FCIA Education & Committee Action Conference

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Agenda

Historical Perspective
Key Roles at UL
Passive Fire Protection Concepts
Standards Development Process
Associated Testing
Questions
UL has been involved with testing of building materials since the 1890’s

- First UL Test Standard – Issued in 1903 for fire doors
- Development of data for creating fire test methods in early 20th Century
- UL 72 for fire rated safes in 1918
- UL 263 for Fire Resistant Building Construction – 1929
- UL 10B for Fire Doors -- 1942
- UL 723 “Steiner Tunnel Test” – 1950
- UL 790 for Roofing Products – 1958
- Participation in ASTM, CEN, NFPA and ULC Fire Test Committees

Not satisfied with resting in the past as we are always looking forward
Key Roles at UL

- Principal Designated Engineer
- Project Engineer
- Field Engineer
- Regulatory
- Planning/Strategy
Fire Resistance and Containment

- Fire Doors
- Fire Dampers
- Firestops
- Safes
- Spray-Applied Fire Resistive Materials
Key Concepts in Passive Fire Protection

- Reaction to Fire
- Roofing Products
- Fire Resistance
- Fire Containment
Fire Resistance

Test and evaluate materials for use in fire resistant construction (walls, partitions, structural steel, floors and ceilings)

• Test Methods Include
  - Fire Endurance and Hose Stream Tests
  - Hydrocarbon fire testing (UL 1709)
  - Loaded Assemblies

• Products include
  - Steel Protection Materials
  - Gypsum board
  - Ceiling Tiles
  - Steel Decking
  - Insulation Products
  - Fibers for Reinforcing Materials
Fire Resistance

Commonly Used Standards –
- ANSI/UL 263
- CAN/ULC-S101
- ASTM E119
- UL 1709

Focused on construction testing; none are product specific – drywall, steel protection, ceiling tiles and concrete blocks
Fire Containment

Products used to contain fire, protect materials and contents from fire
Test Methods:
- Fire Endurance Tests and Hose Stream Tests
- Protection of Contents – Safes
- Thermal performance
- Cycling and Endurance Testing
- Structural, dynamic and impact testing

• Examples:
- Doors, glazing materials and door hardware
- Dampers in HVAC systems
- Through Penetration Fire Stops and Joint Systems
Fire Containment Products
Fire Containment Standards

Doors –
• UL 10B – Elevators, Shutters, Chute Doors, Swinging Doors
• UL 10C – Swinging Doors
• NFPA 252 = UL 10B and UL 10C (combines both test methods)
• UL 1784 – Air Leakage Tests for Doors
• ULC S104 – Doors for Canada

Glazing
• UL 9 – Windows and Glass Blocks
• ULC S106 – Windows for Canada
Fire Containment

Dampers
• UL 555 for fire
• UL 555S for smoke
• UL 555C for ceiling dampers
• ULC S112, S112.1, S112.2

Record Protection Equipment (Safes)
• UL 72
Fire Containment

Through Penetration Fire Stop Systems
• ASTM E814
• UL 1479
• ULC S115

Joint Systems
• ULC S115
• UL 2079

Ducts – Grease, Ventilation
Circuit Integrity Products
Exterior Wall Systems and Perimeter Fire Containment
Exterior Wall Systems and Perimeter Fire Containment

- Fire Tests designed to evaluate products for resisting the spread of flame on the outside of a building or to prevent spread of fire inside the building behind the curtain

- Focused on evaluating facades and materials for spread of fire vertically and horizontally on building exterior

- NFPA 285 for exteriors, ASTM E2307 for perimeter containment

- ASTM E2307 addresses spread of fire along the inside of the façade from room to room
Reaction to Fire – UL 723/ASTM E84/S102

Assess materials for heat release, flammability or smoke created by combustion

• Test methods include:
  - Steiner Tunnel Test (UL 723/ASTM E84)
  - Cone Calorimeter
  - Point of Ignition Tests
  - Telecom Industry Standards
  - Discrete Products
  - Radiant Panel Testing

• Examples
  - Wall coverings
  - Speakers in ceilings
  - Insulation Products like Expanded Foam Panels
Roofing Products – UL 790

Evaluate and Certify Materials Used in Commercial and Residential Construction

• Test Methods Include
  - Burning Brand Test
  - Spread of Flame / Intermittent Spread of Flame
  - Wind Uplift
  - Hail Damage

• Examples
  - Membrane Roofing Products
  - Composite Shingles
  - Expanded insulation materials
  - Coatings and adhesives
Supporting Testing / Programs

Related testing:
- Research and preliminary investigations
- Analytical test capabilities (IR, TGA, Instron, Calorimeters)
- Code Compliance Programs
- Research by UL on fire safety topics
Standards Development Process

- UL uses a consensus based approach – like ASTM and NFPA

- Standards Technical Panel = Group who votes on proposals; Cross-section of interested parties; ULC utilizes a standing committee on fire testing

- Proposals, however, not limited as anyone can submit

- Cycle of soliciting/receiving proposals, discussion, fact finding where needed, more discussion and balloting

- All votes are equal and all can participate
Standards and Code Development

Codes

Products

Standards
The Landscape

- Alphabet Soup of Groups and acronyms
- For UL – takes constant monitoring and participation to stay informed of trends/needs/practices
Today’s Tour:

- PPE and Safety
- Photography
- Logistics
- Fire testing and UL
ANY QUESTIONS?
THANK YOU

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