

SECTION 08870 (08 87 00)

WINDOW FILMS

Display hidden notes to specifier. (Don't know how? [Click Here](#))

Copyright 2019 ARCAT, Inc. - All rights reserved

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Transitional window films. For retrofit onto an existing building's windows and door glass.

1.2 RELATED SECTIONS

- A. Section 08400 - Entrances, Storefronts, and Curtain Walls.
- B. Section 08500 - Windows.
- C. Section 08600 - Roof Windows and Skylights.
- D. Section 08800 - Glazing.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Verification Samples: Two representative units of each type, size, pattern and color.
- D. Shop Drawings: Include details of materials, construction and finish. Include relationship with adjacent construction.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

- D. Mock-Up: Construct a mock-up with actual materials in sufficient time for Architect's review and to not delay construction progress. Locate mock-up as acceptable to Architect and provide temporary foundations and support.
 - 1. Intent of mock-up is to demonstrate quality of workmanship and visual appearance.
 - 2. If mock-up is not acceptable, rebuild mock-up until satisfactory results are achieved.
 - 3. Retain mock-up during construction as a standard for comparison with completed work.
 - 4. Do not alter or remove mock-up until work is completed or removal is authorized.

1.5 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.7 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 recommended limits.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard 10 year limited warranty. Will not blister, peel, change color, or bubble.
 - 1. Photochromic reactions are warranted for a minimum of five (5) years from date of installation. Extended warranty option available.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: CoolVu Transitional Window Films, available through Innovative Glass Corp; 120 Commercial Street, Plainview, NY 11803; (516)777-1100; info@eglass.com; www.InnovativeGlassCorp.com/coolvu
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 PERFORMANCE REQUIREMENTS

- A. Energy Performance:
 - 1. Block Ultraviolet Radiation: 99 percent.
 - 2. Block Infrared Energy: 80 percent.
 - 3. Transition: Up to 35 percent.
 - 4. Control Sun Glare: Up to 80 percent.

- B. View Enhancement:
 - 1. Allow for clear vision through glass at all times and lighting conditions.
 - 2. Glare control.

2.3 WINDOW FILM

- A. Basis of Design: CV75/50; as manufactured by CoolVu Transitional Window Films.

- 1. Performance under Normal Conditions:
 - a. Solar Energy Transmitted: 52.0 percent.
 - b. Solar Energy Reflected: 11.0 percent.
 - c. Solar Energy Absorbed: 37.0 percent.
 - d. Visible Light Transmitted: 73.0 percent.
 - e. Visible Light Reflected to Exterior: 9.0 percent.
 - f. Visible Light Reflected to Interior: 8.0 percent.
 - g. Glare Reduction: 10.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.50.
 - i. Shading Coefficient: 0.58.
 - j. Total Solar Energy Rejection: 48.0 percent.
 - k. Infrared Rejection: 81.0 percent.
 - l. U-Factor: 1.5.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.
- 2. Performance at Darkest:
 - a. Solar Energy Transmitted: 45.0 percent.
 - b. Solar Energy Reflected: 11.0 percent.
 - c. Solar Energy Absorbed: 44.0 percent.
 - d. Visible Light Transmitted: 40.0 percent.
 - e. Visible Light Reflected to Exterior: 9.0 percent.
 - f. Visible Light Reflected to Interior: 8.0 percent.
 - g. Glare Reduction: 45.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.45.
 - i. Shading Coefficient: 0.51.
 - j. Total Solar Energy Rejection: 52.0 percent.
 - k. Infrared Rejection: 81.0 percent.
 - l. U-Factor: 1.5.
 - m. Emissivity: 0.85.
 - n. Ultraviolet Rejection: More than 99 percent.

- B. Basis of Design: CV55/35; as manufactured by CoolVu Transitional Window Films.

- 1. Performance under Normal Conditions:
 - a. Solar Energy Transmitted: 46.0 percent.
 - b. Solar Energy Reflected: 11.0 percent.
 - c. Solar Energy Absorbed: 43.0 percent.
 - d. Visible Light Transmitted: 54.0 percent.
 - e. Visible Light Reflected to Exterior: 11.0 percent.
 - f. Visible Light Reflected to Interior: 8.0 percent.
 - g. Glare Reduction: 39.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.43.
 - i. Shading Coefficient: 0.49.
 - j. Total Solar Energy Rejection: 54.0 percent.
 - k. Infrared Rejection: 81.0 percent.
 - l. U-Factor: 1.9.

- m. Emissivity: 0.9.
- n. Ultraviolet Rejection: More than 99 percent.
- 2. Performance at Darkest:
 - a. Solar Energy Transmitted: 43.0 percent.
 - b. Solar Energy Reflected: 11.0 percent.
 - c. Solar Energy Absorbed: 46.0 percent.
 - d. Visible Light Transmitted: 35.0 percent.
 - e. Visible Light Reflected to Exterior: 11.0 percent.
 - f. Visible Light Reflected to Interior: 8.0 percent.
 - g. Glare Reduction: 60.2 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.41.
 - i. Shading Coefficient: 0.56.
 - j. Total Solar Energy Rejection: 58.0 percent.
 - k. Infrared Rejection: 81.0 percent.
 - l. U-Factor: 1.9.
 - m. Emissivity: 0.85.
 - n. Ultraviolet Rejection: More than 99 percent.
- C. Basis of Design: CV35/20; as manufactured by CoolVu Transitional Window Films.
 - 1. Performance under Normal Conditions:
 - a. Solar Energy Transmitted: 44.0 percent.
 - b. Solar Energy Reflected: 15.0 percent.
 - c. Solar Energy Absorbed: 41.0 percent.
 - d. Visible Light Transmitted: 35.0 percent.
 - e. Visible Light Reflected to Exterior: 18.0 percent.
 - f. Visible Light Reflected to Interior: 15.0 percent.
 - g. Glare Reduction: 61.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.40.
 - i. Shading Coefficient: 0.46.
 - j. Total Solar Energy Rejection: 56.0 percent.
 - k. Infrared Rejection: 83.0 percent.
 - l. U-Factor: 1.0.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.
 - 2. Performance at Darkest:
 - a. Solar Energy Transmitted: 36.0 percent.
 - b. Solar Energy Reflected: 15.0 percent.
 - c. Solar Energy Absorbed: 49.0 percent.
 - d. Visible Light Transmitted: 25.0 percent.
 - e. Visible Light Reflected to Exterior: 18.0 percent.
 - f. Visible Light Reflected to Interior: 15.0 percent.
 - g. Glare Reduction: 71.5 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.36.
 - i. Shading Coefficient: 0.42.
 - j. Total Solar Energy Rejection: 60.0 percent.
 - k. Infrared Rejection: 83.0 percent.
 - l. U-Factor: 1.0.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.
- D. Basis of Design: CV25/15; as manufactured by CoolVu Transitional Window Films.
 - 1. Performance under Normal Conditions:

- a. Solar Energy Transmitted: 36.0 percent.
 - b. Solar Energy Reflected: 20.0 percent.
 - c. Solar Energy Absorbed: 44.0 percent.
 - d. Visible Light Transmitted: 28.0 percent.
 - e. Visible Light Reflected to Exterior: 23.0 percent.
 - f. Visible Light Reflected to Interior: 21.0 percent.
 - g. Glare Reduction: 69.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.35.
 - i. Shading Coefficient: 0.40.
 - j. Total Solar Energy Rejection: 64.0 percent.
 - k. Infrared Rejection: 85.0 percent.
 - l. U-Factor: 1.0.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.
2. Performance at Darkest:
- a. Solar Energy Transmitted: 33.0 percent.
 - b. Solar Energy Reflected: 20.0 percent.
 - c. Solar Energy Absorbed: 47.0 percent.
 - d. Visible Light Transmitted: 18.0 percent.
 - e. Visible Light Reflected to Exterior: 23.0 percent.
 - f. Visible Light Reflected to Interior: 21.0 percent.
 - g. Glare Reduction: 79.5 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.33.
 - i. Shading Coefficient: 0.38.
 - j. Total Solar Energy Rejection: 66.0 percent.
 - k. Infrared Rejection: 85.0 percent.
 - l. U-Factor: 1.0.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.

E. Basis of Design: CoolVu Plus 1; as manufactured by CoolVu Transitional Window Films.

1. Performance under Normal Conditions:
- a. Solar Energy Transmitted: 41.0 percent.
 - b. Solar Energy Reflected: 32.0 percent.
 - c. Solar Energy Absorbed: 25.0 percent.
 - d. Visible Light Transmitted: 70.0 percent.
 - e. Visible Light Reflected to Exterior: 9.0 percent.
 - f. Visible Light Reflected to Interior: 10.0 percent.
 - g. Glare Reduction: 20.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.49.
 - i. Shading Coefficient: 0.56.
 - j. Total Solar Energy Rejection: 59.0 percent.
 - k. Infrared Rejection: 83.0 percent.
 - l. U-Factor: 0.7.
 - m. Emissivity: 0.85.
 - n. Ultraviolet Rejection: More than 99 percent.
2. Performance at Darkest:
- a. Solar Energy Transmitted: 29.0 percent.
 - b. Solar Energy Reflected: 32.0 percent.
 - c. Solar Energy Absorbed: 39.0 percent.
 - d. Visible Light Transmitted: 35.0 percent.
 - e. Visible Light Reflected to Exterior: 9.0 percent.

- f. Visible Light Reflected to Interior: 10.0 percent.
 - g. Glare Reduction: 57 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.40.
 - i. Shading Coefficient: 0.46.
 - j. Total Solar Energy Rejection: 71.0 percent.
 - k. Infrared Rejection: 83.0 percent.
 - l. U-Factor: 0.7.
 - m. Emissivity: 0.85.
 - n. Ultraviolet Rejection: More than 99 percent.
- F. Basis of Design: CoolVu Plus 2; as manufactured by CoolVu Transitional Window Films.
- 1. Performance under Normal Conditions:
 - a. Solar Energy Transmitted: 61.0 percent.
 - b. Solar Energy Reflected: 19.0 percent.
 - c. Solar Energy Absorbed: 20.0 percent.
 - d. Visible Light Transmitted: 72.0 percent.
 - e. Visible Light Reflected to Exterior: 14.0 percent.
 - f. Visible Light Reflected to Interior: 13.0 percent.
 - g. Glare Reduction: 18.0 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.68.
 - i. Shading Coefficient: 0.77.
 - j. Total Solar Energy Rejection: 40.0 percent.
 - k. Infrared Rejection: 45.0 percent.
 - l. U-Factor: 0.9.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.
 - 2. Performance at Darkest:
 - a. Solar Energy Transmitted: 50.0 percent.
 - b. Solar Energy Reflected: 19.0 percent.
 - c. Solar Energy Absorbed: 31.0 percent.
 - d. Visible Light Transmitted: 35.0 percent.
 - e. Visible Light Reflected to Exterior: 11.0 percent.
 - f. Visible Light Reflected to Interior: 11.0 percent.
 - g. Glare Reduction: 57 percent.
 - h. Solar Heat Gain Coefficient (SHGC): 0.66.
 - i. Shading Coefficient: 0.74.
 - j. Total Solar Energy Rejection: 50.0 percent.
 - k. Infrared Rejection: 45.0 percent.
 - l. U-Factor: 0.9.
 - m. Emissivity: 0.9.
 - n. Ultraviolet Rejection: More than 99 percent.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions approved submittals and in proper relationship with adjacent construction.

3.4 CLEANING AND PROTECTION

- A. Clean products in accordance with the manufacturer's recommendations.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION