

CRCA 2015 Trade Show & Seminars

“Be Prepared – Change Continues”

Thursday – 11a-6p

Friday 9a-1p



“Roofing Week in Chicago”

R-Values for Dummies – IL Energy Code

*Darren Meyers, International Energy
Conservation Consultants*

Lisa Mattingly, CDB



R-Values for Dummies – IL Energy Code

- CRCA @ IL Energy Code Advisory Council
- IL Licensing Laws – Limited, Unlimited
- IECC 2012 Insulation Requirements
 - Clarifications – Insulation



CRCA @ IL Energy Code Advisory Council

- Purpose:
 - *‘Represent viewpoints of your industry as it relates to the business and issues before the Advisory Council’.*



CRCA @ IL Energy Code Advisory Council

- Lisa Mattingly, CDB
- Robert Coslow, CDB
- Ray Boosinger, CDB
- Don Plass, Building and Fire Code Academy
- **George Patterson, CRCA**
- Thomas Ayers, City of Rock Island
- John Meek, Felmley Dickerson Co.
- Bruce Maxey, BLDD Architects
- John Goetz, RD Lawrence Construction
- Ted Schieler, Sheiler & Rassi Quality Builders
- David Wytmar, Wytmar
- Ryan Nation, Hanson, Inc.
- Scott Dettmer, Dettmer Homes
- Tom Bucheit, Bric Partnership



CRCA @ IL Energy Code Advisory Council

- ***2015 IECC Code Adoption***

- ***Commercial Review – Aug. 1 to Nov. 30, 2014***
- ***Residential Review – Dec. 1, 2014 – April 30, 2015***
- ***CDB Review & Approval – ? 2015***
- ***2015 IECC Adopted in IL – 11/30/2016 - 1/1/2016***
 - ***Concurrent Residential & Commercial Adoption***
- ***CRCA Meetings with State 2013-2016***

- ***DCOE Educating Building Code Officials***



CRCA ACTIONS & 2012 IL Energy Code

- Jan. 13 – Final Clarifications; D. Meyers @ CRCA
- **April/Sept. 13 – NRCA Proposals @ ICC**
- **June - Oct. 2013 - City of Chicago Discussions**
- **Spring 2014 – Proposals for 2015 IECC to IL**
- **Summer/Fall 2014 – Teleconf's/Hearings**
- **Winter 2014/2015 – Teleconf's, Hearings**
- **Nov. 30, 2015 – New 2015 IL Energy Code**
- **'Buildings Permitted After'**



CRCA & ICC/IL Energy Code Commercial & Residential - Insulation

- IECC Insulation – Residential, +39% or +22%
 - 2006 - R-38, (but R-30 ‘Deemed to Comply...’?)
 - 2009 - R-38
 - 2012 – R-49
 - **2015 – R-49**



CRCA & IL/IECC Energy Code

Commercial & Residential - Insulation

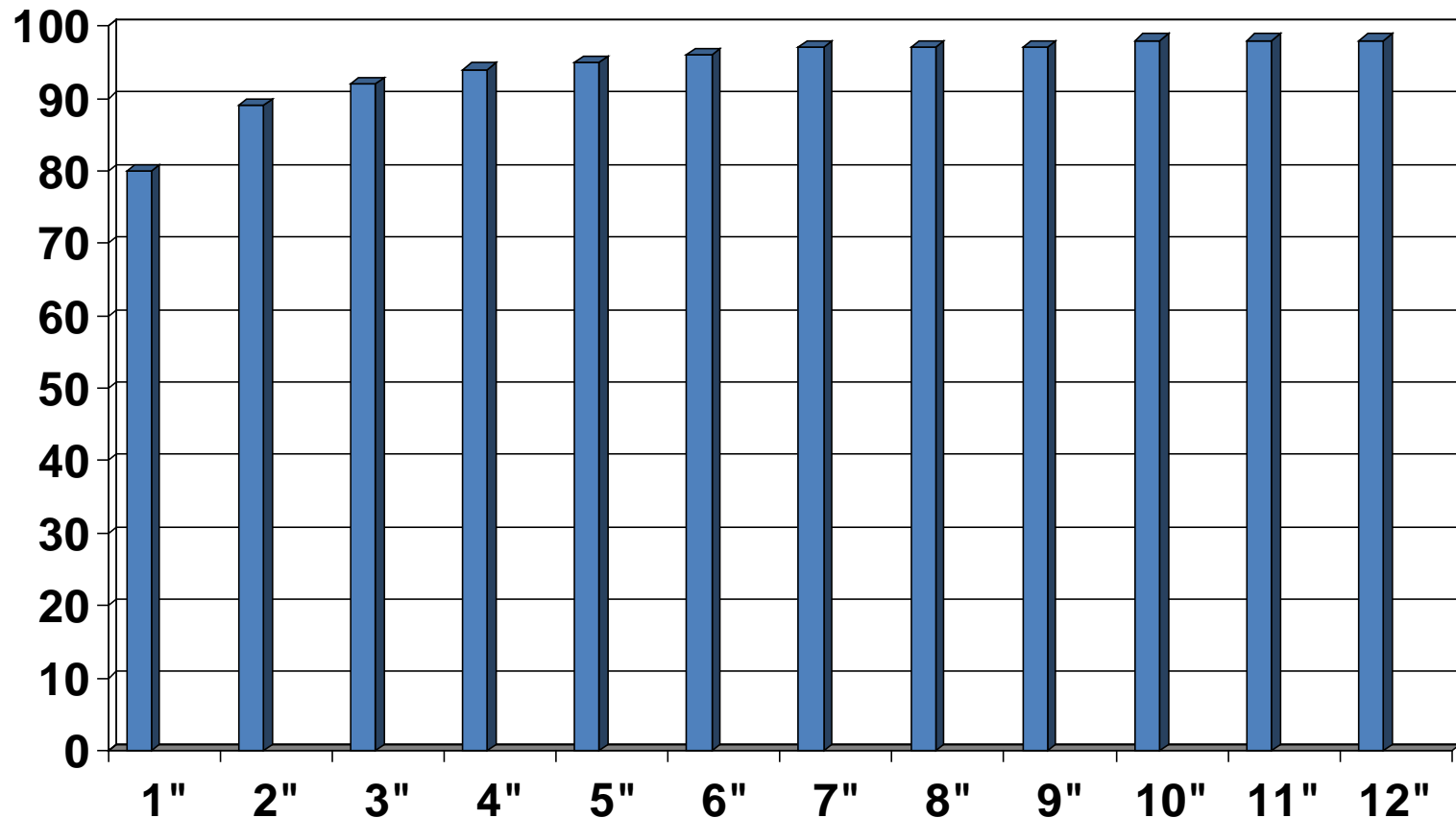
- IECC Insulation...Commercial, **Low Slope, +30%**
 - 2006 – R-15
 - 2009 – R-20
 - 2012 – R-25
 - **NEW 2015 – R-30**
 - **NEW NRCA STUDY....2014**

- **Does more insulation provide ROI ?**



Insulation Calculations?

- ❑ Total Heat Flow Reduction with Increased Insulation Thickness (Massave.com)



Insulation Effect Study

NRCA's Energy Wise Calculator

- ❑ Insulation Effect - Study – Energy Wise
 - ❑ 10,000 SF - Heating/Cooling costs
 - R-10 to R20 – Saved \$959
 - R-20 to R-30 - Saved \$293
 - Adding R-10 to R-20 = \$1.60/SF (\$10,600)
 - Adds 2" (R12.0) Insulation, Fastening, Labor \$1.60/sf
 - 54 year payback R20 to R-30 –
 - Roof Life - 20 years?
 - In New Construction – Makes sense
 - In Renovation Construction....??
 - Raise HVAC Units, Windows, Doors...
 - ❑ Source: NRCA Energy Wise Calculator



2012 State of IL Insulation Clarifications

- Table 5.5-5 of Standard 90.1 allows commercial roofs in Illinois, with insulation entirely above deck, to be insulated to R-20 in lieu or the 2012 IECC requirement for R-25.
 - Therefore, both paths to compliance (IECC or ASHRAE Standard 90.1) are recognized compliance options
 - **FOR EXISTING BUILDINGS ONLY**



IL IECC Clarifications – TAPER

- **Q: When using tapered insulation where the insulation is close to zero thickness near a roof drain, is the required R-value [R-20ci from Table 502.2(1), Climate Zones 2-6, “Insulation entirely above deck”] taken as the average thickness over the entire roof or is the minimum R-value required at the roof drain together with the additional tapered thickness on top of that?**



State of IL IECC Clarifications

- A: Neither. The **minimum R-20ci** [Table 502.2(1), Climate Zones 2-6, and “Insulation entirely above deck”] applies to the area-weighted average U-factor (U-0.048 from Table 502.1.2) of the tapered insulation assembly. However, at no point (i.e., at roof drains) is **the thickness of insulation to vary more than 1-inch (25 mm) from the required minimum R-20ci.**



State of IL IECC Clarifications

- *The use of ASHRAE Standard 90.1-2010 as an alternative compliance path for commercial buildings is permitted....*
 - *For EXISTING BUILDINGS ...*
AND NO FAÇADE CHANGE
 - *ASHRAE 90.1-2010 – R-20*
 - *IECC 2012 – R-25...R-20*
 - *NO AIR BARRIER Required*
- *Now in 2015 IECC Nationally...*

State of IL Air Barrier Clarifications

- EXISTING BUILDINGS
- ‘Put simply, **no continuous Air Barrier is required** when the extent of work is **limited solely to reroofing, roof recover, roof replacement as defined by the IBC**, and the Exceptions (1-8) itemized in Section C101.4.3, which permit a degree of compliance...subject to approval of the code official.’
 - State of IL Website...
[http://www.ildceo.net/dceo/Bureaus/Energy Recycling/FAQ-2.htm](http://www.ildceo.net/dceo/Bureaus/Energy_Recycling/FAQ-2.htm)



NEW R-Values

- IECC 2009 – R-20
- IECC 2012 – R-25
- **NEW IECC 2015 – R-30**
- **NEW ASHRAE 90.1 2013 – R-30**

- **CRCA working with State of IL on Amendments and Clarifications...stay tuned to...**
- **www.CRCA.org for info....**



NEW 2012 IL Energy Code SUMMARY

- Commercial Buildings – General 2012....
 - Air Barrier
 - Required in New Construction & Existing Buildings
 - **Clarifications – Not required for Existing Buildings – AHJ Approval**
 - Insulation
 - Increases IECC 2009 from **R-20** to IECC 2012
 - **Increases R-25 – R-30 for IECC 2015....Clarifications....**
 - **Clarifications for Existing Buildings – AHJ Approval Required**
 - **2012 Clarifications...working on making it an Amendment to tcode.**
 - R-20 if blocking and flashings allow
 - Replace with like kind high 'R' value Insulation
 - Reflectivity
 - Chicago YES. .72 NEW, .50 AGED 3 Years.
 - Suburbs & Downstate NO...NOT NOW.



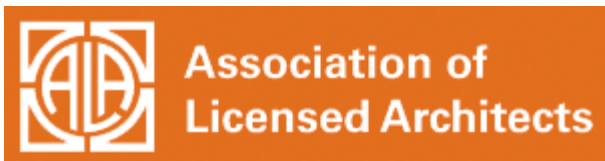
CRCA & NEW IL Energy Code

- State of IL Website – Clarifications
- General -
 - www.crca.org
 - http://www.ildceo.net/dceo/Bureaus/Energy_Recycling/FAQ-index.htm
- Roofing Related
 - http://www.ildceo.net/dceo/Bureaus/Energy_Recycling/FAQ-2.htm





Attendance / CEU Certificates
1 hour after seminars
@ Registration
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2014 Laws for 2015...

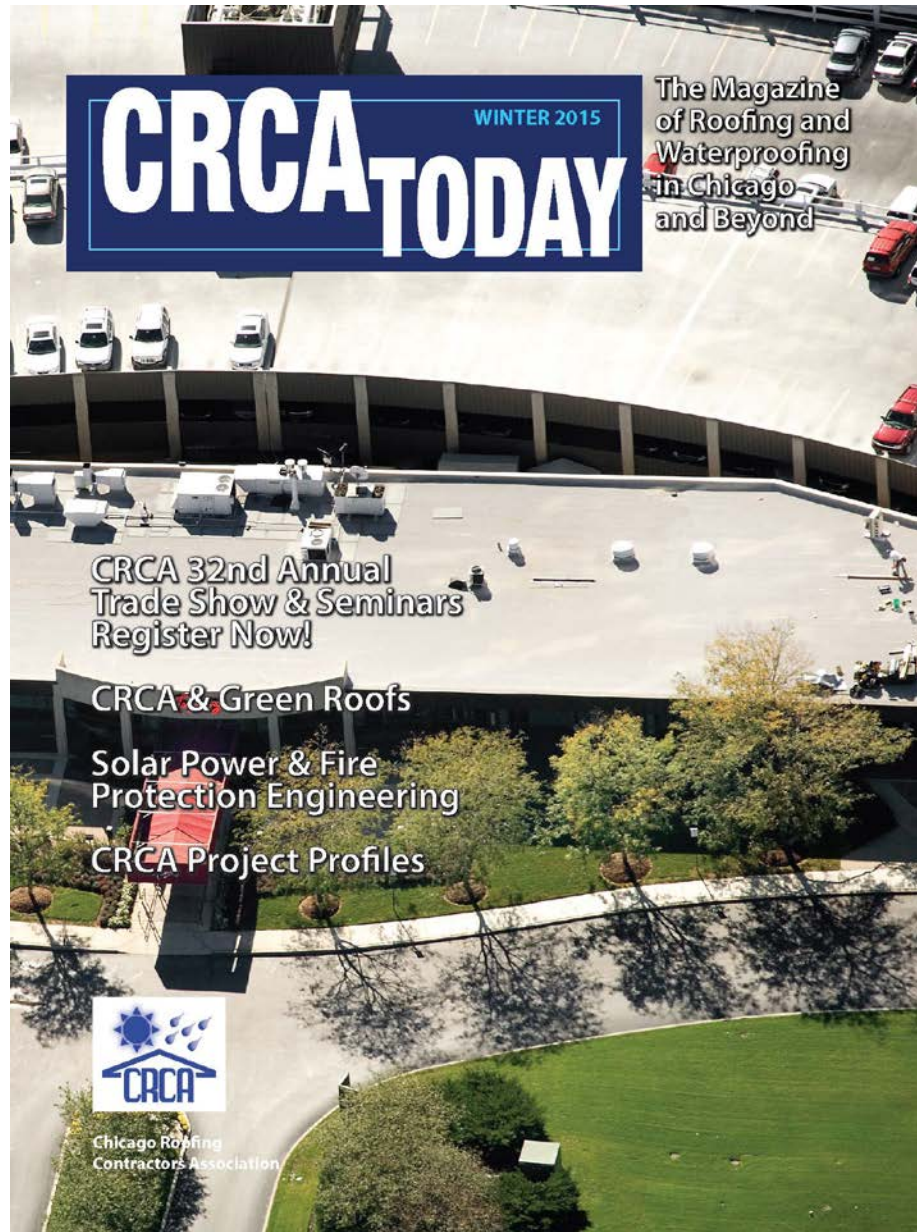
- **Find ways to have State of IL Enforce Existing**
- **Renew Licensing Laws**
- **Focus on Education of what's required to those issuing Building Permits**



CRCA TODAY!

- **3rd Year!**
- **Quarterly**
- **Articles**
- **Job Profiles**
- **Advertising**

• **Linda, Bill,
Jeanne @
CRCA.org**



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