



National Fenestration Rating Council Incorporated

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NFRC IVP Manufacturer Guideline

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FOREWORD

The National Fenestration Rating Council, Incorporated (NFRC) has developed and operates a uniform rating system for energy and energy-related performance of fenestration 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, 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 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 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 program (Certification Program) 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).

Through the Certification Program 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 Program, 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 which has been licensed by NFRC in accordance with the requirements of the NFRC 702. NFRC-licensed IAs also 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 Certificate of Authorization (CA), or 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).

Ratings for 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 Product Certification Program (PCP), Laboratory Accreditation Program (LAP) and Certification Agency Program (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 program 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

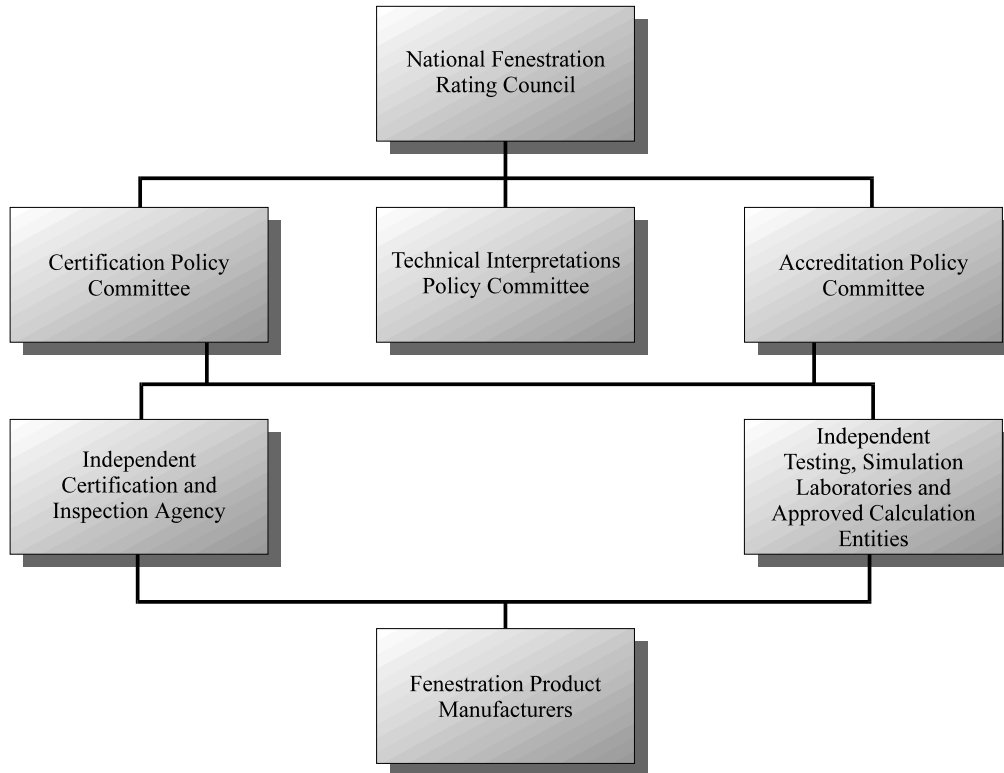


Figure 2

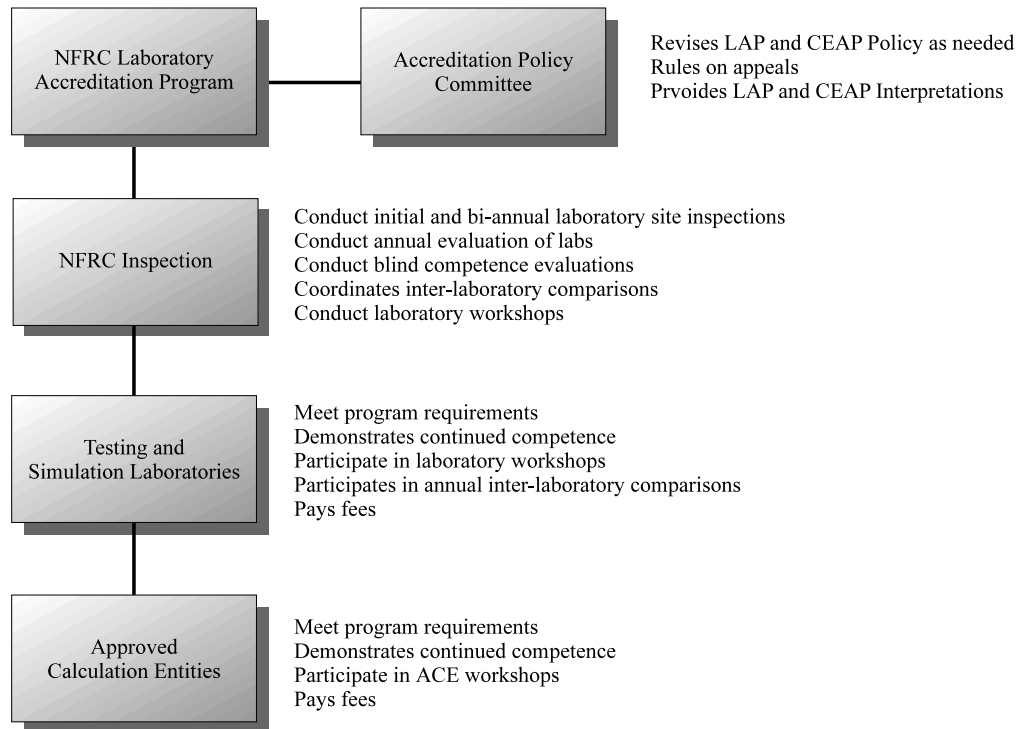
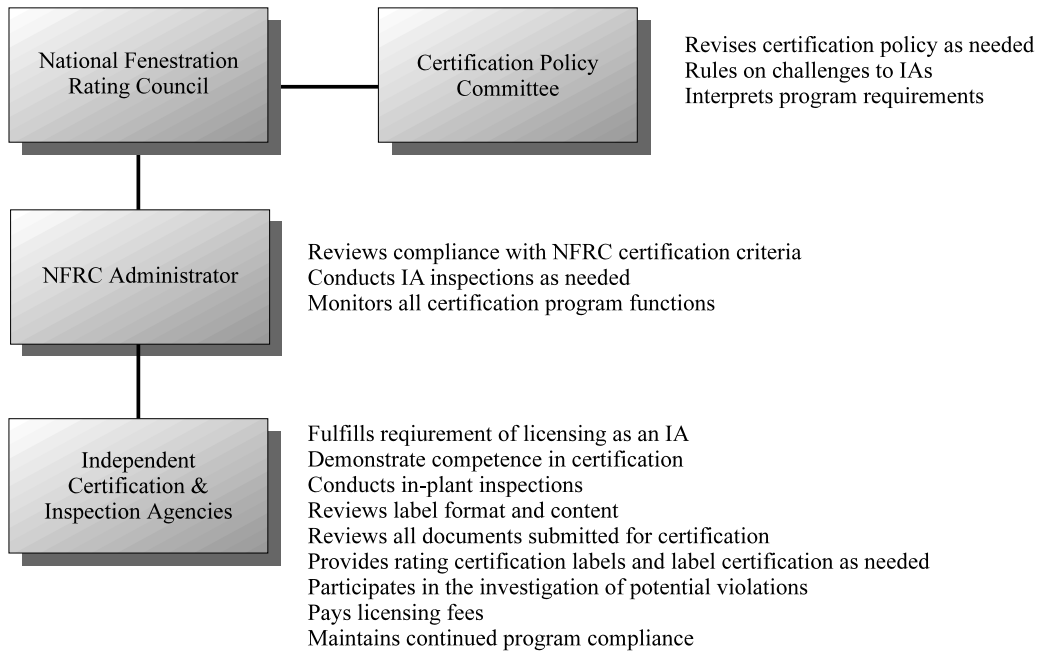


Figure 3



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@nfr.org
Website: www.nfr.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 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. MANUFACTURER IVP GUIDELINES

This document provides an ENERGY STAR Partner® the guidelines to properly navigate the NFRC Independent Verification Program (IVP) process. Details on how to enroll in the IVP, designate product lines that are sold as ENERGY STAR products, and the information to be provided by and timelines expected to be performed by the Participant and NFRC.

It is important for NFRC and the Partner to keep the lines of communication open and providing information is essential to make sure that all entities participating in the verification test can meet their roles as part of the IVP.

NFRC highly recommends using the checklist supplied at the end of the document to assist you with participating in the IVP.

1.1 Enrollment

Enrollment is a two step process. All ENERGY STAR Partners are required to fill out and submit to NFRC an IVP Participation Form and use an online tool to designate each ENERGY STAR product line.

1.1.1 IVP Participation Form

- A. Each ENERGY STAR Partner can access the IVP Participation Form to provide NFRC with the Partner's company information, NFRC Member and ENERGY STAR status.

Note: If you, as an ENERGY STAR Partner, choose not to participate in the IVP, you acknowledge that under the IVP NFRC will be required to report your lack of participation to the EPA. NFRC does not have the authority to make determinations regarding your ENERGY STAR partnership and does not hold responsibility for any inaction on a manufacturer's part with respect to participation in the ENERGY STAR program.

- B. The IVP Participation Form will be made accessible in various methods:
 - i. Online:
 - (a) Partners can access an online form by visiting the [Enrollment Page](#) in the new NFRC community web site.
 - (b) Partners can access a PDF file via the IVP page on the NFRC website for download at your convenience. The form should be returned to NFRC at ivp@nfr.org or by fax at 301-589-3884.
 - ii. Fax:

NFRC will also fax the IVP form at the request of the Partner. Requests for fax should be made by calling the NFRC Office at 301-589-1776 or emailing at ivp@nfr.org.

The form should be returned to NFRC at ivp@nfr.org or by fax at 301-589-3884.

1.1.2 ENERGY STAR Product Line Identification Tool

ENERGY STAR Partners have an online tool to supply details about which product lines include ENERGY STAR qualified product options that are available for sale.

The information collected from this online tool will assist NFRC with the IVP algorithm and the EPA when selecting products. A manual to use the tool is located on the IVP page on the NFRC website. If necessary, NFRC Inspection Agencies and NFRC staff are authorized to access the online tool to assist Partners with completing this step in the enrollment process.

Partners are required to maintain this product line identification online tool continuously, such as when product lines are no longer eligible for ENERGY STAR or when new product lines are available for sale.

Note: Qualifying options within the selected product lines must carry the appropriate ENERGY STAR label, per your partnership agreement with EPA. Similarly, no product options in non-ENERGY STAR product lines are permitted to carry the ENERGY STAR label.

1.2 Product Procurement

Products can be procured either by direct contact with the manufacturer representative or through a blind purchasing process.

1.2.1 Blind Procurement Method

NFRC will procure a product without the knowledge of the manufacturer via a third-party purchaser through their established purchasing channels. Upon receiving the product, the purchaser will deliver the product to the designated NFRC accredited laboratory selected by NFRC.

NFRC will inform the manufacturer when the product is received by the laboratory that a product has been selected for IVP verification.

1.2.2 Direct Procurement Method

When utilizing the direct contact method, Staff will contact the manufacturer representative via the information provided on the IVP enrollment form. The initial contact email will include the following information:

- A. A list of products eligible for participation in the IVP which will include the full CPD#, MFR Product Description, and Energy Performance ratings.
- B. The NFRC Accredited Laboratory to perform the verification test.

The manufacturer will have five (5) business days to confirm via email, which of the product options in the list is available for verification testing and provide the following information to NFRC:

- A. Product's Full CPD Number that will be built and shipped
- B. The product's expected manufacture date
- C. The product's expected ship date
- D. The product's expected arrival date at the designated laboratory
- E. The plant that will build and ship the product. The plant should be listed on the Schedule I and the product line should be associated with the plant on the Schedule II.
- F. If none of the products are available for procurement, the manufacturer shall contact staff immediately for further direction.
- G. The preferred lab for testing which shall be mutually agreed upon with NFRC.

1.3 Ordering and Shipping

When the manufacturer confirms the product's availability, the manufacturer representative will place the order in a manner that ensures there is no interference or tampering of the product during the manufacturing of the test sample.

- A. If there is any delay in the ordering or shipping of the product, the manufacturer's representative shall contact NFRC staff to report the reason for the delay and a solution to resolve the delay, and if necessary updated manufacturing, shipping, and delivery dates.
- B. The participant is expected to manufacture and ship the product to the laboratory within twenty (20) business days from the day the manufacturer confirmed with NFRC the product's availability.
- C. All IVP products must have the proper NFRC temporary labels, permanent labels, and ENERGY STAR labels applied; otherwise the Participant will be required to provide another product at their own cost. In cases where the permanent label is not visible from the interior after product installation, the manufacturer shall identify to NFRC the location of the permanent label.
- D. If the installation instructions are not attached to the product, the participant shall provide NFRC with the product's online installation instructions.
- E. The air leakage requirement may be met in by one of the following methods:
 - i. Air leakage rating shall be shown on the NFRC temporary label; or
 - ii. Submit one of the listed Certification Bodies' certification authorization report for an air leakage rating.

1.4 Invoicing

For manufacturer's participating in the small business program, per the NFRC 704, all costs associated with testing the product and the cost to build and ship the product is the manufacturer's responsibility.

For all other IVP participants NFRC will only reimburse a maximum of \$500 for the cost of the sample and shipping for IVP testing. Verification testing fees will be handled between staff and the laboratory.

Invoices shall be submitted to the following billing address:

*NFRC
6305 Ivy Lane, Suite 140
Greenbelt, MD 20770
Attn: IVP Accounting*

Or may be emailed to accounting@nfr.org (if emailing, please confirm receipt).

1.5 Verification Testing

- A. Upon confirmation of the expected delivery date supplied by the Participant, staff will notify the laboratory to schedule a test date for the thermal hot box test. Within two (2) business days, the laboratory will provide a tentative test date for the product.
- B. Within two (2) business days of receipt of the product, the laboratory shall determine the following and if necessary contact staff:
 - i. If the product is in good testing condition
 - ii. The correct individual product option was manufactured and meets the following criteria:
 - (a) Product type
 - (b) Product line
 - (c) Number of Lites
 - (d) Spacer Type
 - (e) Lites Thickness
 - (f) Low-E locations
 - (g) Gap Width
 - iii. The NFRC temporary label, a permanent label, and ENERGY STAR label are applied
 - iv. When applicable, verify that installation instructions are included with the product.
- C. If the laboratory determines any of the above listed conditions are not meet, the laboratory shall contact staff. Based on the information provided by the laboratory, staff will determine if the product is still acceptable for testing.

If the product is not acceptable for testing:

- i. In cases where the product is damaged due to shipping, normal business practices shall be used to deal with the issue of obtaining another product for testing.
- ii. In case where the incorrect product is sent or there no labels are applied to the product, staff will then contact the manufacturer's representative within one (1) business day to order another product.
 - (a) The manufacturer representative shall confirm with staff the order date, manufacture date, ship date, and arrival date of the new product within five (5) business days.
 - (b) NFRC is not responsible for the cost to manufacture or ship this product.
- iii. NFRC will inform the EPA when the incorrect product type is sent if the same product is sent incorrectly twice in a row.
- iv. If the manufacturer is required to send a new product because of sending the incorrect the product type, this is a parameter in the algorithm that will escalate the weighted average.

D. If the laboratory and or staff determine the product is acceptable for testing:

- i. Upon the date of determining the product to be in good testing condition, in good faith, verification testing shall be conducted within 30 days of this date.
- ii. Verification testing is a U-factor test that shall be conducted in accordance with NFRC 102 by the confirmed scheduled test date as provided by the laboratory.
- iii. The laboratory shall provide a detailed report to staff within five (5) business days of the completed U-factor test date.
- iv. Staff will investigate the results within five (5) business days of receipt of the test report and determine if the tested value is within the tolerances per Section 4 of NFRC 713.
- v. Staff will provide the Participant with preliminary results of the test.
 - (a) If no issues are identified, the laboratory will conduct the component evaluation.
 - (b) If additional investigation is necessary, staff may continue investigation for up to an additional five (5) business days.

E. At NFRC's direction, the laboratory shall conduct the Component Evaluation within ten (10) business days per Section 3.2.2 of NFRC 713.

- i. The CE is the manner to disassemble the test specimen in order for staff to verify the product description.
- ii. Upon completion of the component evaluation, the laboratory shall provide a detailed report to staff within five (5) business days.

- iii. The component evaluation is for reporting purposes only and has no weight on the verification grading results. Cases where the CE reveals that an incorrect product was tested may result in action based on Section 7 of NFRC 713.

1.6 Verification Grading / Reporting

Upon receipt of the detailed test report from the laboratory, staff shall conduct the final investigation and grading within five (5) business days to determine the confirmed configuration's tested results versus the tolerances and conditions listed in Section 4 of NFRC 713. Staff will determine if the verification test resulted in a successful or unsuccessful test.

A. Successful test:

Within two (2) business days of determine the grade, Staff will issue to the Participant a Notice of Verification.

B. Unsuccessful test:

Within twenty (20) days of receipt of the final report, staff will determine the final grade. Within two (2) days of determining the final grade, Staff will forward a Notice of Non-compliance for an unsuccessful test.

The Notice of Non-compliance will provide the performance results and the foundation for the unsuccessful test. Per EPA Directive 2011-06, the NFRC shall report "failures" within two (2) business days after determining an unsuccessful test per tolerances listed in Section 4 of NFRC 713. The Notice of Non-Compliance shall be issued to the Participant concurrently with the issuance of the notice of failure to the EPA/ENERGY STAR enforcement.

1.7 Compliance Action

- A. Participants are subject to corrective actions per the EPA's "Disqualification Procedures" document.
- B. NFRC will provide assistance as necessary to the EPA and the Participant.
- C. Participants have the right to inspect the failed test specimen within the following guidelines:
 - i. The Participant shall notify NFRC prior to inspecting the failed test specimen.
 - ii. The failed test specimen shall remain in the custody of the testing facility at all times.
 - iii. The Participant shall assume all costs associated with conducting the inspection.
 - iv. If the product is discarded, manipulated, or modified in any manner during the inspection, Participants are subject to suspension from the NFRC IVP and NFRC will notify the EPA

1.8 Appeal Process

Upon receipt of the Notice of Non-compliance, the Participant shall have a period of fifteen (15) days to appeal the IVP decision of the verification results by written notification to NFRC (electronic submission acceptable). This appeals process is exclusive of any appeal made directly to the EPA.

- A. If the Participant does not submit an appeal within the appeal deadline, the Participant assumes responsibility of the Notice of Non-compliance.
- B. If an appeal is received by staff:
 - i. Within five (5) business days, staff will review the appeal and provide a summary and recommendation to the VPC.
 - ii. At a normally scheduled monthly conference call, the VPC will review the appeal.
 - (a) All appeals will be presented anonymously as the identity of the Participant shall not be disclosed to the VPC without the Participant's approval.
 - (b) At the discretion of the VPC, the Participant may be able to be present to discuss their appeal.
 - iii. The VPC shall provide a recommendation to the NFRC Executive Committee, who shall review and make the final decision at the next scheduled conference call.
 - iv. All NFRC Executive Committee decisions on the appeal are final. In the event that the appeal is denied, the Notice of Non-Compliance shall remain in effect.

2. IVP PROGRAM PARTICIPANT CHECKLISTS

Below are two checklists IVP participants shall use to submit and maintain information and communication during the IVP process.

Submission checklist- to submit to NFRC staff to ensure all product requirements are met for IVP testing.

Initial Contact by NFRC (Date):	
Within 5 Business Days provide NFRC the following	
CPD # of Product Option Order (CPD #):	
Product Ordered (Date):	
Product Manufactured (Date):	
Product Shipped (Date):	
Product Delivered (Date):	
Plant Manufacturing Product:	
Laboratory Preferred for Testing:	
Location of Installation Instructions:	In/On Package Link (provide below)
Link if applicable:	
Air Leakage:	NFRC Rating on Label and In CPD Other (Provide certificate)
Additional Comments:	

Tracking checklist – for use by the manufacturer to track their progress through the IVP process.

Initial Contact by NFRC (Date):	
Within 5 Business Days provide NFRC the following	
CPD # of Product Option Order (CPD #):	
Product Ordered (Date):	
Product Manufactured (Date):	
Product Shipped (Date):	
Product Delivered (Date):	
Plant Manufacturing Product:	
Laboratory Information	
Laboratory performing Testing:	
Product Received by Lab (Date):	
Test Scheduled (Date):	
Product Condition Acceptable for testing (Y or N):	
<p>Yes = Lab will perform test No = Staff will contact Participant</p>	
Verification Test Information	
Test Performed (Date):	
Preliminary Results Received (Date):	
U-factor Value (Result):	
Preliminary Grade (Result):	
Component Evaluation Performed (Y or N):	
Component Evaluation (Date):	
Final Grade (Result):	
Noticed Received (Date):	
Notice of Non-compliance	
Initial Discussion with EPA (Date):	
Required Corrective Action (Result):	
Appeal forwarded to NFRC (Date):	
VPC Conference Call (Date):	
NFRC Executive Committee Decision (Result):	