



## International Energy Conservation Code Envelope & Embodied Energy Subcommittee

### Meeting Notes

January 19, 2023  
11:00 AM to 2:00 PM EST (3 hour)

**Committee Chair:** Tom Culp, Birch Point Consulting

**Committee Vice Chair:** Emily Lorenz, IIBEC

1. **Call to order.** The meeting was called to order by Tom Culp at 11am ET
2. **Meeting Conduct** – Chair Culp reviewed the anti-trust, conflict of interest, representation of interests, and code of ethics policies.
3. **Roll Call/Establish Quorum** – Lorenz reported establishment of quorum

Name	Organization		Name	Organization	
*Culp, Tom (chair)	Glazing Industry Code Cmte; Aluminum Extruders Council	X	Guttman, Maureen	Energy Solutions	X
*Lorenz, Emily (vice chair)	Intl Inst of Building Enclosure Consultants	X	Humble, Jonathan	Amer Iron & Steel Institute	X
Altenhofen, David	RWDI	X	*Johnson, Greg	Natl Multifamily Housing Council	X
*Belcher, Matt	Enhanced Bldg Systems		*Kochkin, Vladimir	National Association of Homebuilders	X
Bradley, Jeff	American Wood Council	X	Melley, Michele	State of CT	X
*Brooks, Scott	Disney	X	*Ross, Bob	Austin Ind. School District	X
*Burton, Richard	City of Lincoln, NE	X	Sanders, Helen	Façade Tectonics Inst.	X
Cinnamon, Tony	Wiss, Janney, Elstner	X	Spiriev, Bistra	GA Finance & Investment	
*Churchill Norbert, Zepherinus	CARICOM		*Tillou, Mike	PNNL	X
*Clausing, Chris	Clausing Builders	X	VanGeem, Martha	Masonry Alliance for Codes and Standards	X

*Crandell, Jay	American Chemistry Council's Foam Sheathing Coalition	X	Weston, Teri	Air Barrier Assoc of Amer.	X
DeWein, Mike	North Branch Services	X	Zani, Andrea	Permasteelisa	

\*Member of main IECC Commercial Committee

4. **Assign Note Taker** – Helen Sanders

5. **Approval of Agenda**

CEDI-102 was moved after CEDI-118 on the agenda and the agenda was then approved.

6. **Approval of Notes** – January 5, 2023 meeting notes were reviewed and approved.

7. **Administrative issues** – ICC staff noted that online modifications are now possible in CDPAccess.

8. **Meeting process:** Chair Culp reviewed the operating procedures for the subcommittee's discussion, including that there is a standard 20-minute check-in, speakers are limited to 2 minutes, and attendees are asked to please raise hand and wait to be recognized before speaking.

9. **New Business** - none

10. **ACTION items**

*Unfinished Air leakage:*

**CED1-132** - applicability to group R and I occupancies (tabled from 1/5/23 meeting)

**Motion: Approve as submitted** by T. Weston/M. DeWein

**Vote:** 13/0/2 CNV

**Reason:** This proposal corrects one of the air leakage section exceptions from "Group R and I occupancies" to "Group R-2 and I-1 occupancies". While not reflected in the public comment draft, this is an erratum because we already voted last round to make that change to limit that exception to R-2 and I-1. As the public review draft mistakenly included just the Group R and I, and because it would be a substantive change to someone in the public who was not aware of what the committee did, we decided to handle it like a change and vote on it. Specifically, CEPI-58 was modified to allow dwelling unit air leakage testing in lieu of whole building air leakage testing in Group R-2 and I-1 occupancies instead of in all of Group R and I. The modification is clearly stated in the following committee documents:

- Meeting Notes IECC Envelope & Embodied Energy Subcommittee for 3/17/2022: Passed AM 18-0-4(CNV), with the amendment to "limit the scope of test method to Group R-2 and I-1" clearly stated as part of the amended text.

- Agenda for IECC Consensus Committee- Commercial for 4/13/2022, including code tracking sheet for CEPI-58. The code tracking sheet clearly states “limit the scope of test method to Group R-2 and I-1”.
  - Minutes of IECC Consensus Committee – Commercial for 4/13/2022, showing the CEPI-58 was approved as modified by a vote of 34-0
- The change limits the use dwelling unit air leakage testing in lieu of whole building testing to Group R-2 and I-1 occupancies rather than the entire Group R and I occupancies. The dwelling unit air leakage testing option provides a bridge to the IECC- Residential Code provisions and allows more continuity between 3-story and 4-story projects. Limiting the dwelling unit testing Group R-2 and I-1, allows dwelling unit testing for multifamily residences (apartment buildings, etc.) including assisted living facilities, but does not allow it for hospitals, prisons or hotels.

*Roofs / Ceilings / Attics:*

**CED1-089** – Roof replacement definition

**Motion:** For **disapproval** by M. Guttman/J. Crandell

**Vote:** 13/1/4 CNV

**Reason:** Creates a conflict with the requirements of Section 503.2.1

**CED1-103** – Restore suspended ceiling section

**Motion:** **Approve as modified** J. Crandell/T. Weston

**Modification:** strike word “minimum” from C402.1.3.3 as such:

C402.1.3.3 Suspended ceilings. Insulation installed on suspended ceilings having removable ceiling tiles shall not be considered part of the ~~minimum~~ thermal resistance (R-value) of roof insulation in roof-ceiling construction.

**Vote:** 18/0/1 CNV

**Reason:** Proposal corrects omission of provisions for addressing U-factor and R-value limits for suspended ceilings.

**CED1-118** – Roof assembly change to roof-ceiling construction

**Motion:** **Approve as modified** (version 2) by J. Crandell/M. Guttman

**Modification:** Revise as follows:

C402.2.1 Roof-ceiling construction assembly. Roof insulation materials in the roof-ceiling construction shall be installed between the roof ~~or ceiling~~ framing, continuously ~~below~~ ~~above~~ the ceiling framing, continuously ~~above, below, or~~ or within the roof ~~deck assembly~~ or in any approved combination thereof. Insulation installed above the roof deck shall comply with Sections C402.2.1.1 through C402.2.1.3.

**Add new text as follows:**

C402.2.1.3 Minimum thickness of tapered insulation, lowest point. The minimum thickness of tapered above-deck roof insulation at its lowest point, gutter edge, roof drain or scupper, shall be not less than 1 inch (25 mm).

**Vote:** 15/0/3 CNV

**Reason:** Clarifies roof-ceiling construction insulation options and restores provision for minimum thickness of tapered insulation.

**CED1-102** – Minimum tapered insulation thickness errata  
Withdrawn by proponent based on prior sub-committee action

**CECD1-xxx** – Possible subcommittee proposal on low sloped roof definition.

**Motion:** **Table** until next meeting by M. Tillou/M. VanGeem

**Vote:** 17/0/1 CNV

**Reason:** To refine proposal further

**CED1-122** – Expands cool roof requirements

**Motion:** **Disapprove** by E. Lorenz/M. Guttman

**Vote:** 15/0/4 CNV

**Reason:** There was no cost-effectiveness nor technical feasibility study to justify expansion of requirements to additional climate zones.

**CED1-123** – Radiant barrier exception to cool roof requirements

**Withdrawn** by proponent

**CED1-124** – Language clarifications for cool roof section

**Motion:** **Approve as modified** by G. Johnson/Bradley (remove strike of “cooled” in C402.4 striking and removing 1.2 language)

**Modification:**

**Revise as follows:**

**C402.4 Roof solar reflectance and thermal emittance.** Low-sloped roofs directly above ~~cooled~~ cooled conditioned spaces in *Climate Zones* 0 through 3 shall comply with one or more of the options in Table C402.4.

**Exceptions:** The following roofs and portions of roofs are exempt from the requirements of Table C402.4:

1. Portions of the roof that include or are covered by the following:
  - 1.1. ~~Photovoltaic~~ **Renewable energy** systems or components.
  - 1.2. ~~Solar air or water heating systems or components.~~
  - 1.3. Vegetative roofs or landscaped roofs.
  - 1.4. Above-roof decks or walkways.
  - 1.5. Skylights.
  - 1.6. HVAC systems and components, and other opaque objects mounted above the roof.

**Vote:** 8/6/5 CNV

**Reason:** PV systems are not the only likely rooftop renewable energy systems that may shade roof surfaces. A generic reference to 'renewable' systems eliminates the need for an individual item for solar thermal systems.

**CED1-144** – Title and wording changes for roof, ceiling, attic alterations

**Motion:** **Approve as submitted** by J. Crandell/T. Weston

**Vote:** 16/0/1 CNV

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**Reason:** This proposal makes three minor modifications to Section C503.2.1:

- A section title that encompasses the enumerated alterations is added.
- The word "roof" is removed because it is redundant; the section's title and scope of alterations only addresses matters related to roof alterations.
- A spelling error is corrected

**CED1-145** – Remove redundant sentence for C503.2.1

**Motion:** Table until February 16, 2023, meeting by J. Crandell/J. Humble

**Vote:** 16/0/1 CNV

**Reason:** To refine further

**CED1-146** – Roof replacement

**Motion:** Table by J. Crandell/M. DeWein to next meeting

**Vote:** 17/0/1

**Reason:** To refine further

**CED1-147** – Roof alterations title, approved entity

Note title **Roof Alterations** is underlined, but this was a CDP access issue and has not been changed. Voted modification included a modification to the title to align with previous action.

**Motion:** Approve modified by G. Johnson/J. Crandell

(modification: replace entity with third party two places; delete "other" and replace with "an", changed title to conform to CEDI 144 roof, ceiling, and attic alterations)

**Modification:**

**Revise as follows:**

**C503.2.1** ~~Roof Alterations~~ **Roof, ceiling, and attic alterations.** Insulation complying with Section C402.1 and Section C402.2.1, or an *approved* design that minimizes deviation from the insulation requirements, shall be provided for the following roof alterations:

1. An alteration of roof-ceiling construction where there is no insulation above conditioned space.
2. Roof replacement for roofs with ~~insulation~~ insulation entirely above deck.

**Exceptions:** Where compliance with Section C402.1 cannot be met due to limiting conditions on an existing roof, an *approved* design shall be submitted with the following:

1. *Construction documents* that include a report by a registered design professional or ~~an other approved source~~ entity third party documenting details of the limiting conditions affecting compliance with the insulation requirements.
2. *Construction documents* that include a roof design by a registered design professional or ~~an other approved source~~ entity third party that minimizes deviation from the insulation requirements.

<ALL OTHER TEXT IN ORIGINAL PROPOSAL REMAINS UNCHANGED>

**Vote:** 16/0/1

**Reason:** The modification which requires a third-party report of roof conditions better meets the proponent's intent.

**CED1-148** – Curb insulation for mechanical equip (also send to HVAC?)  
Will route to mechanical with a recommendation from envelope subcommittee

**Modifications:**

Add new text as follows:

**503.3.8 Replacement or added roof mounted mechanical equipment.** *For roofs with insulation entirely above the roof deck and where existing roof-mounted mechanical equipment is replaced or new equipment is added, and the existing roof does not comply with the insulation requirements for new construction in accordance with Section C402.1 and Section C402.2.1, any new equipment curbs and existing curbs for added or replaced equipment shall be of sufficient a height necessary to accommodate the future addition of above-deck roof insulation during a future roof replacement to be installed in accordance with Section C503.2.1, Item 2. Alternatively, the curb height shall comply with Table C503.3.8. Curb height shall be the distance measured from the top of the curb to the top of the roof deck.*

**Table 503.3.8 Roof Mounted Mechanical Equipment Curb Heights**

CLIMATE ZONE	CURB HEIGHT, MINIMUM <sup>a</sup>
0 and 1	15.0 inches (381 mm)
2 and 3	16.0 inches (406.4 mm)
4, 5 and 6	17.0 inches (431.8 mm)
7 and 8	18.0 inches (457.2 mm)

~~a. Curb height shall be the distance measured from the top of the curb to the roof deck.~~

**Motion:** Approve as modified J. Crandell/M. DeWein

**Vote:** 14/0/2 CNV

**Reason:** Adds needed provisions for equipment curbs to facilitate future roof replacements.

**11. Upcoming meetings**—first and third Thursdays of every month

- a. ~~Feb 2, 2023, 11:00 AM to 2:00 PM ET.~~ Since many members are traveling for ASHRAE and other meetings, the decision was made to cancel the February 2<sup>nd</sup> meeting. A doodle poll will be sent out to identify whether the meeting can be rescheduled.
- b. Next up:

*Unfinished Roofs / Ceilings / Attic proposals from above.*

*Opaque walls, floors, etc:*

*(unlikely to get to all of these in next meeting, but on deck)*

CED1-99 – equipment building thermal envelope exception

CED1-100 – mass walls and floors

CED1-101 – metal framed wall U-factors

CED1-143 – perf path baseline for framed walls

CED1-105 – relocate mass wall and floor criteria

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CED1-106 – thermal resistance of Mech Equip Penetrations (also look at overlap with CED1-107)  
CED1-109 – steel frame U-factor framing factor  
CED1-111 – Table C402.1.3 footnote i  
CED1-112 – Group R wording  
CED1-113 – R-Table "other" wall and roof assemblies  
CED1-114 – stud cavity insulation  
CED1-115 – deletion of section from CEPI-27 (is it public review draft erratum?)  
CED1-116 – remove assembly construction section. Also look at CED1-115.

- c. Feb 16, 2023, 11:00 AM to 2:00 PM ET
- d. Mar 2, 2023, 11:00 AM to 2:00 PM ET
- e. Mar 16, 2023, 11:00 AM to 2:00 PM ET

12. **Adjourn:** Meeting adjourned at 1:55pm ET.