



INTERNATIONAL
CODE
COUNCIL®

Impact of Grenfell Fire on the US Building Regulatory System

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Beth Tubbs, P.E., FSFPE
Senior Staff Engineer

Overview



- ICC
- US Building Regulatory System
- Technical Requirements
- Approvals Process
- Looking to the future

International Code Council



- Nonprofit corporation – Since 2000
- Headquartered in Washington, D.C.
- Develops and maintains building safety codes/standards
- 64,000+ members
- Staff of more than 350



Number of **government agency** members: **9,509**

Number of **private sector** members: **54,920**

Total number of governmental member voting representation: **16,156***



*Numbers as of March 2018

I-Codes



- ICC publishes 15 model codes used by jurisdictions around the world



I-Codes Review Process

- ICC Committee hearings
- Hear on the order of 3000 proposals every three years



2015-2017 CYCLE



3,318

CODE CHANGES



1,552

VOTERS

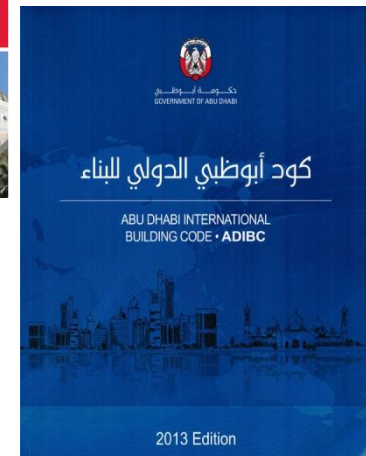
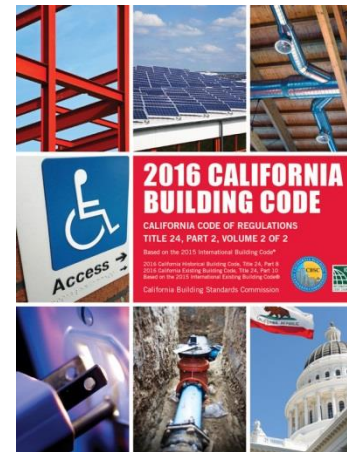


207,176

VOTES CAST

I-Codes Adoptions

- 50 States + District of Columbia
- U.S. Territories
- Federal Agencies
- Mexico
- Caribbean Region
- Central America
- Eastern Europe
- Middle East
- Africa



Building Regulatory System



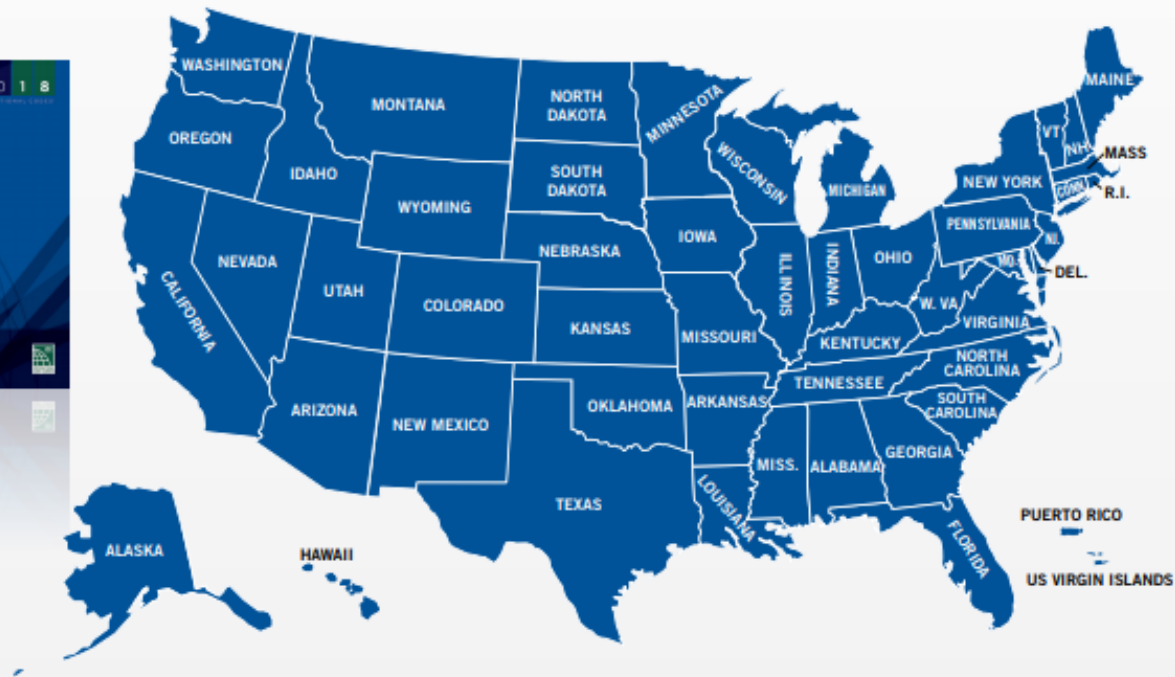
- States have police power
- Buildings not regulated at a federal level
- Minimally 50+ major jurisdictions
- In reality there are thousands

Building Regulatory System

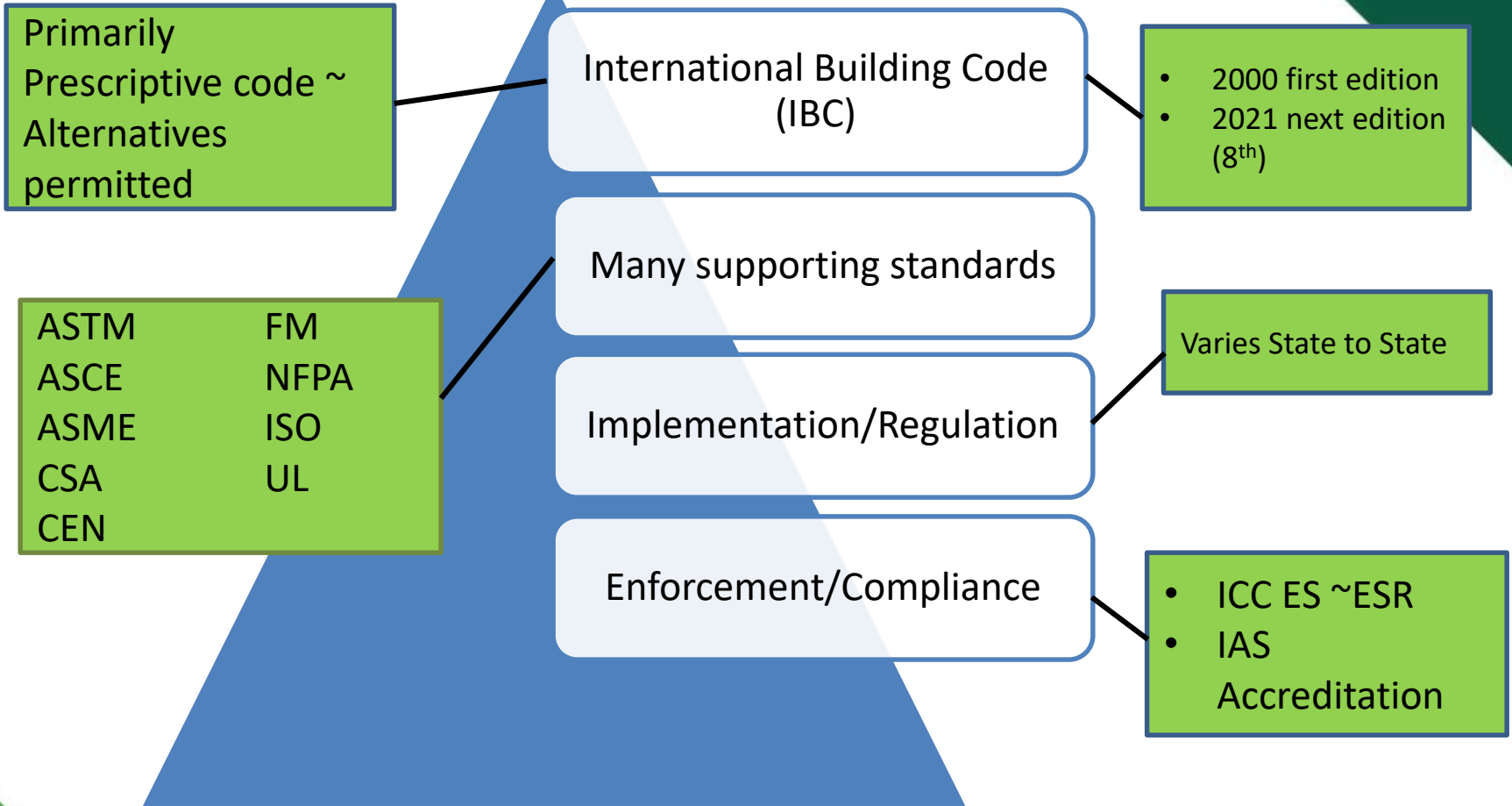


INTERNATIONAL BUILDING CODE ADOPTION MAP

The IBC is in use or adopted in 50 states, the District of Columbia, the U.S. Virgin Islands, Guam and the Northern Marianas Islands.



Building Regulatory System



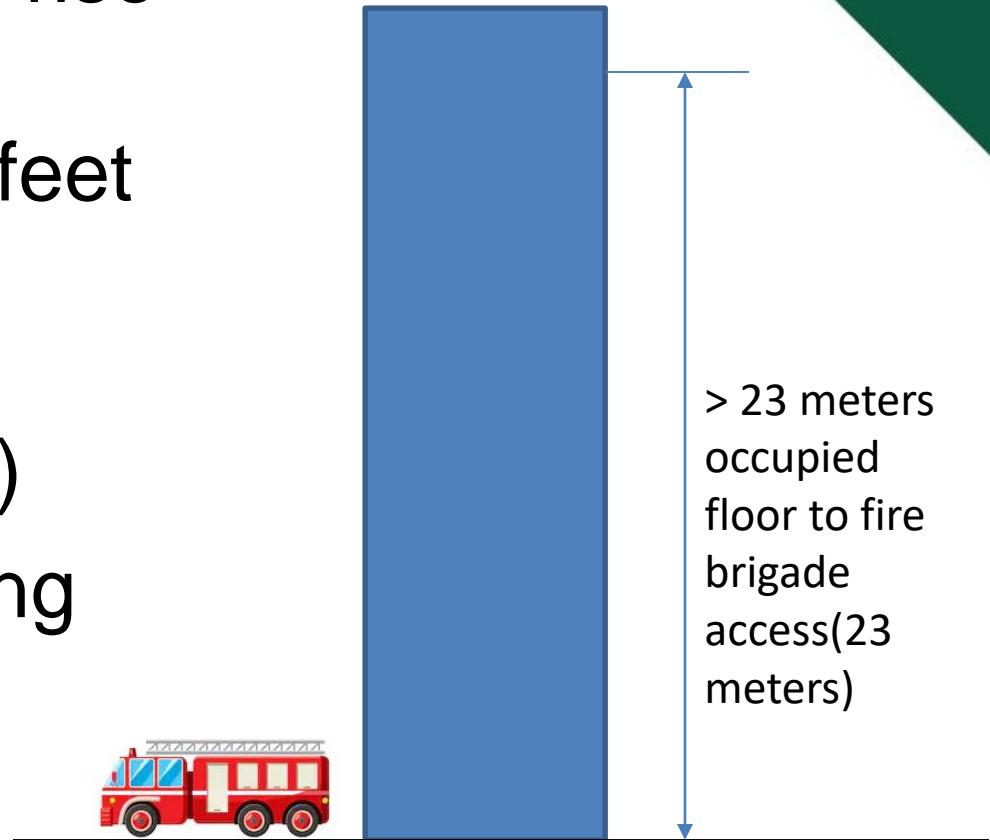
Key Concerns After Grenfell



- Can this happen in the US?
- Do the current technical requirements result in safe buildings?
- How are jurisdictions and designers addressing these issues?

Technical Requirements

- Tall Building ~ High rise requirements
(Occupied floor 75 feet ~ 23 meters from lowest level of fire department access)
- Exterior wall/cladding requirements



Key High Rise Provisions



- IBC Considers High Rises a special use
- New and all occupancy types (2018 IBC)
 - Automatic sprinkler system throughout
 - Minimally two interior exit stairways
 - Emergency Voice/Alarm Communication system
 - Fire service access elevators (over 120 feet)
 - Standby and emergency power for many features
 - Fire command center

Exterior Wall Finish/Cladding

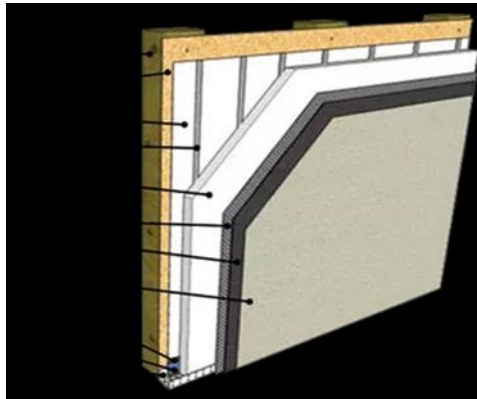
- Chapter 14 of the IBC Addresses exterior wall systems
- Chapter 26 of the IBC deals with foam plastic
- Full scale testing to NFPA 285 is triggered in several different sections
 - Combustible water resistive barrier or MCM > 40 feet ~12 meters
 - EIFS
 - Foam insulation over 1 story



Exterior Wall Finish/Cladding

- Several different types of Combustible cladding permitted in addition combustible water barriers.
- Typical are EIFS and MCM (also Termed Aluminum Composite Materials (ACM))
- MCM often installed with foam insulation – Chapter 26 of the IBC

EIFS



MCM

Post Grenfell



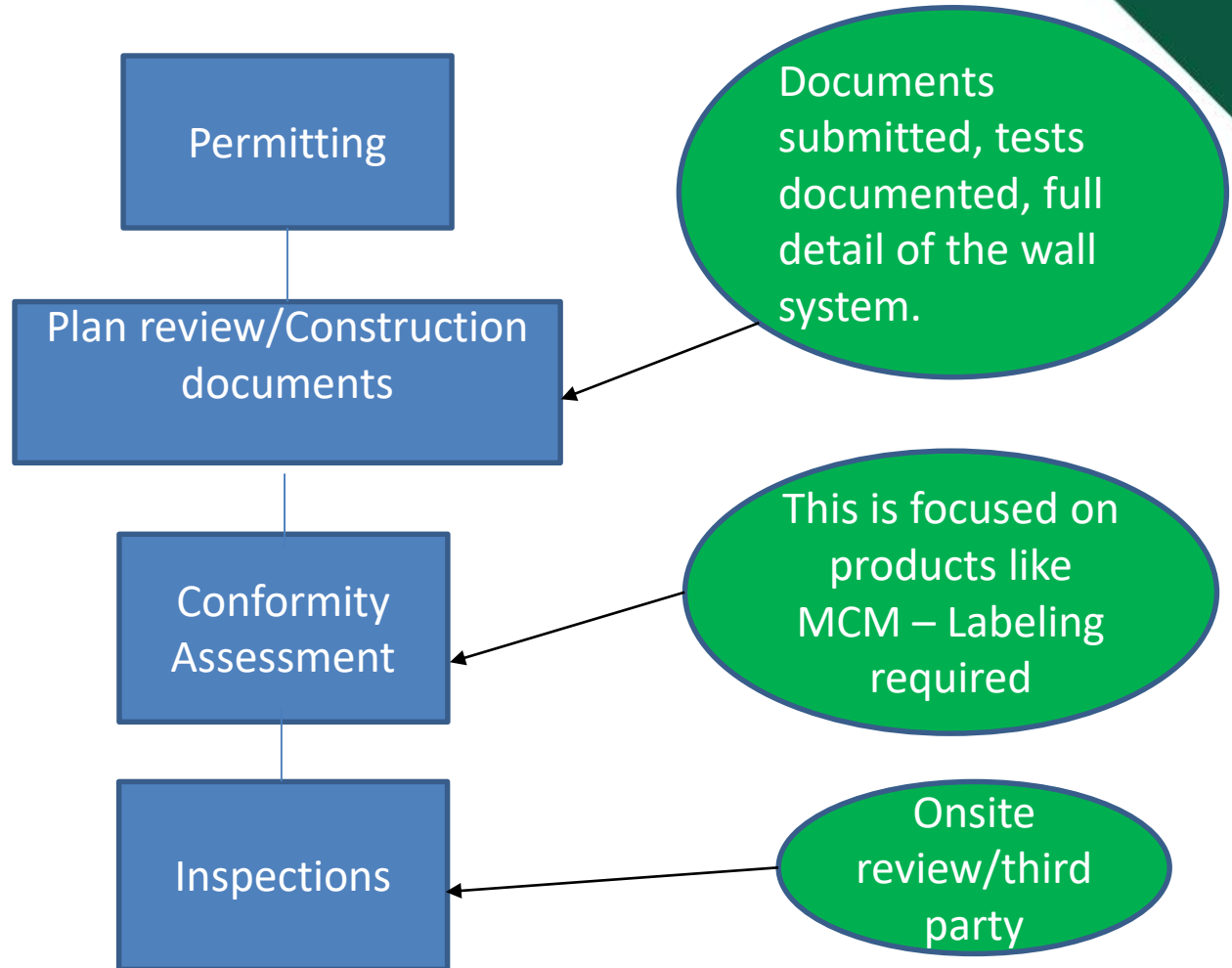
- Task group studied issues
- Number of proposals submitted
- Detailed review of provisions – MCM (ACM)
- Removal of provisions that were confusing and particularly related to MCMs
- Debate within our process on the test procedure – still using NFPA 285
- NFPA 285 discussing engineering judgement

Approvals Process



- Code requirements are only one part of the construction process
- The code application and approvals process is key.
- Article focused on approvals process
 - [Combustible Exterior Wall “Cladding” Systems:](#)

Approvals Process



Construction Documents



[A] 107.2.4 Exterior wall envelope. *Construction documents* for all buildings shall describe the *exterior wall envelope* in sufficient detail to determine compliance with this code. The *construction documents* shall provide details of the *exterior wall envelope* as required, including flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves or parapets, means of drainage, water-resistive membrane and details around openings.

The *construction documents* shall include manufacturer's installation instructions that provide supporting documentation that the proposed penetration and opening details described in the *construction documents* maintain the weather resistance of the *exterior wall envelope*. **The supporting documentation shall fully describe the exterior wall system that was tested, where applicable, as well as the test procedure used.**

Engineering Judgement



- Technically code requires full scale testing
- Code allows for alternative methods
- Feedback from jurisdictions mixed
 - Registered Design professional
 - Engineer Architect
 - Third party review in some cases
 - Some jurisdiction prohibit
 - Others not presented with request

Inspections



110.1 General. Construction or work for which a *permit* is required shall be subject to inspection by the *building official* and such construction or work shall remain visible and able to be accessed for inspection purposes until *approved*. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid. It shall be the duty of the *owner* or the owner's authorized agent to cause the work to remain visible and able to be accessed for inspection purposes. Neither the *building official* nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

Looking to the Future



- Continue communication with Members
 - Major Jurisdictions
- International communication
 - Dame Judith Hackitt (ICC Annual Meeting)
 - SFPE
 - IFSS
 - IRCC
- Existing Buildings
- Inspection process

Thank you!



Beth Tubbs

Email btubbs@iccsafe.org

