1. **Roll Call and Introductions**

2. **Discussion and voting on Chapter C4 of the IECC**
   a. (P65): IECC Section C405.2.7 (Tabled from 9/5 hearing)
   b. (P96)401: IECC Section C405.3 (separate committee was to revise proposal and bring back on 9/11)

3. **Discussion and voting on Chapter C5 of the IECC**
   a. (P168): IECC Section C502.3 (Tabled from 9/5 hearing)

4. **Discuss IECC Residential Proposals**
   a. (P129): IECC Section Residential EV Ready (Residential Portion only. Commercial approved on 8/15)
   b. (p75)373: IECC Section R303.2
   c. (P74)372: IECC Section R401.2
   d. ((P76)372: IECC Section R401.3
   e. (P73)371: IECC Table R402.1.2
   f. (P86)393: IECC Table R402.1.2
   g. (P79)377: IECC Table R402.1.2
   h. (P89)396: IECC Section R402.1.5
   i. #52: IECC Section R402.2.3
   j. #406: IECC Section R402.2.8
   k. #50: IECC Section R402.4.1.1
   l. #405: IECC Section R402.4.1.2
   m. (P80)378: IECC Section R403.1.3 & R403.10.1
   n. #407: IECC Section R403.3
   o. (P69)367: IECC Section R403.3
   p. #408: IECC Section R403.3.3
   q. (P70)368: IECC Section R403.3.3
   r. (P81)379: IECC Section R403.6.1

Please note that any items that we do not get to in this hearing will be automatically transferred to the next scheduled hearing date and will be the first items on the agenda for that hearing.

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**Denver 2018 IECC Committee Hearings**

**Join the conference call:**
1-571-317-3122. access code 671-519-341

**Joining from a video-conferencing room or system?**
Depending on your device, dial:
375634997@67.217.95.2 or 67.217.95.2##375634997
Proposal # P96  
Public Testimony in Support:
Working group got together with members of the industry and Denver Staff to discuss impacts on existing grows and qualified products. Changes we exempted existing grows so they won’t be impacted. The code would only apply to new grows and new additions/expansion where it is clearly new lighting and new canopy areas. Expansion with limited ceilings would be exempted. 3 options added to clarify qualified products, list of qualified products, addressed double ended high pressure sodium lamps, addressed more flexibility for the growers. Similar proposal in 2021 ICC, this one gives more flexibility and we are 2 years earlier, so this will come up again. Some concern about cost effectiveness without xcel rebates, without rebates LED’s in veg rooms will be cost effective over 5-10-year period.
Public Testimony in Opposition: None
Questions from the Committee to Proponent:
1. Committee ask the public here from the industry if they are comfortable with what’s being proposed here?
   a. Yes, working with proponent we have been able to support this fully.
Original Motion:  As-Submitted (AS)
Final Motion:  As Submitted
Final Vote:  AS Passes 13-1
Additional staff or committee comments for the record:
Need correct year reference for the standards proposed here.

Proposal # P129 (Residential Portion)  
Public Testimony in Support:
Working to hit electric vehicle goals for the city. Want to make charging easier, more cost effective and affordable. Updating existing code and upgrading it 40 am 240-volt circuit. This is due to battery on electric vehicles being larger and expectation that over time garages will have 2 vehicles overnight. Smaller multi family, and larger parking facilities would need to have additional charging stations. This mirrors what was passed in the commercial portion of the code.
Public Testimony in Opposition: None
Questions from the Committee to Proponent:
1. Did we get exception for single- and two-family dwellings exempt on identification?
   a. Yes
   b. They have to be built to this requirement, but they don’t have to put on the plans because they are not necessarily electrical plans.
2. In the IRC Glenn presented proposal to delete 327, can you summarize
Original Motion:  A/S with Intent to Modify (ASM);
Modification #1:
Change to parking garage. Add “onsite parking space”, after detached garage. 404.2.2 “EV capable parking spaces”
Table 404.2.2 “Number of EV Ready Parking Spaces”.
Vote on Modification #1:  Passes 14-0
Modification #2:  Remove the first sentence in the Identification Section. And remove Exception
Discussion:
• Requirements for what has to be on the plans is already in the code. It will be shown on the drawings anyway.
• If we take out those sentences, then we don’t need the exception. That was strictly to address exception on the plans.
Vote on Modification #2: Passes 14-0  
**Final Motion: As Modified**

**Final Vote:** AM Passes 14-0  
**Additional staff or committee comments for the record:**
Change exemption to say that single- and two-family dwellings don’t have to comply with Identification section. “Alterations to single family dwellings, two family dwelling and townhomes shell not be required to comply with this Identification section”

**Proposal # P75**
The quality of insulation installation has a significant impact on the performance of the building envelope. When insulation is not properly installed, the code does not achieve the energy savings intended by its insulation requirements. Poorly installed insulation can compromise home performance, resulting in higher energy bills for the builder’s customers and increased customer call backs due to comfort issues.

**Public Testimony in Support:**
No reason why this is a detriment or deterrent to the market.

**Public Testimony in Opposition: None**

**Questions from the Committee to Proponent:**
1. Striking manufacturer instructions in lieu of Grade 1 insulation installation requirements so where do materials fall?
   a. Grade 1 will only apply to insulation of materials.
2. What is the difference in definition of Grade 1 between years?
   a. In older version talking about all insulation types together, new version breaks out the different insulation types and gives them a way to grade each specific insulation type. From code perspective manufacturer’s instructions and Grade 1 should be synonymous.
3. What’s the reason for the proposal?
   a. We wanted to get connect the dots more specifically with Grade 1.
4. Manufacturer’s instructions synonymous with Grade 1 but what we are seeing in field does not match up. Install should have followed instructions, how does changing language affect what we are seeing in the field? Sounds like more of an enforcement issue.
   a. In regard to manufacturer’s instructions you deal with assumptions, averages, to mix and meld products in to one category. Variety of different manufacturer’s over time the term will lose credibility in the market specifically in inspection protocol. By putting Grade 1 language in to the code, it calls awareness and will bring greater compliance.
5. Does the city need any documentation that this Grade 1 has been achieved?
   a. Some companies include letters and photos to certain jurisdictions.
   b. Would be dependent on whether the city is using a third-party inspector. Would need to find a policy to verify that manufacturer’s instructions or Grade 1 were followed.

**Discussion:**
- Grade 1 standards are linked to specific RESNET 301 standards, recently changed how you perform grading. This proposal isn’t specific on what standard to use.
  - Standard wasn’t live when this proposal was written.
- Committee feels that manufacturer’s instructions and Grade 1 should be the basis.
- Terminology Grade 1 is becoming prevalent in the field, builders understand what it means, and they may not have read the manufacturer’s instructions.
- Some concern about what standard we call out. Some feel it should be whatever is latest. Some say that now code calls out 2014 so we need to make sure we are clear with where we want people to comply.
  - Standard doesn’t get updated frequently so there’s not a huge risk to put in to the language to refer to most recent standard.
  - Committee concern that it could cause confusion if we don’t have a set reference.
  - Some committee members think we should reference RESNET 2019 instead of no reference which would just kick us back to the most current.

**Committee Discussion:**
Think referencing Grade 1 is a great idea, but we need to leave manufacturer’s instructions in. Some manufacturers may have more strict standards.
Original Motion:  *A/S with Intent to Modify (ASM)*

**Modification:** Keep “Manufacturer’s Instructions insulation being at a minimum Grade 1 insulation.”

**Vote on Modification:** Passes 14-0

**Final Motion:** As Modified

**Final Vote:** AM Passes 14-0

Additional staff or committee comments for the record:

Proposal # P74

The purpose of this proposal is to add a flexible means of significantly increasing the stringency of the energy code in order to meet Denver’s energy code goals

**Public Testimony in Support:** None

**Public Testimony in Opposition:** None

**Original Motion:** Disapprove (D)

**Questions from the Committee to Proponent:**

**Committee Discussion:**

- Concerns about review requirements based on mechanical.
- Feel it is tough to meet the points.
- Complicated for those submitting who do not have to be certified. Some struggle to even deal with R Value. This adds a whole new level of confusion, it would require a professional or HERZ rater to truly make this work.
  - Would need extensive training to get people in the field up to this level of complication

**Final Motion:** Disapproval

**Final Vote:** D Passes 13-0-1

Additional staff or committee comments for the record: None

Proposal # P76

The purpose of this proposal is to improve the quality of information about the energy systems of the home available to the homeowner. Require permanent certificate with ERI score be placed in home.

**Public Testimony in Support:** None

**Public Testimony in Opposition:** None

**Questions from the Committee to Proponent:**

**Committee Discussion:**

- We have a variety of ERI’s out there, this doesn’t express which type they want here. Not tied to ERI pathway in the code, if you put this on certificate it would need to be the HERZ ERI which is very different from the code based ERI.
  - Committee feelings that we should strike the ERI portion (last sentence)
- Concern that we should save if and ERI has been done, it should be included.
  - Could change to say “any energy compliance report shall be included”
- Concern that this costs money but isn’t saving us any energy.
  - Most production builders are doing some sort of testing in Denver and are providing homeowners manual, if they don’t have proof of it, this provision could hold up the process and potentially closing.
- Education of homeowner is essential.

**Original Motion:**  *A/S with Intent to Modify (ASM)*

**Modification:**

Remove last sentence “The ERI.” Under R401.3.2 Homeowner Manual Remove and/or ERI certificate and put any energy compliance report shall be included.

**Vote on Modification:** 12-0-2

**Final Motion:** As Modified

**Final Vote:** AM Passes 10-4

Additional staff or committee comments for the record: None
Proposal # P73
This proposed change to the fenestration U-factor aligns the IECC with the ENERGY STAR Version 6.0 specification. The ENERGY STAR specification for windows in climate zones 5-8 has been in place since January 1, 2016. Products that meet the ENERGY STAR standard are widely available and have been for some time. In 2016 – the first year the ENERGY STAR Version 6.0 specification was in effect for all climate zones – ENERGY STAR windows already had an 83% market share.

Public Testimony in Support:
Increase envelope requirements.

Public Testimony in Opposition: None

Questions from the Committee to Proponent: None

Committee Discussion:
- Concerns that this will take out vinyl windows.
- See a difference going down in windows 2016 to 2018 getting .3 in market now is easy, already eliminating the worse windows.
- Any push to reduce window to wall area ratio?
  - Yes, if we want to pass through this, reduce U Values when you’re above a certain window to wall ration. Could be good for green code or future code cycles.

Original Motion: Disapprove (D)
Final Motion: Disapproval
Final Vote: D Passes 13-0-1
Additional staff or committee comments for the record: None

Proposal # P86
This proposal provides a prescriptive wall insulation option for the vast majority of builders who insulate walls using cavity insulation of various types. It corresponds with the wood wall insulation requirements in Table R402.1.2 of the 2018 IECC for Climate Zone 6. As such, it is proposed to be used by Denver as part of any stretch code that may reference the higher requirements of Climate Zone 6.

Public Testimony in Support: None

Public Testimony in Opposition: None

Original Motion: (D)Disapproval
Final Motion: Disapproval
Final Vote: D Passes 14-0
Additional staff or committee comments for the record: None

Proposal # P79
The purpose of this proposal is to improve the performance of the opaque thermal envelope.

Public Testimony in Support:
Creates new category in envelope table, R2 occupancies and nudges the other up to improve performance on that class of construction. Developed from stake holder process, desire to improve envelope. Small increase focused on envelope and not fenestration, create increase in insulation for Denver’s climate zone.

Public Testimony in Opposition: None

Questions from the Committee to Proponent:
1. Footnote G is removed but referenced in the table?
   a. Editorial Error, G should be removed.
2. How this proposal is unique to Denver, how can we benefit from separating out single family attached and detached?
   a. Initially it was an insulation proposal. Concern was about how we build multi family. These numbers possible in single family construction but may not work well for multifamily. This was a way to move us forward for Denver’s climate.
3. Can you clarify multifamily only R2?
   a. This utilizes the code definitions versus the field definitions. This would not apply to R2.
4. On wood frame wall, the 23 is cavity insulation?
   a. Intended to be continuous insulation.

Committee Discussion:
- Committee concerns about the cost of this for an already expensive housing market.
- Would need to modify the software’s used to take this in to account.

Original Motion: Disapprove (D)
Final Motion: Disapproval
Final Vote: D Passes 14-0
Additional staff or committee comments for the record: None

Proposal # P89
To ensure that all software that has been developed in accordance with the ASHRAE Handbook of fundamentals can be used to demonstrate code compliance under section R402.1.5. Simply Stated the REScheck software is not the only software that creates compliance reports for section R402.1.5

Public Testimony in Support: None
Public Testimony in Opposition: None
Questions from the Committee to Proponent:
1. Why is this necessary?
   a. Coming from doing energy ratings and having UA reports developed by software, would like to see those as means of submission for code compliance.

Committee Discussion:
- Seems like this is a training issue where people are misinterpreting.
- Think it would be acceptable to address this in policy.

Original Motion: Disapprove (D)
Final Motion: Disapproval
Final Vote: D Passes 13-0-1
Additional staff or committee comments for the record: None

Proposal # 52
Revision on mandatory eave baffles.

Public Testimony in Support:
Eave baffles appear currently to be able to be traded off, this proposal corrects that by making clear that they are mandatory.

Public Testimony in Opposition:

Questions from the Committee to Proponent:
1. Are we limiting to Styrofoam baffles?
   a. No, nothing was changed as far as wording, only added Mandatory because eave baffles are in a prescriptive section.
2. Why can’t these be traded off?
   a. No physical way to trade it off.
3. Should there be an exception for panels when you wouldn’t have a conditioned attic?
   a. It’s under vented attic in the code. Only applies to air-permeable insulation in vented attics.

Original Motion: As-Submitted (AS)
Final Motion: As Submitted
Final Vote: AS Passes 14-0
Additional staff or committee comments for the record: None

Proposal # 406
Public Testimony in Support:
Taking section of code modified in 2015 to create exception. Language in exception is hard to understand, Proponent worked to get this proposal through CAH to divide installation in to 3 sections.

Public Testimony in Opposition: None
Questions from the Committee to Proponent:
1. How does sequence of construction happen? How would you install that top insulation to rim board?
   a. All floors insulated this way would be using a bat or rigid board, insulated from beneath not the top. Stay wires would be holding them in place.
   b. Using blown in insulation. Doesn’t preclude other methods, just have to determine how to keep in place with glue, nail or stay wires.
   c. This is currently in the code; it’s just explained better in this proposal.
2. Any options of installing that are taken out by this proposal?
   a. No. The proposal doesn’t change the code, just breaks it out into 3 installation options.
3. Where would this go?
   a. Floor over conditioned space.

Original Motion: As-Submitted (AS)
Final Motion: As Submitted
Final Vote: AS Passes 12-0-2
Additional staff or committee comments for the record: None

Proposal # 50
Public Testimony in Support:
Redundant language in the table is removed. Removed one sentence to take out the redundant language.
Public Testimony in Opposition: None
Questions from the Committee to Proponent:
Committee Discussion:
Concern that this creates more amendments when it’s already been passed in 2021.
Original Motion: Disapprove (D)
Final Motion: Disapproval
Final Vote: D Passes 14-0
Additional staff or committee comments for the record: None

Proposal # 405
Public Testimony in Support:
Trying to introduce metric for quantifying air leakage of a building and holes that are in that building. Gives option to stay with ACH volume metric or .17 CFM per square foot dwelling enclosure area. It also looks at an exception for small dwelling units allows slightly higher leakage rates to accommodate the issues these smaller homes face.
Public Testimony in Opposition: None
Questions from the Committee to Proponent:
1. Exception would allow 1,500 square ft to have 5 ACH.
   a. Yes
2. Based on .17 CFM being 3 it would be over 5 ACH?
   a. Yes
3. 1,500 considered small but that’s not tiny.
   a. Right, but it’s the volume metrics that create issues getting the ACH

Committee Discussion:
• Feel like this would be rolling back. Possibly drop the square footage requirement.
• Very challenging to get standards to 3 ACH with less volume in smaller homes.
• This would bump duplexes in to another category.
  o Builders are struggling to achieve 4 ACH in duplexes and townhomes. Issue of party walls.

Discussion:
• Multifamily currently required less than 4, if you do .3 it’s just over 5. They could then use natural ventilation. Want to make sure we are not rolling back to less stringent.
• Shouldn’t we mandate tight envelope and require ventilation.
• Would like to change this to match IRC.
• .30 should be lower
• 1,500 square feet should be around 750.
• Moving forward in next code cycle has it been brought up to take ACH as testing methods.
  o Yes, at national level.
• Does blower door software allow for both options?
  o Yes, and the code compliance software for simulated performance path take it in to account as well.

Motion: Tabled until 9/18/19