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Docket Number:	17-BSTD-01
Project Title:	2019 Building Energy Efficiency Standards PreRulemaking
TN #:	221553
Document Title:	Deletion of Exception 1 in Â§110.6(a)2, Â§110.6(a)3 and Â§110.6(a)4
Description:	N/A
Filer:	System
Organization:	Ken Nittler
Submitter Role:	Public
Submission Date:	10/20/2017 9:09:38 AM
Docketed Date:	10/20/2017

Comment Received From: Ken Nittler
Submitted On: 10/20/2017
Docket Number: 17-BSTD-01

Deletion of Exception 1 in Â§110.6(a)2, Â§110.6(a)3 and Â§110.6(a)4

Additional submitted attachment is included below.

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October 20, 2017

California Energy Commission
Docket 17-BSTD-17
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Re: **Deletion of Exception 1 in §110.6(a)2, §110.6(a)3 and §110.6(a)4**

I am proposing that Exception 1 in §110.6(a)2, §110.6(a)3 and §110.6(a)4 be deleted as follows:

§110.6(a)2:
~~**EXCEPTION 1 to Section 110.6(a)2:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default U-factor may be calculated as set forth in Reference Nonresidential Appendix NA6.~~

§110.6(a)3
~~**EXCEPTION 1 to Section 110.6(a)3:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default SHGC may be calculated as set forth in Reference Nonresidential Appendix NA6.~~

§110.6(a)4
~~**EXCEPTION 1 to Section 110.6(a)4:** If the fenestration product is a skylight or a vertical site-built fenestration product in a building covered by the nonresidential standards with less than 1,000 square feet of site-built fenestration, the default VT may be calculated as set forth in Reference Nonresidential Appendix NA6.~~

I have been involved with the Title 24 Part 6 Standards since their inception in 1978 as an energy consultant, software developer, and Standards development. I also operate a National Fenestration Rating Council (NFRC) accredited simulation lab, WESTLab, serving the fenestration industry across North America. We also are an approved calculation entity (ACE) under NFRC's component modeling approach that is recognized in §10-111 beginning in 2013 as a method to rate fenestration energy performance.

In the early years of the Standards there was no uniform standard for determining the energy performance of fenestration products in buildings. Yet fenestration has a major impact in the overall energy performance of buildings. NFRC grew out of this recognition that fenestration played a major role in building energy performance and that the industry needed a standard way to determine fenestration energy performance.

The 1992 Standards included language requiring the rating, certification and labeling of fenestration products for U-factor. Over the years, requirements for the Solar Heat Gain Coefficient (SHGC) and Visible Transmittance (VT) were also added. NFRC was

designated the Supervising Entity in the 1995 Standards and is responsible for administering the State's certification program for fenestration products.

During the 1990's the manufactured fenestration industry largely transformed into having their products rated and labeled in accordance with Title 24, Part 6 requirements. Most residential and many nonresidential windows are manufactured products. Since the market transformed to having ratings, there has been tremendous improvement in product energy performance. This includes the transition to low conductance frames and the use of low emissivity glass coatings. The low emissivity glass coatings are particularly important in California as this product can cut solar heat gain by more than 50% and helps to reduce cooling loads in buildings. The adoption of NFRC ratings in California has contributed significantly to the improvement of fenestration products used under our standards.

However there is a serious lack of compliance with rating and labeling of site-built fenestration products. As a businessman, it is clear to me that the lack of enforcement and the ability of fenestration suppliers to avoid the requirements is a major part of this problem. This is not a surprise in the sense that ratings take time and cost money. The result is that many nonresidential projects have ducked the requirements in part by inappropriately applying the exceptions.

These exceptions were first written into the 2001 Standards and provided an exception for site-built products in nonresidential occupancies. Site-built products include the widely used curtainwall and storefront systems used in most larger nonresidential buildings. Initially, the exception was only to apply to buildings with less than 10,000 ft^2 of fenestration product. The exception allowed the use of favorable default value equations. These equations can sometimes lead to the situation where the defaults yield better values than those of products independently rated in accordance with NFRC Standards and certified by a nationally recognized certification program. Compliance software of this era did not stop users from taking these equation defaults even when there was more than 10,000 ft^2 of fenestration. In the 2013 Standards, the limit was reduced to 1,000 ft^2.

Since the exceptions were written into the standard, NFRC has invested millions of dollars to introduce an alternative to traditional ratings that better fits how many nonresidential projects are designed and bid. This method is called the Component Modeling Approach (CMA) and is implemented in software named CMAST. It allows the frame system to be combined with a glazing system to give a reliable rated and certified project that helps to achieve compliance with the Standards and its challenging 0.41 U-factor and 0.25 SHGC requirements. CMA was recognized in the 2013 Standards.

Unfortunately, while the use of CMA has worked much better in certain markets like the State of Washington where the Seattle area has vigorous enforcement of the rating and certification requirements, it has not been widely used in California. Based on data in NFRC's label certificate database in early October, there have been only 828 certificates issued since the program was implemented. In Washington, 262 certificates were issued, about 32% of the total. In California over the same period, there were only 103 certificates, or about 12% of the total. As California's GDP is about 5 times bigger than Washington's, it would be reasonable to expect that there would be significantly more certificates in California. This is especially apparent with the boom in

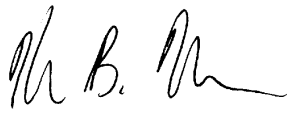
nonresidential construction has been happening in Silicon Valley, San Francisco, Los Angeles, Orange County and San Diego driven by the success of high technology businesses.

The lack of certificates reduces the chance the buildings are compliant with the Standards. In our work at WESTLab, we have seen cases where center of glass data, without frame effects, have been used for compliance. And it is a frequent occurrence that we get calls from some in the fenestration industry asking us to help figure out how to get around the need for rated and certified products or calls where fenestration suppliers are unaware of or seem to have never heard of the requirements for NFRC ratings even though they have been referenced in our Standards for years.

The lack of certificates in California's large construction market has been a significant financial burden on NFRC, as it was expected that their investment would be covered by program participant fees. This should be a concern to the Commission because NFRC is its nonprofit partner for rated and certified fenestration products and its financial health is important for its continued success.

In summary, I believe that a key reason there are so few certificates in California is due to the inappropriate use of the exceptions that leave a marketplace and enforcement confused over when these regulations apply. Originally the exceptions were written into the standard because of concern over the availability of rated and certified products. After 16 years, this reasoning is out of date and no longer necessary with the implementation of NFRC's CMA rating and labeling program.

I recommend that Exception 1 to Sections §110.6(a)2, §110.6(a)3 and §110.6(a)4 be deleted. Thank you for considering this request.



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