

NFRC COMPONENT MODELING APPROACH & 2008 TITLE 24

Question & Answer Summary from January, 2010 webinar.

1. Does CMA really ‘eliminate’ the need for lab testing?

Lab testing (otherwise known as a validation test) of the framing product line is still conducted by accredited labs in order to validate the framing product lines placed in CMAST. Once validated frame members associated with this framing product line can be NFRC-approved and entered into the CMAST library for unlimited use. So from the perspective of an energy consultant or design team member, once you create a window in CMAST you do not need to send a window sample out for lab testing as testing has already been conducted as part of the frame component approval process.

2. Can CMA be used for site-built fenestration on residential projects?

Not at this time. In California, CMA is currently approved for use for Title 24 compliance purposes for Nonresidential (and Residential High-Rise, four habitable stories or greater) site-built fenestration. However, NFRC (National Fenestration Rating Council) and the CEC (California Energy Commission) are exploring the potential of including residential fenestration types in future revisions of the California Title 24 Energy Standard. NFRC intended that CMA be used for any type of commercial fenestration.

3. Can CMA be used for skylights?

Yes. CMA is designed by NFRC to be used for any nonresidential fenestration. In California, CMA is approved for nonresidential site-built fenestration. Therefore, if the skylight is site-built, then CMA can be used for Title 24 compliance purposes.

4. Have other states followed the California model to adopt CMA as a provision in the energy code?

Not the same model. California makes a direct reference to CMA, however, any energy code referring the NFRC 100 (for U-factor rating) and NFRC 200 (for SHGC and VT rating) will benefit from using the CMA method to rate. CMAST is based on NFRC 100 and 200 requirements and produces the same U-factor, SHGC, and VT ratings that the existing NFRC nonresidential Site Built Program does, but simplifies the calculation and compliance.

Currently, thirty-eight states reference ASHRAE 90.1 as their commercial building energy code. ASHRAE 90.1 references NFRC 100 and 200 For commercial energy code status, visit: <http://bcap-energy.org/node/21>.

5. Could energy-related performance values obtained using CMA impact HVAC load calculations?

Yes, it is likely that more accurate values from CMA will impact HVAC load calculations. Our discussions with engineers have indicated that, in most cases, ASHRAE recommended values are utilized to inform load calculations. The CEC alternative default values, NA6, calculated using the ‘Alternate Default Fenestration Procedure to Calculate Thermal Performance, are based on ASHRAE methodology. Therefore, if CMA values are utilized for load calculation purposes, there would be positive impact on HVAC load calculations (for example, reduced HVAC capacity).

6. Could a user specify a window with U-0.30 SHGC 0.30 and CMAST provide assemblies that meet that criterion?

Not at this time. Currently, CMAST only can do the reverse. A user will pick the components (glazing, frame, spacer) and CMAST will provide the user with the associated energy-related performance values of that fenestration product (U-factor, SHGC, VT). However, the user can iterate with various components to get to the required U-factor and SHGC.

7. When will the DOE-2 output files from CMAST be available for use in other simulation software (such as EnergyPro and eQUEST)?

At present, CMAST (v 1.1.09) can generate energy-related performance values (SHGC, U-factor, VT) and output a file describing detailed angular-dependent values for SHGC and VT for EnergyPlus. The software developers of CMAST expect to add a DOE-2 output file before the end of the Quarter 1 of 2010.

This is not to say, however, that energy-related performance values derived from CMAST (SHGC, U-factor, VT) cannot yet be used in DOE-2 based building simulation programs like eQuest and EnergyPro. A user can take the values generated by CMAST and manually input them in these software.

The primary difference between using the detailed output file and entering the values manually into the software is that the angular dependent calculations from CMAST will not be taken into account in the manual input method.

8. How will the DOE-2 output file be ultimately imported into simulation software such as EnergyPro and eQUEST?

At this time, EnergyPro does not have a method to import the detailed DOE-2 output file. This feature will have to be programmed into EnergyPro.

eQuest, however can import the detailed DOE-2 output file using the “Input Window Report File” function. Please refer to eQuest documentation for further help on this topic.

9. Must one be certified by NFRC (or hire an ACE) to utilize CMAST?

No. Anyone can download, purchase and utilize CMAST. For example, an energy consultant or architect could download CMAST and utilize the software to

create a 'CMA Pre-Bid Certificate.' This certificate will not, however, include the NFRC logo and cannot be used for Title 24 compliance purposes. To obtain a 'CMA Label Certificate' for compliance purposes, the user generating the certificate from CMAST must be an approved NFRC ACE (Approved Calculation Entity) Organization.

The ACE organization can be either a 'Manufacturer ACE' or 'Independent ACE' Organization. Note that only ACE Organizations, who by definition employ one (or more) approved ACE(s), are authorized to generate a Label Certificate.

10. Can the energy consultant responsible for the energy documentation print labels for his/her own projects if he/she is also an ACE?

Yes. To ensure quality control, NFRC requires that an ACE undergo training before they produce CMA Label Certificates. Additionally, IAs (Independent Certification and Inspection Agencies) will perform spot-checks on CMA Label Certificates, to ensure that the ACE is correctly utilizing CMA.

11. What are the training costs for becoming an ACE?

Training costs typically range from \$100 - \$300. The cost depends on various factors such as the membership status of the ACE candidate (NFRC members will pay a reduced fee). As ACE training typically occurs prior to the NFRC Membership meetings, training fees are reduced for individuals who also attend the meeting. Future plans call for ACE training to be done via webinar, however, neither the dates or fees for such training have been established as of yet. Check back at the NFRC CMA training page: www.nfrc.org/cmaprogram.aspx.

12. When and where is the next 2010 ACE training?

NFRC will conduct the next ACE training session in conjunction with its Spring Membership Meeting in New Orleans (April 12-15, 2010); for more information, visit the NFRC CMA training page: www.nfrc.org/cmaprogram.aspx.

13. When does the 6-month free trial for CMAST end?

The 6-month CMAST free trial will lapse 6-months after you download and install the software. For example if the CMAST is downloaded February 1, 2010, the software would expire August 1, 2010. CMAST can be downloaded at <http://cmast.nfrc.org>.

14. Does NFRC provide troubleshooting and other technical support for CMAST?

Yes. For questions and technical inquiries, NFRC has provided a free support service through a web-based portal run by *SupportSuite*. In order for NFRC to provide superior customer service for CMAST and the associated certification program, users are to submit a "ticket" (written entry) via the *CMA SupportSuite* application. This assures that questions or concerns go directly to the person who is most qualified to provide assistance. The web-based *SupportSuite* can be accessed at: <http://support.nfrc.org>.