NFRC COMPONENT MODELING APPROACH & 2008 TITLE 24

Question & Answer Summary from December 3, 2009 webinar.

1. **Does CMA really 'eliminate' the need for lab testing?**

   Lab testing 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 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. **How does CMA compare to the Site-Built program? Can the Site-Built program still be used in 2008 Title 24?**

   The Site-Built program is still an active NFRC program and a valid option for compliance in the 2008 Title 24. Certain custom fenestration applications may still use Site-Built program (100SB). When you are compiling your energy compliance documentation for fenestration, you can choose one of two options for energy compliance (for site-built fenestration): 1) Default values (CEC Tables 116A & 116B or Alternative Calculation Method NA6) 2) NFRC values from either CMA or Site-Built program.

3. **Is validation testing required for future certification of product lines? The current program allows you to reference as far back as April 1, 2005 for your validation test.**

   Yes, if you introduce a new framing product line in to CMAST then it would require validation testing. Frame members associated with this new framing product line can then be evaluated and approved into the CMAST frame library.

4. **Does CMA take into account how U-Factor, SHGC vary for different size windows?**

   Yes; CMAST has the ability to produce both 'actual size' and 'standard size' performance ratings.

5. **Can you use fenestration 'actual size' values for Title 24 compliance calculations?**

   No; under the 2008 Title 24 Standard you must use 'standard size' values for compliance purposes.

6. **Will CMA be required in to be used in California for all unit skylights and slope glazing?**

   CMA is not a requirement, it is a provision for code compliance in the 2008 Title 24 Standard. If your skylight or slope glazing is site-built, you can use CMA.

7. **Who is the 'Responsible Party' when using CMA for Title 24 compliance purposes? Is it the glazing installer?**

   The 'Responsible Party' is referred to as the 'Specifying Authority' in the CMA program, and can be any of a number of individuals and is not limited to the glazing installer. For example, the 'Specifying Authority' might be the engineer, the architect, the owner, the glazing installer, or another qualified project team member.

8. **Who is responsible for hiring the ACE (Approved Calculation Entity)?**

   For California Title 24 compliance purposes there are no limitations regarding who would hire the ACE. However, an ACE must be hired to produce a certified CMA Label Certificate.

   As an example, the individual who hires the ACE might be the owner, the architect, the energy consultant, or another qualified project team member who is responsible for producing the energy compliance documentation.

9. **Can CMA be used for "Standard" vinyl windows for High-Rise Residential compliance?**

   If the fenestration meets the Site-Built requirement, and the frames (vinyl or otherwise) are part of the CMAST library, then CMA can be used for High-Rise Residential (4 habitable stories or higher) Title 24 compliance in California as High-rise residential Title 24 references the Non-Residential Standards for building envelope.

10. **Does ownership of CMAST automatically make you an NFRC ACE?**

    No; If you purchase the CMAST software you can work in the software and calculate your fenestration product's energy performance values. However, you will only be able to print a Pre-Bid report. Regarding how you can become an ACE, consult Question 11.

11. **How does one become an ACE (Approved Calculation Entity)?**

    This is a new program from NFRC called the 'Calculation Entity Approval Program' (CEAP). This program has its own governing body and associated documents (NFRC 708 document). This document outlines program requirements, including: training, quality assurance, and licensure protocols, among other items. An Organization can become 'licensed' as an ACE organization. The ACE organization then employs or contracts with individuals who are 'certified' as ACEs.

    There are two paths to becoming an ACE Organization: 1) an Independent ACE Organization 2) a Manufacturer ACE Organization. An Independent ACE Organization is beholden to independence requirements. In other words, they cannot be affiliated with a particular product and thus can represent multiple products/interests. Examples of Independent ACE's include an Accredited Laboratory (already in place for the Site-Built Program) or an individual consultant. A Manufacturer ACE Organization is not required to meet these same

independence requirements and is likely affiliated with a manufacturer of a specific line of products.

To find out more about the program and when NFRC is offering ACE trainings please visit www.nfrc.org/CMAprogram.aspx.

12. **Since there are still a number of products that are obtaining approval from NFRC to be entered into CMAST, will this delay adoption of the CMA program as a provision in 2008 Title 24?**

    No; CMA is on schedule to be included in the 2008 Title 24 starting on January 1, 2010. However, if the product you are looking for is not yet in the CMAST library, there are alternatives for modeling and testing performance ratings listed in Question 2 above.

13. **Can residential projects utilize CMA?**

    Currently CMA can only be used for non-residential projects. Please note, however, that High-Rise Residential site-built applications can utilize CMA for Title 24 compliance.

    NFRC is considering adopting CMA for residential applications, however, no date has been established..

14. **Who will utilize CMAST? The manufacturer? What is the role of the Energy Consultant when using CMA?**

    There are four major steps in utilizing CMAST to create a Label Certificate (for Title 24 compliance purposes):

    First, the window component manufacturers will send NFRC their components (glass, frame, spacer) for approval. This process runs in the background, i.e. CMAST libraries are regularly updated and you can sync the libraries every time you log-on to the software.

    Second, a user of the CMAST software can create a fenestration product in CMAST and calculate it's energy performance values (U, SHGC, VT). This user can be anyone - a manufacturer, an architect, an energy consultant or a window contractor. They can create a Pre-Bid report at this stage. However, note that for a pre-bid report, components don't have to be NFRC approved.

    Third, an energy consultant or individual running the compliance simulation model (eg. EnergyPro), will utilize these performance values from CMAST to input into the energy model.

    Fourth, for Title 24 compliance, an ACE will create a CMA Label Certificate from CMAST. For a CMA Label Certificate, only NFRC-approved components can be used.

15. **Are the algorithms in CMA consistent with ISO Standards?**

    Yes, Therm and Window software (the two engines running beneath CMAST) use algorithms from ISO-15099 (Standard Detailed Calculation Method). CMAST uses a slightly simplified version of these algorithms. Tests have shown a slight

variance for certain products' U-factor and SHGC ratings. However, ISO also has two other algorithms 1077-1 and 1077-2. NFRC procedures are not compliant with these standards. This is primarily due to the fact that these are simplified procedures and NFRC has decided to use the more accurate procedure (ISO-15099).

16. **Can one replicate a window configuration already generated in CMAST for another project? Also, can one utilize the same CMA Label Certificate more than once?**

    CMAST is a web enabled software, i.e. once a product is modeled in CMAST (with NFRC approved components), the product can be accessed on the website and can be used again in another project. You have the ability to determine whether you would like to share your product with other users or whether you would like to keep it private.

    You cannot, however, use an existing CMA Label Certificate, instead you will have to ask an ACE to add an existing product to your project in CMAST and print a new Label Certificate. Label Certificates are project specific and will include data specific to that project (project name, Responsible Party, etc) and a unique identification number (which must be referenced on the Title 24 compliance forms). These unique identification numbers can then be referenced online by a building official when reviewing compliance documentation.

17. **How many spacer and frame components are currently approved by NFRC in CMAST? What about glass components?**

    Currently there are no spacer components in CMAST, but a few frame components are now included in the database and are pending approval. The CMA program has been piloted throughout 2009 and during this period, NFRC has been trainings its Accredited Laboratories, ACE's and IA's on the new spacer and frame procedures (these were not called out in past programs). A large amount of the program pilot effort was focused on these set up procedures, but now NFRC is in a good position to further populate the CMAST libraries.

    Currently, there are spacer and frame components in CMAST which are there for testing purposes and can be used by CMAST users for practice purposes. As soon as the new spacer and frame components are approved by NFRC. entered in the software, and the CMA Product Certification Program is implemented in January these test components will be removed.

    The glass libraries are populated and fairly complete. There are over 1,000 glazing components in CMAST which were uploaded from the International Glazing Database (IGDB) and have been utilized by NFRC for a number of years.

18. **Who pays the ACE?**

    The Specifying Authority contracts with and pays the ACE. This individual can be the architect, framing/glazing supplier, engineer (or the individual who is taking responsibility on that project for the fenestration rating).

19. **What is the 10,000 sf limitation for, what does it have to do with CMA?**

    The 10,000sf limitation is with regards to the Title 24 Alternative Calculation Method, which is one of the compliance options for site-built fenestration is listed in Question 2 above. The CMA program, however, can be used for any size window.

20. **Are there future trainings on CMA?**

    Yes, this webinar will be repeated on January 28th 2010. Register at: www.h-m-g.com/cma.

    NFRC will also be offering additional trainings on CMA. Please consult NFRC's website: www.nfrc.org/CMAProgram.aspx.