

DOCKETED	
Docket Number:	21-BSTD-03
Project Title:	2022 Rulemaking for Part 11 (CalGreen) and Parts 2-5 of the Building Standards Code
TN #:	239333
Document Title:	Dan Johnson, CEA Comments
Description:	This comment was originally docketed in docket number 21-BTSD-01, which relates to Parts 6 and 1 of Title 24.[1] CEC staff reviewed this comment and determined that the comment is relevant for the CEC's consideration of Part 4 of Title 24, specifically Section 402.1. For this reason, CEC staff is filing the comment to this docket so that it can be considered and addressed in the appropriate Section. The originally filed comment is available at https://efiling.energy.ca.gov/GetDocument.aspx?tn=237978&DocumentContentId=71223 .
Filer:	Peter Strait
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/16/2021 5:02:20 PM
Docketed Date:	8/16/2021

DOCKETED	
Docket Number:	21-BSTD-01
Project Title:	2022 Energy Code Update Rulemaking
TN #:	237978
Document Title:	Dan Johnson, CEA Comments - Do the Energy Code ventilation requirements supersede the California Mechanical Code
Description:	N/A
Filer:	System
Organization:	Dan Johnson, CEA
Submitter Role:	Public
Submission Date:	5/25/2021 10:31:11 AM
Docketed Date:	5/25/2021

Comment Received From: Dan Johnson, CEA
Submitted On: 5/25/2021
Docket Number: 21-BSTD-01

Do the Energy Code ventilation requirements supersede the California Mechanical Code

Please refer to attached document

Additional submitted attachment is included below.

Do the Energy Code ventilation requirements supersede the California Mechanical Code?

5/24/21

<https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-BSTD-01>

Docket 21-BSTD-01

<https://efiling.energy.ca.gov/EComment/EComment.aspx?docketnumber=21-BSTD-01>

Do the ventilation requirements in 120.X and 150.0(o) supersede the California Mechanical Code completely, or shall designers calculate the airflow rate for each code, then use the airflow rate that is the greater of the two codes (the most stringent)?

Peter Strait during the 2022 Energy Code webinar on 5/24/21 said there is a "*redirect*" in the beginning of CMC" that voids and supersedes the CMC entirely. Another presenter said with hesitation "the more stringent code" governs airflow rates.

The language in CMC 402.1 is written below:

402.1 Occupiable Spaces

Occupiable spaces listed in Table 402.1 shall be designed to have ventilation (outdoor) air for occupants in accordance with this chapter. *Ventilation air requirements for occupancies regulated by the California Energy Commission are found in the California Energy Code.*

Please clarify: Is this just a courtesy note informing the designer that more than one code applies, or does this note mean that CEnC supersedes CMC for ventilation air requirements, even when the CMC is more stringent?

CEnC interprets this CMC 402.1 note in the commentary document *2019 Nonresidential Compliance Manual*, page 4-67:

Title 24, Part 4, states; "Ventilation air supply requirements for occupancies regulated by the California Energy Commission are found in the California Energy Code." Thus, it refers to Title 24, Part 6 as the authority on ventilation.

Does "authority" mean CEnC airflow rates always govern, even when CMC is more stringent? See this screenshot from Form NRCC-MCH-E below, which references UMC. (Please correct: UMC is a model code that is not adopted in CA; the amended CMC is adopted) This says "*the most stringent code requirement takes precedence*":

	<input type="checkbox"/> Check this box if the project includes new or altered high-rise residential dwelling units
03	<input type="checkbox"/> Check the box if the project is using natural ventilation in any spaces to meet required ventilation rates per §120.1(c)2 .
Add System Remove Last	

¹ FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system.

² Air filtration requirements apply to the following three system types per [§120.1\(c\)1A](#): space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.

³ Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.

⁴ See [Standards Tables 120.1-A and 120.1-B](#).

⁵ For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.

It is customary engineering practice to resolve conflicting requirements by following the more stringent requirement.

Furthermore, engineers often apply CMC 403.2.2 Zone Air Distribution Effectiveness multiplier on top of the CMC ventilation rate, which can increase the required airflow by up to 20%.

If CMC governs all occupancy ventilation rates whenever CMC is more stringent, then why is only Healthcare noted repeatedly in CEnC? *2019 NonRes Compliance Manual* section 4.3 regarding 120.1 says "Ventilation requirements for healthcare facilities should conform to the requirements in Chapter 4" of the CMC, implying that other occupancies are NOT regulated by the CMC?

If the more stringent code governs, then Residential Dwelling Unit occupancies will all be governed by CMC, which requires 5 CFM/person + 0.06CFM/SF. For example, a 1200 SF, 2-bedroom home, CFM = **87 CFM**. A designer will also compute the air using CEnC (ASHRAE 62.2) at 7.5 CFM/person + 0.03CFM/SF = **59 CFM**, and find that **CMC governs**. CMC makes the lower airflow rates in ASHRAE 62.2 irrelevant.

Compliance software CBECC-COM and -RES use ASHRAE 62.2 airflow calculations for homes. A designer who inputs the more stringent CMC airflow design rates **will take a penalty in CBECC for over-ventilating**. The CEC recently discussed revisions to the Res ACM such that a ventilation rate exceeding 110% of ASHRAE 62.2 takes an explicit penalty. In the example above, the **CMC airflow exceeds by 47%**.

Therefore the compliance software implies that the more stringent code DOES NOT govern, that all occupancies regulated by CEnC **must be designed to CEnC airflow rates or be penalized by the Performance Calculation**.

Please clarify the policy rules for engineers statewide, and please align the compliance software with Compliance Manuals, NRCC-MCH-E footnotes, and italic notes in CMC 402.1 as necessary.

Thank you.

Sincerely,



Dan Johnson

CEA #NR16-19-20061
CA Architect #C-36171

415-236-1333
Dan@BeyondEfficiency.us