



**National
Fenestration
Rating Council,
Incorporated**

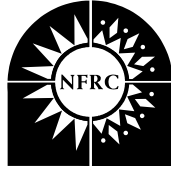
NFRC 1997 Technical Interpretations

Copyright NFRC

Published: March, 2004 Applicable to 1997 Procedures

Prepared by:

**National Fenestration Rating Council, Incorporated
8484 Spring Street, Suite 320
Silver Spring, Maryland 20910
Telephone: 301/589-1776
Facsimile: 301/589-3884
Website: www.nfrc.org**



National Fenestration
Rating Council

The NFRC Technical Committee issues Technical Interpretations to *NFRC 100sm: Procedure for Determining Fenestration Product Thermal Properties (Currently Limited to U-values)*, *NFRC 200: Procedure for Determining Solar Heat Gain Coefficients at Normal Incidence*, *NFRC 300: Procedure for Determining Solar Optical Properties for Simple Fenestration Products*, *NFRC 400: Procedure for Determining Fenestration Product Air Leakage*, and *NFRC Simulation Manual*. These *NFRC Technical Interpretations* examine questions put forth by NFRC members and those entities involved in the NFRC rating system and certification and labeling program.

This document is published annually, but maybe published more frequently if the need arises. Please contact NFRC to assure that you are reading from the most recent edition of *NFRC Technical Interpretations*. These *NFRC Technical Interpretations*, where applicable, while be incorporated into future editions of their respective program documents.

For more information contact:

*National Fenestration Rating Council, Incorporated
8484 Georgia Avenue, Suite 320
Silver Spring, MD 20910
Telephone: 301-589-1776
Facsimile: 301-589-3884
Web Site: <http://www.nfrc.org>*

Table of Contents

NFRC 100: Technical Interpretations

Strip Window and Wall Simulation	TI-2003-02
Clad Product definition	TI-2003-03
Interior and Exterior Glazed Products	TI-2003-04
Domed Skylight	TI-2003-08
Door Sill Evaluation	TI-2003-13
Products Having Edge of Glazing Less than 63.5mm (2.5 inch).....	TI-2003-16
Greenhouse/Garden Windows	TI-2003-17
Equal and Unequal Sash Grouping (Rescinded 03-23-04)	TI-2003-18
Decorative Tapes and Applied Dividers	TI-2003-19
Default Divider	TI-2003-20

NFRC 200: Technical Interpretations

Nominal Glass Thickness for SHGC and VT	TI-2003-01
Strip Window and Wall Simulation	TI-2003-02
Laminated Glass SHGC and VT	TI-2003-10
Spectral Data File.....	TI-2003-11
Decorative Tapes and Applied dividers	TI-2003-19
Default Divider	TI-2003-20

NFRC 400: Technical Interpretations

Product Line Grouping for Air Leakage	TI-2003-25
---	------------

NFRC Simulation Manual:

Laminated Glass SHGC and VT	TI-2003-10
-----------------------------------	------------



TI-2003-01 03/24/03

NFRC Technical Interpretation-1997

Interpretation Requested:
Is TI-100-00003* (Nominal Glass Thickness) applicable to NFRC 200 procedure also? *(Can nominal glass thickness be used for NFRC 100 U-factor calculations-details see Technical Interpretation manual -1997 Part I)

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
03/03/03	03/03/03	03/24/03

Pertinent Document:	
NFRC 200 (1997) and NFRC 200 (2001)	
Referenced Sections:	Referenced Pages:
NFRC 200 (2001) sec. 6.1.1	Page 8

Interpretation :
Yes. Nominal glass thickness may be used for determining the SHGCc and VTc of the glazing system.

Technical Committee Revisions to Initial Interpretation:



TI-2003-02
03/24/03

NFRC Technical Interpretation-1997

Interpretation Requested:
How are strip window wall simulated? Are intermediate Jambs measured centerline to centerline?

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
03/03/03	03/03/03	03/24/03

Pertinent Document:	
NFRC 100 (1997) and NFRC 100 (2001), NFRC 200 (1997) and NFRC 200 (2001)	
Referenced Sections:	Referenced Pages:
NFRC 100 (1997) sec. 5.2, NFRC 100 (2001) sec.1.5.3	Page 14 and , Page1-21 respectively

Interpretation :
Strip windows were determined to be the same as a window wall; therefore, intermediate vertical members are simulated for the jambs based on centerline to centerline dimensions.

Technical Committee Revisions to Initial Interpretation:



TI-2003-03
03/24/03

NFRC Technical Interpretation-1997

Interpretation Requested:
Is the definition of cladding as defined in NFRC 100 (2001) applicable to NFRC 100 (1997) document?

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
03/03/03	03/03/03	03/24/03

<i>Pertinent Document:</i>	
NFRC 100 (1997)	
<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
NFRC 100 (1997) sec. 4.1	Page 7

Interpretation :
Yes, the definition of cladding as defined in NFRC 100-2001 is applicable to NFRC 100-1997

Technical Committee Revisions to Initial Interpretation:



TI-2003-04
03/24/03

NFRC Technical Interpretation-1997

Interpretation Requested:
Is grouping of Interior and Exterior glazed products as one Product Line allowed under NFRC 100 (1997)?

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
03/03/03	03/03/03	03/24/03

Pertinent Document:	
NFRC 100 (1997)	
<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
NFRC 100 (1997) sec. 4.1	Page 7

Interpretation :

No, the Interior and Exterior glazed products cannot be grouped as one Product Line under NFRC 100 (1997) procedure.

Technical Committee Revisions to Initial Interpretation:



TI-2003-08
04/04/03

NFRC Technical Interpretation-1997

Interpretation Requested:
What is the procedure for simulating product where glazing was tested under ASTM C 1363 procedure, e.g. dome skylight?

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
03/20/03	04/02/03	04/04/03

<i>Pertinent Document:</i>	
NFRC 100 (1997) and NFRC 100 (2001)	
<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
NFRC 100 Section 5.1.2	Page 12

Interpretation :

- Test the dome only using ASTM C 1363 test procedure to determine the conductance value.
- Use the conductance value and create a glass in WINDOW having thickness equivalent to frame IG insert opening.
- Import the glazing of the modeled glazing into the frame (150mm, 6 inches). Note the value of the film coefficients. Run all cross-sections in accordance with NFRC requirements.
- Area wt. and obtain the total U-factor, the using the COG U-factor calculated in WINDOW or later using the film coefficient from THERM/FRAME import and the conductance value.

Technical Committee Revisions to Initial Interpretation:



TI-2003-10 05/05/03

NFRC Technical Interpretation-1997

Interpretation Requested:

How does a simulator model SHGC and VT for laminated glass using NFRC 200 (1997)?

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
10/28/99	05/05/03	05/05/03

Pertinent Document:

NFRC 200 (1997) and Simulation Manual

Referenced Sections:	Referenced Pages:
NFRC 200 (1997) Section 2, and Simulation Manual section 5.5.1	NFRC 200 (1997) Pg. 1, Simulation Manual Pg. 5-10

Interpretation :

Tinted laminated glass **shall** use NFRC approved spectral data for the actual glass and interlayer thicknesses.

Laminated glass SHGC calculation for **clear** Laminate glass:
 Use NFRC approved spectral data and select only products with 0.76mm (0.030") clear PVB thickness with two panes of 3mm (1/8") glass to represent any combination of glass thickness and PVB thickness. This construction of laminated glass shall represent both residential and commercial single glazed products.

For Insulated glass units, the laminated glass as described above shall be combined with 3mm (1/8") glass for residential products and 6mm(1/4") glass for non-residential.

Technical Committee Revisions to Initial Interpretation:

Revised TI-99007 May 5th, 2003



TI-2003-11
06/03/03

NFRC Technical Interpretation-1997

Interpretation Requested:
May Spectral data that has been NFRC approved (# sign) in windows be used in WINDOW4.1 with out # sign

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
06/03/03	06/08/03	06/08/03

Pertinent Document:	
NFRC 200 (1997)	
Referenced Sections:	Referenced Pages:
Section 5.4	Page 7

Interpretation :
Yes, Spectral data that is approved for WINDOW (currently approved) can be used for WINDOW4.1 (without the # sign) upon implementation of procedures based upon the limited use of OPTICS.

Technical Committee Revisions to Initial Interpretation:



TI-2003-13
07/09/03

NFRC Technical Interpretation-1997

Interpretation Requested:

How can a manufacturer of side-hinged exterior doors simplify the evaluation of multiple sill options available in a given side-hinged exterior door system?

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
07/08/03	07/09/03	07/09/03

Pertinent Document:	
NFRC 100 Section B (1997)	
Referenced Sections:	Referenced Pages:
NFRC 100-B - Section B5.0	Page 13

Interpretation :

Side-hinged exterior door sill systems that are non-metal or metal and meet the requirement of a thermally broken member, as defined in NFRC 100-Section B 1997 Section B3.25, may be given the same total product U-factor as the same door system option with the NFRC default sill.

Side-hinged exterior door sill systems that are metal and do not meet the requirement of a thermally broken member, as defined in NFRC 100-Section B 1997 Section B3.25, may be given total product U-factor 0.10 W/m²C (0.02 BTU/hr*ft²*F) higher than the same door system option with the NFRC default sill system.

The simulation report shall include a simulation for the exact option as tested.

Technical Committee Revisions to Initial Interpretation:



TI-2003-16 09/08/03

NFRC Technical Interpretation 1997

Interpretation Requested:

A standard window product is made with and without dividers. The dividers must be modeled in accordance with NFRC 100, but the default divider pattern does not allow for the full 63.5mm of edge-of-glass (divider) to be modeled. How should this product be area-weighted? (See attached drawing)

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
08/19/03	09/08/03	09/08/03

Pertinent Document:

NFRC 100 (1997)

<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
NFRC 100 Section 4.2, 6.2	Page 8, 24

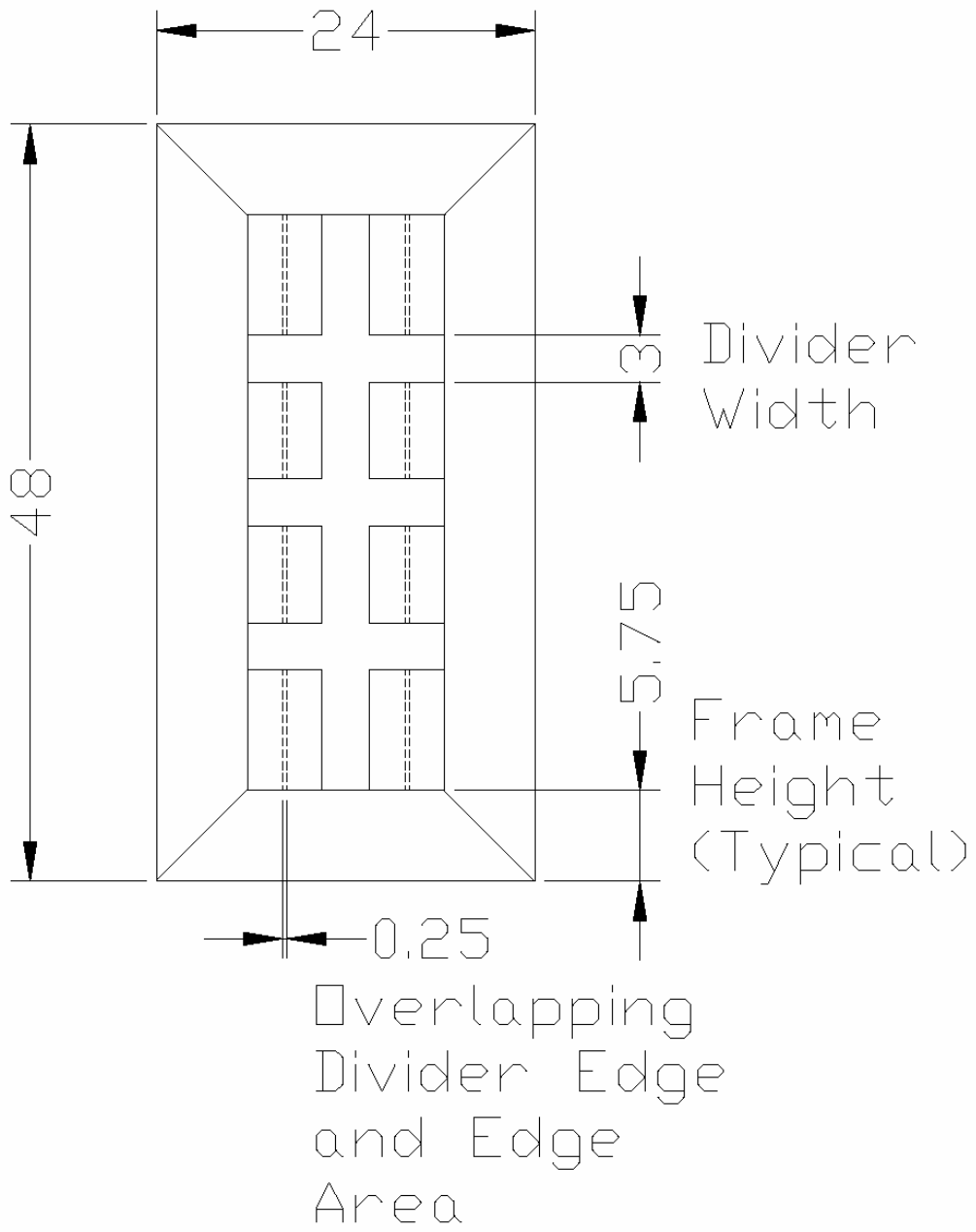
Interpretation :

This interpretation shall apply to all fenestration products.

Increase the overall dimension(s) by the distance of the overlap, thereby restoring the 63.5mm edge and divider-edge dimensions, leaving the center-of-glass area equal to zero.

Note: This would be the same as the interpretation for transoms and sidelites (TI-100-99008)

Technical Committee Revisions to Initial Interpretation:





TI-2003-17 09/08/03

NFRC Technical Interpretation-1997

Interpretation Requested:
How do we model greenhouse/garden windows?

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
09/04/03	09/08/03	09/08/03

Pertinent Document:	
NFRC100 (1997)	
Referenced Sections:	Referenced Pages:
NFRC 100 section 5.2	Page 13

Interpretation :
Currently greenhouse/garden windows cannot be simulated. They are test only products.

Technical Committee Revisions to Initial Interpretation:



TI-2003-18
Rescinded
03-23-04

NFRC Technical Interpretation 1997

Interpretation Requested:

1997 Procedure Only
Can equal and unequal sash configurations be grouped as individual options in a single product line? (See attached drawings)

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
09/5/03	09/08/03	09/08/03

Pertinent Document:

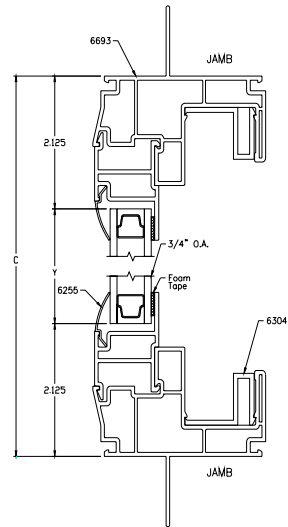
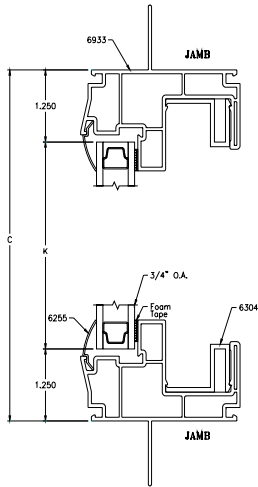
NFRC 100 (1997)	
<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
4.1,4.2	6-8

Interpretation :

Yes, as long as the total product U-factor when simulated with the lowest center-of-glazing option, result in an overall product U-factor change of +/- 0.06 W/(m²K) (0.01 Btu/h•ft²•F) or less.

Technical Committee Revisions to Initial Interpretation:

Rescinded 03-23-04



NFRC TI-2003-18 (Rescinded 03-23-04)
 Equal and Unequal Sash Grouping

September 8, 2003



TI-2003-19
09/29/03

NFRC Technical Interpretation-1997

Interpretation Requested:

Tapes are used for decorative window applications. It can be used to simulate the appearance of grids or other designs. The main question is: Can this product be ignored when calculating U, SHGC, and VT. If not, how can it be rated?

Date Requested:	Initial Interpretation Date:	Final TIPC Approval Date:
09/15/03	09/29/03	09/29/03

Pertinent Document:	
NFRC 100 (1997), 200 (1997)	
Referenced Sections:	Referenced Pages:
NFRC 100 section 6.2, NFRC 200 Section 4.3	NFRC 100Pg 15, NFRC 200 pg 5

Interpretation :

Tapes that are transparent or translucent shall be deemed to be equivalent the same glass without the tape.

Technical Committee Revisions to Initial Interpretation:



TI-2003-20
09/29/03

NFRC Technical Interpretation-1997

Interpretation Requested:

When calculating the number of horizontal and vertical dividers, which dimensions should be used?

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
09/15/03	09/29/03	09/29/03

Pertinent Document:

NFRC 100 (1997), 200 (1997)

<i>Referenced Sections:</i>	<i>Referenced Pages:</i>
NFRC 100- section 4.2, NFRC 200- section 4.3	NFRC 100 pg 8, NFRC 200 pg 5

Interpretation :

The overall window dimension shall be used to determine the number of horizontal and vertical dividers.

Technical Committee Revisions to Initial Interpretation:



TI-2003-25 11/11/03

NFRC Technical Interpretation-1997

Interpretation Requested:
Can an Air Leakage rating for a casement be used on the awning?

<i>Date Requested:</i>	<i>Initial Interpretation Date:</i>	<i>Final TIPC Approval Date:</i>
10/24/2003	11/11/03	11/11/03

Pertinent Document:	
NFRC 400 (1997)	
Referenced Sections:	Referenced Pages:
NFRC 400 - Section 3.1	Page 1

Interpretation :
<p>No. The current NFRC 400 section 3.1 states: "A series of fenestration products specific to operator type (see Table 1 of NFRC 100) and framing material." No groupings of product lines are allowed under the NFRC 400 procedure.</p>

Technical Committee Revisions to Initial Interpretation: