



**CHICAGO ROOFING CONTRACTORS ASSOCIATION**  
Maintaining High Standards of Professionalism [www.crca.org](http://www.crca.org)

## **CRCA's 28<sup>th</sup> Annual Trade Show**

Oakbrook Terrace, IL – January 20-21, 2011

***Are you ready for the 2012 ICC Codes?***

**Mark S. Graham**

Associate Executive Director, Technical Services  
National Roofing Contractors Association



# Topics

- Why?
- ICC revision process
- 2012 I-codes
- *International Green Construction Code (IGCC)*

# Why do we even care?

The Code provides minimum legal requirements for the construction and maintenance of buildings and structures

# Code enforcement

- Code official
- Plaintiff attorney

# Who is responsible?

- The building owner
- And, everyone else involved

# ***International \_\_\_\_\_ Code (I-codes)***

- Building (IBC)
- Residential (IRC)
- Fire (IFC)
- Energy Conservation (IECC)
- Plumbing (IPC)
- Private Sewage Disposal
- Mechanical (IMC)
- Fuel Gas
- Wildland-Urban Interface
- Existing Building (IEBC)
- Property Maintenance (IPMC)
- Zone (IZC)

# I-code Editions

1995: IPC

1996: IMC

2000: I-codes

2003: I-codes

2006: I-codes

2009: I-codes

2012: I-codes

# 09/10 code-development cycle for 2012

- Proposal deadline of Jan. 2, 2009
- Code development hearings:
  - Baltimore, MD: Oct. 24-Nov. 11, 2009
- Final action hearing (Group A):
  - Dallas, TX: May 15-23, 2010
- Final action hearing (Group B):
  - Charlotte, NC: Oct. 24-31, 2010
- Publication (scheduled for April 2011)



# Roofing-related changes for 2012

- ASCE 7-10 for wind design (90 mph → 115 mph)
- Copper re-instated as Class A without testing
- Secured (e.g., adhered) underlayment in high wind areas
- Impact-resistance removed (hail regions)
- Coatings table for SPF
- Ice dam membrane recover in reroofing

## **Roofing-related changes – cont.**

- Increased R-value requirements
- Vegetative roofs' fire resistance to IFC
- Rooftop PV added to IBC Ch. 15 and IFC
- IECC → ASHRAE 90.1-10 → air barriers

# Air barriers

ASHRAE 189.1-09 Sec. 5.4.3.1,1 and ASHRAE 90.1-10 Norm. Appendix B

- “...continuous air barrier...”
- Materials: 0.004 cfm/ft<sup>2</sup>
- Assemblies: 0.04 cfm/ft<sup>2</sup>
- Building: 0.4 cfm/ft<sup>2</sup>
- Prescriptive material configurations

# Prescriptive material configurations

Air barriers – ASHRAE 189.1-09 and ASHRAE 90.1-10

- Plywood and OSB,  $\frac{3}{8}$  in. (min.)
- XPS,  $\frac{3}{4}$  in. (min.)
- Foil-backed urethane,  $\frac{1}{2}$  in. (min.)
- Gypsum or cement board,  $\frac{1}{2}$  in. (min.)
- BUR or MB membranes
- Fully-adhered single-ply membranes
- Portland cement parge or gypsum plaster,  $\frac{5}{8}$  in. (min.)
- Cast-in-place and precast concrete
- Grouted CMU
- Steel sheet

## So what will happen to...?

- Mechanically-attached single plies
- Metal Panels
- Shingles, tile, slate

Ask those manufacturers... and stay tuned

# **Development of the *International Green Construction Code (IGCC)***

# IGCC timeline

- Development
- Public Version 1.0 published on March 2010
- ICC public hearing Aug. 13-24, 2010 (Rosemont)
- Public Version 2.0 published in November 2010
- Code change submission by Jan. 3, 2011
- ICC code change hearing May 15-21, 2011
- ICC final action Nov. 3-6, 2011
- Publication by March 2012

# **International Green Construction Code**

- An “overlay code”
- Addresses sustainability requirements
- Multiple compliance routes:
  - IGCC’s mandatory requirements
  - ASHRAE 189.1 option
  - Jurisdictional requirements (30)
  - Project electives (56)



# **Ch. 1-Administration**

IGCC Public Version 2.0

- Applies to all buildings and structures:
  - Except one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high
  - ICC 700 intended to apply to residential occupancies
- Does not apply to equipment or systems used for industrial or manufacturing purposes

# **Ch. 2-Definitons**

IGCC Public Version 2.0

- Definitions to terms that are specific to the IGCC.

# **Ch. 3-Jurisdictional Requirements** **and Project Electives**

IGCC Public Version 2.0

- Table 302.1-Jurisdictional Requirements (30):
  - Alternate compliance with ASHRAE 189.1
  - Recycling: 50% to 65% or 75%
  - Project Electives: Select 1 to 14
- Table 303.1-Project Electives (56):
  - “Cool” or vegetative roofs

# **Ch. 4-Site Development and Land Use**

IGCC Public Version 2.0

- “Cool” roofs:
  - Required in Climate Zones 1, 2 and 3
  - By Project Elective in Climates Zones 4 through 8
- Vegetative roof systems:
  - Specific requirements, if used:
    - Minimum 80% coverage two years after installation

# **Ch. 5-Material Resource Conservation** **and Efficiency**

IGCC Public Version 2.0

- Recycling of non-hazardous debris:
  - Min. 50%
  - Min. 65% or 75% by Jurisdictional Requirement
- Material section:
  - At least 55% (weight, volume or cost):
    - Used
    - Recycled
    - Recyclable
    - Indigenous (500 mile radius)

# Ch. 6-Energy Conservation, Efficiency and Atmospheric Quality

IGCC Public Version 2.0

- Zero Energy performance Index (zEPI)
- zEPI = 51 (or less):
  - zEPI = 100 represents 2000 average usage
  - zEPI = 0 represents zero net energy usage
  - zEPI = 73 is equivalent to IECC 2006
- Jurisdiction option (zEPI = 0 to 50)
- Thermal insulation: IECC 2012 increased by 10%
- Renewable energy systems, if used:
  - Rooftop PV, solar hot water, wind energy systems

# **Ch. 7-Water Resource Conservation and Efficiency**

IGCC Public version 2.0

- Rainwater catchment and collection systems, if used:
  - Drainage system water test
  - No lead flashings or joints (solder)

# **Ch. 8-Indoor, Environmental Quality** **and Comfort**

IGCC Public Version 2.0

- VOC limits for all materials (roofing materials)
- Project Elective: Overall VOC limit for projects (also applies to roofing materials)



# **Ch. 9-Commissioning, Operational and Maintenance**

IGCC Public Version 2.0

- Pre- and post-occupancy commissioning
- No specific roofing requirements

# **Ch. 10-Existing Buildings**

IGCC Public Version 2.0

- Alteration, repair, additions and maintenance
- Roof repairs = “repair”?
- Reroofing = “alteration”?
- Change in occupancy or sale of buildings trigger IGCC provisions (energy efficiency, HVAC, water)

# **Ch. 11-Existing Building Site Development**

IGCC Public Version 2.0

- No roofing-specific requirements

# **Ch. 12-Reference Standards**

IGCC Public Version 2.0

- Lists designations, titles and years/editions of referenced standards

# **Appendixes**

IGCC Public Version 2.0

- Appendix A: Optional Ordinance
- Appendix B: Greenhouse Gas Reductions in Existing Buildings
- Appendix C: Sustainability Measures
- Appendix D: Enforcement Procedures

“...the IGCC will fundamentally  
change the construction industry...”

-Mark S. Graham

Is your company's  
current business model “sustainable”?

# Questions?





## **Mark S. Graham**

Associate Executive Director, Technical Services  
National Roofing Contractors Association  
10255 West Higgins Road, 600  
Rosemont, Illinois 60018-5607

(847) 299-9070

1-800-323-9545

(847) 299-1183

[www.nrca.net](http://www.nrca.net)

[mgraham@nrca.net](mailto:mgraham@nrca.net)

