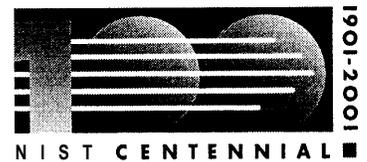


NISTIR 6774

Workshop On Fire Testing Measurement Needs: Proceedings

William Grosshandler
(Editor)



NIST

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

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**Workshop On Fire
Testing Measurement Needs:
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Building and Fire Research Laboratory

August 2001



U.S. Department of Commerce
Donald Evans, Secretary

National Institute of Standards and Technology
Dr. Karen H. Brown, Acting Director

NES: A Perspective on Fire Testing

Future Needs in Code Development

Dave Bowman to NIST Workshop on Fire Testing, 6/21/2001

NES

Agenda

- The Evaluation Services--a unique perspective on Fire Testing
- Code Development Needs for the International Code
- Changes needed to support the new Performance Code

The NES Perspective

- We view ourselves as the eyes and ears of the code enforcement community
- As such, our concerns are with the Code requirements for fire testing.
- The fire testing called out in the IBC is becoming increasingly difficult to apply to new technology and new thinking on building sciences.

Code Development Needs

- ASTM E84:
 - Used throughout the code:
 - Interior finishes
 - Plastics
 - Foam plastics
 - Other insulation
 - Is a poor test for measuring flame spread of foam plastics

Code Development Needs

- ASTM E84: (cont'd)
 - Is limited in its capacity (material thickness), therefore limits the use of new thicker foam plastics that are being used today.
 - Gives limited information--
 - Tells the performance relative to a piece of red oak
 - Huge variations in interpretation (such as dripping and melting test material)

Code Development Needs

- Replacement for E84?
 - Performance data (ignition temperature, rate of heat release, smoke density)
 - True assessment of fire safety in life-safety and health-safety terms, rather than relative to commonly accepted materials
 - Realistic fire scenario(s)

Code Development Needs

- Another example--combustible, non combustible
- Code places a high value on the use of noncombustible vs. combustible materials as measured by ASTM E136
- This is flawed logic

Code Development Needs

- Combustible vs. Noncombustible
- Code requires noncombustible building framing materials for larger buildings
- We have all seen examples where buildings that are noncombustible do not necessarily perform as well in fires as their combustible counterparts

Code Development Needs

- ASTM E136 only gives a rough indication of the fuel load that a material provides
- Needed:
 - Use of rate of heat release as a measurement of materials performances
 - Change the code logic to place a value on material performance rather than level of combustibility

Performance Code:

New Testing Challenges

- The ICC's First Performance Code will be issued in late December, 2001
- Places different types of demands on materials manufacturers and testing agencies:
 - Need for fire tests that provide data that can be used in predictive modeling software

CHALLENGE

- Get involved in the code development process
- Changes in Code Logic are fair game

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