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 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
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 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 Certification Authorization Report (CAR), 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 PCP, LAP, and Certification 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.
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 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.
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>iii</td>
</tr>
<tr>
<td>Disclaimer</td>
<td>vii</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2. Bid Report</td>
<td>2</td>
</tr>
<tr>
<td>3. Creating A Proper Project</td>
<td>3</td>
</tr>
<tr>
<td>3.1 COMPONENTS</td>
<td>3</td>
</tr>
<tr>
<td>3.2 ASSEMBLIES</td>
<td>3</td>
</tr>
<tr>
<td>3.3 PRODUCTS</td>
<td>3</td>
</tr>
<tr>
<td>3.4 PROJECT</td>
<td>3</td>
</tr>
<tr>
<td>3.4.1 Required Project Information</td>
<td>3</td>
</tr>
<tr>
<td>3.4.2 Additional Information</td>
<td>4</td>
</tr>
<tr>
<td>3.4.3 Add Products</td>
<td>4</td>
</tr>
<tr>
<td>3.5 UPLOAD PROJECT FOR BID REPORT</td>
<td>5</td>
</tr>
<tr>
<td>4. Generate a Bid Report</td>
<td>7</td>
</tr>
<tr>
<td>4.1 SEARCH FOR PROJECT</td>
<td>7</td>
</tr>
<tr>
<td>4.2 GENERATE BID REPORT</td>
<td>8</td>
</tr>
<tr>
<td>4.3 INCOMPLETE PROJECTS OR PROJECT INFORMATION</td>
<td>9</td>
</tr>
<tr>
<td>4.4 INCOMPLETE BUILDING INFORMATION</td>
<td>10</td>
</tr>
<tr>
<td>Appendix A – Bid Report Example</td>
<td>11</td>
</tr>
</tbody>
</table>
1. **INTRODUCTION**

This Bid Report User's Manual is to be used by users of Component Modeling Approach Software Tool (CMAST) and fully replaces Section 3.10, in the NFRC CMAST 1.2 Manual. Described herein provides the process to generate a bid report for a Specifying Authority's use for bidding on projects.

**Figure 1.1 CMAST Application Home Page**
2. **Bid Report**

CMAST was designed to generate a bid report for the Specifying Authority to use when bidding on projects. It provides a summary of thermal performance values for U-factor, Solar-Heat-Gain-Coefficient, Visible Transmittance on products specified within a project. The performance values will be listed in NFRC standard size, and optionally at specified size. A Specifying Authority may submit a bid report for whole project certification through an ACE organization to obtain an NFRC Label Certificate.

All registered users, except for the NFRC Inspection Agent in Responsible Charge (IARC), can generate a Bid Report for a project in design status using the CMAST application and the CMAST web. All projects and products will be created in the CMAST application and uploaded through the Smart Sync client, then a bid report can be generated via the CMAST web (http://cmast.nfrc.org). Due to the fact that the IARC has access to proprietary information the upload function is not available for an IARC user and therefore cannot generate a bid report.

Minimum required information shall be entered in the CMAST application with the project in order to generate a Bid Report in the CMAST web. Minimum required information can be found in Section 3.4 of this document. If minimum required project information is not input, the bid report will not generate.

A bid report can be one or more products using approved and non-approved components in the following scenarios:

- Products using all approved spacer and frame components
- Products using a mix of approved and non-approved spacer and frame components
- Products using all non-approved spacer and frame components

This manual does not detail how to create individual components, assemblies, or products nor provides instructions to print Energy Plus Reports. Users shall refer to CMAST Manual 1.2.
3. **Creating A Proper Project**

The bid report consists of components made into assemblies; assemblies made into products; and those whole products are added to a project. The bid report will be generated once the following steps are completed.

3.1 **Components**

CMA components include of frame, spacer, and glazings; all three are required for completing a project for a bid report.

A. Approved components may be downloaded from the Smart Sync Client.

B. Non-approved components created by the user may be used in the bid report, but are not able to be used for an NFRC Label Certificate.

3.2 **Assemblies**

Assemblies consist of components and can be created either from approved or non-approved components. The only exception is glazing as glazing always will be an approved component.

A. Components used to create assemblies may be approved, non-approved, or a mix of both.

3.3 **Products**

Products consist of assemblies of frames, spacers, and insulated glazings; all three are required for completing a project for a bid report.

A. Products are created from assemblies.

B. Products shall be uploaded and downloaded to CMAST Smart Sync client to receive server IDs.

3.4 **Project**

In order to create a Project for a bid report, products with server IDs shall be downloaded by using the CMAST Smart Sync client. Under the “project” screen, the user will select “New” to create a new project.

3.4.1 **Required Project Information**

The following criteria are required project information that shall be entered in order to generate a bid report:

A. Project name – This can be the name of the project, building or street location as identified by the Specifying Authority

B. Address – Street address of the project

C. City – City of the project

D. State – State the project is located in, shall be two alpha characters (i.e. MD)
E. Zip Code – Zip Code the project is located in, accepts Canada zip codes as well
F. Country – Country entered in 3 alpha-character (i.e., USA, CAN)
G. Specifying Authority – Responsible party requesting bid report, which is registered with NFRC
H. Contact person – Specifying Authority contact person
I. Phone – Specifying Authority contact person’s phone number
J. Email – Specifying Authority contact person’s email address

3.4.2 Additional Information
The following criteria may be included in the project, but is not required in order to generate a bid report:
A. Inspection Agency – Select one from drop-down
   i. The user may select an Inspection Agency if the project has the potential to be submitted for a Label Certificate. Refer to the CMAST 1.2 Manual for specific details to submit a project for Label Certificate.

3.4.3 Add Products
A bid report must contain at least one product.

NOTE: If no product exists in a project, the user will not be able to generate a bid report.
A. Select product(s) to be included in the project, making all necessary adjustments to quantity and size.
   i. The ratings will be displayed as NFRC Standard Size (see Figure 3.1)
   ii. Adjustments made to size will be indicated as “Specified Size” on the bid report
### 3.5 Upload Project for Bid Report

A. Once a project is complete, it must be uploaded to generate a bid report in the CMAST web.
   
   i. Launch Smart Sync
   
   ii. Select the “Upload” button to activate the upload functions
   
   iii. Select “Projects” entity from the menu on the right
   
   iv. From the statuses dropdown select “All”
   
   v. Set the visibilities by selecting the radio button “Mine”
   
   vi. Select the “Get List”

B. Projects are displayed in the window below. Projects are those that are on the users local client database (CMDOP.cdf) file. Projects can be any previously uploaded or any new projects that have been created.

   i. Select the desired project to upload by checking the selection box on the left

   ii. Select the Upload button
C. A pop-up box will be displayed notifying the user that the upload is complete
   i. Allow Smart Sync to refresh the screen behind the pop-up, then select “OK”
   ii. Any warnings or errors should be reported to NFRC.

D. The project name will be colored blue indicating its been saved to the server. A server ID has been assigned within the CMAST web.
E. The user may download the newly saved project from the CMAST web to keep a current copy with server ID on the users local client database (CMDOP.cdf) file.

4. **GENERATE A BID REPORT**

To generate a bid report, the user must login to the CMAST web (http://cmast.nfrc.org). Only the users that have been given permission, through CMAST application visibilities, for the specific project will be able to find and generate the bid report.

4.1 **Search for Project**

A. From the “Find” menu, select the new menu item “Project”.

![CMAST Web Find Menu](image)

B. Set the search parameters and select the Search button.

C. The Project Summary screen is displayed with a list of all available projects.
Projects which are able to have a bid report generated, will have a Project number.

Projects that do not have a project number will not be able to generate a bid report until at least one product or required information is entered and re-uploaded to the CMAST server.

**Figure 4.2 Project Summary Results Page**

D. Select the desired project by clicking on the project number hyperlink.

E. The Project Details page is displayed with summary of products in the project, and a link to generate a bid report.

**Figure 4.3 Project Details page**

4.2 Generate Bid Report

A. Additional required information shall be selected in order to generate the bid report:

i. Select number of floors:
   a) Fewer than 3 floors; or
b) More than 3 floors

ii. Select area:
   a) Less than or equal to 10,000 ft²; or
   b) Greater than 10,000 ft²

B. Select the “Generate Bid Report” button.
   i. A pop-up message will allow the user to open, save, save as the bid report as a PDF file. Or the user can cancel the generation.

Figure 4.4 Bid Report generation

4.3 Incomplete Projects or Project Information

A. If required fields are not filled in properly or no products are associated to the project from the CMAST application, the Project Detail page will display the following prompt:

“The bid report cannot be generated to the following missing item(s):”

(Exact missing parameters will be listed)

Figure 4.5 Incomplete Error Message
B. The user shall return to the CMAST application, enter in the correct information or add products and re-upload.

### 4.4 Incomplete Building Information

A. If no floor or area information is selected, the following error message will be displayed:

**Figure 4.6 Missing Floor or Area Selection Error Message**

<table>
<thead>
<tr>
<th>Floors*</th>
<th>Area*</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fewer than 3 Floors&lt;br&gt;• More than 3 Floors</td>
<td>• &lt;= 10,000 ft²&lt;br&gt;• &gt; 10,000 ft²</td>
</tr>
<tr>
<td>• Pick a floors option!&lt;br&gt;• Pick an area option!</td>
<td>• Pick a floors option!&lt;br&gt;• Pick an area option!</td>
</tr>
</tbody>
</table>

B. The user shall follow the steps listed in 4.2 above.
APPENDIX A – BID REPORT EXAMPLE

NON-RESIDENTIAL FENESTRATION CALCULATION REPORT / BID REPORT ACCORDING TO NFRC CMA PROCEDURES-NFRC STANDARD SIZE.

NOTE: This is NOT an NFRC Label Certificate. This document can NOT be used in place of a NFRC Label Certificate and can be used only for Bid and Design Purposes.

Project Information/Number: BR-MKW-0093
Bid Report Generated By: YKK AP America Inc.

Project Name: 11/04/16 Testing
Project Address: 0305 Ivy Lane
Project City: Greenbelt
State: MD
ZIP code: 20770

Specifying Company Name: Manko Window Systems
Specifying Authority Contact Person: Kevin Dix
Specifying Company Phone: 703-778-9545

Frame Component Uploaded By: Architectural Testing Inc. - MN
Frame Component Status: Approved
Frame Component Uploaded By: Architectural Testing Inc. - PA
Frame Component Status: Approved
Spacer Component Uploaded By: Architectural Testing Inc. - PA
Spacer Component Status: Approved

PRODUCT LISTING:

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>Framing Ref</th>
<th>Glazing Ref</th>
<th>Spacer Ref</th>
<th>U</th>
<th>SHGC</th>
<th>VT</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/04/16 Testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.34</td>
<td>0.28</td>
<td>0.50</td>
</tr>
</tbody>
</table>

FRAME, GLAZING AND SPACER ASSEMBLIES:

GLAZING LISTING:

<table>
<thead>
<tr>
<th>Glazing Ref</th>
<th>Supplier ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PPG Industries</td>
</tr>
</tbody>
</table>

SPACER LISTING:

<table>
<thead>
<tr>
<th>Spacer Ref</th>
<th>Supplier ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Technofor</td>
</tr>
</tbody>
</table>

FRAMING LISTING:

<table>
<thead>
<tr>
<th>Framing Ref</th>
<th>Supplier ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manko Window Systems</td>
</tr>
</tbody>
</table>
NON RESIDENTIAL FENESTRATION CALCULATION REPORT/BID REPORT
ACCORDING TO NFRC CMA PROCEDURES, SPECIFIED SIZE.

PRODUCT LISTING:

<table>
<thead>
<tr>
<th>ID</th>
<th>Qty</th>
<th>Total Area</th>
<th>Name</th>
<th>Energy Plus Report</th>
<th>Width</th>
<th>Height</th>
<th>U</th>
<th>SHGC</th>
<th>VT</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2457.51</td>
<td>11/04/10 Testing</td>
<td>P-MKW-47064.txt</td>
<td>49.50</td>
<td>71.50</td>
<td>0.33</td>
<td>0.20</td>
<td>0.51</td>
<td></td>
</tr>
</tbody>
</table>

* Individual product performance at specified size is listed in the above table and has been determined in accordance with NFRC technical procedures. However, the specified size performance calculations above are for information purposes and used in area-weighted average calculations and energy simulation programs.