



800 ROOSEVELT ROAD, BLDG C-312, GLEN ELLYN, IL 60137 – (708) 449-3340

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**CRCA’s Industry Affairs Committee Leaders** have been working at the IL Capital Development Board (CDB) on the new 2021 Illinois Energy Conservation Code (IL ECC) with a big assist from NRCA’s Mark Graham, CRCA Lobbyist Margaret Vaughn and CRCA Past President George Patterson.

### **CRCA’s Negotiations**

Much negotiation took place to reach consensus on this new Illinois Energy Conservation Code (IL ECC), with Illinois Amendments. CRCA’s lobbyist Margaret Vaughn worked with representatives at the Joint Committee on Administrative Rules (JCAR) to help pass the 2021 Illinois Energy Conservation Code with the Roofing Industry Amendments in both Commercial and Residential Codes. CRCA’s past president George Patterson was a voting member of the [IL Energy Conservation Advisory Council](#) that helped build the code. NRCA’s Mark Graham brought the national perspective to the State of IL Code Development Process.

### **Specific IL Roofing Amendments – From CRCA & NRCA Involvement**

The new IL ECC, based on the International Code Council’s 2021 International Energy Conservation Code (IECC), roofing sections now have the following [Illinois Specific Amendments, taking effect for buildings permitted after January 1, 2024](#):

#### **1. 2021 IL ECC R-Value Requirements – General**

- a. **Commercial Low Sloped Roofs** – See Table C402.1.3 for minimum R-Values by Climate Zone and Occupancies
  - i. **Min. R-30 c.i.**
- b. **Residential Low and Steep Slope Roofs**
  - i. Min. R-60 c.i., is in the 2021 IECC.
  - ii. The 2021 IL ECC was reduced to R-49, based on NRCA & CRCA’s work at CDB.
  - iii. Note: R-30 is deemed to comply for low sloped roofs without attics, still, but limited to 500sf.

#### **2. 2021 IL ECC R-Value Amendment - Technical Infeasibility for Insulation Thicknesses – Residential & Commercial**

In Section C503.2.1, there is an allowance for when rooftop conditions do not allow the required R-30 thickness of insulation to be installed. In this case, the new requirement is that someone with knowledge of engineering principles can prepare reasons why full thickness of insulation is not possible. A declaration that the maximum amount of insulation possible is being installed has to be made as part of the requirement.

This declaration or Technical Infeasibility is done by an “approved source”. The approved source is a defined term in the International Building Code.

**[A] APPROVED SOURCE.** An independent person, firm or corporation, *approved by the building official*, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

An approved source is a ‘person approved by the code official that can apply engineering principles’ to roof construction. A roofing contractor can be an approved source – as long as the code official approves the person.



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Finally, construction documents need to state the technical infeasibility. Construction documents are written graphic and pictorial documents ...

**[A] CONSTRUCTION DOCUMENTS.** Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building *permit*.

...in other words, documents needed to get the job done. Drawings don't have to be complex, just communicate job requirements and be submitted for obtaining a building permit.

Below is amendment that the CRCA successfully put into the 2021 IL ECC:

### **SECTION C503 ALTERATIONS**

C503.2.1 Roof Replacement. Roof replacements shall comply with Section C402.1.3, C402.1.4, C402.1.5 or C407 where the existing roof assembly is part of the building thermal envelope and contains insulation entirely above the roof deck. In no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

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 *approved source* 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 *approved source* that minimizes deviation from the insulation requirements.

### **3. Roof Membrane Peel and Recover – Residential & Commercial**

- a. This concept was not renewed in the 2021 IL Energy Conservation Code.
- b. If the conditions are right, an alternative method can be applied for at the Code Official / Jurisdiction for an approved alternative, under section 104.11 of the Building Code, to allow for this operation.

### **4. Air Barrier Requirements – The language in yellow has been added to the IL Energy Conservation Code, a proposal from CRCA to add continuity to air barriers at the roof assembly.**

- a. **C402.5.1.1 Air barrier construction.** The continuous air barrier shall be constructed to comply with the following:
  1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.
  2. Air barrier joints and seams shall be sealed, including sealing transitions at joints between dissimilar materials. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.
  3. Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealing shall allow for expansion, contraction and mechanical vibration. **Paths for air leakage from the building to the space between the roof deck and roof covering used as an air barrier, shall be**



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caulked, gasketed or otherwise covered with a moisture vapor-permeable material. Joints and seams associated with penetrations shall be sealed in the same manner or taped. Sealing materials shall be securely installed around the penetration so as not to dislodge, loosen or otherwise impair the penetrations' ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation. Sealing of concealed fire sprinklers, where required, shall be in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.

**CRCA's work on the 2024 IL Energy Conservation Code starts soon. Watch for more on this important topic.**

**For more specifics on energy codes, visit the [Illinois Smart Energy Design Center](#) at the University of Illinois.**

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