Disposable, 3.0mil (or greater) release liner.
  - b. Anti-Graffiti adhesive.
  - c. Clear layers of polyester film.
  - d. Scratch resistant coating with high hydrophobicity and extended weatherable coating
- C. Colors: Clear.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine glass and surrounding frames for conditions that could negatively affect installation. These would include:
  - a. Any glass that is broken, chipped, cracked, abraded, or damaged in any way.
  - b. Unsecured frames that are not securely anchored and/or show signs of defects
  - c. Unsatisfactory preparation and cleaning of glass, leaving behind dust, paint, oil, mildew and/or any other contaminants that would hinder proper adhesion.
- B. Once installation has commenced, acceptance of conditions is implied. Because of this, proceed with installation only after all unsatisfactory conditions have been remedied.

### 3.2 PREPARATION

- A. Comply with manufacturer's instructions for surface preparation.





- B. Clean glass surfaces of substances of any/all contaminants that would hinder proper adhesion such as dust, paint, oil, mildew, etc.
- C. Protect all adjacent surfaces including frames, upholstery, carpeting, etc.





### 3.3 INSTALLATION

- A. General: Install in accordance with window film manufacturer's written installation instructions applicable to products and applications indicated
  - a. Install with no gaps or overlaps, except allowed gap at perimeter of 1/16" to 1/8"
  - b. Do not remove release liner from individual pieces of film until glass has been properly prepared and each piece of film is cut and ready for installation.
  - c. Install film with proper mounting solution recommended by window film manufacturer.
  - d. Install film without air bubbles, creases, pinholes, curled edges or blemishes (in accordance with manufacturer's acceptable guidelines.)
  - e. Seams – ***Not approved for Blast Hazard Mitigation applications.***
    - 1. Seam only if required due to available material sizes in comparison with needs of glazing unit
    - 2. Horizontal seams not approved. Vertical seams to be installed without gaps or overlaps.

**END OF SECTION**

