



Guidelines for the NFRC Product Certification Program For Site-Built Fenestration Systems

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**In cooperation with
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Foreword

The National Fenestration Rating Council Incorporated ("NFRC") has developed and operates a uniform national rating system for the energy performance of fenestration products, including windows, doors, skylights, curtain walls and similar products. The linchpin of the Rating System is a procedure for determining the thermal transmittance ("U-factor") of a product. The U-factor rating procedure is supplemented by procedures for rating products for solar heat gain coefficient ("solar heat gain" or "SHGC"), visible transmittance or "VT"), and air leakage ("AL"). Together, these rating procedures, as set forth in documents published by NFRC, are known as the NFRC Rating System. The Rating System will be supplemented by additional procedures for rating energy performance characteristics, including long-term energy performance, ultra-violet (UV), comfort and condensation index.

The Rating System employs computer simulation and physical testing by NFRC-accredited laboratories to establish energy performance ratings for fenestration products and product lines. The Rating System is reinforced by a certification program under which fenestration manufacturers, glazing contractors and other responsible parties may label and certify fenestration products to indicate those energy performance ratings, if the ratings are authorized for certification by an NFRC-licensed certification and inspection agency ("IA"). The requirements of the rating, certification and labeling program (the "Certification Program") are set forth in the *NFRC Product Certification Program*, as amended, updated or interpreted from time to time (the "PCP"). Through the Certification Program, the *NFRC Laboratory Accreditation Program* (the "LAP"), and the *NFRC Certification Agency Program* (the "CAP"), NFRC intends to ensure the integrity and uniformity of NFRC ratings, certification and labeling by ensuring that testing and simulation laboratories and IA's adhere to strict NFRC requirements.

In order to participate in the Certification Program, a manufacturer or other responsible party shall rate a product to be certified for U-factor, solar heat gain and visible light and may elect to be rated for air leakage or any other procedure adopted by NFRC, and to include those ratings on the NFRC Label Certificate. U-factor, SHGC and VT rating reports shall be obtained from a laboratory that has been accredited by NFRC in accordance with the requirements of the LAP. An Independent Inspection and Certification Agency that has been licensed by NFRC in accordance with the requirements of the CAP shall then review the rating, and the IA must issue a product certification authorization.

Products that are described and printed on an NFRC Label Certificate in accordance with NFRC requirements are considered NFRC-certified. At least once each year, NFRC publishes the *NFRC Certified Products Directory*, listing product lines and individual products selected by the manufacturer or responsible party for which product certification authorization has been granted and all NFRC-licensed IA's and NFRC-accredited testing and simulation laboratories.

The Certification Program was developed based on guidelines established by the American National Standards Institute ("ANSI") in *ANSI Z34.1: American National Standard for Certification--Third Party Certification Program* and by the American Society for Testing and Materials ("ASTM") in *ASTM 699-79: Standard Criteria for*

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Evaluation of Agencies Involved in Testing, Quality Assurance, and Evaluating Building Components in Accordance with Test Methods Promulgated by ASTM Committee E-6.

NFRC manages the Rating System and supporting Certification, Accreditation and IA Programs in accordance with the *PCP*, the *LAP* and the *CAP* and conducts compliance activities under all the programs and the Compliance Assurance Program. NFRC also continues the development of the Rating System and each of the programs.

NFRC owns all rights in and to each of the *PCP*, *LAP*, *CAP*, Compliance Assurance Program, and each procedure that is a component of the Rating System, as well as each of its certification marks, trade names, and other intellectual property. For additional information on the roles of the IA's and laboratories and operation of the IA Program and Accreditation Program, see the *CAP* and *LAP*, respectively.

Disclaimer

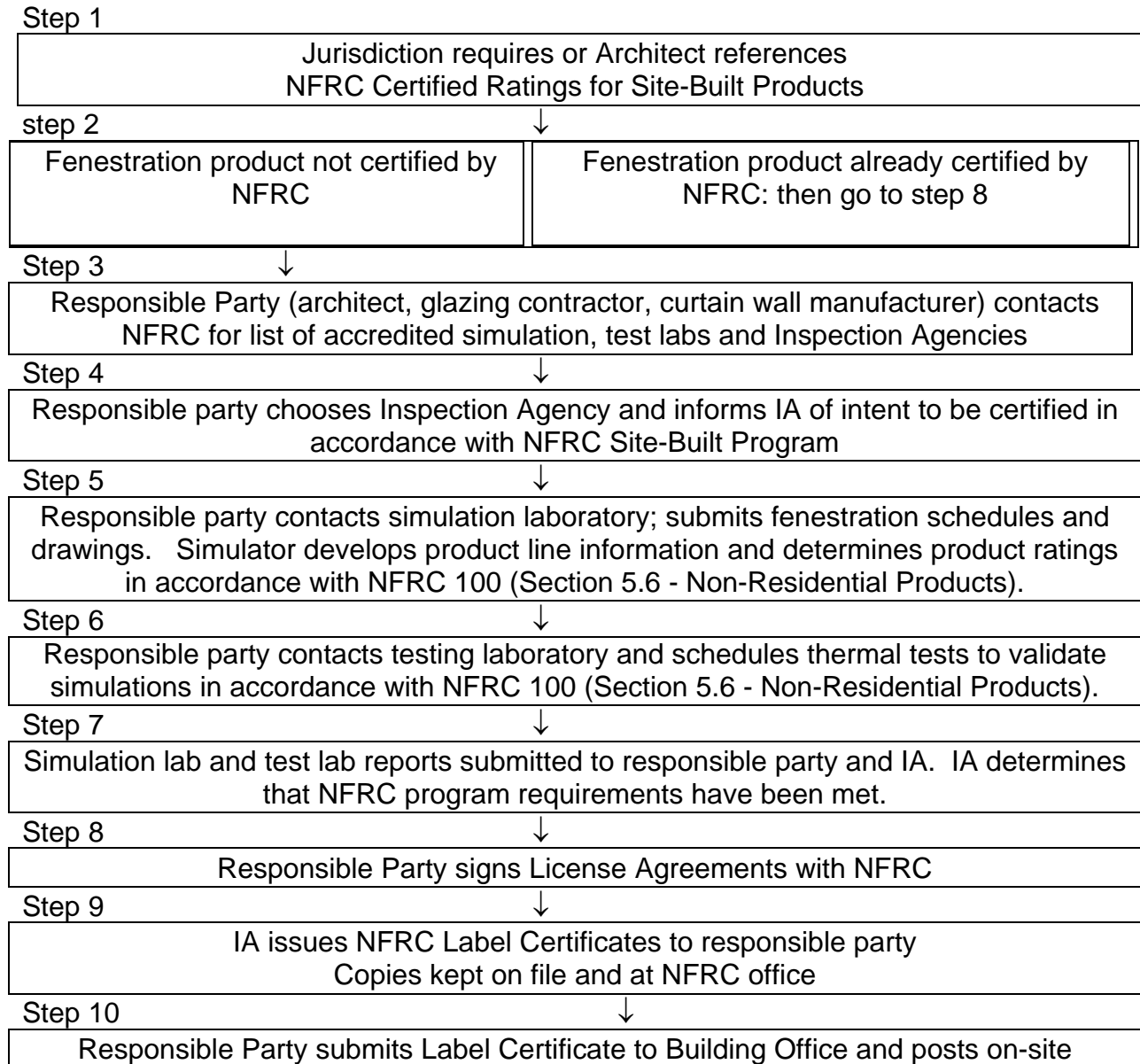
NFRC certification is the authorized act of a fenestration manufacturer in labeling a fenestration product with an NFRC Label which bears one or more energy performance ratings reported by NFRC-accredited simulation and testing laboratories and authorized for certification by an NFRC-licensed IA. Each of these participants acts independently to report, authorize for certification and certify a rating. NFRC does not certify a product and certification does not constitute a warranty of NFRC regarding any characteristic of a fenestration product. Certification is not an endorsement of or recommendation for any fenestration product or product line or any attribute of a product or product line. NFRC is not a merchant in the business of selling fenestration products and therefore cannot warrant products as to their merchantability or fitness for a particular use.

NFRC THEREFORE DISCLAIMS ANY AND ALL LIABILITY THAT MAY ARISE FROM OR IN CONNECTION WITH SERVICES PROVIDED BY, DECISIONS MADE BY OR REPORTS OR CERTIFICATIONS ISSUED OR GRANTED BY ANY NFRC-ACCREDITED LABORATORY, NFRC-LICENSED IA OR ANY PRODUCT MANUFACTURER; RELIANCE ON ANY NFRC PRODUCT DESCRIPTION, SPECIFICATION, RATING, TEST OR CERTIFICATION, WHETHER APPEARING IN A REPORT, A PRODUCT CERTIFICATION AUTHORIZATION OR A PRINTED OR ELECTRONIC DIRECTORY, OR ON A LABEL; OR THE SALE OR USE OF ANY NFRC RATED OR CERTIFIED FENESTRATION PRODUCT OR PRODUCT LINE; INCLUDING BUT NOT LIMITED TO DAMAGES FOR PERSONAL OR OTHER INJURY, LOST PROFITS, LOST SAVINGS OR OTHER CONSEQUENTIAL OR INCIDENTAL DAMAGES. NFRC program participants are required to indemnify NFRC from and against such liability.

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Flowchart
NFRC Certification and Rating Program for Site-Built Fenestration Products
NFRC 100 (Section 5.6 - Non-Residential Products)



Section 1

Introduction

Scope of Program

Any curtain wall manufacturer, lineal supplier, glazing contractor, architect or other party may choose to be the “Responsible Party.” The Responsible Party specifies, assembles, fabricates or installs site-built fenestration products. The Responsible Party arranges to have the product physically tested by an NFRC-accredited testing laboratory in accordance with the *NFRC Test Procedure*. The test reports are delivered to the Responsible Party, which may then direct the testing laboratory to deliver the reports to the IA. The simulation and testing sequence is performed at the Responsible Party’s discretion.

The IA then compares the physical test results with the computer simulation results for the same product line. If the IA determines that the simulated and tested values are within the tolerances required by *NFRC 100 (Section 5.6 - Non-Residential Products)*, and that all requirements for product certification have been met, the IA authorizes NFRC product certification and gives the Responsible Party permission to print, file and post an NFRC Label Certificate in accordance with the Certification Program. Products described in the Label Certificate are NFRC-certified products. Products authorized for certification and selected by the responsible party may be listed in on-line Certified Products Directory on the NFRC website at the discretion of the Responsible Party.

A. Role of NFRC

1. NFRC establishes, and periodically reviews, Certification Program requirements, including rating and certification criteria and a system for challenges and appeals;
2. NFRC manages the Certification Program in accordance with *PCP, LAP, CAP, NFRC 100 (Section 5.6 - Non-Residential Products)* and other NFRC rating procedures;
3. NFRC licenses IA’s to provide NFRC product certification services;
4. NFRC accredits simulation and testing laboratories to provide NFRC rating services;
5. NFRC maintains a system under which Label Certificates are issued to Responsible Parties to be posted on-site and files with the proper authorities;
6. Maintains an online listing of products and their energy performance ratings authorized for certification; this listing is the Certified Products Directory (CPD).
7. NFRC conducts educational workshops for IA’s, laboratories and others to ensure continuing competence and uniform application of the Certification Program;
8. NFRC hears challenges, reviews policy and acts on appeals pertaining to the Certification Program, the IA Program and the Accreditation Program.

B. Role of Responsible Party

1. Arranges with one or more NFRC-licensed IA's to obtain NFRC certification for one or more product lines;
2. Arranges with one or more NFRC-accredited simulation laboratories for the conduct of simulations and development of the matrix required for rating the manufacturer's product lines;
3. Arranges with one or more NFRC-accredited testing laboratories for the conduct of thermal tests required for rating the Responsible Party's products;
4. Authorizes testing and simulation laboratories to provide an IA with copies of simulation and testing results and necessary support data for the purpose of determining compliance with Certification Program requirements;
5. Maintains a quality control program to assure consistent quality as it relates to energy performance characteristics of rated products;
6. Cooperates with inspections of facilities to determine continued compliance with the Certification Program requirements;
7. Enters into a license agreement with NFRC, authorizing the Responsible Party to use an NFRC certification mark on certified products and in advertising;
8. Utilizes Label Certificates to indicate certification.

Please note that a Responsible Party may participate in the NFRC Certification Program with more than one IA and participate in other product certification programs not related to energy performance referencing NFRC procedures. Additional requirements may be established by NFRC as necessary to assure continued program credibility.

C. Role of IA

1. Establishes written procedures and policies consistent with the requirements of the Certification Program for licensee's participation in the NFRC Certification Program;
2. Implements the NFRC requirements and procedures regarding product rating and certification;
3. Conducts in-plant inspections of licensee's facilities to determine continued compliance with Certification Program requirements;
4. Reviews product matrix, simulation and test reports to determine whether all data appears complete and reasonable;

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- 5 Authorizes certification of a licensee's products that are deemed certifiable and distribute, or authorize the production of Label Certificates, to be posted at the building site and filed with the appropriate authorities;
- 6 Participates in the investigation of potential violations (prohibited activities) as set forth in the NFRC Compliance and Monitoring Program.

Please note that additional information regarding the role of the IA in the NFRC Certification Program may be found in NFRC CAP. In the event that there are no NFRC-licensed IA's available to perform the services to be provided by an IA, any such service may be provided by NFRC or NFRC's subcontractor. In the event there is no NFRC-licensed IA's, the word "IA," as used herein, shall mean NFRC or NFRC's subcontractor.

D. Role of Laboratory

Manufacturers participating in the NFRC's Certification Program shall use testing and simulation laboratories that are accredited under NFRC's Laboratory Accreditation Program. For information on the Laboratory Accreditation Program, see NFRC LAP.

E. Property Rights

NFRC owns all rights to the Certification Program, the Accreditation Program, the IA Program, *NFRC 100, NFRC 101, NFRC 102, NFRC 200, NFRC 201, NFRC 300, NFRC 301, NFRC 400 and NFRC 500.*

F. Compliance and Monitoring Program

NFRC has adopted and enforces a Compliance and Monitoring Program pursuant to which NFRC may impose fines and require corrective action by Certification Program participants and other persons who fail to comply with the requirements of the Certification Program License Agreement or certain legal requirements, and each NFRC licensee shall comply with the provisions of the Compliance and Monitoring Program.

F. Required Testing and Simulation Tools

Under the Certification Program, fenestration products may be authorized for certification only if they have been rated in accordance with NFRC-approved procedures, computer programs and test methods.

1. Fenestration thermal performance procedures for rating and testing methods are set forth in *NFRC 100: Procedure for Determining Fenestration Product U-factors*, *NFRC Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems*, as they may be amended or interpreted or otherwise modified from time to time.
2. All NFRC-accredited testing laboratories are required to follow *NFRC Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems* and in general accordance with *ASTM C 1199: Standard Test Method for Measuring the Steady State Thermal Transmittance of Fenestration Systems using Hot Box Methods*. (or its successor provision)
3. All NFRC-accredited simulation laboratories are required to use the following NFRC-approved computer procedures, or any computer software program for the simulation of the energy performance of fenestration products, adopted by the NFRC Board of Directors or its successor provision upon approval by the NFRC Board of Directors:

WINDOW 4.1

Copyright March 1992. Regents of the University of California. LBL-25686. *WINDOW 4.1: A PC Program for Analyzing Window Thermal Performance*. Windows and Daylighting Group. Lawrence Berkeley Laboratory, Berkeley, California; and

FRAME 4.0

Copyright June 1992. *FRAME: A Computer Program to Evaluate the Thermal Performance of Window Frame Systems*, Version 4.0. Enermodal Engineering Limited. Waterloo, Ontario, Canada.

THERM 2.1

Copyright 1999 Regents of the University of California. *THERM for Analyzing Two-Dimensional Heat Transfer Through Building Products*, Version 2.0. Windows and Daylighting Group, Building Technologies Department, Environmental Energy Technologies Division, Ernest Orlando Lawrence Berkeley National Laboratory, Berkeley, CA 94720 USA.

Section 2

Product Certification Authorization

A. Responsible Party Participation Requirements

A Responsible Party seeking to participate in the NFRC Certification Program may do so only upon applying for and obtaining product certification authorization from an NFRC IA and thereafter entering into a license agreement with NFRC. Product certification authorization may be obtained for any one or more of the energy performance ratings comprising the Rating System.

B. Product Certification Authorization Procedures

An applicant wishing to be the responsible party for product certification (i.e., fenestration manufacturer, lineal supplier company, glazing contractor, architect, etc.) shall obtain, from an NFRC-accredited laboratory, a fenestration product U-factor rating, for each product to be authorized for certification. Such ratings shall be obtained by complying with either the Product Line Validated Computational Procedure or Testing Alternative Procedure in accordance with *NFRC 100*. An applicant that rates products in accordance with the Product Line Validated Computational Procedure shall meet the requirements and follow the procedures set forth in Section B1 (see below). An applicant rating products in accordance with the Testing Alternative shall follow the procedures in Section B2.

Note: The Testing Alternative shall not be used to obtain a rating to grant product certification authorization if the U-factor for the product to be certified can be simulated in accordance with *NFRC 100 (Section 5.6 - Non-Residential Products)*.

1. Product Line Validated Computational Procedure

An applicant shall, for each product to be authorized for certification utilizing the Product Line Validated Computational Procedure, obtain an NFRC simulation report in accordance with the following requirements.

- A. For each product to be rated the applicant shall deliver copies of product drawings representative of and describing each of the products to an NFRC-accredited simulation laboratory.
- B. For certified product ratings on a specified building project, the applicant shall submit the fenestration schedule, construction details and elevation drawings (including framing system and glazing system descriptions) for that project to an accredited simulation laboratory.
- C. The schedule and drawings shall include or be accompanied by specification sheets and any supplemental drawings or specifications that accurately portray product construction and operation. Products to be rated shall meet the definitional and

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other requirements set forth in *NFRC 100*.

- D. The applicant shall request the simulation laboratory to conduct computer simulations on each such product in accordance with *NFRC 100* and to develop a matrix and issue both the matrix and a copy of each simulation report to the applicant.
- E. The applicant shall direct the simulation laboratory to deliver the matrix and one copy of each simulation report, together with copies of complete support data to an NFRC-licensed IA selected by the applicant.
- F. An applicant shall, for each product to be authorized for certification, obtain physical test reports from an NFRC-accredited test laboratory. The testing laboratory shall physically test the representative products in accordance with *NFRC 100* and issue one copy of the testing report to the applicant. The laboratory may perform destructive evaluation after each test to ensure that the product complies with the product's bill of materials.
- G. The applicant shall direct the testing laboratory to deliver one copy of each test report, together with copies of complete support data to the NFRC-licensed IA selected by the applicant.

2. Validating Simulations

The applicant shall select an NFRC-licensed IA and shall direct the IA to review the test results and review the simulation results obtained in B1 to determine whether the products rated meet the equivalence and certification authorization requirements as set forth in NFRC 100 and NFRC 100 (see below).

- A. Simulated and tested U-factors for a given total fenestration product shall be considered equivalent if the agreement between the two numbers is within the following range:

Simulated U-factor	Accepted Difference between Tested and Simulated U-factor
2.27 W/m ² -°C (0.4 BTU/hr-ft ² -°F) or less	2.27 W/m ² -°C (0.4 BTU/hr-ft ² -°F) or less
Greater than 2.27 W/m ² -°C (0.4 BTU/hr-ft ² -°F)	10% of Simulated U-factor

- B. The products submitted for physical testing shall conform to the product drawings, catalogue information, bills of materials or other product information submitted in connection with computer simulation ratings.

3. Testing Alternative

An applicant shall, for each product line to be authorized for certification utilizing the

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Testing Alternative, obtain physical test reports from an NFRC-accredited test laboratory. The testing laboratory shall physically test the representative products in accordance with *NFRC 100* and issue one copy of the testing report to the applicant. The laboratory may perform destructive evaluation after each test to ensure that the product complies with the product's bill of materials. The applicant shall direct the testing laboratory to deliver one copy of each test report, together with copies of complete support data to an NFRC-licensed IA selected by the manufacturer. The physical test results for the product set forth in each test report issued pursuant to this section shall meet the requirements for Testing Alternative set forth at *NFRC 100*.

Note: A products shall not be rated utilizing this alternative if it can be simulated in accordance with *NFRC 100*, Section 5.4 (or its successor provision).

4. Non-validation Actions

If the thermal test does not validate the simulation the following procedure shall be followed:

- A. The IA shall notify the simulation laboratory, the manufacturer, fabricator or lineal supplier and the testing laboratory of the non-validation. These parties shall attempt to establish reasons of the non-validation. These parties shall have 10 calendar days to identify the reason(s) for the non-validation.
- B. If errors in workmanship or product materials are identified, one re-test is allowed at the expense of the applicant.
- C. If no resolution is reached within the 10 calendar day period, the IA shall notify NFRC staff within 1 business day for assistance.

5. Re-certification of U-factor

Products to be listed in the NFRC Certified Products Directory as certified for NFRC U-factor ratings shall be subject to re-certification four (4) years from the date of the oldest physical test conducted for the latest certification ratings.

6. Inspection

In connection with an initial product certification authorization a designated IA shall conduct an inspection of the applicant (Responsible Party) taking responsibility for the rating of the site-built product line, to ensure compliance with the requirements of the certification program. The initial inspection in connection with the initial product certification authorization may be conducted after certification of the applicant's first product, in the discretion of the IA, but shall be completed not later than six (6) months after the date of notification by the IA of initial product certification authorization. For more information about the inspection program, see Section 4 of the PCP.

7. Responsible Party/Manufacturer Rights

NFRC certification, simulation and test reports shall be considered confidential.

Section 3 NFRC Licensing

A. Procedure for Licensing

1. In the event the IA determines that all of the requirements of product certification authorization have been met, the IA shall notify the responsible party in writing, with a copy to NFRC, of the products for which product certification authorization has been granted and that the responsible party is authorized to be licensed.
2. NFRC shall deliver to the responsible party a license agreement, with schedules for identifying the products authorized for certification and the energy performance ratings for which product certification authorization has been granted.
3. The manufacturer or responsible party shall return a signed copy of the license agreement to NFRC that shall take effect on the date of execution by NFRC. The license agreement shall remain valid upon compliance with the annual inspection and review requirements, and until product certification authorization is terminated, suspended or revoked.
4. Upon execution of the NFRC license agreement, a manufacturer or responsible party shall be licensed by NFRC to affix the NFRC certification mark, by means of NFRC-approved Label Certificate projects set forth on a license agreement schedule and to advertise NFRC certification of such products.
5. A licensee shall be entitled further to have certified products listed in the *NFRC Certified Products Directory*.

B. Denial of Product Certification Authorization or Manufacturer Licensing

An NFRC IA may deny NFRC product certification authorization or NFRC licensing if all of the requirements of this program have not been met. A responsible party may appeal a denial.

Section 4

Certification of Site-Built Products by Private Labelers (non-manufacturers)

The following is to provide guidance to site-built product manufacturers and others regarding testing and certification authorization for such products. This guidance is provided subject to NFRC adoption of program provisions that establish procedures for such testing and certification authorization.

1. The NFRC Product Certification Program provides for licensing of manufacturers to participate in the NFRC Program and to certify fenestration products as meeting NFRC requirements. Product certification authorization is available only for the products of a licensed manufacturer or fabricator.
2. A Lineal Supplier may contract for simulations and tests on product lines for NFRC rating on behalf of one or more contractors or other responsible parties.
3. If a Lineal Supplier obtains NFRC simulation and test reports on behalf of a contractor or other responsible party, the Lineal Supplier shall authorize the simulation and test laboratory to reissue the reports in the name of the responsible party provided that the report clearly indicates the date and report number of the original simulation and test. Reissued reports shall employ a numbering system to allow for tracking the reported information to the drawings, materials lists, and other information used in conducting the original simulations and tests. If a simulation or test report is issued to a Lineal Supplier, e.g., and identified as Report 1000, all reissues of these reports shall be identified as 1000-01, 1000-AA, or similar suffix identifiers.
4. When submitting simulation or test reports to an IA in connection with a manufacturer's product certification authorization, a laboratory must indicate to the IA that the reissued report is based on the same drawings, materials lists, and other information utilized under any previously submitted report.
 - a. Site-built products may have a label certificate based on test and simulations of assembled sample products if the manufacturer maintains control and responsibility of all components including glazing materials used in the site assembly of the product.
 - b. Other site-built products shall have a certificate based on test and simulations of assembled sample products if the manufacturer or responsible party for the ratings assumes responsibility for all components, including glazing materials, used in the site assembly of the component system. This option may be used by any entity participating as a fenestration manufacturer including, but not limited to, a lineal

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supplier, a fabricator, or a glazing contractor.

5. Each site-built individual product meeting the requirements of *NFRC 100 (Section 5.6 - Non-Residential Products)* shall have an NFRC Label Certificate, which shall act in the capacity of an NFRC label.
6. The Label Certificate shall identify each system option, including glazing type, and operator type employed in the construction of the project. Each individual product shall have its own unique Label Certificate.
7. The Label Certificate shall, by itself, permit compliance with the permanent label and temporary label requirements as long as this Label Certificate is part of a permanent record of the project specifications and will be readily accessible during the construction phase of the job and upon completion of the job.

Section 5

Licensee Responsibilities

A. Product Consistency, Modification, and Labeling

1. Each NFRC licensed manufacturer or responsible party shall assure that products (or projects) it markets as NFRC-certified are described in product literature using product descriptions that are consistent with those submitted to the NFRC-accredited simulation laboratory for computer simulation.
2. A product shall not be NFRC certified unless it has been issued an NFRC Label Certificate.
3. An NFRC-licensed manufacturer or responsible party shall assure that only products for which it has obtained NFRC product certification authorization shall be issued an NFRC Label Certificate.
4. An NFRC-licensed manufacturer or responsible party shall be responsible for the proper posting and filing of NFRC Label Certificates.
5. An NFRC licensee shall maintain an in-plant quality control program acceptable to the IA to assure consistent quality as it relates to energy performance characteristics of rated products.
6. An NFRC licensee shall retain all quality control records for a minimum of four years.
7. An NFRC licensee shall employ properly trained and experienced personnel to supervise production to assure the products meet the thermal performance ratings for which certification authorization has been granted, including at least one qualified person responsible for the immediate direction and maintenance of the licensee's quality control system. All quality control personnel shall be qualified by experience and training and shall be known to have the integrity to conduct the required minimum tests and inspections and to keep proper records.

B. Requirements as to NFRC Label Certificates

1. General Requirements

- a. A licensee shall only affix labels and print or post Label Certificates for products that it has been granted product certification authorization by its IA.
- b. Label Certificates shall be reviewed and approved by the Responsible Party's IA

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prior to use to ensure compliance with all label requirements. Labels or Label Certificates may not be printed, or authorized to be printed, until a certification authorization has been issued for the Product Line by the Responsible Party's Certification and Inspection Agency.

- c. Only ratings for which authorization has been granted may appear on the Label Certificate.
- d. The Label Certificate shall enable tracing of the product bearing the labels to a Product Line listed in the *Certified Products Directory*.
- e. Label Certificates shall not be printed or posted for products or projects where certification authorization is suspended or revoked.
- f. If an appeal of a Notice of Suspension is not requested or if a Notice of Revocation is issued, the Label Certificate for that product shall be destroyed by the IA not later than 90 days after the date of the Notice of Suspension or Notice of Revocation.
- g. Label Certificates shall not be printed or posted at any time during which a License Agreement is suspended or revoked or after it has been terminated.

2. Label Certificates shall:

- a. Be a stand-alone document of the size, format and content shown in Appendix C. of the *PCP*, unless otherwise specified. The Label Certificate shall include ratings for U-factor, Solar Heat Gain Coefficient and Visible Light Transmittance (effective January 1, 2004).
- b. Be available on the job site no later than the installation of the first complete fenestration product and be available for building code inspection.
- c. Be placed in a conspicuous location on the job site that shall ensure accessibility, legibility and visibility.
- d. Be specific to each Individual Product that has received an NFRC certification authorization report and is being installed on the job site, with the certificate complying with the requirements of the *PCP*.

Section 6

Size, Layout and Design Requirements For NFRC Label Certificates

A. Size

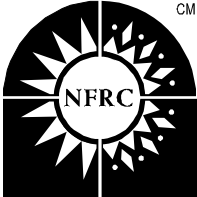
1. Label Certificate width shall be 8-1/2 inches (or A4 size) within ½ inch.
2. Label Certificate height shall be 11 inches (or A4 size) within ½ inch.

B. Format

1. Label Certificate shall conform to the content and layout in Figure C.1. of the *PCP*.
2. Label Certificate shall contain in the upper right hand corner the NFRC Temporary Label from Appendix B of the *PCP*. The NFRC Temporary Label portion of the Label Certificate shall be of the size specified in Appendix B, and shall contain all the information required in Appendix B and be subject to the limitations in Appendix B.
3. Label Certificates shall contain all the NFRC Permanent Label information required in Appendix C of the *PCP* and be subject to the limitations in Appendix C.
4. Label Certificates shall contain the following project information:
 - a. Street address
 - b. City, state, zip code
 - c. Project name (optional)
 - d. Designer (optional)
5. Label Certificates shall contain the following product line information:
 - a. Operator type
 - b. Product line identification number
 - c. Individual product identification number
 - d. Number of individual products in the project (building)
 - e. Location of the individual products in the project (building)
 - f. Elevation page location in the architectural drawings
 - g. Fenestration (window and door) schedule page in the architectural drawings
6. Label Certificate shall contain the following information for the frame material supplier, the glazing material supplier and the glazing contractor/installer:
 - a. Company name
 - b. Street address
 - c. City, state, zip code
 - d. Name of contact person with phone and facsimile number
7. Label Certificate shall be signed by and contain the name of the Independent Certification and Inspection Agency (IA) and the date that the Certification Authorization is issued.

SAMPLE LABEL CERTIFICATE USING 1997 TEMPORARY LABEL

**NFRC
Label
Certificate**
(for Site-Built Products)

 <p>National Fenestration Rating Council</p> <p>CERTIFIED</p>		<p>ENERGY Performance</p>	
<p>Energy savings will depend on your specific climate, house and lifestyle For more information, call _____ or visit NFRC's web site at Www.nfrc.org</p>			
<p>Technical Information</p>			
Res	U-Factor	Solar Heat Gain Coefficient	Visible Light Transmittance
Non- Res			
<p>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product energy performance. NFRC ratings are determined for a fixed set of environmental conditions and specific product sizes.</p>			

PROJECT LOCATION

Street
Address _____

City, State, Zip Code: _____
Project name: _____ Architect: _____
Contractor: _____

CERTIFIED FENESTRATION SYSTEM INFORMATION

Operator Type (per NFRC 100, Table 1): _____
Framing System description: _____
Glazing System description: _____
How many of this product and square footage on project: _____
Elevation drawing page: _____ Fenestration (window & door) schedule page: _____
Location(s) on building _____

Total Fenestration Product Area (ft²) on project _____

FRAMING SYSTEM SUPPLIER

Company name and address _____

Contact person: _____ Phone: _____ Facsimile: _____

GLAZING FABRICATOR/SUPPLIER

Company name and address _____

Contact person: _____ Phone: _____ Facsimile: _____

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GLAZING CONTRACTOR/INSTALLER

Company name and address _____

Contact person: _____ Phone: _____ Facsimile: _____

CERTIFICATION AUTHORIZATION


Independent Certification and Inspection Agency (IA): _____

Authorized IA Signature: _____ Date Certificate Issued: _____

SAMPLE LABEL CERTIFICATE USING 2003 ONE-SIZE TEMPORARY LABEL

NFRC Label Certificate

(for Site-Built
Products)

 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.35	Solar Heat Gain Coefficient 0.32
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2
<small>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. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	

PROJECT LOCATION

Street address: _____

City, state, zip code: _____

Project name (optional): _____ Designer (optional): _____

PRODUCT LINE INFORMATION

Operator type (per NFRC 100, Table 1): _____

Product line ID number: _____ Individual product ID number: _____

How many of this individual product: _____ Location in building: _____

Elevation drawing page: _____ Fenestration (window & door) schedule page: _____

FRAME MATERIAL SUPPLIER

Company name, address: _____

City, state zip code: _____

Contact person, phone & fax number: _____

GLAZING MATERIAL SUPPLIER

Company, name, address: _____

City, state, zip code: _____

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Contact person, phone & fax number: _____

GLAZING CONTRACTOR/INSTALLER

Company, name, address: _____

City, state, zip code: _____

Contact person, phone & fax number: _____

CERTIFICATION AUTHORIZATION

Independent Certification and Inspection Agency (IA): _____

Date Certification Authorization Issued: _____

Appendix 1

Timetable (approximate)

NFRC Site-Built Certification and Rating Program NFRC 100 (Section 5.6 - Non-Residential Products)

Day one	Party desires/requires NFRC certified Product ratings and contacts NFRC office for program information
Day 7	Party contacts accredited simulation laboratory and IA
Day 21	IA/Simulation Lab obtain drawings/fenestration schedule from responsible party (2 weeks)
Day 35	WINDOW/THERM/FRAME ratings for products are completed and forwarded to responsible party and IA (2 weeks)
Day 63	Specimen are received at accredited testing laboratory (4 weeks)
Day 77	Test results from lab are sent to responsible party and IA (2 weeks)
Day 91	IA reviews lab reports and schedules and issues CAR – schedules inspection (2 weeks)
Day 93	NFRC License agreements are signed
Day 100	Label Certificate Form completed, filed and posted

Notes

1. Times are variable, as noted:
 - It often takes two weeks to get drawings to a simulator because the party does not know what to send or sends incorrect drawings and schedules.
 - The time for a simulator to model the products depends upon how many product lines are involved but turn-around can be as short as one week.
 - It was noted that a lengthy period often occurs attempting to get the proper specimen to the test lab.
 - Testing periods are variable, note that a thermal test typically takes one day (24 hours).
 - IA response times are variable, “the squeaky wheel gets the grease.”

2. If product changes occur during the course of construction, delays are dependent on whether or not the change precipitates a new product line. If so, a new thermal test must be conducted to validate the simulation. If not, a new simulation must be run. In the case of the former, the time line will be lengthened by an addition 4 to 6 weeks. In the case of the latter, an extra week would suffice.

3. The building department needs to see the Label Certificate, however, a simulators report may be provided for granting preliminary approval (building permits).

Appendix 2

Glossary

Accredited Laboratory: A computer simulation or testing laboratory which has met NFRC requirements of the *LAP*, and which has entered into a laboratory License Agreement with NFRC and has received a Certificate of Accreditation from NFRC, neither of which has been terminated nor revoked.

Assembler: Any person who completes the final assembly of a product authorized for certification from fabricated parts, components, and accessories as supplied by a manufacturer in accordance with the product certification, and is authorized by that manufacturer to attach the appropriate temporary labels when necessary. An assembler retains the right to become an NFRC-certified manufacturer at a future date.

Certification: The affixing by an NFRC-Licensed Manufacturer of an NFRC Label on a fenestration product for which NFRC Product Certification Authorization has been granted by an NFRC IA and remains current, in accordance with the requirements of the *PCP*, and by which the manufacturer gives assurance to the purchaser and others that the product so labeled will perform in accordance with the energy performance rating or ratings specified thereon.

Certification Mark: The distinctive logotype a “sunflake” incorporating the initials NFRC in the center and the work “CERTIFIED” appearing at the base, which has been registered with the United States Trademark Office and it intended to appear as a component of an NFRC Label to indicate that the fenestration product to which the NFRC Label is affixed has met the requirements of the *PCP*.

Certification Program: The NFRC program for grant of authorization to fenestration manufacturers to rate and label products under the NFRC Rating System, as set forth in the *PCP*.

Certified Product: A fenestration product for which NFRC product certification authorization has been granted by an NFRC IA, is properly labeled and which remains current, in accordance with the requirements of the *PCP*, and that is manufactured by a manufacturer which meets the requirements of the *PCP*, and upon which the manufacturer has affixed an NFRC Permanent Label and an NFRC Temporary Label in the manner and form approved by NFRC. (See *PCP Section 3.1.C*)

Certified Products Directory: A directory published at least annually by NFRC, in printed or electronic form, listing fenestration products for which product certification authorization has been granted by the NFRC IAs. The *Directory* also lists NFRC-accredited laboratories and NFRC-licensed IAs and may be modified by supplements from time to time.

Certification Program: The NFRC program for grant of authorization to fenestration manufacturers to rate and label products under the NFRC Rating System, as set forth in

the *PCP*.

Compliance and Monitoring Program: A NFRC compliance program of fines applicable to certain activities that an individual may engage in that is prohibited by the program, which activities are prohibited by law or contract.

Computer simulation: The process by which a matrix is developed utilizing NFRC-approved computer software and manufacturer product specifications and drawings, in accordance with the requirements of the NFRC Rating System.

Fabricator: Any entity (which may include for site-built products, a glazing contractor) that receives reissued reports as authorized from an NFRC-licensed Lineal Supplier Company and meeting all of the requirements for a fabricator in the NFRC *PCP* may be deemed to be a fabricator.

Glazing Contractor: An entity that performs and completes the final assembly of a component system authorized for certification from fabricated parts, components, glazing, and accessories as supplied by a manufacturer, lineal supplier or fabricator in accordance with the component system certification. A glazing contractor retains the right to be or become an NFRC-certified manufacturer or fabricator.

IA: An independent certification and inspection agency which has been licensed by NFRC in accordance with the provisions of the *CAP* to provide services and grant Product Certification Authorizations in accordance with the *CAP* and the *PCP*.

License Agreement: A written agreement, in a form contained in Appendix A to the *PCP*, which is entered into between NFRC and a manufacturer, fabricator, or extruder, and pursuant to which the manufacturer, fabricator, or extruder agrees to comply with the requirements of the *PCP* and other applicable NFRC requirements and is granted certain rights.

Lineal Supplier: A company that manufactures lineals (i.e. extrusions or other similar frame/sash components made from vinyl, aluminum, wood, fiberglass, or other components), and supplies those lineals to a fenestration manufacturer or a glazing contractor, obtains simulation reports and testing reports for initial validation or re-certification, authorizes re-issuance of those reports to a fabricator for submission for certification authorization, and agrees to comply to those non-compliance issues directly related to the material which they supply.

Manufacturer: Any entity meeting all of the requirements of NFRC *PCP* may be deemed to be a manufacturer, that being a single plant/fabricator or a single company with multiple plants/fabricators or a combination thereof, that produces completely assembled fenestration products either in a plant or, for site-built products, on a building, as well as takes complete responsibility for all simulation and testing reports submitted for NFRC certification.

NFRC 100: *NFRC 100: Procedure for Determining Fenestration Products U-factors,*

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including all attachments thereto, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System.

NFRC 102: *NFRC 102: Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems*, supplemented or otherwise modified from time to time, which is a component of the Rating System, and is one of the Test Procedures.

NFRC 200: *NFRC 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients at Normal Incidence*, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System, and is one of the Test Procedures.

NFRC 201: *NFRC 201: Procedure for Interim Standard Test Method for Measuring the Solar Heat Gain Coefficient of Fenestration Systems Using Calorimetry Hot Box Methods*, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System, and is one of the Test Procedures.

NFRC 300: *NFRC 300: Procedure for Determining Solar Optical Properties of Simple Fenestration Product*, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System.

NFRC 301: *NFRC 301: Standard Test Method for Emittance of Specular Surfaces Using Spectrometric Measurements*, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System.

NFRC 400: *NFRC 400: Procedure for Determining Fenestration Product Air Leakage*, as amended, supplemented or otherwise modified from time to time, which is a component of the Rating System, and is one of the Test Procedures.

NFRC 500: *NFRC 500: Procedure for Determining Fenestration Product Condensation Resistance Values*, as amended, supplemented, or otherwise modified from time to time, which is a component of the Rating System.

NFRC Inspector: One or more individuals authorized by NFRC to act on behalf of NFRC in connection with certain activities, including but not limited to, conducting laboratory inspections, IA inspections or other inspections under the NFRC programs.

NFRC Label (n.): An NFRC approved label indicating the rating of the fenestration product, determined by the NFRC PCP program document, to which it is affixed in both a temporary and permanent format.

PCP: *NFRC PCP Product Certification Program* (most current version), as amended, updated or interpreted from time to time, whether by action of the Rating Codes and Standards Committee, the NFRC Board of Directors or the NFRC Certification Policy Committee.

Product Certification Authorization: The authority granted by an NFRC-Licensed IA

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to an NFRC-Licensed Manufacturer to affix NFRC Labels on a fenestration product upon compliance by the manufacturer with the requirements of the *PCP*, which is evidenced by a written certificate issued by the IA.

Product Line: The term product line shall have the meaning set forth in the Rating Procedure, which is being applied to a manufacturer's group of fenestration products for which NFRC Product Certification Authorization is being sought.

Rating: The energy performance value obtained using NFRC-approved test and simulation procedures that is used for comparative purposes.

Rating Procedures: The NFRC Test Procedures and Simulation Procedures for measuring energy performance characteristics of fenestration products, as supported by the Certification Program, adopted by the NFRC Board of Directors from time to time.

Rating System: The NFRC Test Procedures and Simulation Procedures for measuring energy performance characteristics of fenestration products, as supported by the Certification Program, adopted by the NFRC Board of Directors from time to time.

Reissued Report: A simulation or test report originating from an NFRC-licensed Extruder that is reissued by an NFRC-accredited simulation or testing laboratory in the name of a fabricator identified on the Extruder Schedule III, for the purpose of seeking NFRC Product Line certification authorization for a fabricator seeking NFRC certification for the Product Line. The reissued reports shall meet the requirements as stipulated in NFRC *PCP* and should only contain those products that are manufactured by the fabricator, glazing contractor or other responsible party.

Responsible Party (Site-built): The entity which signs the NFRC Site-Built License Agreement, in a form contained in Appendix A to the *PCP*, which is entered into between NFRC and a manufacturer, fabricator, lineal supplier, glazing contractor, building owner, architect, or other party, which agrees to comply with the requirements of the *PCP* and other applicable NFRC requirements and is granted certain rights. (Note: also see License Agreement definition)

Simulation: Any computer software program for the simulation of the energy performance of fenestration products, adopted by the NFRC Board of Directors in addition to or in lieu of WINDOW 4.1, or FRAME 4.0, as each may be amended, updated or interpreted from time to time, whether by action of the NFRC Board of Directors, the NFRC Certification Policy Committee or the NFRC Accreditation Policy Committee.

(Applicable Simulation or Test)

NFRC 100, NFRC 200, NFRC 300, NFRC 301, NFRC 400, or any other physical test procedure or calculation for the determination of the energy performance of fenestration products, adopted by the NFRC Board of Directors in addition to or in lieu of any computer software program for simulating the energy performance of fenestration products, adopted by the NFRC Board of Directors, as each may be amended, updated

or interpreted from time to time, whether by action of the NFRC Board of Directors, the NFRC Certification Policy Committee or the NFRC Accreditation Policy Committee.

Solar Heat Gain Coefficient or SHGC: The ratio of the solar heat gain entering the space through a fenestration product to the incident solar radiant flux (power). Solar heat gain includes directly transmitted solar heat and absorbed solar radiation that is reradiated, conducted or convected into the space.

Test Procedures: *NFRC 100, NFRC 300, NFRC 301, NFRC 400*, or any other physical test procedure or calculation for the determination of the energy performance of fenestration products, adopted by the NFRC Board of Directors in addition to or in lieu of any computer software program for simulating the energy performance of fenestration products, adopted by the NFRC Board of Directors, as each may be amended, updated or interpreted from time to time, whether by action of the NFRC Board of Directors, or the NFRC Technical Interpretation Policy Committee.

U-Factor: A measure of the heat transfer characteristics of a fenestration product under specific environmental conditions. The U-factor multiplied by the interior-exterior temperature difference and by the projected fenestration product area, yields the total heat transfer through the fenestration product due to conduction, convection and infrared radiation. The U-factor is the heat transmission in unit time through a unit area of a test specimen and its boundary air films, induced by a unit temperature difference between the environments on each side. Previously called U-value.

Visible Transmittance or VT: The visible transmittance of the total fenestration system is the transmittance across the visible portion of the solar spectrum where sensitivity to each wavelength is weighted by the eye's response. Visible Transmittance ratings are determined in accordance with *NFRC 300: Procedure for Determining Solar Optical Properties for Simple Fenestration Products*.

Appendix 3

FREQUENTLY ASKED QUESTIONS

1. *Are there enough manufacturers for all of California demand?*

“Yes” – referencing NFRC does not affect the supply of curtain wall/window wall/commercial window suppliers (hereafter referred to as “manufacturers”). If the question instead refers to the number of manufacturers currently certified by NFRC, then the answer is “No.” However, the NFRC program does not depend upon certified manufacturers. Rather, it places the burden on a “responsible party” typically architects, glazing contactors or installers (hereafter referred to as “installers”); therefore, the supply of certified manufacturers is not relevant. It is in the best of interests of the installers to utilize ‘already’ certified glazing systems, therefore, this would provide a “market pull” for those manufacturers **who have already obtained** certified ratings for their systems. In the case where there are no certified systems available, the program allows the installer to obtain certified ratings for the fenestration system being installed on the building.

2. *How does the building official get information they trust?*

The highly visible NFRC Label is part of the NFRC Label Certificate. The certified ratings (SHGC, U-factor, etc) are part of that Label; therefore it will be fairly simple for the building official to check the label information against Title 24 requirements. The architect, installer or manufacturer would be required to provide the Label Certificate.

3. *What is delivered to the building official and when?*

The Label Certificate is to be posted on site. If desired (or required) the code official could request a Label Certificate(s) prior to issuing a building permit. The architect, manufacturer or installer can provide the Label Certificate.

4. *How does installer get information on what product to install?*

The installer will need to show that the products he is installing on a building meets the energy code requirements of Title 24. The building code official will not grant a building permit unless the plans show that the building meets the energy code. These plans can include an NFRC Label Certificate. In addition, most suppliers (especially glass suppliers) will be more than happy to assist the installer in understanding what products are needed to achieve the new code requirements. The NFRC site-built program will go a long way towards helping the installer and manufacturer understand and know

what the requirements are – the NFRC accredited simulators tend to be very helpful in this aspect. In addition, NFRC has been promoting energy efficient ratings to installers and manufacturers at numerous conferences and in the trade press.

5. *How does the industry transition from current practice to the NFRC 100 (Section 5.6 - Non-Residential Products) procedure?*

To respond to this question requires several parts, due to the dichotomy of the commercial building industry (i.e., manufacturers, installers, architects).

Manufacturers – The current practice for manufacturers is to have their systems “specified” by the architect or building contractor. These systems must meet current building and energy code requirements. The manufacturer currently provides test reports (thermal tests and air/water/structural tests) to show that the system meets those requirements. In addition, mock-up testing is often required for specific custom system to prove to the architect that the system meets the specification. Typically SHGC (or SC) numbers are provided for center-of-glass only – and submitted by the glazing supplier; not the manufacturer.

How would the transition affect this practice? Rather than conducting AAMA or ASTM thermal tests for fenestration systems, the manufacturer will go through the NFRC program and obtain NFRC certified ratings on their products. These ratings can be published in the NFRC Certified products Directory and they can also be utilized on the NFRC Label Certificate in two ways: 1) If the manufacturer knows the glazing to be installed in their framing system, they can be the “responsible party” and actually post the Label Certificate; 2) The manufacturer can provide NFRC accredited test and simulation reports to the installer – who as the “responsible party” then can obtain a Label Certificate from an IA.

Installers – The current practice for glazing contractors is to utilize data (test reports) from the manufacturers for fenestration systems to be installed on buildings; or they may choose to design their own system utilizing components from one or more manufacturer. In this case, the glazing contractor will provide test results (thermal and air/water/structural) to the architect (and regulatory bodies).

How would the transition affect this practice? If the manufacturers were not the responsible party for a particular building project, the contractors would have to become responsible for the energy ratings on the glazing systems they are installing. They would need to obtain NFRC test and simulation reports for the products on a building project and work with an NFRC IA (Independent Inspection Agency) to obtain a Label Certificate.

Architects/specifiers – Currently the architect depends upon the word of the

product suppliers (manufacturers and installers) regarding the performance of the fenestration systems specified. They often require thermal and structural tests on actual specimen and mock-ups to provide assurance that the systems perform appropriately. Visible transmittance, solar heat gain coefficient or shading coefficient ratings come from glass suppliers and are typically only for the center-of-the-glass, neglecting the effects of the framing system.

How would the transition affect this practice? Architects would reference NFRC certified ratings in their specifications in order to meet the energy code requirements. They would have to understand how the process works and affects the timing of deliverables and the additional costs. They would, however, get in return: more accurate and reliable data; be assured of obtaining the performance “as specified;” and have a methodology for tracing responsibility for the ratings. They may wish to be the responsible party, especially for custom envelope designs, obtain NFRC accredited simulation and test reports for the fenestration systems on a specific building project and work with an IA to obtain an NFRC Label Certificate.

6. *Does NFRC have the approved site-built assemblies included on its web page?*

Yes – there are curtain wall systems entitled “Glazed Wall Systems” in the online Certified Products Directory. It should be noted that the Certified Products Directory is maintains currency in real time.

7. *Is the amount of time delay for product certification something we know and can inform the affected parties about?*

Yes – Depending upon the complexity of the building project (i.e., the number of various fenestration systems and product lines on a building envelope) there is a good estimate of the time needed to complete the computer modeling, conduct the validation tests and issue the label certificate (see attached flowchart). Utilizing fenestration systems that have already been simulated and tested in accordance with NFRC 100 (Section 5.6 - Non-Residential Products) will greatly shorten the time needed for certification.

8. *How does the responsible party (i.e., architect, contractor) get a certificate for products that are already certified by NFRC? How will this system work?*

If the curtain wall manufacturer is the responsible party, he/she will already have the Label Certificate for specific products used on a project. For the glazing contractor or architect there are three paths:

- a) The glazing contractor (or architect) provides the test and simulation for

specific products on a project.

- b) The contractor reviews the NFRC CPD and requests a specific certified product from a curtain wall supplier (or other contractor). The contractor then contacts an IA and informs them that he will be using NFRC certified system number xxx. The IA obtains all the pertinent data and issues a Label certificate to the contractor. Typically, these reports will have to be re-issued under the contractor's name due to changes in glazing type.
- c) The contractor requests that a curtain wall supplier provide a test and simulation in accordance with NFRC 100 (Section 5.6 - Non-Residential Products) from accredited labs. Those reports are typically good for four years and will have to be re-issued in the contractors name if there are glazing substitutions. The contractor is still the responsible party and the IA must review ALL information prior to issuing a Certificate (i.e, simulation and test lab reports; drawings from the curtain wall manufacturer, etc.). Note that these are not "certified products" unless the manufacturers submits them to an NFRC IA for review and signs a license agreement with NFRC.

9. *How does anyone tell that the products that are being installed are the same as the products for which an installer has a Label Certificate?*

The building cannot be inspected during construction by NFRC. However, all the information about the products on the building envelope is available in the Label Certificate for the inspectors' use, if needed or desired. NFRC will be inspecting the responsible party to assure that the fenestration schedule and drawings submitted for the simulation and test reports match the original specifications and drawings for the certified project. If they do not, certification is withdrawn.

10. *How do you handle punched openings in commercial buildings? Do they qualify as "Site-Built?"*

A punched window can only be considered "site-built" if the product is either assembled or glazed - "in the field." (i.e, on a building). A punched window that is completely assembled in a shop (whether by a manufacturer or its representatives) would not be considered "site-built."

11. *How do you address Spandrel areas?*

If the spandrel glass has insulation behind it (including all exposed metal) the spandrel area can basically be ignored and considered as part of the wall - not part of the fenestration. If there is no insulation, the simulator must determine the ratings for both the visible and opaque portions separately - it typically can be classified as one product line; however, the simulator must model the product

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with both types of glass. The rating for a curtain wall can be area-weighted for both products or two ratings (one for spandrel; one for vision) can be provided.

Appendix 4

Licensee and Product Inspection

Licensee Inspection

- A.** In connection with an initial product certification authorization, a designated IA shall conduct an inspection of the applicant (Responsible Party) taking responsibility for the rating of the site-built product line. The initial inspection in connection with the initial product certification authorization may be conducted after certification of the applicant's first product, in the discretion of the IA, but shall be completed not later than six (6) months after the date of notification by the IA of initial product certification authorization.
1. An applicant or NFRC licensee shall grant the IA's representative access to that party's place or places of manufacture, assembly or shipment at any time during normal daytime working hours. Advance notice of up to 48 hours may be given to the licensee or applicant's designated representative.
 2. At all times while at the applicant's (responsible party) facilities, a representative designated by the applicant shall accompany the IA's representative. The IA's representative shall have access to such quality control records, products and product components as are necessary to allow the IA to perform all required inspections in order to determine compliance with NFRC product certification authorization and licensing requirements.
 3. The responsible party or applicant's refusal, without good cause, to permit access to places essential to the inspection required hereunder shall be due cause for denial of product certification authorization or revocation of initial product certification authorization and licensing or issuance of a Notice of Suspension of the responsible party's licensing and product certification authorization. The responsible party may appeal the IA's suspension.
- B.** If the results of the initial inspection in connection with initial product certification authorization indicate compliance and all other requirements for product certification authorization have been met, the applicant (responsible party) shall be entitled to become an NFRC licensee. If the results of an annual inspection indicate compliance and all other applicable requirements are met, the license shall continue in effect.

Product Inspection in Connection with Inspection of Responsible Party

- A.** Upon completion of a signed license agreement, a Responsible Party's designated IA shall conduct an inspection of the licensed Responsible Party's facility within six months of the issuance of an NFRC Label Certificate.

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- B.** During the inspection, the designated IA shall review the files of the Responsible Party and conduct a random inspection of all pertinent information related to all NFRC Label Certificates for at least one particular project. This inspection shall include review and verification of the following:
1. NFRC Label Certificates for overall product: compare NFRC Label Certificates in Responsible Party's files with versions in IA's files.
 2. Specific Data on each Label Certificate:
 - a. Project location information: compare with approved Building Permit drawings.
 - b. Product Line information: compare with purchase orders and delivery receipts for framing, glass, spacer, gas-fill, and other materials noting the correct vendor and products purchased: compare with fenestration schedule and elevations on the approved Building Permit drawings.
 - c. Frame Material Supplier, Glazing Material Supplier and Glazing Contractor/Installer information: compare with purchase orders and delivery receipts.
 - d. Certification Authorization: compare with versions in IA's file.
 3. Availability of NFRC Label Certificate on the jobsite: Check transmittal memos to determine date NFRC Label Certificate was delivered to jobsite and where it was placed; evaluate for compliance with PCP 3.3.B.
- C.** If the Responsible Party is also a lineal supplier, the designated IA shall inspect the facilities of the supplier and randomly compare product drawings (extrusions) to fabricated parts and/or dies covered under the License Agreement and authorized Label Certificate.
- D.** Not later than 15 days after the inspection, the IA shall deliver to the Responsible Party, with a copy to NFRC, a report indicating the results of the inspection.
- a. To correct the failures and to provide a written representation not later than 15 days after the date of the IA's report, with a copy to NFRC, that the failures identified by the IA have been corrected, which representation shall be confirmed by prompt re-inspection by the IA; or
 - b. To submit the subject product to NFRC testing in accordance with *NFRC 100 (Section 5.6 - Non-Residential Products)* to determine the performance rating, in accordance with the following procedures:
 - i. The Responsible Party-designated IA shall select a random sample of the product from finished production products to which the NFRC label has been affixed and shall apply a tamper-proof identification mark thereto; and the manufacturer shall immediately ship the sample freight prepaid to an NFRC-

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- accredited laboratory designated by the IA for testing in accordance with *NFRC 100 (Section 5.6 - Non-Residential Products)*.
- ii. The NFRC-accredited testing laboratory shall be directed to conduct the test in accordance with *NFRC 100 (Section 5.6 - Non-Residential Products)* and to deliver the test report to the IA, with a copy to NFRC.
 - iii. In the event that the test report indicates compliance with the product's original thermal performance rating, the Responsible Party's product certification authorization shall continue in effect and the IA shall pay the laboratory's charges for the testing.
 - iv. In the event that the test report indicates noncompliance with the product's original thermal performance rating, the Responsible Party's right to use NFRC labels for that product and related product line shall be suspended immediately by issuance of a Notice of Suspension by NFRC. NFRC shall have the right to suspend the manufacturer's license agreement if the product certification authorization is material to the Responsible Party's licensing; or
 - v. In the event that a certified product and related product line are found to be in serious noncompliance, NFRC certification authorization shall be terminated. If such failures are not corrected within a period of 15 days after the date of the noncompliance report, the Responsible Party's license shall be suspended by NFRC.
4. The Responsible Party may appeal a Notice of Suspension in accordance with the provisions of Section 6.0 hereof.

E. Expenses. All costs related to annual inspection and review, sample testing and re-sampling, and retesting and review shall be borne by the Responsible Party and shall not be borne by NFRC.