

NFRC's Guiding Principles of Fenestration Attachments



**PRESENTATION TO INTERIOR ATTACHMENTS
TASK GROUP CONFERENCE CALL
APRIL 16, 2008**

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NFRC Attachment Guidelines

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- The energy performance of attached window systems shall be determined in combination with a set of Reference or Base Case Windows or Doors.
- These Base Case Windows and Doors shall be whole window or door systems, not just the center-of-glass portion.
- The combined energy performance of the Base Case Window or Door and attachment shall be expressed using numerical indices currently defined by NFRC documents and on NFRC Labels (e.g., U-factor, SHGC and Visible Transmittance).
- These principles and the same set of Base Case Windows or Doors shall apply to the rating of all fenestration attachments.

NFRC Attachment Guidelines

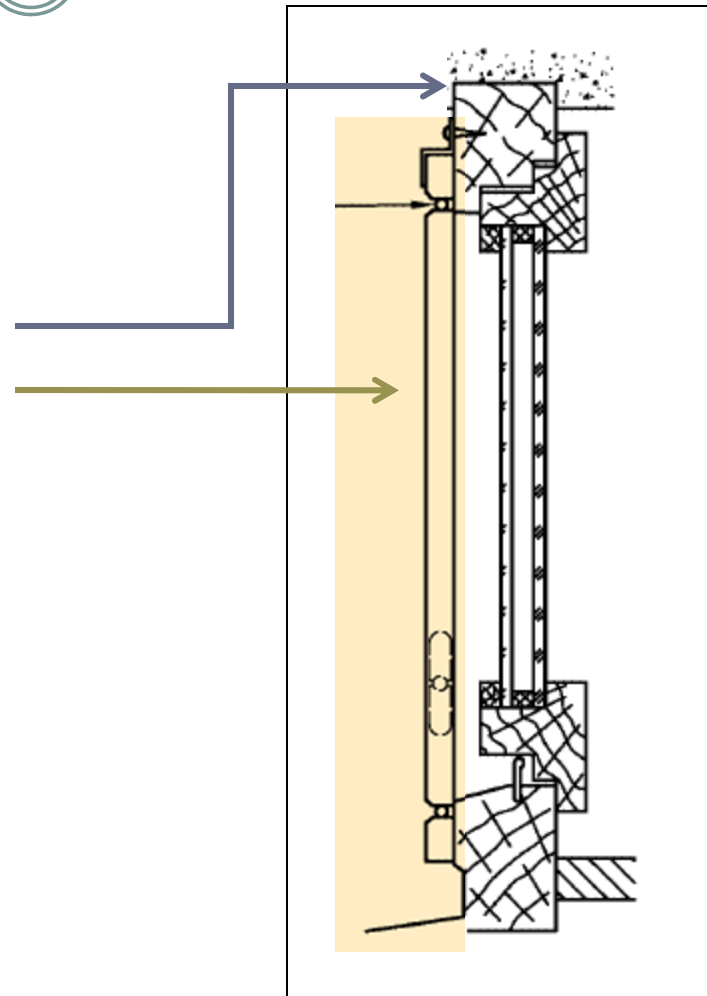
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- **Combine Attachment with Base Case Windows or Doors**

- Rating = Base Case plus (+) Attachment

- **Base Case Examples**

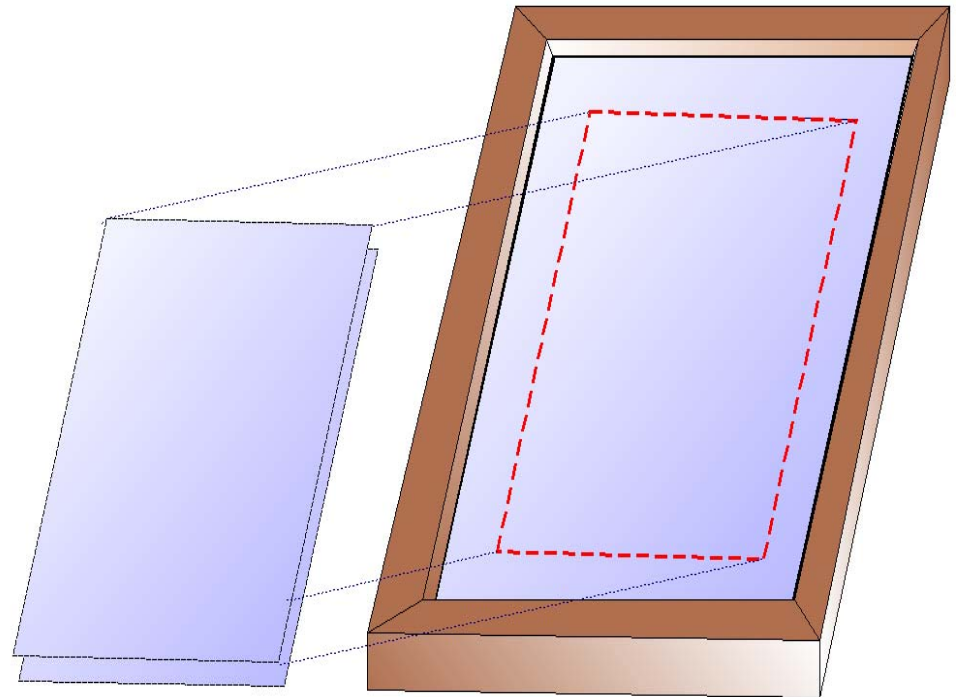
- ✦ Single-Glazed Metal Frame (Commercial system)
- ✦ Double-Glazed Wood Frame (Residential)
- ✦ Double-Glazed Low-e Vinyl Frame (Residential & Commercial)



NFRC Attachment Guidelines

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- **Base Cases are Whole Windows or Doors**
 - Not Just the Center-of-Glass



Center-of-Glass Only

Whole Window

NFRC Attachment Guidelines

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NFRC ATTACHMENT RATINGS
National Fenestration Rating Council®
CERTIFIED

XYZ Applied Film Company • Deluxe Green Film
CPD#ABC-X-001 (Exterior)
This rating uses reference product energy performance – actual product performance may vary.

**ENERGY PERFORMANCE RATINGS –
Solar Heat Gain Coefficient & Visible Transmittance Only**

Reference Product		Solar Heat Gain Coefficient	Visible Transmittance
Type	Glazing	With Film	With Film
Residential	Single Glazed Clear	0.64	0.67
	Double Glazed Clear	0.56	0.60
Non-Residential	Single Glazed Clear	0.68	0.69
	Single Glazed Grey	0.46	0.33
	Double Glazed Clear	0.58	0.64
	Double Glazed Grey	0.35	0.29

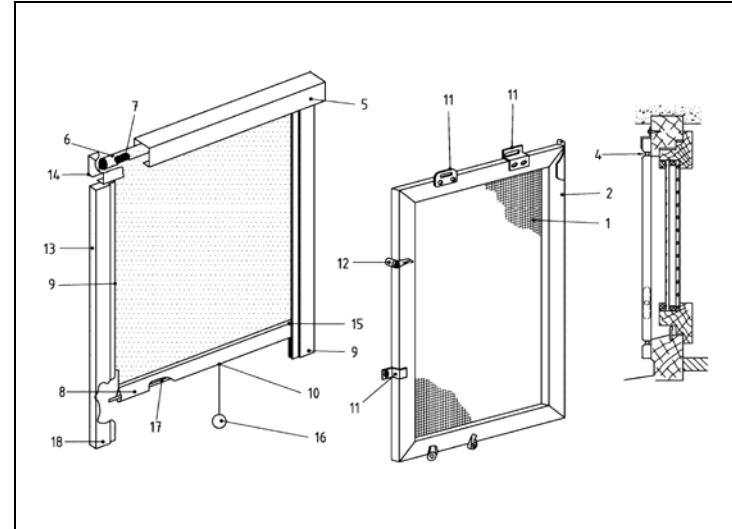
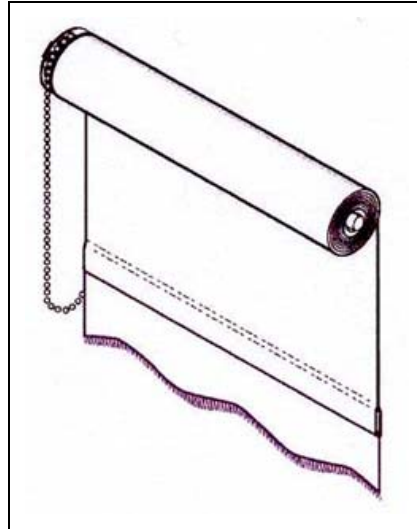
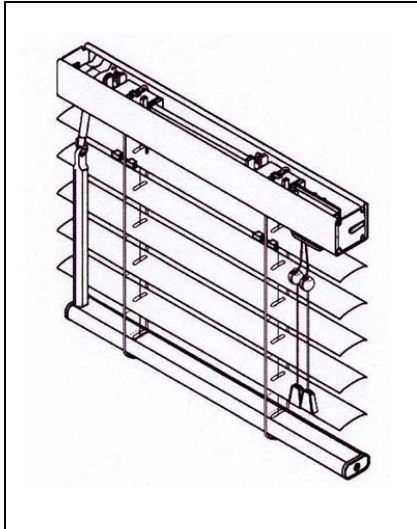
Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information.
www.nfrc.org

- Use Numerical Indices Currently on NFRC Labels

- U-factor
- SHGC, and
- Visible Transmittance

NFRC Attachment Guidelines

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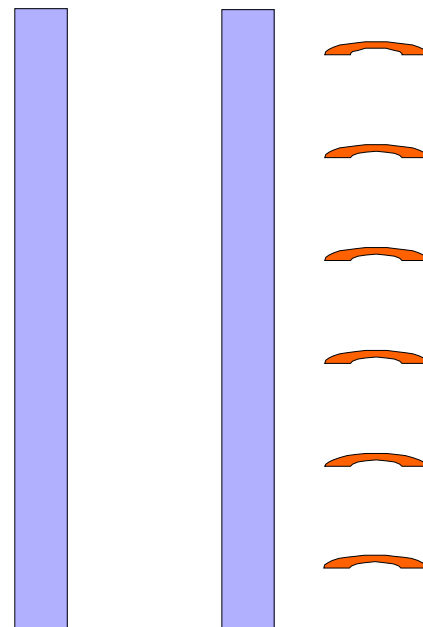
- Same Base Case Windows and Doors Are Used to Rate All Fenestration Attachments
 - Storm Windows and Doors
 - Applied Films
 - Venetian Blinds
 - Roller Blinds
 - Sun Screens

NFRC Attachment Guidelines

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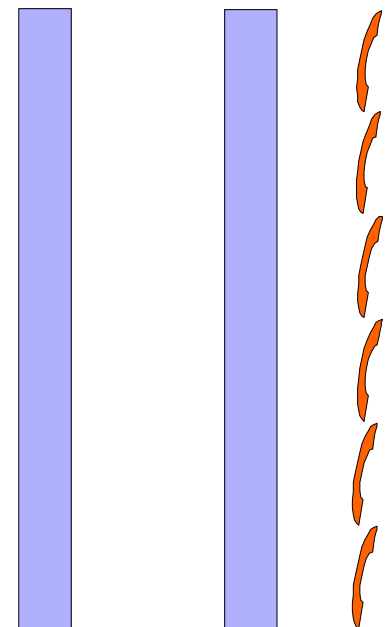
- **Some Fenestration Attachments Exhibit Dynamic Performance Characteristics Based on their Orientation**
 - Fully Open
 - Fully Closed
 - Intermediate Positions

Fully Open Venetian Blind
(Slats 0°)



U-Factor = 0.65 Btu/(hr · Ft² · °F)
SHGC = 0.75

Fully Closed Venetian Blind
(Slats 80°)



U-Factor = 0.52 Btu/(hr · Ft² · °F)
SHGC = 0.35