



National Fenestration Rating Council Incorporated

NFRC 706-2011 [E0A1-E0A2]

Requirements for Participating Insulating Glass Certification
Programs

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FOREWORD

The National Fenestration Rating Council, Incorporated (NFRC) develops and operates a uniform rating system for energy and energy-related performance of fenestration and fenestration attachment products. The Rating System determines the U-factor, Solar Heat Gain Coefficient (SHGC), and Visible Transmittance (VT) of a product, which are mandatory ratings for labeling NFRC-certified products, and are mandatory ratings for inclusion on label certificates, and are supplemented by procedures for voluntary ratings of products for Air Leakage (AL) and Condensation Resistance. Together these rating procedures, as set forth in documents published by NFRC, are known as the NFRC Rating System.

The NFRC Rating System employs computer simulation and physical testing by NFRC-accredited laboratories to establish energy and related performance ratings for fenestration and fenestration attachment product types. The NFRC Rating System is reinforced by a certification program under which NFRC-licensed responsible parties claiming NFRC product certification shall label and certify fenestration and fenestration attachment products to indicate those energy and related performance ratings, provided the ratings are authorized for certification by an NFRC-licensed Certification and Inspection Agency (IA).

The requirements of the rating, certification, and labeling programs (Certification Programs) are set forth in the most recent versions of the following as amended, updated, or interpreted from time to time:

- NFRC 700 Product Certification Program (PCP)
- NFRC 705 Component Modeling Approach (CMA) Product Certification Program (CMA-PCP)

and through the Certification Programs and the most recent versions of its companion programs as amended, updated, or interpreted from time to time:

- The laboratory accreditation program (Accreditation Program), as set forth in the NFRC 701 Laboratory Accreditation Program (LAP)
- The IA licensing program (IA Program), as set forth in NFRC 702 Certification Agency Program (CAP)
- The CMA Approved Calculation Entity (ACE) licensing program (ACE Program) as set forth in the NFRC 708 Calculation Entity Approval Program (CEAP)

NFRC intends to ensure the integrity and uniformity of NFRC ratings, certification, and

labeling by ensuring that responsible parties, testing and simulation laboratories, and IAs adhere to strict NFRC requirements.

In order to participate in the Certification Programs, a Manufacturer/Responsible Party shall rate a product whose energy and energy-related performance characteristics are to be certified in accordance with mandatory NFRC rating procedures. At present, a Manufacturer/Responsible Party may elect to rate products for U-factor, SHGC, VT, AL, condensation resistance, or any other procedure adopted by NFRC, and to include those ratings on the NFRC temporary label affixed to its products or on the NFRC Label Certificate. U-factor, SHGC and VT, AL, and condensation resistance rating reports shall be obtained from a laboratory that has been accredited by NFRC in accordance with the requirements of the NFRC 701.

The rating shall then be reviewed by an IA that has been licensed by NFRC in accordance with the requirements of the NFRC 702. NFRC-licensed IAs review label format and content, conduct in-plant inspections for quality assurance in accordance with the requirements of the NFRC 702, and issue a product Certification Authorization Report (CAR) and may approve for issuance an NFRC Label Certificate for site-built or CMA products and attachment products. The IA is also responsible for the investigation of potential violations (prohibited activities) as set forth in the NFRC 707 Compliance and Monitoring Program (CAMP).

Products that are labeled with the NFRC Temporary and Permanent Label, or products that are listed on an NFRC Label Certificate in accordance with NFRC requirements, are considered to be NFRC-certified. NFRC maintains a Certified Products Directory (CPD), listing product lines and individual products selected by the Manufacturer/Responsible Party for which certification authorization has been granted.

NFRC manages the Rating System and regulates the PCP, LAP, and CAP in accordance with the NFRC 700 (PCP), the NFRC 701 (LAP), the NFRC 702 (CAP), the NFRC 705 (CMA-PCP), and the NFRC 708 (CEAP) procedures, and conducts compliance activities under all these programs as well as the NFRC 707 (CAMP). NFRC continues to develop the Rating System and each of the programs.

NFRC owns all rights in and to each of the NFRC 700, NFRC 701, NFRC 702, NFRC 705, NFRC 707, NFRC 708 and each procedure, which is a component of the Rating System, as well as each of its registration marks, trade names, and other intellectual property.

The structure of the NFRC programs and relationships among participants are shown in Figure 1, Figure 2, and Figure 3. For additional information on the roles of the IAs and laboratories and operation of the IA Program and Accreditation Program, see the NFRC 700 (PCP), NFRC 701 (LAP), and NFRC 702 (CAP) respectively.

Figure 1

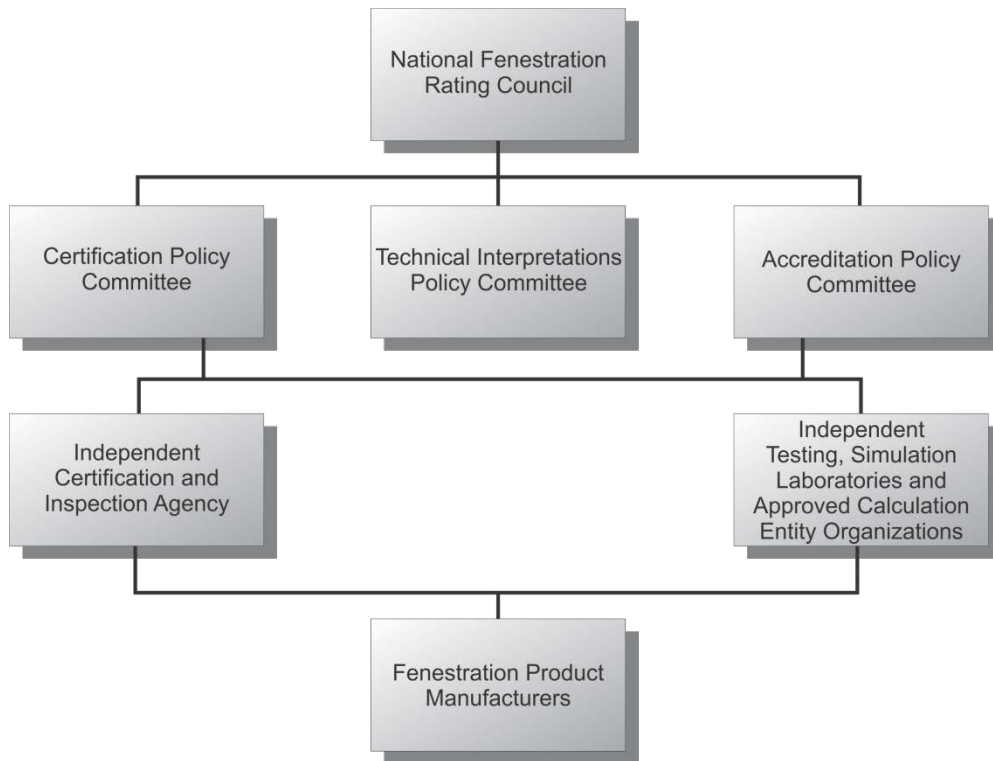


Figure 2

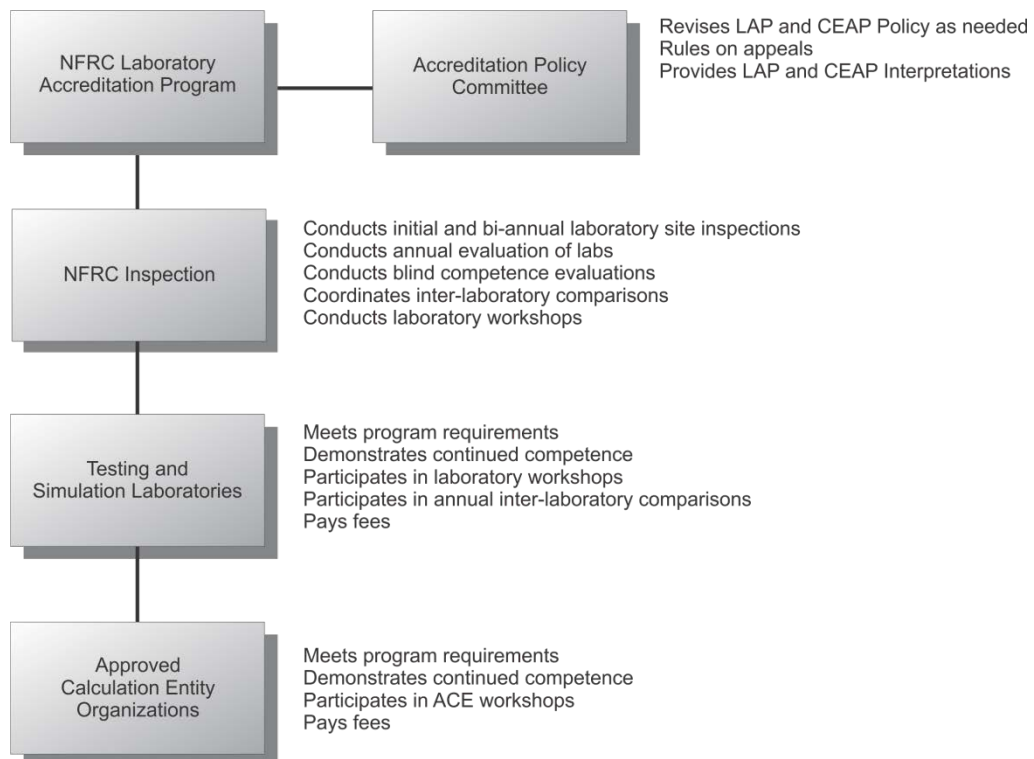
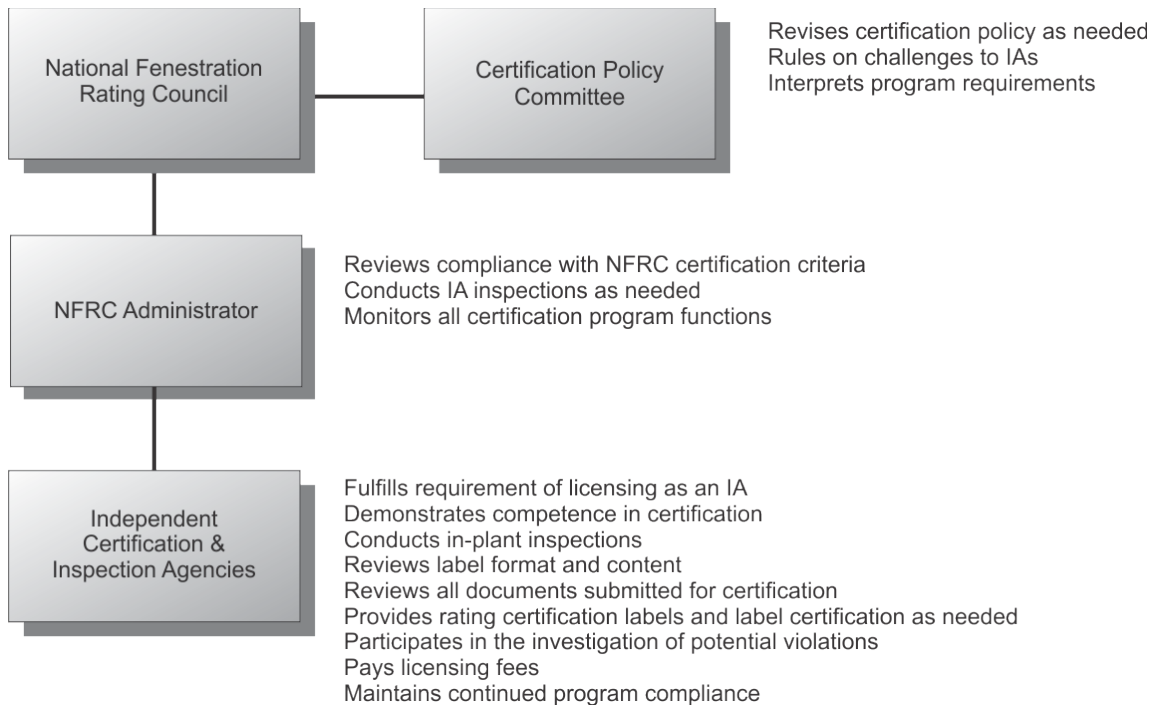


Figure 3



Questions on the use of this procedure should be addressed to:

National Fenestration Rating Council

6305 Ivy Lane, Suite 140

Greenbelt, MD 20770

Voice: (301) 589-1776

Fax: (301) 589-3884

Email: info@nfrc.org

Website: www.nfrc.org



DISCLAIMER

NFRC certification is the authorized act of a Manufacturer/Responsible Party in: (a) labeling a fenestration or related attachment product with an NFRC Permanent Label and NFRC Temporary Label, or (b) generating a site built or CMA label certificate, either of which bears one or more energy-related 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 certification, and certify the energy-related ratings of fenestration and related attachment products.

NFRC does not certify a product and certification does not constitute a warranty of NFRC regarding any characteristic of a fenestration or fenestration-related attachment product. Certification is not an endorsement of or recommendation for any 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 or fenestration-related 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/ RESPONSIBLE PARTY; 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 ON A LABEL CERTIFICATE; OR THE SALE OR USE OF ANY NFRC-RATED OR CERTIFIED 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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1. INTRODUCTION

1.1 Requirements for Participating Insulating Glass Certification Programs

NFRC has adopted “Requirements for Participating Insulating Glass Certification Programs” (Program Requirements) that stipulate certain criteria for the operation of independent, third party IG certification programs (IGC Program[s]) that wish to certify and report performance attributes of certified IG products. IGC Entities that wish to have their IGC Program included on the IGC Directory must attest in writing to NFRC that their programs meet all of the Program Requirements and that those programs continuously comply with all of the Program Requirements. NFRC will maintain and publish a directory of IGC Programs (IGC Directory) operated by IGC Entities that have attested to NFRC in writing that their programs comply with the Program Requirements. IGC Programs that are listed in the IGC Directory are referred to as “Participating IGC Programs.”

1.2 Duties of the Participating IGC Entities

- A. A Participating IGC Program must provide independent certification and reporting of certain performance attributes of IG products incorporated in fenestration products that are NFRC labeled and certified.
- B. A Participating IGC Program must meet all of the Program Requirements, as those requirements may be revised by NFRC from time to time. A Participating IGC Entity shall promptly notify NFRC in writing if at any time its Participating IGC Program fails to meet the Program Requirements. In support of any application submitted to NFRC, a Participating IGC Entity shall, from time to time, provide information requested by NFRC relating to or supporting that application. Failure to comply with the Program Requirements may result in the removal of the Participating IGC Program from the IGC Directory.
- C. A Participating IGC Entity shall pay such application and other fees as may be established from time to time by NFRC’s Board of Directors.
- D. The Program Requirements shall be administered by the Certification Policy Committee (CPC), subject to oversight and direction by NFRC’s Board of Directors.
- E. A Participating IGC Entity shall not be entitled to use or reproduce any registered or common law trademark or certification mark of NFRC and shall not advertise or state that it or its Participating IGC Program has been licensed, endorsed, certified, or approved by NFRC.
- F. A participating IGC Entity shall not make statements that indicate or suggest that the entity or its Participating IGC Program has been approved by NFRC or that NFRC has endorsed or certified its performance. A Participating IGC Entity may state that its Participating IGC Program is included in the IGC Directory.

F.G. New technologies shall be evaluated by the participating IGC Entity regarding certification within the Participating IGC Program. In the event that the Participating IGC Program cannot certify or provide any temporary certification for a new technology, the participating IGC Entity shall be the responsible party for providing justification and requesting a compliance extension for their client(s).

2. GLOSSARY OF TERMS

Refer to NFRC 600: Glossary and Terminology [for additional definitions](#).

Certification: The affixing by a licensed Responsible Party of an NFRC label on a fenestration product, or on a box/package containing an attachment product, or the distribution of an NFRC Label Certificate, for which Certification Authorization has been granted.

Certification Mark: The distinctive logotype "sun flake" incorporating the initials NFRC in the center and the word "CERTIFIED" appearing at the base that has been registered with the United States Trademark Office and is intended to appear as a component of an NFRC Label or Label Certificate indicating the fenestration product has met the PCP or CMA PCP requirements as applicable.

Certification Policy Committee (CPC): A standing committee whose members are appointed by the NFRC Board of Directors to manage the NFRC Certification Agency Program (CAP) and to provide interpretations for the NFRC Product Certification Program (PCP). See the NFRC 710: Operating Policies Manual for further details.

Certification Program: A term often used for the Product Certification Program (PCP or CMA PCP).

Fenestration: Products that fill openings in a building envelope, such as windows, doors, skylights, curtain walls, etc., designed to permit or limit the passage of air, light, vehicles, or people.

Glass: An inorganic, amorphous substance, usually transparent, composed of silica (sand), soda (sodium carbonate), and lime (calcium carbonate) with small quantities of other materials.

Insulating Glass Unit (IGU), Sealed Insulating Glass Unit: A preassembled unit comprising lites of glass, which are sealed at the edges and separated by dehydrated space(s). The unit is normally used for windows, window walls, picture windows, sliding doors, patio doors, or other types of fenestration.

Rating: Performance values obtained using NFRC-approved procedures used for comparative purposes only (i.e., U-factor, SHGC, VT, etc.).

Responsible Party: The entity (manufacturer, fabricator, lineal supplier, building owner, architect, door distributor, or other party) that signs an NFRC License Agreement. The responsible party agrees to comply with all applicable program requirements.

3. APPLICATION PROCEDURES AND PROGRAM REQUIREMENTS

3.1 Applications for Approval

- A. An IG Entity seeking to have its IGC certification program become a Participating IGC Program shall complete, sign, and submit an initial written application to NFRC, along with any accompanying application fee. A copy of the current application form is attached as Appendix A of this document and may be revised by NFRC from time to time.
- B. NFRC staff shall review the application to confirm that the applicant has represented that its IGC certification program meets all of the Program Requirements. NFRC may request additional information if the application is incomplete or to clarify information provided in the application. NFRC staff shall advise the CPC whether or not the applicant's IGC certification program is eligible for listing in the IGC Directory based on the information provided in its application and any supplemental information provided by the applicant.
- C. The CPC shall review the application, NFRC staff's recommendations, and any other available information determined to be relevant to the CPC's review. The NFRC shall advise the applicant in writing whether or not the applicant's IGC certification program has been accepted as a Participating IGC Program and, if not, the basis for that denial.
- D. The applicant shall direct any questions or concerns about the action on its application to the NFRC Chief Executive Officer.

3.2 Performance Criteria Included in the Program Requirements.

- A. The following are included in the Program Requirements and these requirements may be revised from time to time in writing by NFRC.
 - i. The IGC Entity shall be accredited as operating in compliance with ISO Guide 65, "General Requirements for Bodies Operating Product Certification Systems" or all elements of ISO 9000, "Quality Management System—Fundamentals and Vocabulary" (www.iso.org).
 - ii. The IGC Program shall require mandatory IG testing by its program participants at least once every two years utilizing independent testing laboratories that are accredited to ISO 17025, "General Requirements for the Competence of Testing and Calibration Laboratories," for the applicable IG testing procedures.
 - iii. The IGC Entity shall perform at least two audits of its certification program participant's IG fabrication facilities per year.
- B. Minimum Requirements for Certified IG Products -- the IGC Program shall require IG Products submitted for certification to meet the following requirements:
 - i. Comply with the requirements of ASTM E2190, "Standard Specification for Insulating Glass Unit Performance and

Evaluation” (www.astm.org), or CGSB 12.8, “Insulating Glass Units,” (www.techstreet.com).

[**Note:** The CGSB 12.8 standard will be acceptable until the ASTM E2189 “Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units” requirements meet or exceed the requirements in the CGSB 12.8 standard.]

ii. When using gas other than air, establish proof of gas content to an average minimum initial 90% insulating gas fill content and an average minimum of 80% insulating gas fill content following completion of respective IG durability testing.

iii. Regardless of the test specification used for certification, if internal components, such as but not limited to decorative components (i.e., blinds/shades), muntins (i.e., grids/dividers), coatings, and if applicable, suspended or applied films are specified for certification, these components shall be included in test specimens.

- C. Minimum Requirements for Quality Assurance -- the IGC Entity shall implement and maintain the following quality assurance requirements for its certification participants:
- i. On a regular basis, verify the quality and effectiveness of the various components of the products and confirm that the IG fabricators’ records identify its component, verification method, success/failure, and the frequency of its inspections;
 - ii. On a regular basis, conduct inspections of final products and indicate frequency of rejection and inspection of products;
 - iii. On a regular basis, verify and calibrate, and document frequency of verification and calibration;
 - iv. Maintain method of controlling non-conforming product components and fabricated products; and
 - v. Create, retain, and maintain training records.
- D. Minimum Requirements for Labeling or Marking -- each IGC Entity shall implement and maintain a permanent labeling or marking requirement that provides traceability.

4. ONGOING REQUIREMENTS FOR PARTICIPATION

4.1 Retain Approval

Participating IGC Programs shall continuously comply with all of the Program Requirements. To confirm continued compliance, Participating IGC Entities shall submit renewal applications to NFRC attesting to the compliance by their Participating IGC Programs compliance with the Program Requirements on an annual basis or at such other intervals as may be required by NFRC.

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APPENDIX A APPLICATION FORM

REQUIREMENTS FOR PARTICIPATING INSULATING GLASS CERTIFICATION PROGRAMS



Application for Listing in NFRC's Participating Insulating Glass Certification Program Directory

The National Fenestration Rating Council (NFRC) sponsors a Participating Insulating Glass Certification Program Directory (IGC Directory) which lists third party insulating glass (IG) certification programs (IGC Programs) that have represented in writing to NFRC that they meet requirements designated by NFRC (Program Requirements) for the operation of an independent program for the certification of performance attributes of IG products.

This application is for those IGC Programs that seek to be listed in the IGC Directory to provide third party insulating glass certification services in accordance with *NFRC 706: Requirements for Participating Insulating Glass Certification Program*.

To ensure that an IGC Program's application can be fully evaluated, all requested information must be provided. If additional space is needed, attach additional pages. Incomplete applications will be returned with information deficiencies cited. Application processing takes approximately three weeks after receipt by NFRC.

Please include the application filing fee, payable to NFRC, of \$500.00 with your application.

Please return all required information with completed application and application fee to:

National Fenestration Rating Council

6305 Ivy Lane, Suite 140
Greenbelt, MD 20770
Voice: (301) 589-1776
Fax: (301) 589-3884
Email: info@nfr.org
Website: www.nfr.org

Organizational Information

Name of Organization: _____

Program
Representative: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax: _____

Email
Address: _____

Principal Business Activity
of Organization: _____

Name of Certification Program(s) seeking listing:

1. _____

2. _____

3. _____

Terms and Conditions

The undersigned officer or other duly authorized representative of the applicant organization accepts on behalf of the applicant the following terms and conditions:

(1) The applicant hereby acknowledges receipt of a copy of *NFRC 706*. The applicant hereby covenants and agrees that it shall comply with all of the terms and conditions of *NFRC 706-2011*, as that document may be amended or interpreted from time to time.

(2) The applicant represents and warrants the following [*check applicable boxes*]:

- The applicant is accredited as operating in compliance with ISO Guide 65, "General Requirements for Bodies Operating Product Certification Systems" or all elements of ISO 9000, "Quality Management System – Fundamentals and Vocabulary."
- The applicant complies with all of the Program Requirements listed in Section 3.2.C. of this document.
- The applicant's IG certification program requires mandatory IG testing by its program participants at least once every two years utilizing independent testing laboratories that are accredited to ISO 17025, "General Requirements for the Competence of Testing and Calibration Laboratories," for the applicable IG testing procedures.
- The applicant performs at least two audits of its program participants' IG fabrication facilities per year.

- IG Products certified under the applicant's IG certification program comply with the requirements of ASTM E2190, "Standard Specification for Insulating Glass Unit Performance and Evaluation," or CGSB 12.8, "Insulating Glass Units."
- IG Products certified under the applicant's IG certification program have, when using gas other than air, proof of gas content to an average minimum initial 90% insulating gas fill content and an average minimum of 80% insulating gas fill content following completion of respective IG durability testing.
- IG Products certified under the applicant's IG certification program meet the minimum labeling or marking requirements.
- IG Products certified under the applicant's IG Certification program that include internal components such as but not limited to decorative components (i.e., blinds/shades), muntins (i.e., grids/dividers), coatings, and if applicable, suspended or applied films are present during testing.

The applicant hereby represents, warrants, and attests to NFRC that all of the information supplied above is accurate, correct, and complete and the applicant further agrees that it shall notify NFRC promptly of any change in any of the information supplied pursuant to this application.

The applicant acknowledges that any false statement in this application is a ground for immediate removal as a Participating IGC Entity and removal from the IGC Directory.

Organization: _____

By: (Signature) _____

Print Name: _____

Title: _____

Date: _____

NFRC

Date of Approval: _____

By: (Signature) _____

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