

# NFRC Lab Simulation Uploadsheet Format Checking Tool

A simulation uploadsheet format checking tool has been implemented in order to minimize and identify issues and to reduce investigation time on errors that have occurred during spreadsheet uploading and product line generation.

**NOTE: All simulations uploaded to CPD 2.0 shall be verified by using **Lab Report Test tool** on the simulator home page in accordance with the **NFRC Simulation Spreadsheet Format Checking User Manual**. Thermal test lab reports are not using the format checking tool at this time.**

## ***Cells with verification:***

- Cell values located in the header and data section of the simulation uploadsheet that are listed on the following pages will be verified by the application only for **formatting and NFRC Database Code requirements**. For instance, cells containing a NFRC database code (i.e., sash type) will be verified in accordance with the NFRC database code list. The recommended “format” of each cell in the simulation spreadsheet is listed in parenthesis after the value title.
- Cells requiring data or codes because of other cell’s data, such as the number of panes versus the number of gaps, will be verified for correctly formatted data as well as NFRC database codes, if applicable. The application will not verify if the “value” is correct. For example, for a dual glazed system, the application will verify there is a value formatted correctly in the “Pane Thickness #1 & #2” and “Gap 1” columns; however, the application will not verify if the value is accurate, such as 5.00” is listed instead of 0.500”.
- For the Model Size and Validation Size cells, the application will only verify if properly formatted data is present when applicable.
- Codes are case sensitive in accordance with the NFRC Database Code list (i.e., “VY” is accepted, “vy” is not accepted).

## ***Cells with no verification:***

- Manufacturer Product Code is not included in the format checking tool process.
- Product Number is not included in the format checking tool process but should be entered in accordance with the NFRC CPD 2.0 Simulator User Manual per the specific report type.

## ***Results of verification:***

- The results of the format checking will be listed in an event log that is available to the user when the process is completed. The spreadsheet line number will be listed for each passed or failed event with a description of the failure.

## Header Values

**Manufacturer Name** (Format: General) – Must be same as manufacturer selected

Mfr Name	<ul style="list-style-type: none"><li>• The name of the manufacturer who owns the product for which the simulation data was generated.</li><li>• Manufacturer name shall be same as listed in the license agreement and as listed in the CPD.</li></ul>
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**Operator Type** (Format: General) – Must match codes in the NFRC Database Code list

Operator Type	<ul style="list-style-type: none"><li>• The Operator Type as listed in NFRC 100 Table 4-3, which applies to the entire product line.</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Thermal Break** (Format: General) – Must match codes in the NFRC Database Code list and is required for ALL product lines

Thermal Break Type	<ul style="list-style-type: none"><li>• The Thermal Break Type which applies to the entire product line.</li><li>• Product lines containing no thermal break shall contain an “N” for not applicable.</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Report Type** (Format: General) – Must match “Report Type” selected when uploading at the database and is required for ALL product lines

Report Type	<ul style="list-style-type: none"><li>• New, recertification, revision or addendum report type</li></ul>
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**CPD Number** (Format: General) – Must be present and a valid CPD number if report is anything but a NEW Report Type. The application does not verify the CPD Number versus the manufacturer selected.

CPD Number	<ul style="list-style-type: none"><li>• This field will be used for the following report types: revision, addendum, and recertification.</li><li>• Use alpha numeric CPD number, i.e. ABC-B-7</li><li>• Matches a valid CPD number.</li></ul>
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**Rating Procedure** (Format: General) – Must match codes in the NFRC Database Code list – NOTE: The 2009 document cycle is approaching and will be required in 2009 when implemented.

Rating Procedure	<ul style="list-style-type: none"><li>• The rating procedure used to prepare the report.</li></ul>
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**SIM Lab Code** (Format: General) – Must be same as lab uploading in the database.

SIM Lab Code	<ul style="list-style-type: none"><li>The identification code which NFRC has assigned to the simulation lab which prepared the report.</li></ul>
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**SIM Rpt Revision date** (Format: Date) – Must be a valid date

SIM Rpt Revision Date	<ul style="list-style-type: none"><li>The date upon which the report was created.</li><li>Note: This cell initially contains the original report date and will contain all subsequent revision dates.</li></ul>
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**Report Number** (Format: General) – Must be filled in

Report Number	<ul style="list-style-type: none"><li>The name or number of the report as specified by the Simulator.</li></ul>
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**Data rows**

**Pane ID #1-8** (Format: General) – Must be numeric or blank

Pane ID #[1 to 8]	<ul style="list-style-type: none"><li>Contains the identifying code (as defined in the IGDB or User database) of the glass or film.</li><li>The number represents the (relative) location of the pane within the assembly beginning from the exterior.</li><li>For products that do not contain glass (opaque door), these cells shall be left blank.</li></ul>
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**Pane Thickness #1-8** (Format: Number) – Must be numeric or blank

Pane Thickness #[1 to 8]	<ul style="list-style-type: none"><li>Contains the thickness of the pane (in inches, truncated to 6 digits) located at the specified position.</li><li>The number represents the (relative) location of the pane within the glazing assembly beginning from the exterior.</li><li>For products that do not contain glass (opaque door), these cells can be left blank</li><li>(L) Test for existence versus # of Pane ID</li></ul>
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**Gap #1-7** (Format: Number) – Must be numeric or blank. The verification for this cell will be against the amount of Panes

Gap [1 to 7]	<ul style="list-style-type: none"><li>Contains gap distance between successive panes (in inches, truncated to 6 digits)</li><li>The number represents the (relative) location of the gap within the glazing assembly beginning from the exterior.</li><li>(L) Test for existence versus # of Panes</li></ul>
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**Gap Fill #1-7** (Format: General) – Must match codes in the NFRC Database Code list or blank. The verification for this cell will be against the number of Gap entries.

Gap Fill (1 to 7]	<ul style="list-style-type: none"> <li>• Contains the gas name which is used to fill the gap</li> <li>• The number represents the (relative) location of the gap within the glazing assembly beginning from the exterior.</li> <li>• This is a text field of a maximum 3 characters from the NFRC Database Codes – i.e., AR3</li> <li>• (L) Test for existence versus # of Gap widths</li> <li>• (S) Matches the NFRC Database Codes.</li> </ul>
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**Gap Fill % #1-7** (Format: Text) – Must be a numeric percentage between 0 and 100. The verification for this cell will be against number of Gap Fills entries for individual products that contain a mixture of gases, (argon and krypton), the user will use a “/” between the values. The application will assume the difference from 100 is air.

% of gap fill [1 to 7]	<ul style="list-style-type: none"> <li>• The gas fill concentration simulated between glazing layers beginning from the exterior. The user shall only state the percentage of inert gases present; the application will assume the difference is air. If multiple inert gases are present, the user shall separate them using “/” (ie 80% argon, 10% krypton mixture shall be shown as “80/10”).</li> <li>• Values shall add up to the capacity of the established NFRC values for the IG’s filling technique; remaining % of the gap shall be considered Air</li> </ul>
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**Emissivity surface #1-16** (Format: Number) – Must be a numeric value between 0 and 1.

Emissivity Surface [1 to 16]	<ul style="list-style-type: none"> <li>• The value of the emissivity of the surface beginning from the exterior exposed environment side. The user shall not enter the emissivity of for clear glass or tinted clear glass (typically 0.840)</li> <li>• This is a decimal field of 3 decimals / 5 characters – i.e., 0.101</li> <li>• (S) Test for existence versus # of Pane ID</li> </ul>
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**Tint** (Format: Text) – Must match codes in the NFRC Database Code list. NOTE: There is a specific manner when listing dynamic glazing options.

Tint	<ul style="list-style-type: none"> <li>• The color code for the tint of the glass, film, or dynamic glazing</li> <li>• This is a text field of 2 characters from the NFRC Database Codes – i.e., LE</li> <li>• The hierarchy is tints, low-e, and then clear</li> <li>• Opaque doors shall contain the code OT and description in the manufacturer code column</li> <li>• (S) Matches the NFRC Database Codes.</li> </ul>
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**Shading System** - Must match codes in the NFRC Database Code list.

Shading System	<ul style="list-style-type: none"> <li>• Currently not in use</li> </ul>
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**U-factor COG** (Format: Number) – Must be numeric value truncated to six (6) decimals.

U-Factor-C-O-G	<ul style="list-style-type: none"> <li>• The U-Factor representative of the center-of-glazing region.</li> <li>• A numeric value truncated to six (6) decimals / 8 characters – i.e., 0.356434</li> <li>• For products that in which a U-Factor<sub>COG</sub> value cannot be obtained, the value 0.000000 shall be used. For products requiring a 0.000000 value, the value 0.000001 shall be used. (This methodology will be used in the interim until the application can handle a blank cell)</li> </ul>
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**SHGC COG** (Format: Number) – Must be a numeric value between 0 – 1 truncated to six (6) decimals.

SHGC C-O-G	<ul style="list-style-type: none"> <li>• The Solar Heat Gain Coefficient (SHGC) representative of the center-of-glazing region</li> <li>• A numeric value truncated to six (6) decimals / 8 characters – i.e., 0.782342</li> <li>• For products that in which a SHGC<sub>COG</sub> value cannot be obtained, the value 0.000000 shall be used. For products requiring a 0.000000 value, the value 0.000001 shall be used. (This methodology will be used in the interim until the application can handle a blank cell)</li> </ul>
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**VT COG** (Format: Number) – Must be a numeric value between 0 – 1 truncated to six (6) decimals.

VT C-O-G	<ul style="list-style-type: none"> <li>• The Visual Transmittance (VT) representative of the center-of-glazing region</li> <li>• A numeric value truncated to six (6) decimals / 8 characters – i.e., 0.782342</li> <li>• For products that in which a VT<sub>COG</sub> value cannot be obtained, the value 0.000000 shall be used. For products requiring a 0.000000 value, the value 0.000001 shall be used. (This methodology will be used in the interim until the application can handle a blank cell)</li> </ul>
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**Spacer** (Format: Number) – Must match codes in the NFRC Database Code list

Spacer	<ul style="list-style-type: none"> <li>• The spacer system(s) used in the simulation of the product line. Note: this field shall be populated and not be left blank, if there is no spacer, e.g. single pane units or opaque doors, user will populate with 'N'. If multiple spacers are present, a comma shall be used to separate the different spacer systems.</li> <li>• This is a text field of 4 characters for each spacer system listed from the NFRC Database Codes – i.e., A1-D,CS-D</li> <li>• (S) Matches the NFRC Database Codes.</li> </ul>
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**Grid Type** (Format: Text) – Must match codes in the NFRC Database Code list

Grid Type	<ul style="list-style-type: none"> <li>• This includes grilles between the panes, simulated divided lite, attached and true divided lite. Note: this field shall be populated and not be left blank. If multiple dividers are present, a comma shall be used to separate the different dividers.</li> <li>• This is a text field of 1 character for each grid type listed from the NFRC Database Codes – i.e., N,G</li> <li>• (S) Matches the NFRC Database Codes.</li> </ul>
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**Grid Size (Format: Text) – Must match codes in the NFRC Database Code list**

Grid Size	<ul style="list-style-type: none"><li>• The designation for grids less than 1” in height shall be listed as 0.75 and the designation for grids greater than or equal to 1” in height shall be listed as 1.5. If multiple dividers are present, a comma shall be used to separate the different dividers. This shall be left blank if no dividers are present.</li><li>• This is a text field from the NFRC Database Codes – i.e., 0.75</li><li>• (L) Test for existence versus Grid Type</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Frame Emissivity (Format: Number) – Must be numeric between 0 and 1.**

Frame Emissivity	<ul style="list-style-type: none"><li>• The emissivity of the frame cross-section surface finish.</li><li>• This is a decimal field with 1 decimal / 3 characters – i.e., 0.9</li></ul>
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**Frame Absorptance (Format: Number) – Must be numeric between 0 and 1.**

Frame Absorptance	<ul style="list-style-type: none"><li>• Contains the frame absorptance value.</li><li>• Use 0.5 for glazed / sloped / curtain wall products; use 0.3 for all other product types.</li><li>• This is a decimal field with 1 decimal / 3 characters - i.e., 0.5</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Frame Type (Format: Text) – Must match codes in the NFRC Database Code list.**

Frame Type	<ul style="list-style-type: none"><li>• Contains the frame type code of the product type from the NFRC Database Codes. Note: this field shall be populated and not be left blank. If multiple frames are present, a comma shall be used to separate the different frame types.</li><li>• This is a text field of 2 characters (XX) for each frame type listed from the NFRC Database Codes – i.e., VY,VA</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Sash Type (Format: Text) – Must match codes in the NFRC Database Code list.**

Sash Type	<ul style="list-style-type: none"><li>• Contains the sash type code of the product type from the NFRC Database Codes. Note: this field shall be populated and not be left blank. If multiple sashes are present, a comma shall be used to separate the different frame types</li><li>• This is a text field of 2 characters (XX) for each sash type listed from the NFRC Database Codes – i.e., VY,VA</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Door Description (Format: Text) – Must match codes in the NFRC Database Code list**

Door Description	<ul style="list-style-type: none"><li>• A description of the door panel configuration from the NFRC Database Codes</li><li>• This is a text field of 2 characters – i.e., EM</li><li>• This cell will be left blank when uploading a window</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Door Core Fill (Format: Text) – Must match codes in the NFRC Database Code list or be blank**

Door Core Fill	<ul style="list-style-type: none"><li>• A description of the material used to enhance thermal, acoustical or structural performance of the door from the NFRC Database Codes</li><li>• This is a text field of 2 characters – i.e., EP</li><li>• This cell will be left blank when uploading a window</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Door Skin Material (Format: Text) – Must match codes in the NFRC Database Code list or be blank**

Door Skin Material	<ul style="list-style-type: none"><li>• A description of the covering which is applied to the door core for the primary purpose of protection from environmental elements that may or may not add structural integrity from the NFRC Database Codes</li><li>• This is a text field of 2 characters – i.e., GS</li><li>• This cell will be left blank when uploading a window</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Door Substructure (Format: Text) – Must match codes in the NFRC Database Code list or be blank**

Door Substructure (Edge)	<ul style="list-style-type: none"><li>• A description of the structural members of door composed of, but not limited to, wood, wood products, metal, composites, or other reinforcing materials that is found between the Door Skin Material from the NFRC Database Codes</li><li>• This is a text field of 2 characters – i.e., WD</li><li>• This cell will be left blank when uploading a window</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**Door Panel Material (Format: Text) – Must match codes in the NFRC Database Code list or be blank**

Door Panel Material	<ul style="list-style-type: none"><li>• A description of the raised panel section of a door that is either an individual component of the door or it may be a simulated panel that is created in the embossing of the Door Skin Material from the NFRC Database Codes</li><li>• This is a text field of 2 characters – i.e., FG</li><li>• This cell will be left blank when uploading a window</li><li>• (S) Matches the NFRC Database Codes.</li></ul>
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**U-factor (Format: Number) – Must be a numeric value**

U-Factor	<ul style="list-style-type: none"><li>• The U-Factor representative of the total fenestration system</li><li>• A numeric value truncated to six (6) decimals / 8 characters – i.e., 0.232342</li></ul>
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**Condensation Resistance (Format: Number) – Must be a whole number or blank.**

Condensation Resistance	<ul style="list-style-type: none"> <li>• The total fenestration product condensation resistance.</li> <li>• This cell can be blank for products not provided a Condensation Resistance rating</li> <li>• This is a number field of 2 digits, no decimals – i.e., 50</li> </ul>
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**Specialty Data (Format: Number) – SHGC and VT columns (ND, <1, >1) corresponding to the applicable grid configuration shall contain numeric values between 0 and 1. Non relevant columns based on the grid configuration may be left blank. For example, an individual product that does not contain grids, the SHGC and VT columns representing grids can be left blank.**

SHGC(0) No Grid	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 0. This designation is used for the product option with no grids using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.004095</li> </ul>
SHGC(1) No Grid	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 1. This designation is used for the product option with no grids using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.781213</li> </ul>
VT(0) No Grid	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 0. This designation is used for the product option with no grids using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.000000</li> </ul>
VT(1) No Grid	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 1. This designation is used for the product option with no grids using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.776152</li> </ul>
SHGC(0) Grid < 1”	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 0. This designation is used for the product option with grids less than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.007854</li> </ul>
SHGC(1) Grid < 1”	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 1. This designation is used for the product option with grids less than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.692343</li> </ul>
VT(0) Grid < 1”	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 0. This designation is used for the product option with grids less than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.000000</li> </ul>
VT(1) Grid < 1”	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 1. This designation is used for the product option with grids less than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.691237</li> </ul>
SHGC(0) Grid > 1”	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 0. This designation is used for the product option with grids greater than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.012342</li> </ul>
SHGC(1) Grid > 1”	<ul style="list-style-type: none"> <li>• The total fenestration product solar heat gain coefficient for a center-of-glazing SHGC of 1. This designation is used for the product option with grids greater than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.622876</li> </ul>

VT(0) Grid > 1"	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 0. This designation is used for the product option with grids greater than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.000000</li> </ul>
VT(1) Grid > 1"	<ul style="list-style-type: none"> <li>• The total fenestration product visible transmittance for a center of- glazing VT of 1. This designation is used for the product option with grids greater than 1 inch using the NFRC 200-(2004) Procedure.</li> <li>• This is a decimal field truncated to 6 decimal places / 8 characters – i.e., 0.612542</li> </ul>