NAHB
Construction Codes and Standards Department

Review of the

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Learning Objectives

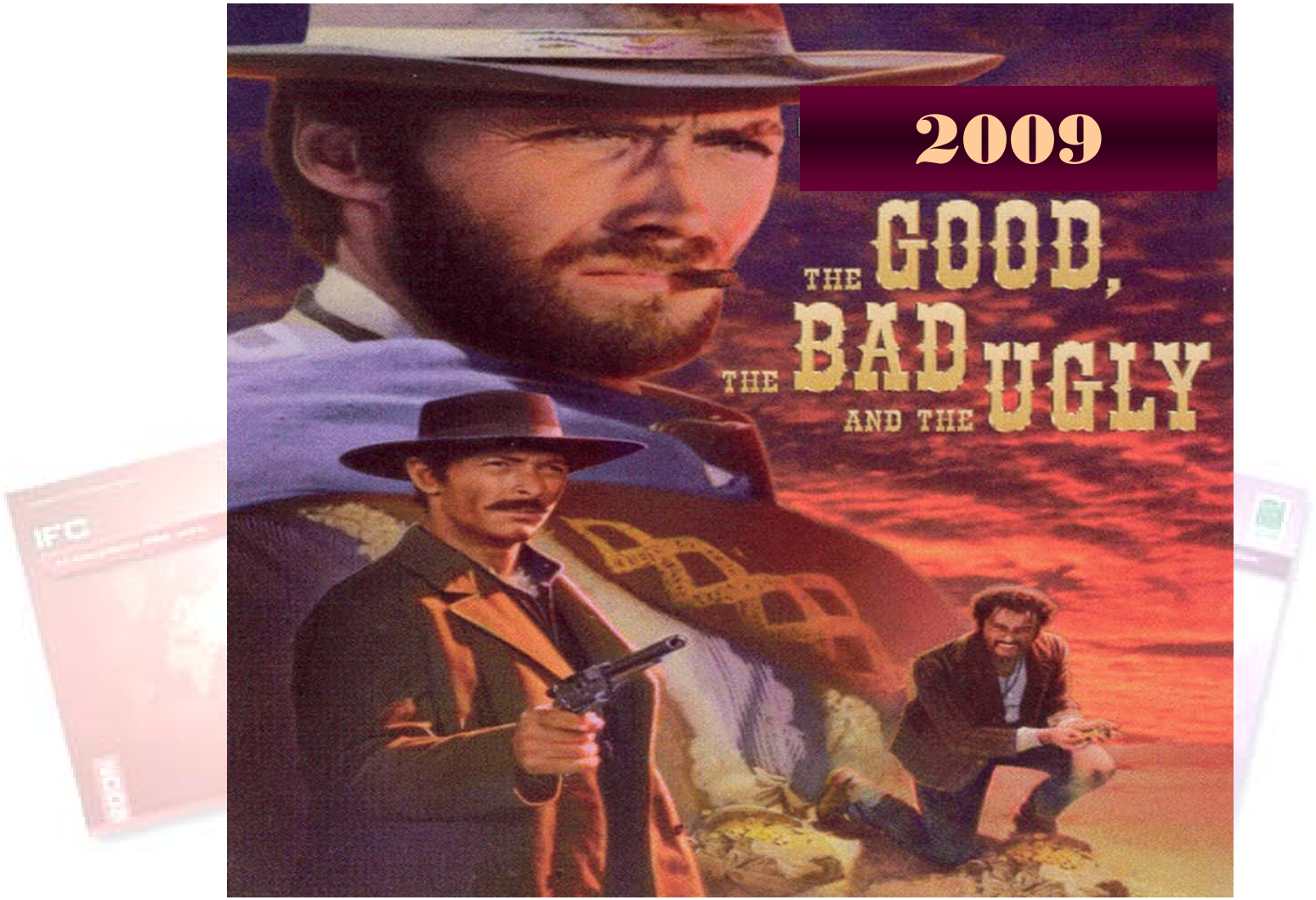
This presentation will provide an overview of the significant change from the 2006 I-Codes to the 2009 I-Codes

and updates from the 2012

Introduction

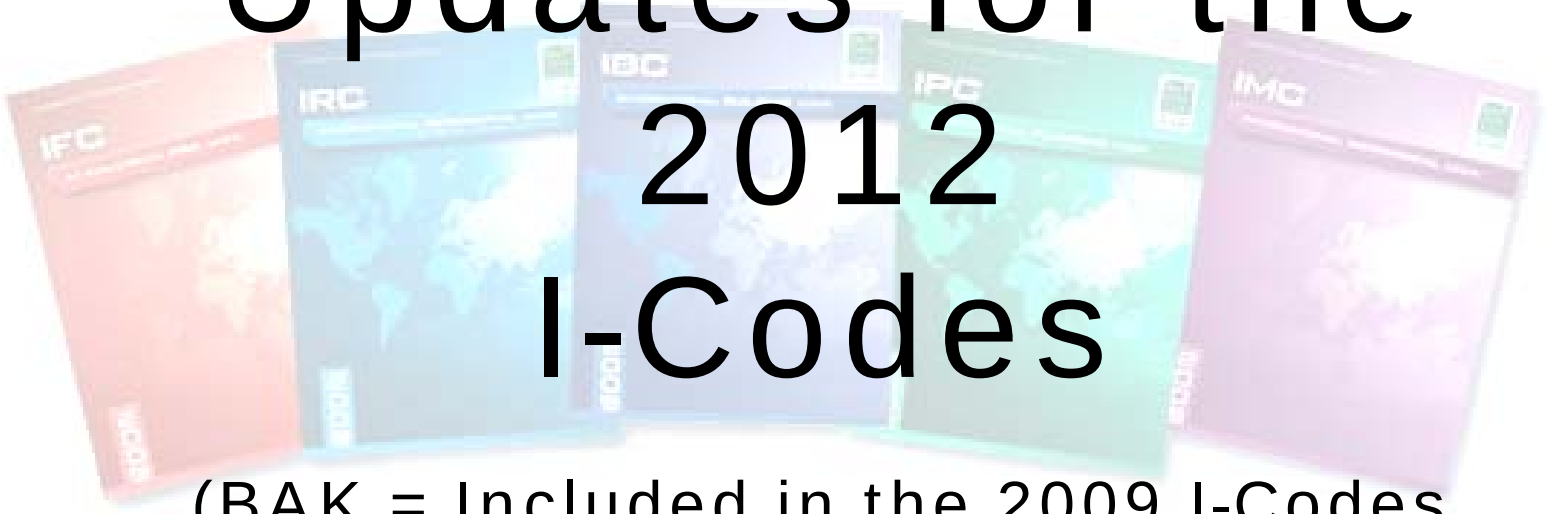
- Larry Brown – *Director Codes and Standards*
- Sonny Richardson – *Builder, Tuscaloosa, AL*
  - Member, CC&S Committee
  - Chair, Fire Safety Working Group

Changes for the 2009 I-Codes



2012 UPDATE

Updates for the 2012 I-Codes



(BAK = Included in the 2009 I-Codes Adoption Builders Action Kit)

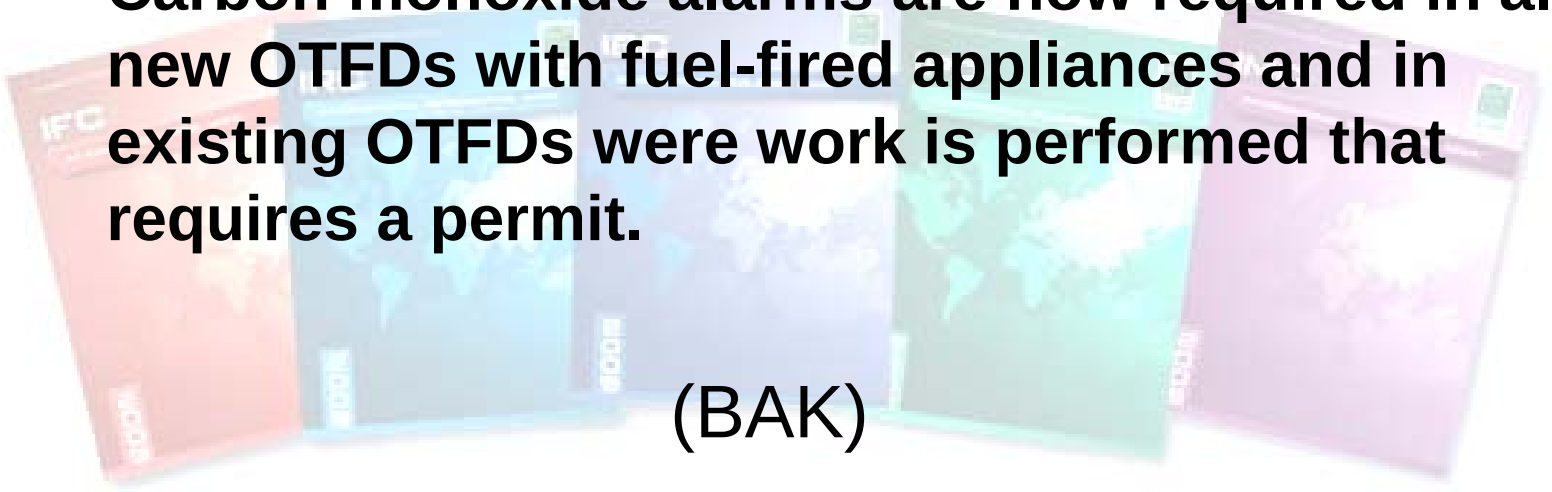
IRC

- **Balconies**
  - **Allows for balconies not serving the means of egress to be less that 36 inches in the direction of travel. (RB50- 07/08)**

Good

IRC

- **Carbon Monoxide Alarms**
  - **Carbon monoxide alarms are now required in all new OTFDs with fuel-fired appliances and in existing OTFDs were work is performed that requires a permit.**

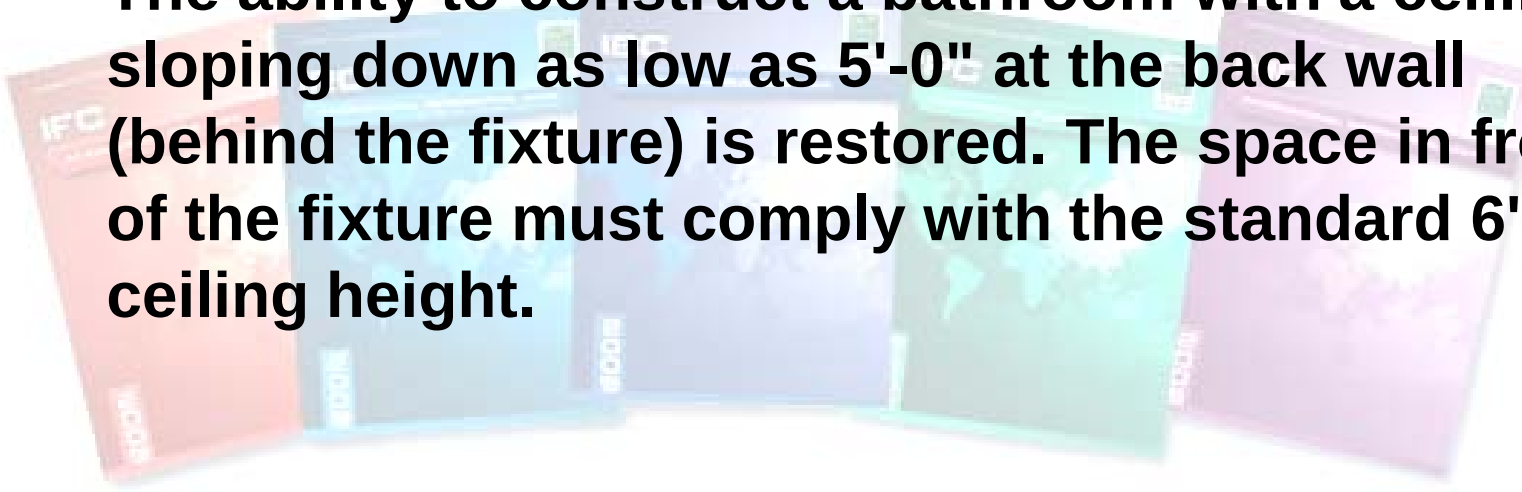


(BAK)

Bad

IRC

- **Ceiling Height**
  - **The ability to construct a bathroom with a ceiling sloping down as low as 5'-0" at the back wall (behind the fixture) is restored. The space in front of the fixture must comply with the standard 6'-8" ceiling height.**



Good

IRC

- **Concrete Foundation Walls**
  - **The concrete basement and foundation wall provisions are extensively revised and updated to match the new PCA prescriptive standard PCA 100. The design requirements for insulated concrete forms are revised to include flat concrete walls. Prescriptive Design now required for Seismic Design. Generally good for builders, although seismic design will be a bit more complicated**

Good

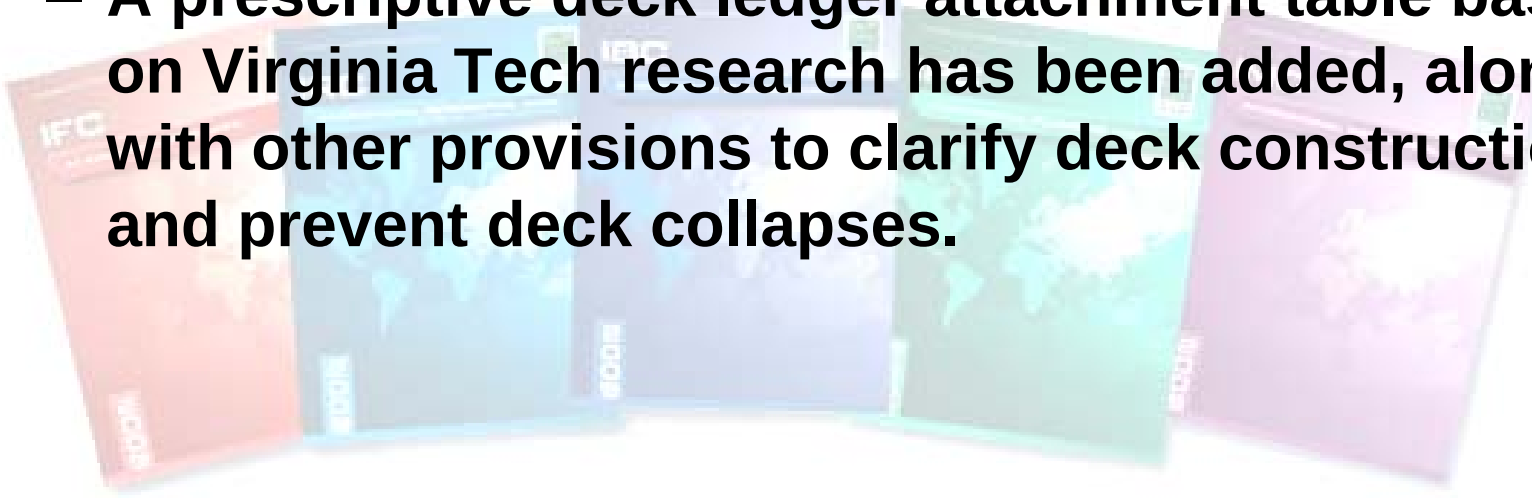
IRC

- **Construction Documents**
  - **Requires identification of braced wall lines, panels, bracing methods, attachment to framing, and braced wall panel support and connection details be provided as part of the construction documents.**

Bad

IRC

- **Deck Ledger Attachment**
  - **A prescriptive deck ledger attachment table based on Virginia Tech research has been added, along with other provisions to clarify deck construction and prevent deck collapses.**



Good

IRC

- **Site Drainage**
  - **Restored the 2000 IRC language governing drainage on tight lots, deleting language that required a 5% side slope and a 2% drain or swale slope when a normal 6 inch in 10 foot side slope could not be obtained. The requirement had the potential to lead to steep, difficult-to-maintain slopes or, in areas of flat terrain, a need to truck in large fill quantities at substantial expense to builders and homeowners.**

Good

IRC

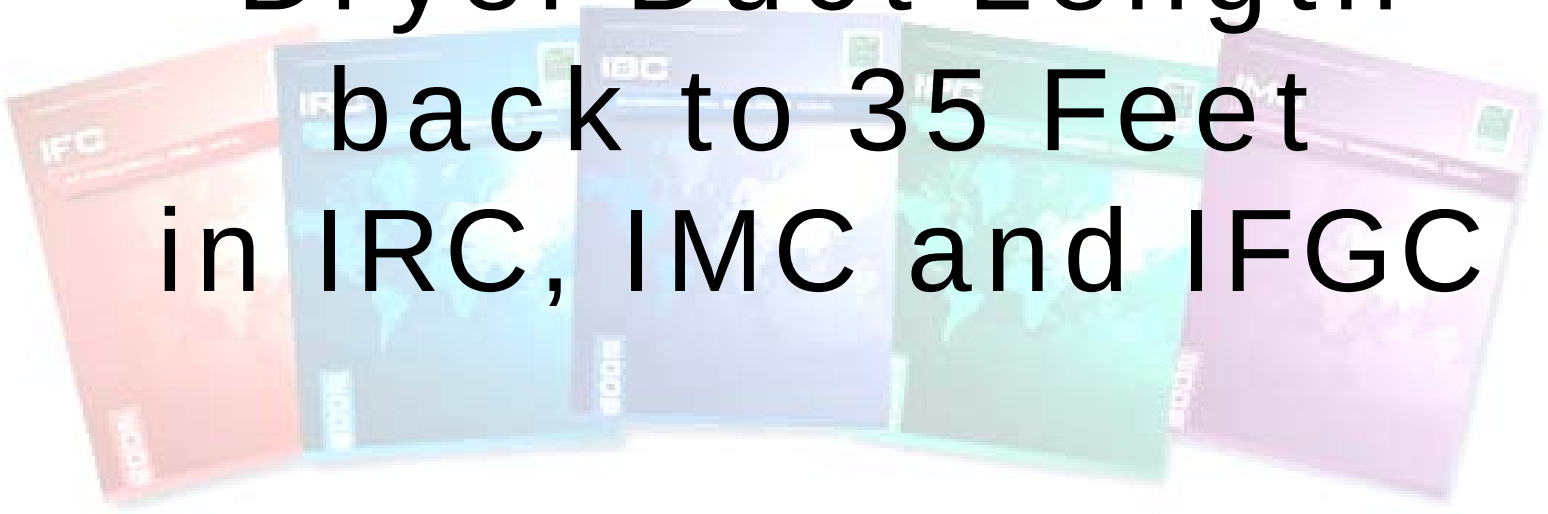
- **Dryer Duct**
  - **Introduced a table for duct fittings and established defined criteria for dryer ducts. Length stayed 35 feet or as allowed by manufacturers instructions. There is a discrepancy with approved code sections and the length may only be 25 feet.**

(BAK)

Bad

2012 UPDATE

Dryer Duct Length back to 35 Feet in IRC, IMC and IFGC



IRC

- **Dryer Rough-in**
  - **Where space for a clothes dryer is provided, an exhaust duct system shall be installed. Where the clothes dryer is not installed at the time of occupancy, the exhaust duct shall be capped at the location of the future dryer.**
  - ***Exception: Where a listed condensing clothes dryer is installed prior to occupancy of structure.***

Bad

IRC

- **Wind Exposure Category**
  - **The selection of the wind exposure category was clarified to use the conditions existing when all homes in a housing development are completed (assuming the development is complete within a year) instead of the exposure that exists when each individual house is constructed.**

Good

2012 UPDATE

- New Wind and Seismic Maps
- Restores 110mph limit for hurricane regions

(Better for builders – Also IBC)

2012 UPDATE

Wind & Seismic limits apply only to the structural elements

(Better for builders)

IRC

- **Fasteners in Borate-Treated Lumber**
  - **Use of plain carbon steel fasteners with sodium borate-treated wood is approved.**
  - **Previously, the fasteners would have needed to be galvanized, stainless steel, bronze or copper as for the other types of pressure-treatments.**
  - **(Provision also added to IBC.)**

Good

2012 UPDATE

Clarification added:
Nuts and washers also need to be same material as the bolt .

IRC

- **Fire Separation Distance**
  - **Walls, overhangs, openings and projections that are perpendicular to line used to determine fire separation are not required to meet the fire resistance ratings of Table R302.1. Also, no fire resistance rating is required between the dwelling an accessory structure on the same lot.**

Good

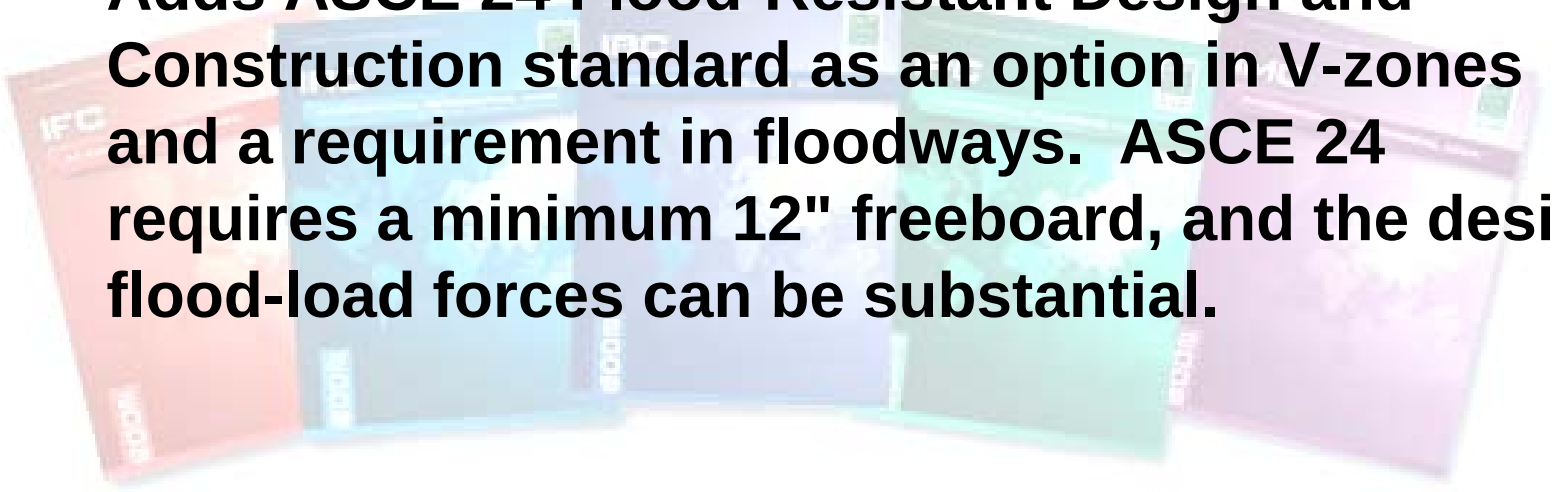
2012 UPDATE

Separation Distance Table Expanded:

3-foot with Sprinklers
5-foot w/o Sprinklers
(BAK)

IRC

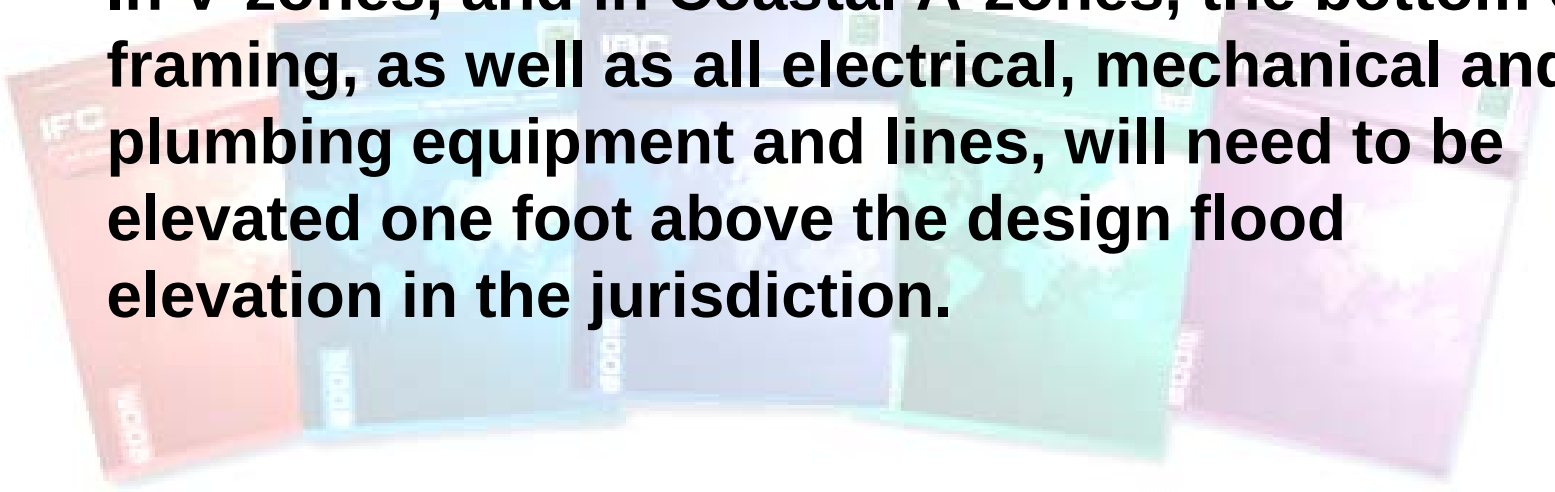
- **Flood-Resistant Construction**
  - **Adds ASCE 24 Flood-Resistant Design and Construction standard as an option in V-zones and a requirement in floodways. ASCE 24 requires a minimum 12" freeboard, and the design flood-load forces can be substantial.**



Bad

IRC

- **Flood-Resistant Construction**
  - **In V-zones, and in Coastal A-zones, the bottom of framing, as well as all electrical, mechanical and plumbing equipment and lines, will need to be elevated one foot above the design flood elevation in the jurisdiction.**



Bad

IRC

- **Flood-Resistant Construction -- Enclosed Area Below DFE in A-Zone**
  - **Requires a registered design professional to certify the venting system in the foundation. NAHB recommends a local change that permits a knowledgeable builder to perform the ASCE 24 calculation.**

Bad

IRC

- **Flood-resistant Construction -- Structural Fill**
  - **Restriction removed on placing fill below buildings in V-zones, as long as the fill is not used for structural support. This allows gravel or other structural fill materials to be placed below an elevated house for parking of cars.**

Good

2012 UPDATE

Mat & Raft Slabs in V-zones need to be engineered

IRC

- **Foundation Anchorage revised**
  - **Foundation anchorage provisions revised and clarified to require anchor bolts for:**
    - **All sole plates on all exterior walls**
    - **Sole plates of braced wall panels on walls inside the house**
    - **All sill plates supporting floor joist construction**
  - **Additionally, the language clarifies that anchor bolts in CMU foundation walls must be installed into grouted cells.**

(BAK)

Bad

IRC

- **Foundation Anchorage**
  - **Code now recognizes equivalence of approved strap and mudsill anchors (by Simpson, USP, et al) to sill or sole plate anchor bolts. (Provision also added to IBC.)**

Good

IRC

- **Foundation Wall Anchorage (Lateral Support)**
  - **The onerous foundation wall lateral support provisions added in the 2006 IRC have been deleted, including the continuous full-depth blocking requirement, the basement slab construction requirements and the anchor bolt spacing tables that required bolts be spaced as close as 5" on center in some cases.**

Good

IRC

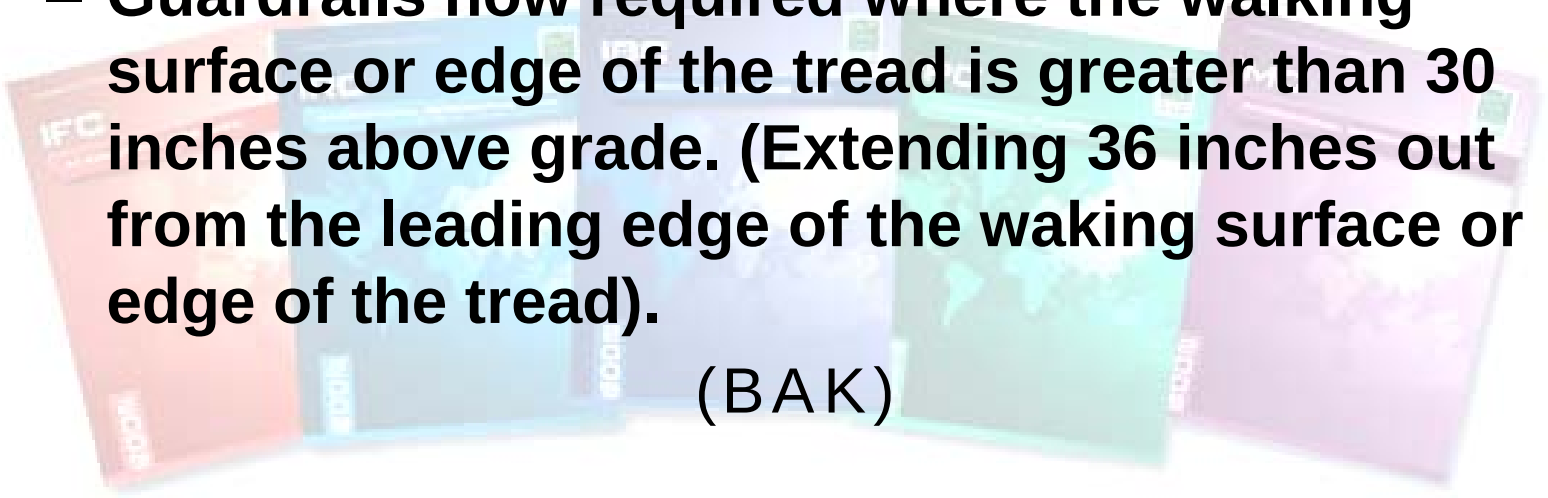
- **Garage Separation**
  - **Builders are now permitted to use materials other than drywall to separate the garage from the remainder of the house.**

Good

IRC

- **Guardrails**
  - **Guardrails now required where the walking surface or edge of the tread is greater than 30 inches above grade. (Extending 36 inches out from the leading edge of the waking surface or edge of the tread).**

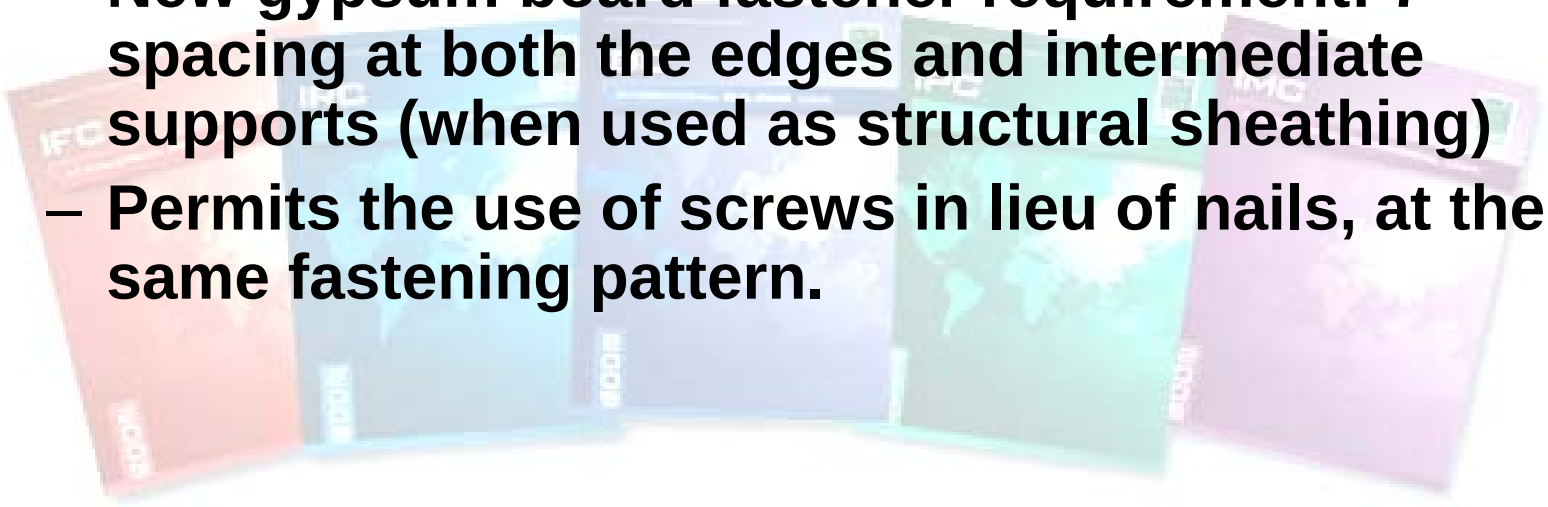
(BAK)



Bad

IRC

- **Gypsum Board Sheathing**
  - **New gypsum board fastener requirement: 7" spacing at both the edges and intermediate supports (when used as structural sheathing)**
  - **Permits the use of screws in lieu of nails, at the same fastening pattern.**



Good

IRC

- **Headroom @ Railing**
  - **Areas above the handrail do not need to maintain the minimum 6 feet 8 inches headroom clearance.**

Good

IRC

- **Gray and Reclaimed Water**
  - **In a building where a nonpotable water-distribution system is installed, the nonpotable system shall be identified by color marking, metal tags or other appropriate method. Where color is utilized for marking, purple shall be used to identify municipally reclaimed water, rain water, and gray water distribution systems. Any nonpotable outlet that could inadvertently be used for drinking or domestic purposes shall be posted. Also in IPC.**

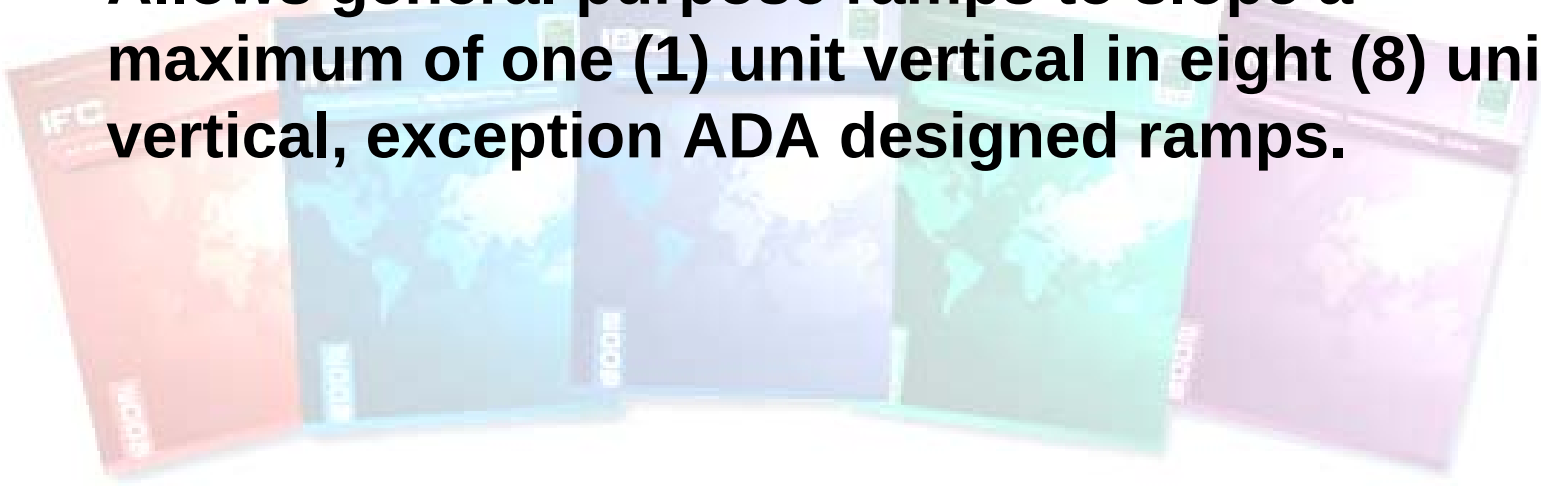
New Provision

2012 UPDATE

Proposals to bring Appendices for Gray water systems into the body of the IRC were Approved

IRC

- **Ramps**
  - **Allows general purpose ramps to slope a maximum of one (1) unit vertical in eight (8) units vertical, exception ADA designed ramps.**

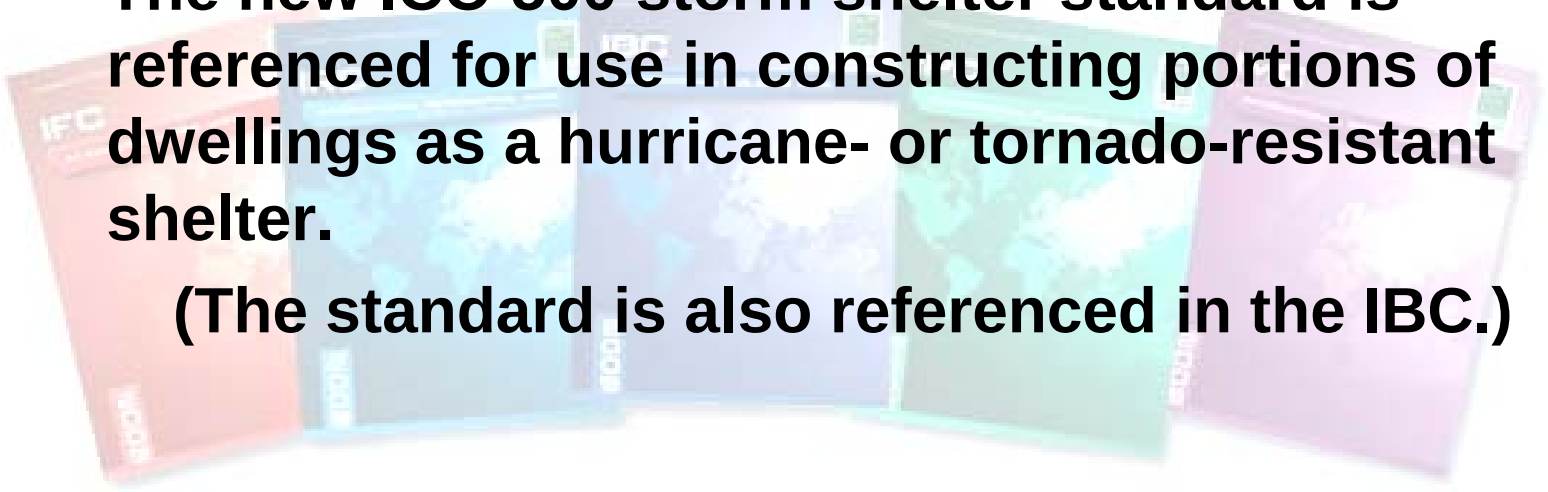


Good

IRC

- **Storm Shelters**
  - **The new ICC-500 storm shelter standard is referenced for use in constructing portions of dwellings as a hurricane- or tornado-resistant shelter.**

    (The standard is also referenced in the IBC.)



Good

IRC

- **Structural Insulated Panels**
  - **Requirements for structural insulated panel systems (SIPs) have been included in the code.**

Good

IRC

- **Vinyl Siding & Foam Sheathing**
  - **New requirements added to insure proper selection of vinyl siding for wind resistance, particularly when used over foam sheathing.**

Good

IRC

- **Wall Bracing -- General Summary of Changes (Good)**
  - **The wall bracing provisions have been completely reorganized for better flow, usability, and clarity.**
  - **Rules for combining intermittent and continuously sheathed walls in a dwelling, or bracing methods within a wall line, are clarified.**
  - **New or improved details for corner returns, tie-downs, offsets, masonry pier support, and angled walls are added.**
  - **New tables are provided to simplify adjustments for varying bracing conditions.**

Good

IRC

- **<u>Wall Bracing -- General Summary of Changes</u>**
  - ***Separate tables for wind loads and seismic loads.***
  - ***Entire dwelling need not be fully sheathed with WSP when using continuous sheathing method.***
  - ***Simplified narrow wall bracing option for garage doors for dwellings in low-seismic regions.***
  - ***APA portal frame can be used anywhere in a dwelling.***

Good

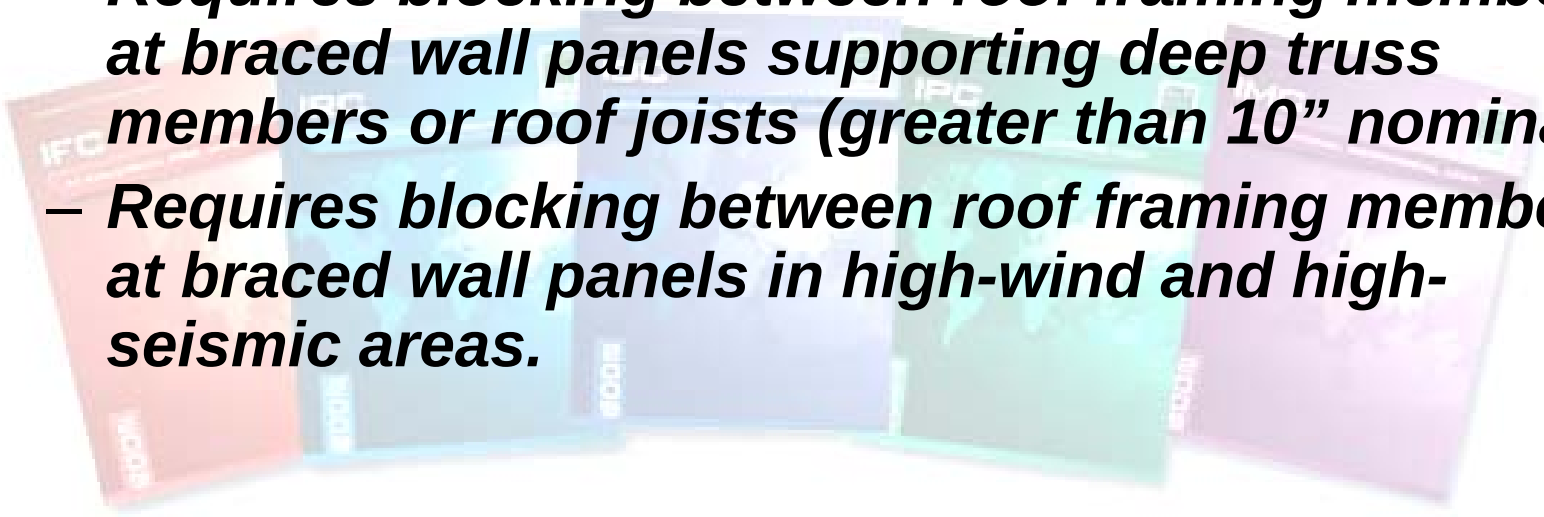
IRC

- **Wall Bracing -- General Summary of Changes**
  - ***Bad Stuff:***
  - ***Requires a continuous load path (vertical uplift straps) at braced wall panels for many houses, even in low-wind regions.***
  - ***Increases wall bracing requirements will increase for houses in higher-wind regions and for large (3-story or open plan) houses.***

Bad

IRC

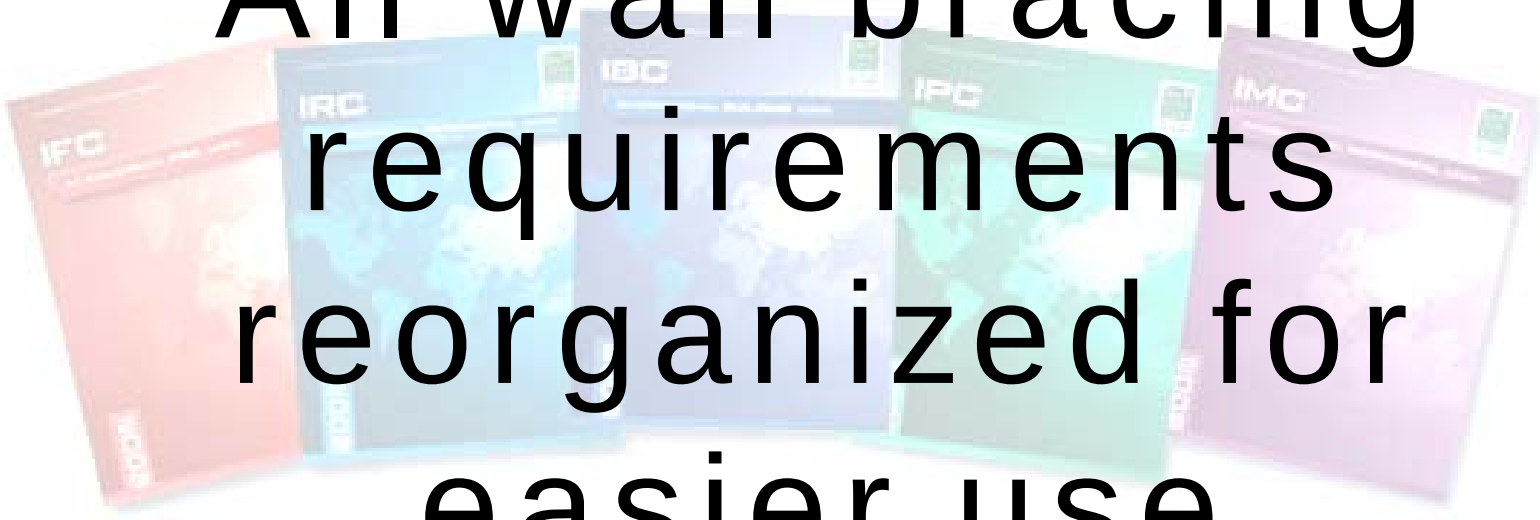
- **Wall Bracing -- General Summary of Changes**
  - ***Requires blocking between roof framing members at braced wall panels supporting deep truss members or roof joists (greater than 10” nominal),***
  - ***Requires blocking between roof framing members at braced wall panels in high-wind and high-seismic areas.***



Bad

2012 UPDATE

All wall bracing requirements reorganized for easier use



2012 UPDATE

Simplified wind bracing provisions for small houses added

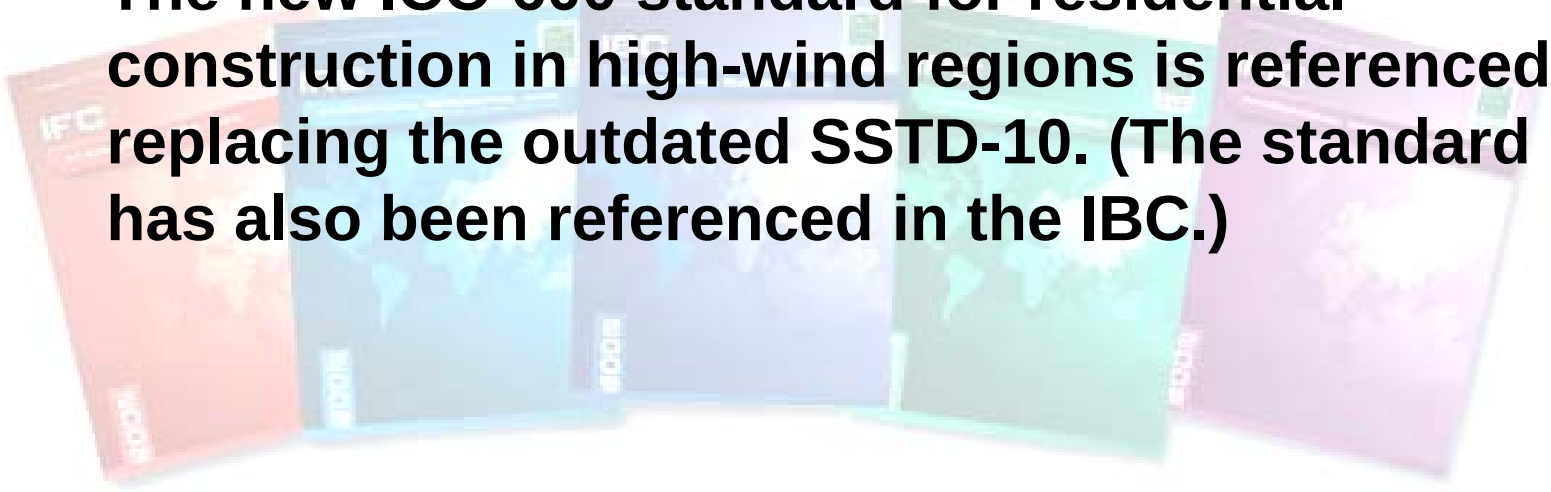
IRC

- **Water-Resistant Barriers**
  - **Now requires a water-resistant barrier be provided behind stone and masonry veneer regardless of whether an air space is provided or the size of the air space.**

Good

IRC

- **Wind Design Criteria**
  - **The new ICC-600 standard for residential construction in high-wind regions is referenced, replacing the outdated SSTD-10. (The standard has also been referenced in the IBC.)**



Good

IRC

- **Window Fall Protection**
  - **Adds new language on window fall prevention devices.**

Good

2012 UPDATE

Hail damage map deleted

2012 UPDATE

IRC Energy Provisions

IBC

- **Decks and Balconies**
  - **Deck and balcony live load requirements are combined. Live load same as adjacent inside space.**

Good

IBC

- **Special Inspection -- Cold-Formed Steel**
  - **Special inspection requirements for cold-formed steel are clarified and aligned with similar provisions for light-frame wood.**

Good

IBC

- **Special Inspections – "Good" Changes**
  - **EOR is permitted to act as the special inspector.**
  - **Fabricated items with 3rd-party QC exempt from special inspections.**
  - **New bracing inspection requirements for long-span trusses.**

Good

IBC

- **Special Inspections – "Bad" Changes**
  - **EOR must is submit a schedule of structural observations to the AHJ.**
  - **Special inspections required in high-wind areas for light-frame shear walls and diaphragms.**
  - **High-wind areas + adhesives = Continuous special inspections**
  - **Special inspections added for wall & roof cladding.**
  - **R-3 structures now require special inspections.**

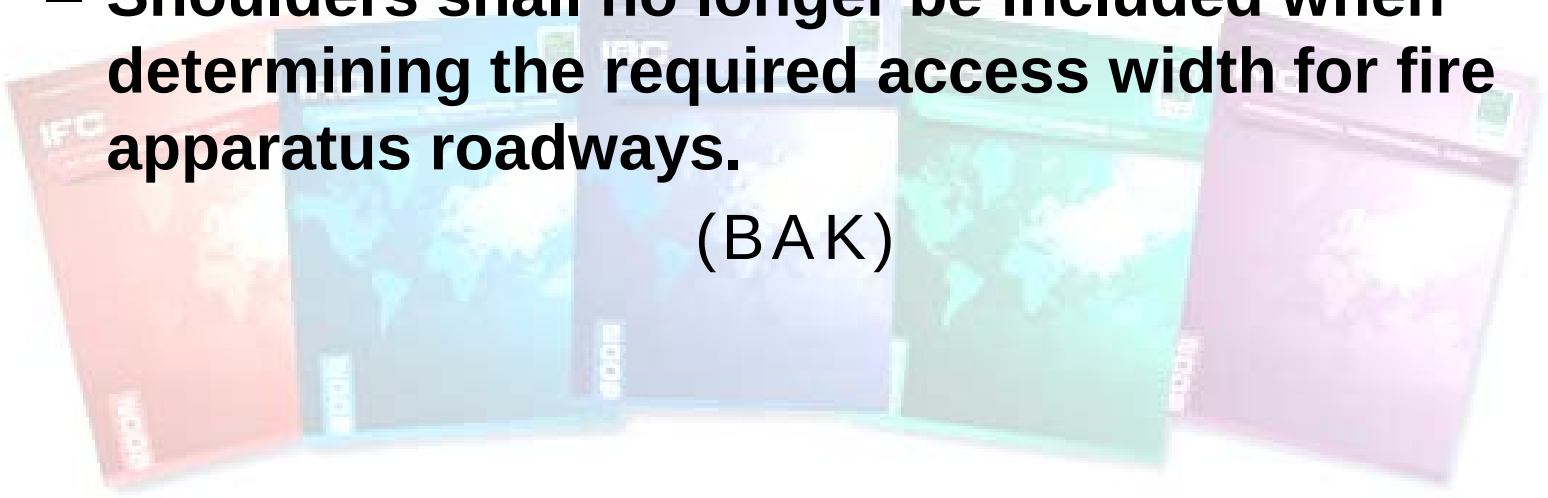
(BAK)

Bad

IFC

- **Fire Apparatus Access Roads**
  - **Shoulders shall no longer be included when determining the required access width for fire apparatus roadways.**

(BAK)



Bad

IECC

- **Duct Testing**
  - **Duct testing can be avoided by bringing the ducts inside the thermal-envelope.**

Good

IECC

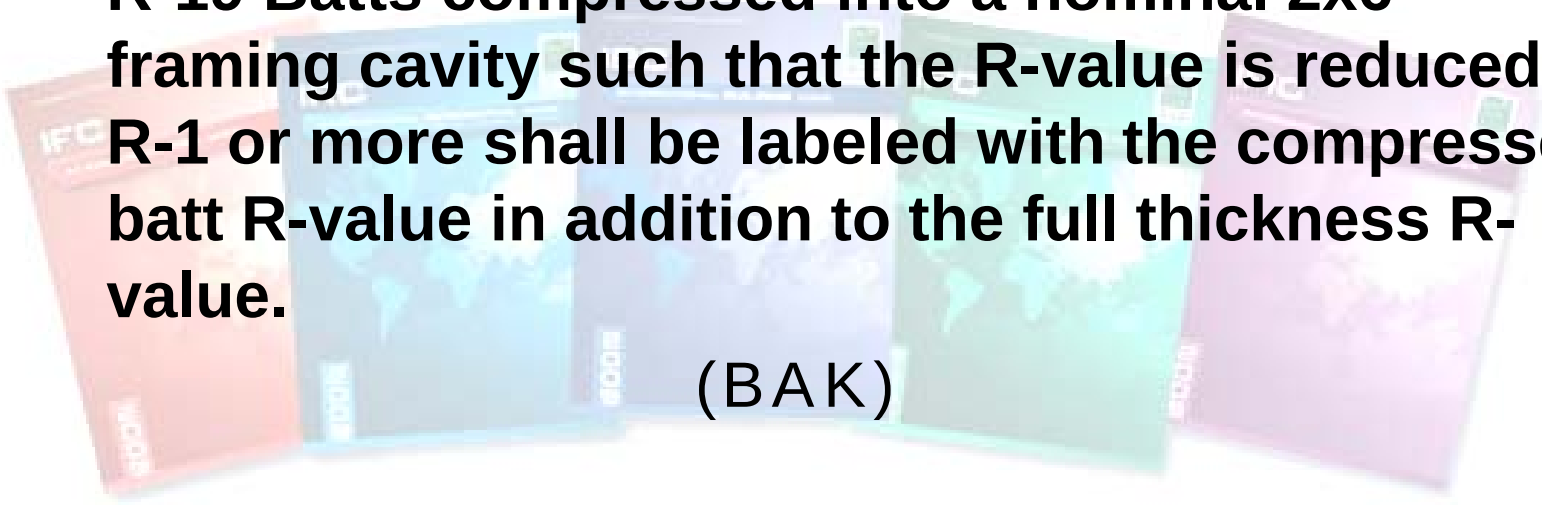
- **Programmable Thermostat**
  - **One programmable thermostat is required.**

Bad

IECC

- **R-19 Batts Compressed into a 2 x 6 Cavity**
  - **R-19 Batts compressed into a nominal 2x6 framing cavity such that the R-value is reduced by R-1 or more shall be labeled with the compressed batt R-value in addition to the full thickness R-value.**

(BAK)



Bad

IECC

- **<u>The Elimination of Equipment Tradeoffs</u>**
  - **Tradeoffs eliminated when using the prescriptive method of compliance.**

(BAK)

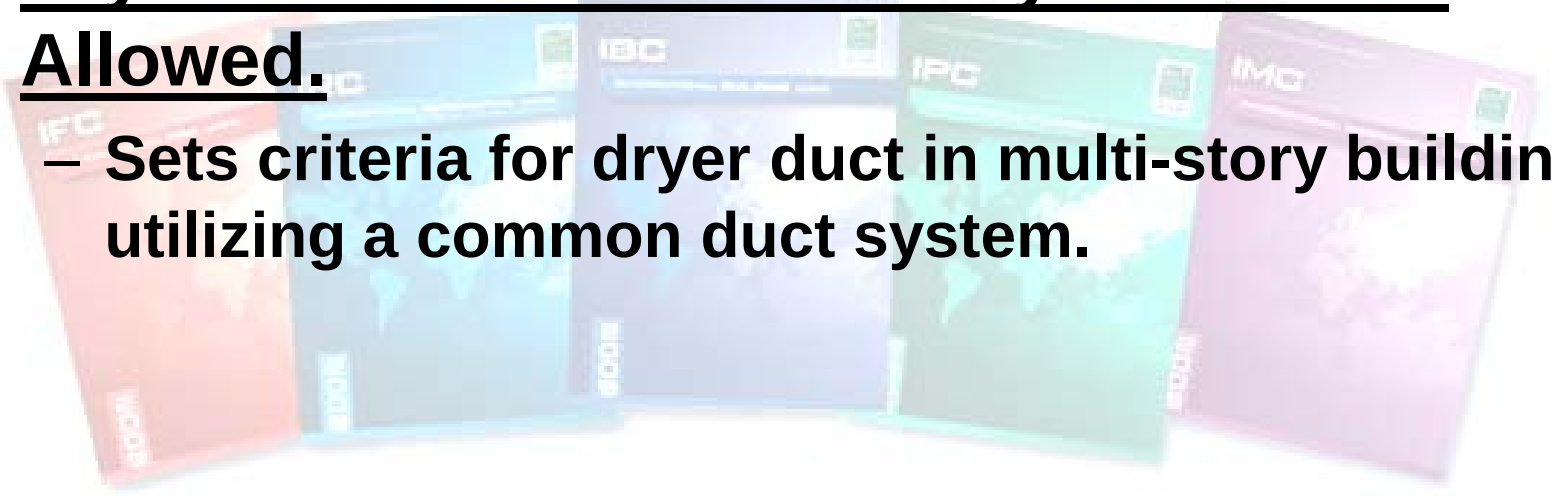
Bad

2012 UPDATE

2012 IECC to be more than 30% above the 2006

IMC

- **Common Exhaust Systems for Clothes Dryers Located in Multi-story Structures Allowed.**
  - **Sets criteria for dryer duct in multi-story buildings utilizing a common duct system.**



Bad

IMC

- **Locking Refrigerant Access Port Caps**
  - **Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps. Also in IRC.**

Bad

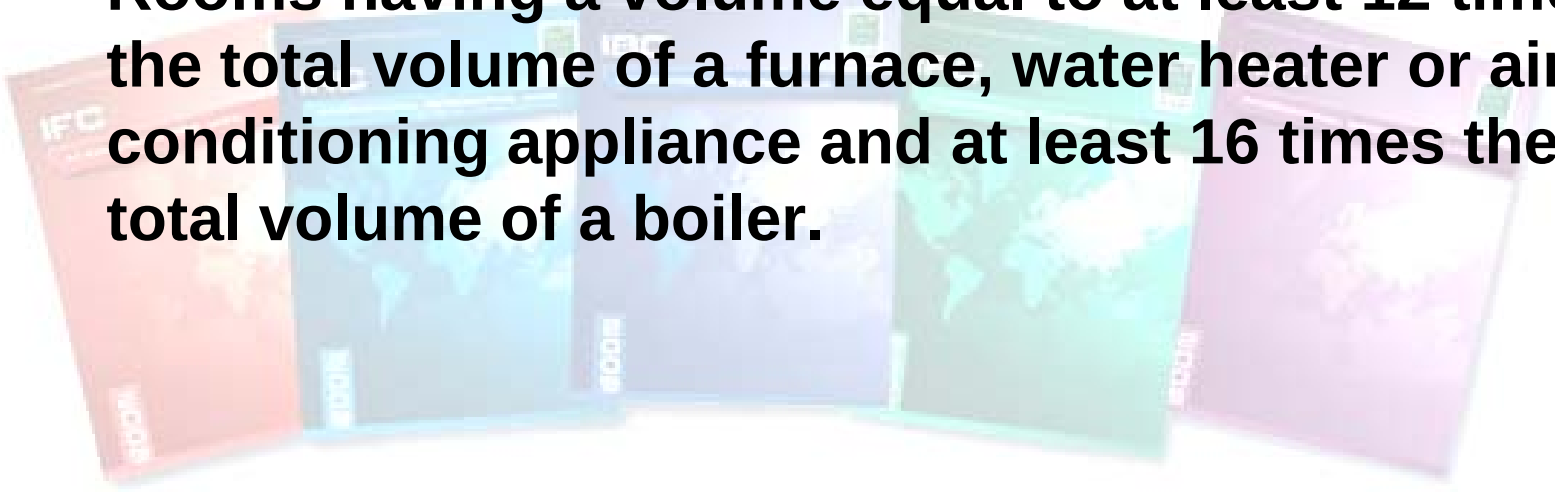
IPC

- **Drainage System. Dead End Runs**
  - **Provisions delete without substitution:**
  - **Now allows dead-end runs for future additions.**

Good

IFGC

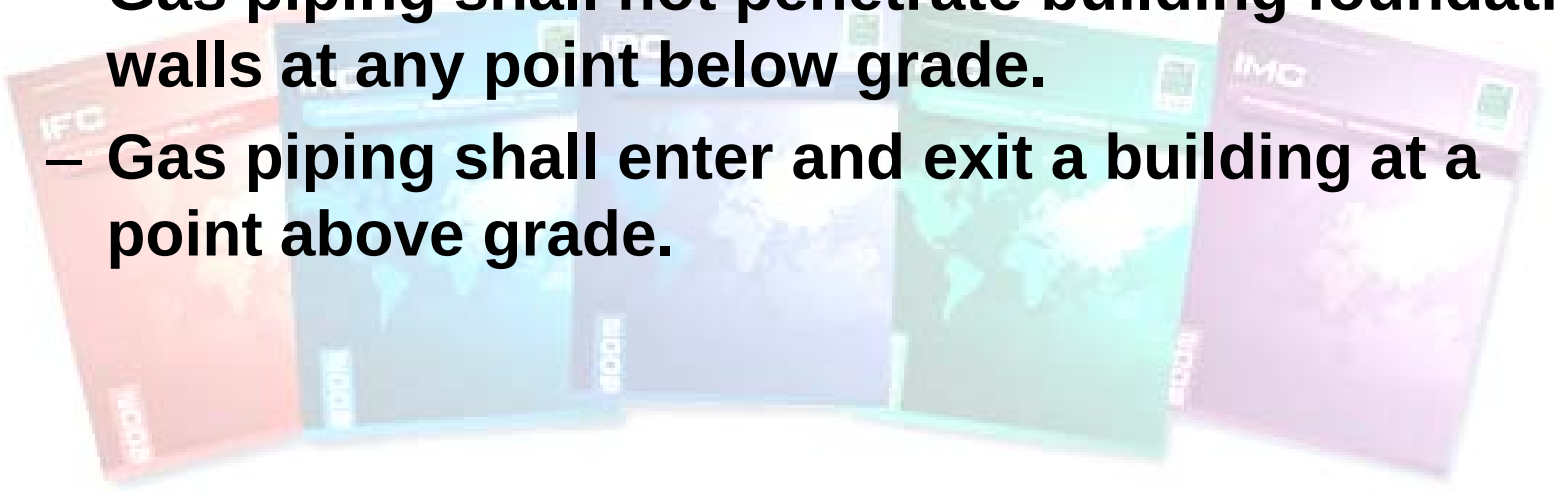
- **Mechanical Appliance Rooms**
  - **Rooms having a volume equal to at least 12 times the total volume of a furnace, water heater or air-conditioning appliance and at least 16 times the total volume of a boiler.**



Bad

IFGC

- **Underground Penetrations Prohibited.**
  - **Gas piping shall not penetrate building foundation walls at any point below grade.**
  - **Gas piping shall enter and exit a building at a point above grade.**

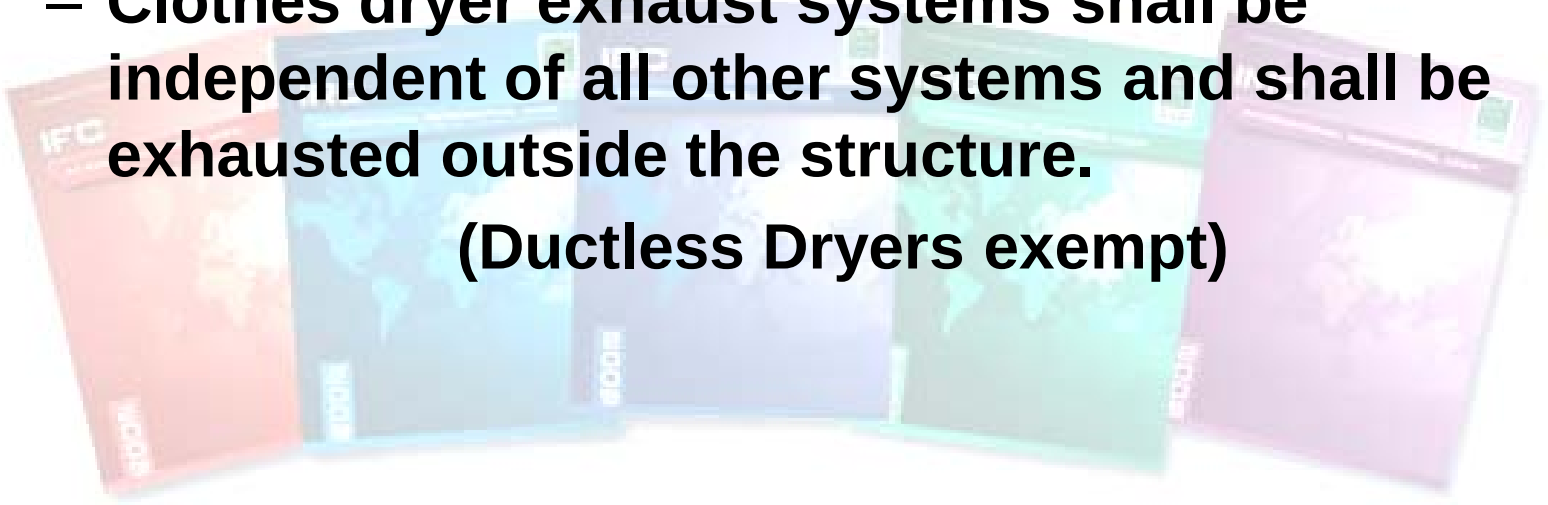


Bad

IPMC

- **Clothes Dryer Exhaust**
  - **Clothes dryer exhaust systems shall be independent of all other systems and shall be exhausted outside the structure.**

    (Ductless Dryers exempt)



Good

IEBC

- **Expansion of Fair Housing Type B Units**
  - **Deletes the Exception that Type B units are not required to be located in existing buildings.**
  - **Now exceeds Federal Law for existing buildings, even those constructed prior to March 13, 1989.**

Bad

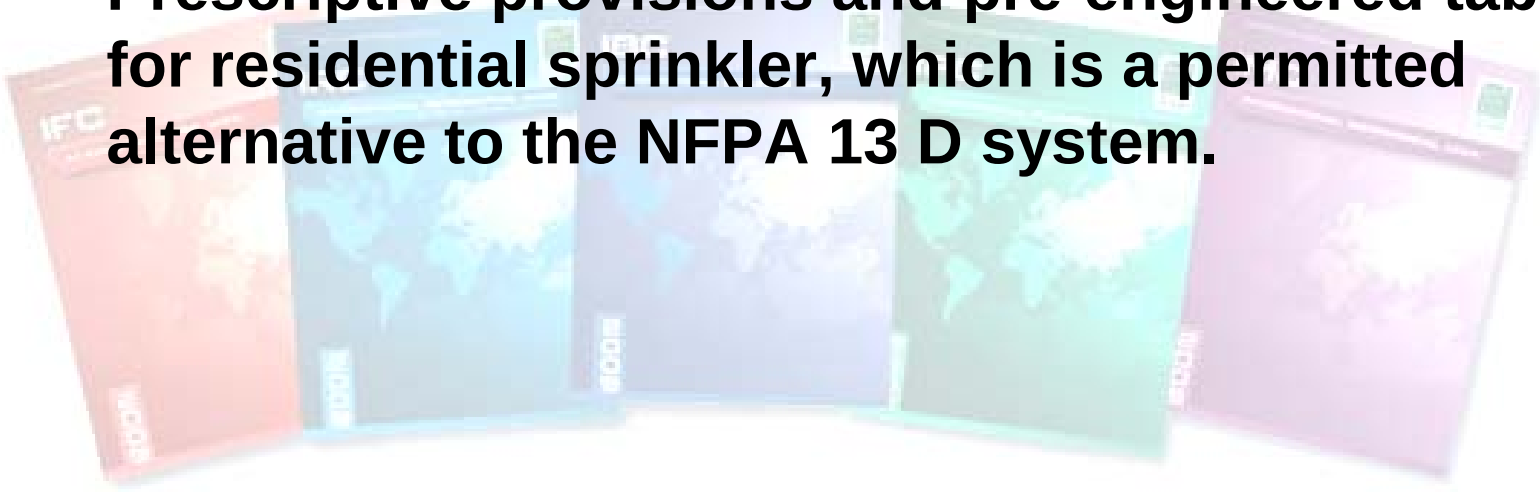
IRC

Residential Fire Sprinkler Mandates

Ugly

IRC

- **Residential Sprinkler- Plumbing**
  - **Prescriptive provisions and pre-engineered table for residential sprinkler, which is a permitted alternative to the NFPA 13 D system.**



Good

IRC

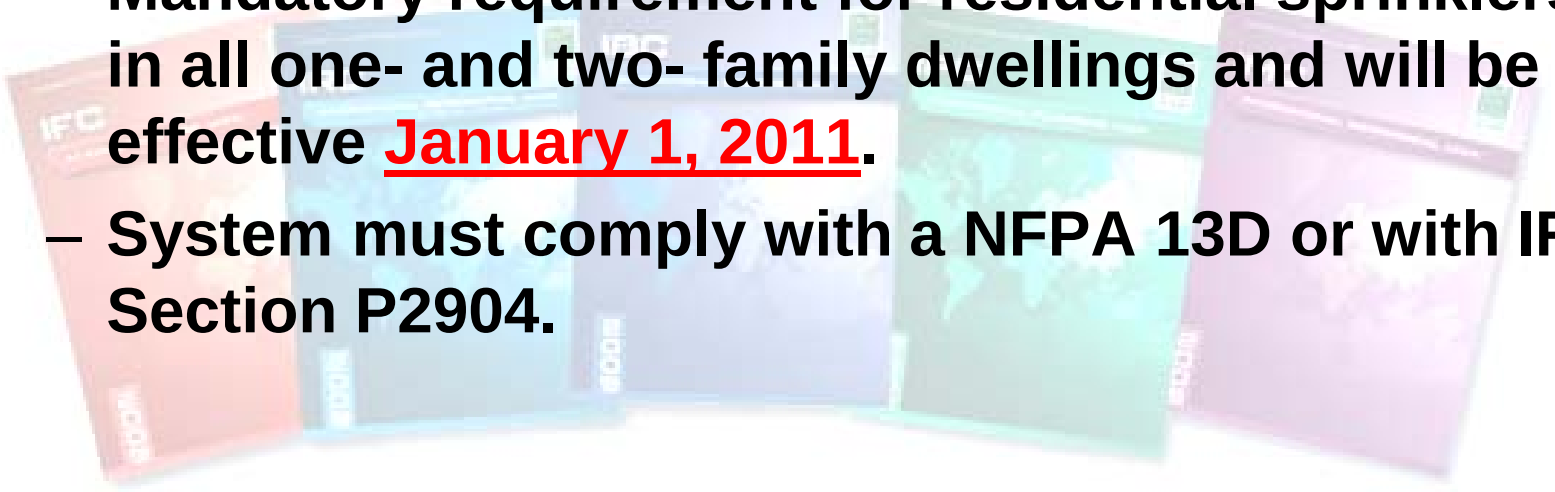
- **Residential Sprinklers**
  - **Mandatory requirement for all townhouses to be equipped with residential sprinklers.**
  - **Immediate effective date upon the adoption of the 2009 IRC.**
  - **Separation wall between townhouses was reduced from two (2) hours to one (1) hour.**

(BAK)

Bad

IRC

- **Residential Sprinklers**
  - **Mandatory requirement for residential sprinklers in all one- and two- family dwellings and will be effective January 1, 2011.**
  - **System must comply with a NFPA 13D or with IRC Section P2904.**



Ugly

State & Local Strategies:

Fire Sprinkler Builder Action Kit

EXCLUSIVE MEMBERS-ONLY CONTENT EXCLUSIVE MEMBERS-ONLY CONTENT EXCLUSIVE MEMBERS-ONLY CONTENT EXCLUSIVE MEMBERS

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NATIONAL ASSOCIATION OF HOME BUILDERS

Home > Community > Committees > Construction, Codes & Standards Committee > Builder Action Kits > Fire Sprinkler Action Kit

FIRE SPRINKLER ACTION KIT Normal View

Residential Fire Sprinkler Mandates

At the ICC Final Action Hearings on September 21, 2008, the ICC Governmental Voting Members voted to mandate fire sprinklers in all one- and two-family dwellings and townhouses. The sprinkler proponents were successful in achieving a 2/3rds majority vote to overturn the IRC Code Committee action of "Disapproval" by soliciting the services of over 1000 fire officials. As a result of this action, NAHBs' focus will now be on amending the *2009 International Residential Code (IRC)*. While there are many other changes that will appear in the *2009 IRC* of concern to the members of NAHB, the mandate for fire sprinklers is the most important. NAHB will continue with its grassroots effort for the upcoming 2009/2010 ICC Code development Cycle, and in assisting State and Local HBAs' with the adoption of the 2009 ICC codes.

Sprinkler Talking Points

These talking points provides you with the information you need to know in opposing mandatory fire sprinkler requirements for one- and two-family dwellings in the IRC. The information below covers a wide range of topics from concerns about residential sprinkler systems performance, installation, cost and the arguments made by sprinkler proponents.

The Action Kit highlights many of NAHB's concerns with mandates for fire sprinklers in one- and two-family dwellings and the basis for NAHB's opposition to such adoption. It's recommended that all materials be reviewed. Additional assistance is available from NAHB Construction, Codes and Standards staff on 800-368-5242, x8303 for Steven Orlowski.

Handouts

Contacting Your Code Officials - Sample Talking Points

NFPA 13D Technical Requirement Concerns

Common Questions About Sprinklers

Residential Fire Sprinklers-Problems with NFPA 13D

NAHB Review of Sprinkler Reports

White Paper Review on Residential Fire Sprinklers

Presentations

Fire Sprinkler Mandates: Why Home Builders Disagree (Video)

Understanding Installation and Costs of Residential Fire Sprinkler Market (PowerPoint)

Advocating Against Sprinkler Mandates (PowerPoint)

Policy

NAHB Policy on Low-Cost Fire Sprinklers

NAHB Policy on Cost-effective Fire and Life-Safety Requirements

NAHB Articles

Fire Sprinkler and Homeowners Insurance

The Priced Out Effect

Fire Deaths in the United States

Statistics on House Fire Deaths

Surveys

Consumer Fire Sprinkler Survey - Slideshow

Consumer Fire Sprinkler Survey - Executive Summary

Smoke Alarm Information

Smoke Alarms Work Brochure

Executive Officer Media Page

Smoke Alarms Work - Webpage

Additional Information

Canadian Sprinkler Report

USFA Public Announcement

IAFC Position Statement

For more information about this item, please contact Steven Orlowski at 800-368-5242 x8303 or via e-mail at sorlowski@nahb.com.

F2005 ROC.lnk

Fire Sprinkler Builder Action Kit

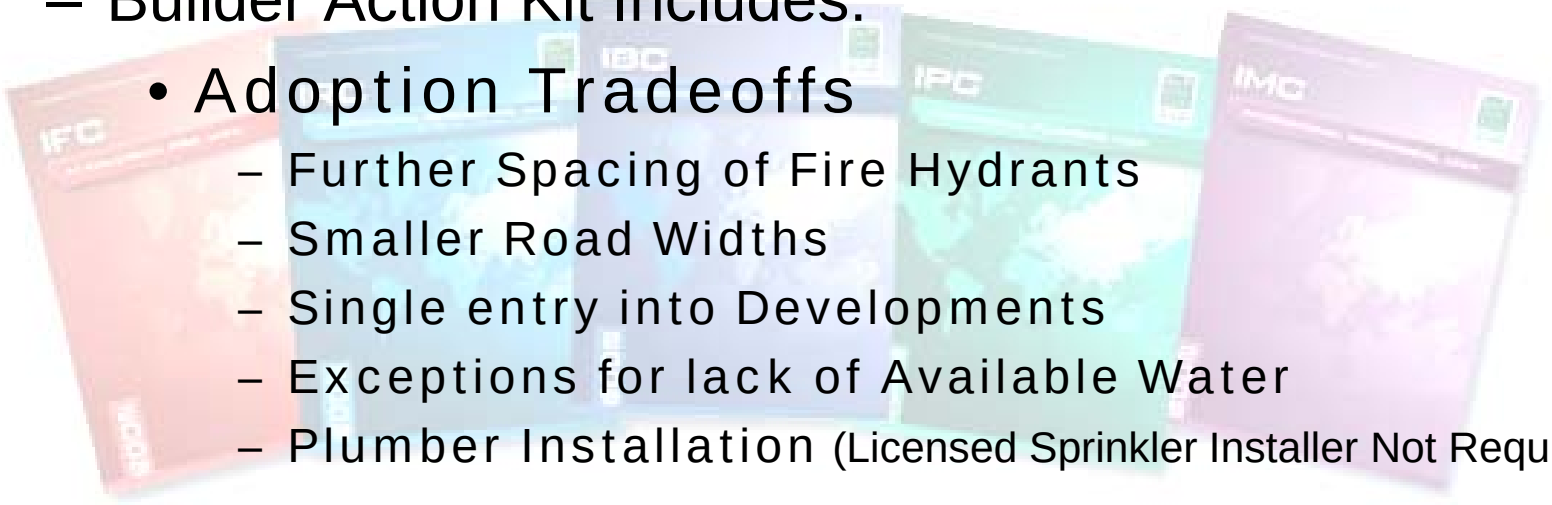
State & Local Strategies:

- Builder Action Kit Includes:
  - Adoption Amendments
    - Eliminate Basement Egress Window
    - Change Fire Separation Distance Back to 3 Feet
    - Sprinklers Not Required for Hunting Cabins, etc.

Fire Sprinkler Builder Action Kit

State & Local Strategies:

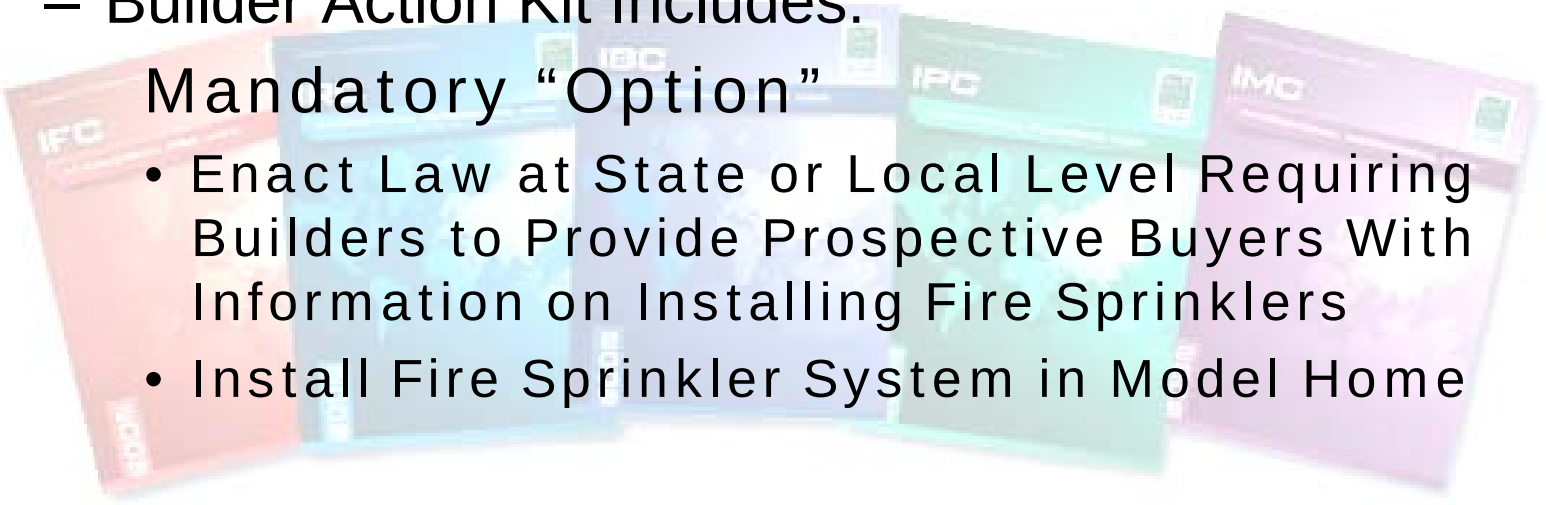
- Builder Action Kit Includes:
  - Adoption Tradeoffs
    - Further Spacing of Fire Hydrants
    - Smaller Road Widths
    - Single entry into Developments
    - Exceptions for lack of Available Water
    - Plumber Installation (Licensed Sprinkler Installer Not Required)



Fire Sprinkler Builder Action Kit

State & Local Strategies:

- Builder Action Kit Includes:



Mandatory "Option"

- Enact Law at State or Local Level Requiring Builders to Provide Prospective Buyers With Information on Installing Fire Sprinklers
- Install Fire Sprinkler System in Model Home

Fire Sprinkler Builder Action Kit

State & Local Strategies:

- Builder Action Kit Includes:

  Industry Alliances

  - Work With Industry Allies to Defeat Mandatory Fire Sprinkler Requirements

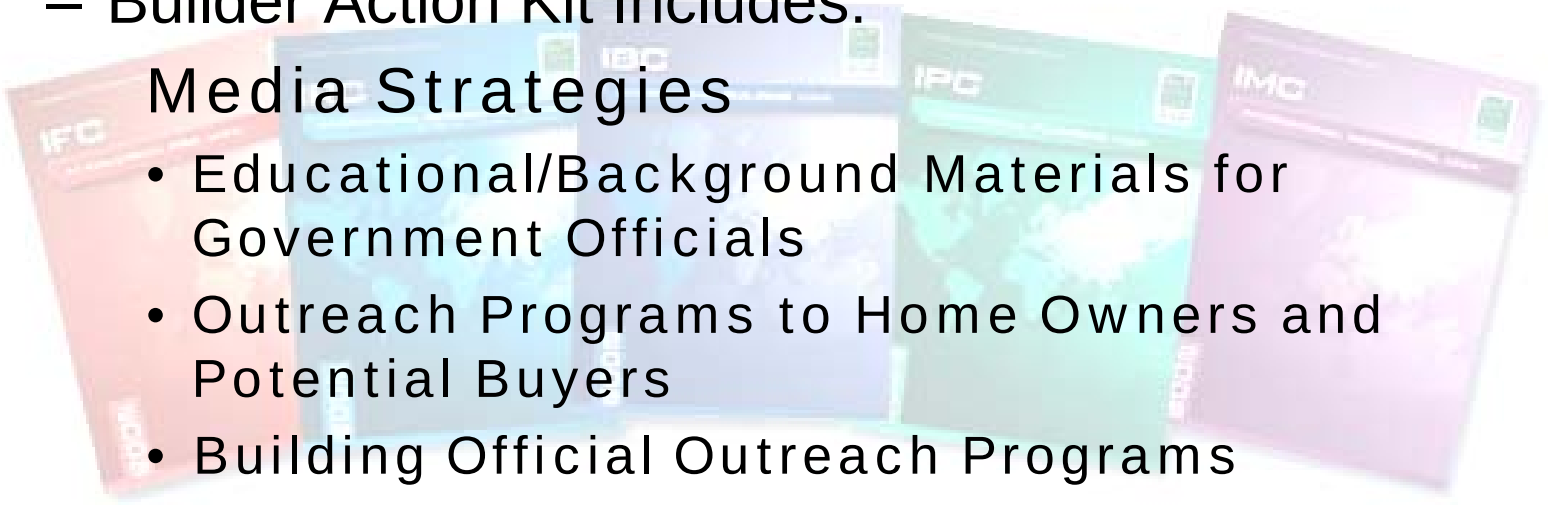
Fire Sprinkler Builder Action Kit

State & Local Strategies:

- Builder Action Kit Includes:

Media Strategies

- Educational/Background Materials for Government Officials
- Outreach Programs to Home Owners and Potential Buyers
- Building Official Outreach Programs



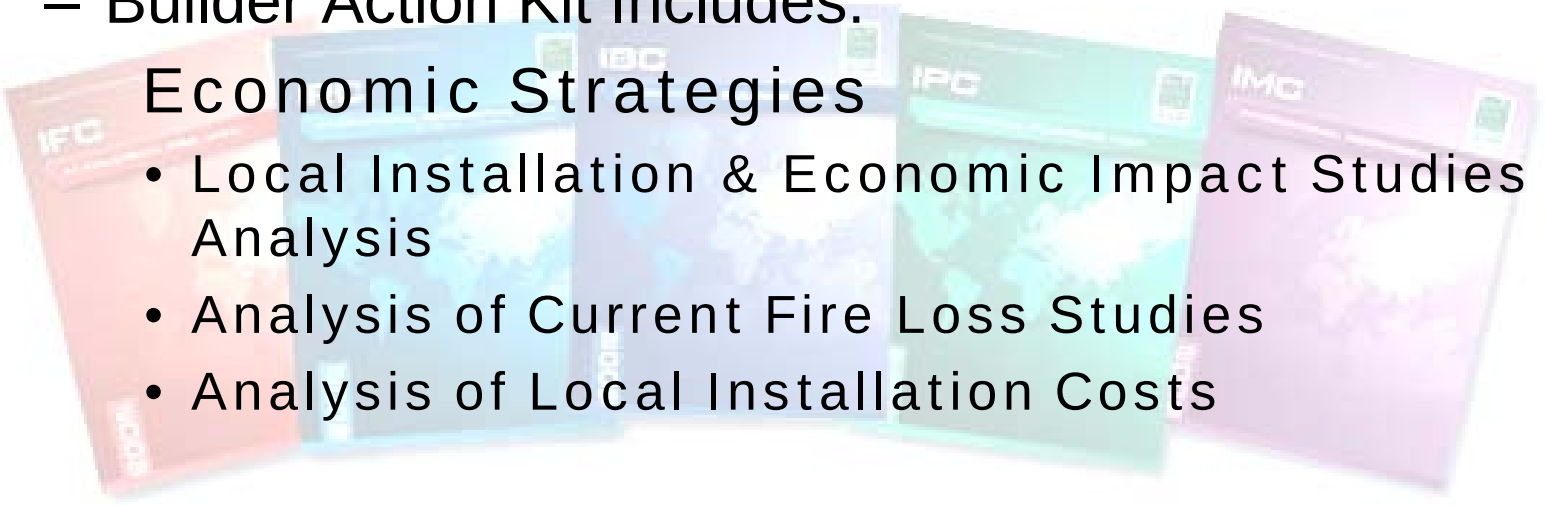
Fire Sprinkler Builder Action Kit

State & Local Strategies:

- Builder Action Kit Includes:

Economic Strategies

- Local Installation & Economic Impact Studies Analysis
- Analysis of Current Fire Loss Studies
- Analysis of Local Installation Costs



State & Local Strategies:

- NAHB Resources
  - Staff support via 800 and email.
  - CCS Technical Staff Support.
  - Medial & Public Relations Staff Support.
  - Legal Staff Support.
  - S&L Support Materials located on NAHB.com

Builder Action Kits

Builder Action Kits for 2009 and 2012 I-Codes Adoption available on line at:

nahb.org

NAHB Construction Codes and Standards Staff

Is available for assistance with any code issues.

NAHB

1-800-368-5242

Steve Orlowski

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