



This document specifies Solar Control Window Films. The products are manufactured by Huper Optik USA. Revise all section numbers and titles below to suit project requirements, specification practices and section content. Refer to Construction Specifications Institute (CSI) Master Format for other section numbers and titles.

PART 1 GENERAL

Specifier Note: Article below may be omitted when specifying manufacturer proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Section 01 42 19-Reference Standards may establish the edition date of standards. This article does not require compliance with standards, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.01.1 REFERENCES

- A. Solar control film applied to existing glass
 - 1.
 - 2.

1.01.2 DEFINITIONS

- A. [\(See Window Film & Glazing Terminology Definitions\)](#)

1.01.3 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Section 01 33 00
- B. Product Data: Submit product data, including manufacturer data sheet for specified products.
- C. Samples: Submit 8 ½ x 11 inch (216 x 279 mm) samples of specified films.
- D. Quality Control Submittals:
 - i. Certificates: Manufacturer certification that the installer is certified
 - ii. Manufacturer Instructions: Manufacturer Installation Instructions
- E. Closeout Submittals:
 - i. Warranty: Manufacturer Standard Warranty document executed by authorized company official. Manufacturer warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Quality Assurance Section and [Film to Glass Recommendation Chart](#).

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Acceptable to the Manufacturer ([See Installation Instructions](#))
- B. Regulatory Requirements: In accordance with Section 01 41 00 – Regulatory Requirement.

SECTION 08 87 13
SOLAR CONTROL FILMS

1.05 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Section 01 61 00 – Common Product Requirements
- B. Delivery: Deliver materials in manufacturer original, unopened, undamaged container with labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental Conditions and at temperature and humidity conditions recommended by the manufacturer.
(See Storage and Handling Instructions)

1.06 WARRANTY

- A. Project Warranty: Refer to Condition of the Contract for project warranty provisions.
- B. Manufacturer Warranty: Submit in accordance with Section 01 78 36 – Warranties for Owner Acceptance. Manufacturer standard warranty document executed by authorized company official. Manufacturer warranty is addition to, and not a limitation of other rights Owner may have under Contract Documents.
- C. Provide film manufacturer 15-year warranty against failure of film, including change of color, peeling, Bubbling, rippling, cracking, delamination, and demetallization; include cost of material and labor for removal and reinstallation. **(see Huper Optik Warranty Terms and Conditions for full terms and conditions, plus possible exclusions)**

- 1.06.1 –** A. Acceptable Manufacturer: Huper Optik USA: 5821 West Sam Houston Pkwy N, Suite 400 Houston TX 77041. ASD. Tel (888) 296-3456. Fax (832) 467-1190 email info@huperoptikusa.com

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of 'or equal' and/or 'approved equal' or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining 'or equal' products.

2.01 SOLAR CONTROL FILMS

Specifier Note: Paragraph below is an addition to CSI Section Format. Retain or delete paragraph below per project requirements and specifiers practice.

- A. Manufacturer: Huper Optik USA**
- B. Contact: Harry Rahman, hrahman@huperoptikusa.com or (832) 467-1170 ext. 120**

SECTION 08 87 13
SOLAR CONTROL FILMS

Solar Control Film: Hüper Optik ESC CERAMIC 45 film: Self-adhesive film, with following characteristics when applied to 1/4 inch (6 mm) clear float glass:

Visible Light Transmittance:	44 percent.
Visible Light Reflectance:	13 percent.
Ultraviolet Rejected:	99.9 percent.
Infrared Rejection:	76 percent.
Shading Coefficient:	0.53.
Solar Heat Gain Coefficient:	0.47.
Total Solar Energy Rejected:	54 percent.
Glare Reduction:	51 percent.
Film Thickness:	1.5 mils (0.04 mm).
Emissivity:	0.86.
U-Value:	0.94.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: Substitutions in accordance with Section 01 25 12 0 – Product Substitution Procedures. No substitutions permitted (_____)

PART 3 EXECUTION

Specifier Note: Paragraph below is an addition to CSI Section Format and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifiers practice.

3.01 MANUFACTURER INSTRUCTIONS

- A. Compliance: Comply with manufacturer product data, including product technical bulletins, product Catalog installation instructions and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions for substrates that have been previously installed under other sections are acceptable for product installation.

CLEANUP

- i. Proceed in accordance with Section 01 74 23 Final Cleaning
- ii. Upon Completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment