New ASTM Fireproofing Inspection Standards

An overview of the three newly published Special Inspection ASTM Standards for passive fire protection materials

Presenter Introductions

Phil Mancuso

Commercial District Sales Manager

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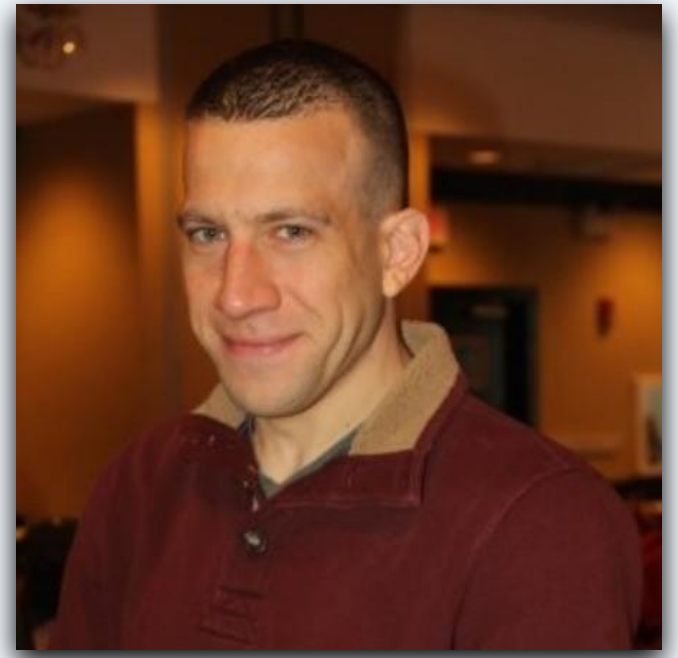


25 years of experience in passive fire protection materials. Technical expert in sprayed cementitious fireproofing, boards, and intumescent coatings for steel construction. Background also includes work with firestop materials. Active member of ASTM International, contributing to the development and advancement of industry standards.

Presenter Introductions (cont.)

Samantha Peterson

Fire Protection Application Engineer

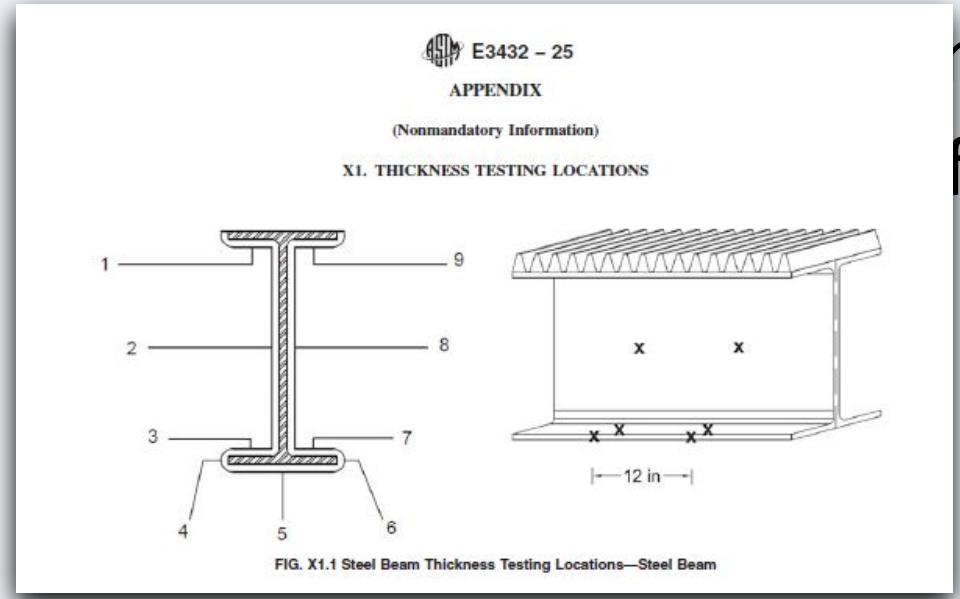
Building Protection Solutions, Industrial Specialties Division

3M

Brings expertise in building code and test standards development process, along with extensive experience in the certification and testing of fire protection product portfolios. Serves as the Co-Chair of the ASTM E06.21 Subcommittee, contributing to industry-wide standardization efforts. In addition, specializes in competitive product analysis.

Learning Objectives

- Why were the standards written/created?
- What do the standards do?



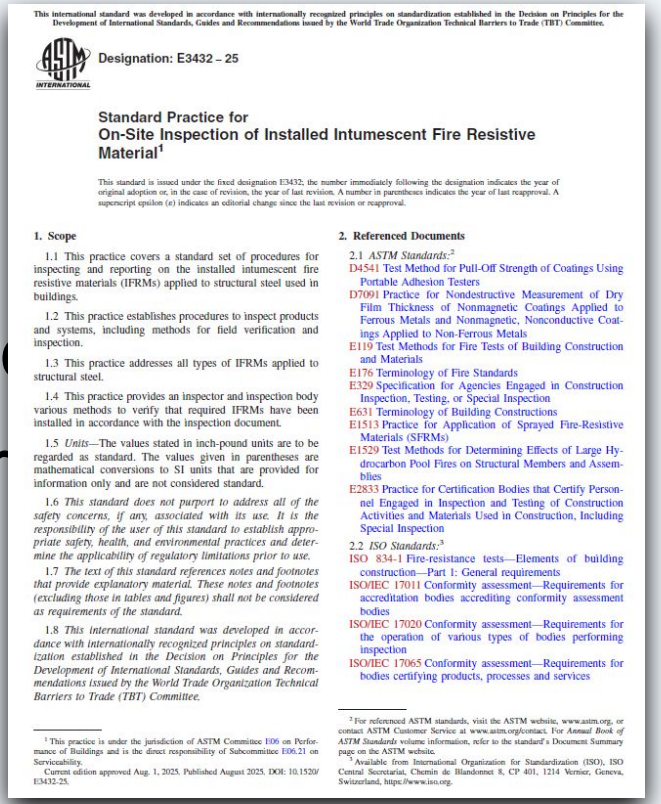
E3432 – 25

APPENDIX

(Nonmandatory Information)

X1. THICKNESS TESTING LOCATIONS

FIG. X1.1 Steel Beam Thickness Testing Locations—Steel Beam



This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: E3432 – 25

Standard Practice for
On-Site Inspection of Installed Intumescent Fire Resistive Material[1]

This standard is issued under the fixed designation E3432; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice covers a standard set of procedures for inspecting and reporting on the installed intumescent fire resistive materials (IFRMs) applied to structural steel used in buildings.

1.2 This practice establishes procedures to inspect products and systems, including methods for field verification and inspection.

1.3 This practice addresses all types of IFRMs applied to structural steel.

1.4 This practice provides an inspector and inspection body various methods to verify that required IFRMs have been installed in accordance with the inspection document.

1.5 *Units*—The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard.*

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]
D4541 Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
D7091 Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
E119 Test Methods for Fire Tests of Building Construction and Materials
E176 Terminology of Fire Standards
E329 Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
E631 Terminology of Building Constructions
E1513 Practice for Application of Sprayed Fire-Resistive Materials (SFRMs)
E1529 Test Methods for Determining Effects of Large Hydrocarbon Pool Fires on Structural Members and Assemblies
E2833 Practice for Certification Bodies that Certify Personnel Engaged in Inspection and Testing of Construction Activities and Materials Used in Construction, Including Special Inspection

2.2 *ISO Standards:*[3]
ISO 834-1 Fire-resistance tests—Elements of building construction—Part 1: General requirements
ISO/IEC 17011 Conformity assessment—Requirements for accreditation bodies accrediting conformity assessment bodies
ISO/IEC 17020 Conformity assessment—Requirements for the operation of various types of bodies performing inspection
ISO/IEC 17065 Conformity assessment—Requirements for bodies certifying products, processes and services

[1] This practice is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.21 on Serviceability.
Current edition approved Aug. 1, 2025. Published August 2025. DOI: 10.1520/E3432-25.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from International Organization for Standardization (ISO), ISO Central Secretariat, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, https://www.iso.org.

How is an ASTM Standard/Practice Created?

- Recognize a need
- Convene stakeholders (Task Group)
- Invite experts (Subcommittee)
- Widen the Lense via the Main Committees
- Draft a standard
- Ballot via Sub & Main Committees
- Address negatives and

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FCIA Firestop Contractors International Association
NECA National Electrical Contractors Association
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Why Were These Standards Created?

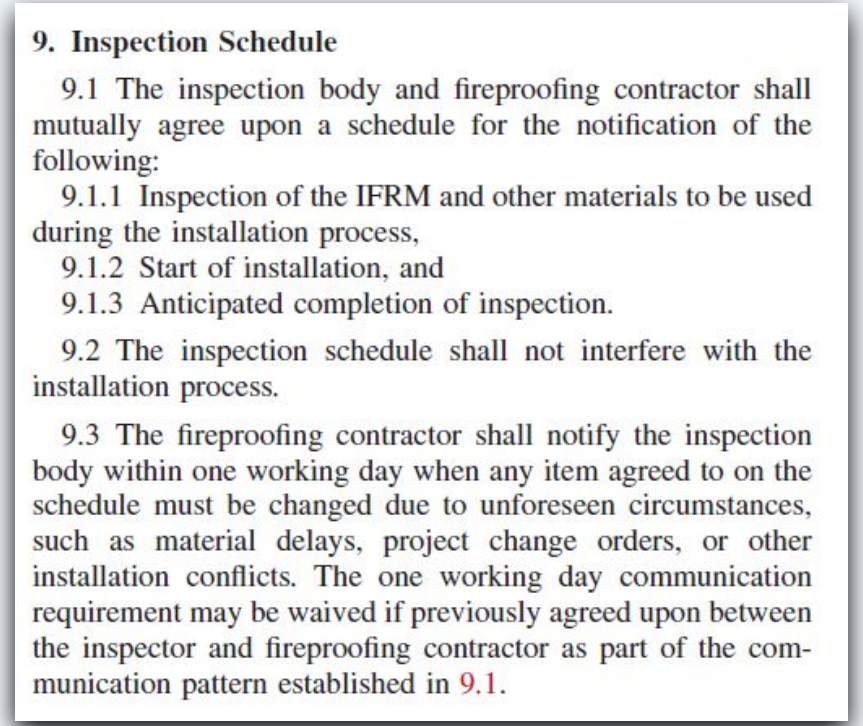
- Developed by ASTM's E06.21 subcommittee, working alongside members from ASTM's E36 committee in creating a standardized set of inspection procedures for fire protection materials applied to structural elements like beams, columns, and floors.
- There was no prior need to unify manufacturers, contractors, and inspection agencies to establish mandatory, uniform protocols for inspecting board systems, SFRM, and IFRM materials.

Why Were These Standards Created?

- The standard may also be used by project teams, authorities having jurisdiction, or regulators even when special inspections aren't formally required.
- We needed an alignment with IBC Chapter 17 special

Why Were These Standards Created? (cont.)

- Reduce variability and improve reliability through mandatory procedures.
- The standards promote safety, compliance, and clarity in roles, improving inspection outcomes and



9. Inspection Schedule

9.1 The inspection body and fireproofing contractor shall mutually agree upon a schedule for the notification of the following:

9.1.1 Inspection of the IFRM and other materials to be used during the installation process,

9.1.2 Start of installation, and

9.1.3 Anticipated completion of inspection.

9.2 The inspection schedule shall not interfere with the installation process.

9.3 The fireproofing contractor shall notify the inspection body within one working day when any item agreed to on the schedule must be changed due to unforeseen circumstances, such as material delays, project change orders, or other installation conflicts. The one working day communication requirement may be waived if previously agreed upon between the inspector and fireproofing contractor as part of the communication pattern established in 9.1.

Why Were These Standards Created? (cont.)

- Its purpose is to ensure fire protection materials are properly installed, supporting safer evacuation and better structural stability during firefighting.
- Reduce variability and improve reliability through mandatory procedures.

Overview of Each Standard – Boards & Wraps

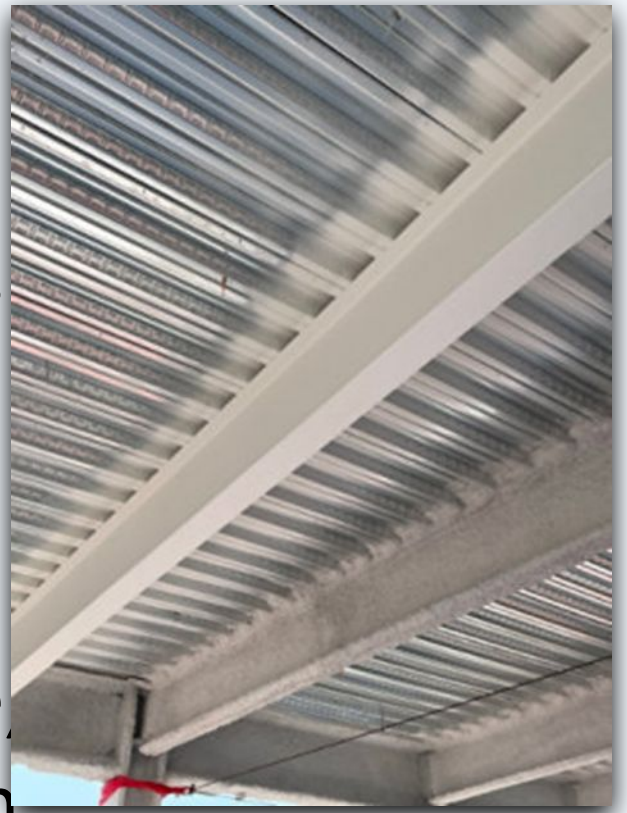
- **ASTM E3430-25 – Board & Wrap Systems**
- **Scope**: board and wrap fireproofing on structural steel.
- Key inspection elements: piece counts, thickness, fastener/banding checks.

Overview of Each Standard - SFRMs

- **ASTM E3431-25 – Spray-Applied Fire-Resistive Materials (SFRM)**
- **Scope**: Cementitious & Fibrous SFRMs on steel or concrete.
- Inspectors verify substrate, environmental conditions, material handling, and thickness/density, E736 adhesion/cohesion.

Overview of Each Standard – Intumescent Coatings

- **ASTM E3432-25 – Intumescent Fire-Resistive Materials (IFRM)**
- **Scope**: intumescent coatings on structural steel.
- Inspectors must document thickness, verify curing, confirm material compliance, and ensure corrections when needed.
- Focus on dry film thickness (DFT) measurements alighted

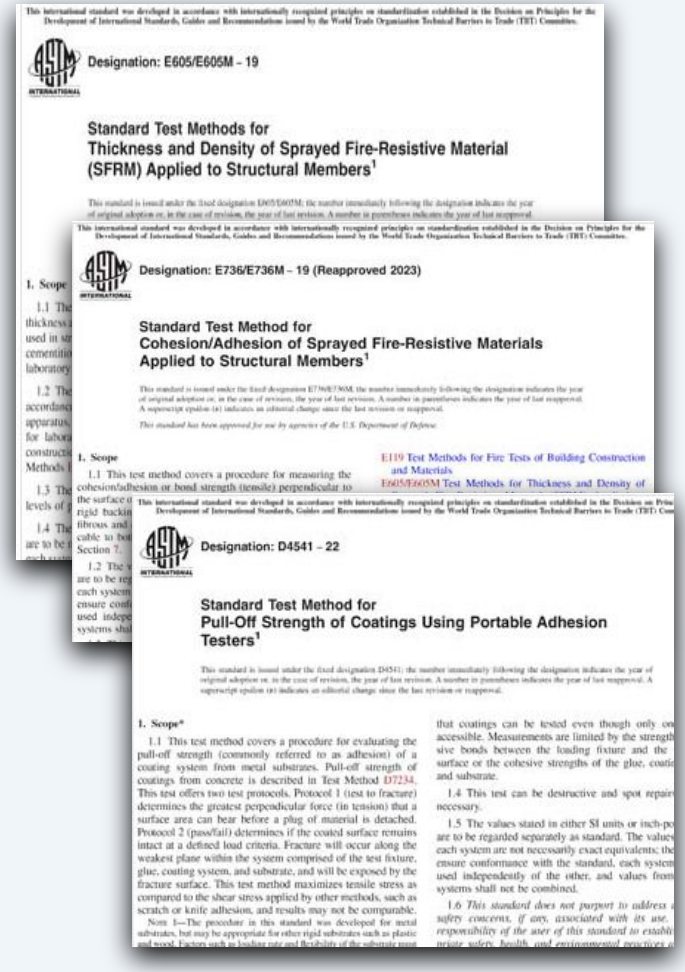


Common Structure Across All Three Standards

- All three standards share a mandatory, enforceable inspection structure aligned with the International Building Code requirements.
- Inspector roles include verifying materials, observing installations, reviewing substrates, and documenting findings without directing contractors.
- Independence & qualifications of inspection bodies (ISO/IEC 17020 Type A, E329, E2833).

Key Differences Between the Standards

- **Material type**: SFRM vs IFRM vs board/wrap.
- **Verification tools/methods**: SFRMs require thickness, density, and adhesion tests; IFRMs need dry film thickness and optional adhesion tests; board/wrap systems check installation details.
- **SFRM**: E605, E736.


Designation: E605/E605M – 19

Standard Test Methods for
Thickness and Density of Sprayed Fire-Resistive Material
(SFRM) Applied to Structural Members[1]

Designation: E736/E736M – 19 (Reapproved 2023)

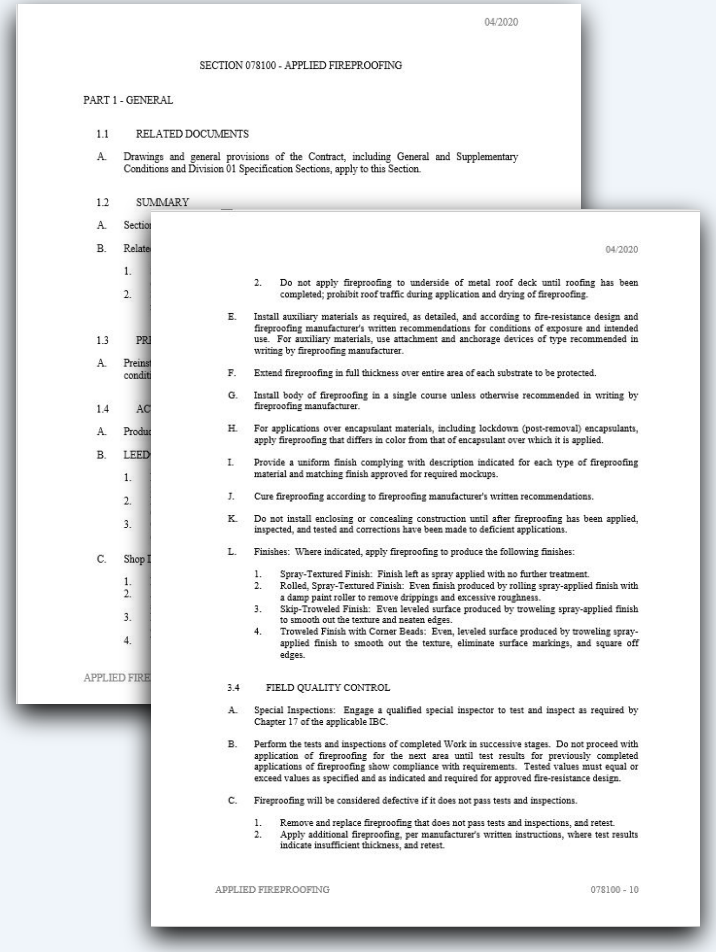
Standard Test Method for
Cohesion/Adhesion of Sprayed Fire-Resistive Materials
Applied to Structural Members[1]

Designation: D4541 – 22

Standard Test Method for
Pull-Off Strength of Coatings Using Portable Adhesion
Testers[1]

How These Standards Help Specifiers

- Provides enforceable, consistent inspection requirements.
- Improve clarity in project documents (listed designs, judgments).
- Reduce disputes by defining roles, responsibilities, and documentation.



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SECTION 078100 - APPLIED FIREPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

1.3

1.4

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Engage a qualified special inspector to test and inspect as required by Chapter 17 of the applicable IBC.

B. Perform the tests and inspections of completed Work in successive stages. Do not proceed with application of fireproofing for the next area until test results for previously completed applications of fireproofing show compliance with requirements. Tested values must equal or exceed values as specified and as indicated and required for approved fire-resistance design.

C. Fireproofing will be considered defective if it does not pass tests and inspections.

1. Remove and replace fireproofing that does not pass tests and inspections, and retest.
2. Apply additional fireproofing, per manufacturer's written instructions, where test results indicate insufficient thickness, and retest.

2. Do not apply fireproofing to underside of metal roof deck until roofing has been completed; prohibit roof traffic during application and drying of fireproofing.

E. Install auxiliary materials as required, as detailed, and according to fire-resistance design and fireproofing manufacturer's written recommendations for conditions of exposure and intended use. For auxiliary materials, use attachment and anchorage devices of type recommended in writing by fireproofing manufacturer.

F. Extend fireproofing in full thickness over entire area of each substrate to be protected.

G. Install body of fireproofing in a single course unless otherwise recommended in writing by fireproofing manufacturer.

H. For applications over encapsulant materials, including lockdown (post-removal) encapsulants, apply fireproofing that differs in color from that of encapsulant over which it is applied.

I. Provide a uniform finish complying with description indicated for each type of fireproofing material and matching finish approved for required mockups.

J. Cure fireproofing according to fireproofing manufacturer's written recommendations.

K. Do not install enclosing or concealing construction until after fireproofing has been applied, inspected, and tested and corrections have been made to deficient applications.

L. Finishes: Where indicated, apply fireproofing to produce the following finishes:

1. Spray-Textured Finish: Finish left as spray applied with no further treatment.
2. Rolled, Spray-Textured Finish: Even finish produced by rolling spray-applied finish with a damp paint roller to remove drippings and excessive roughness.
3. Skip-Troweled Finish: Even leveled surface produced by troweling spray-applied finish to smooth out the texture and neaten edges.
4. Troweled Finish with Corner Beads: Even, leveled surface produced by troweling spray-applied finish to smooth out the texture, eliminate surface markings, and square off edges.

APPLIED FIREPROOFING 078100 - 10

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NFCA National Fireproofing Contractors Association

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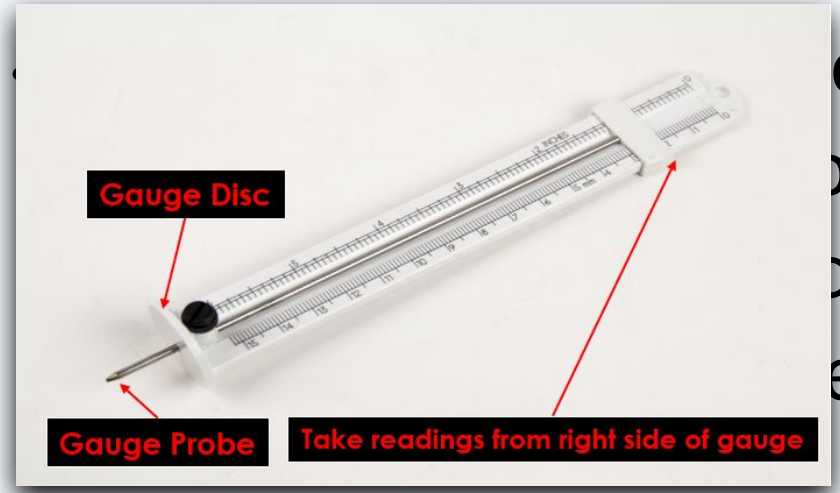
How These Standards Help Inspectors

- Provide structured inspection steps & documentation tools.
- Defines inspector responsibilities and provide detailed measurement and sampling protocols for clarity and consistency.
- Reduce ambiguity with objective acceptance criteria.
- Continues Inspector independence to reduce bias or conflict.

- Support impartiality through Type A independence under ISO/IEC 17020 protects inspectors from conflicts of interest ensuring unbiased inspections.

How These Standards Help Inspectors (cont.)

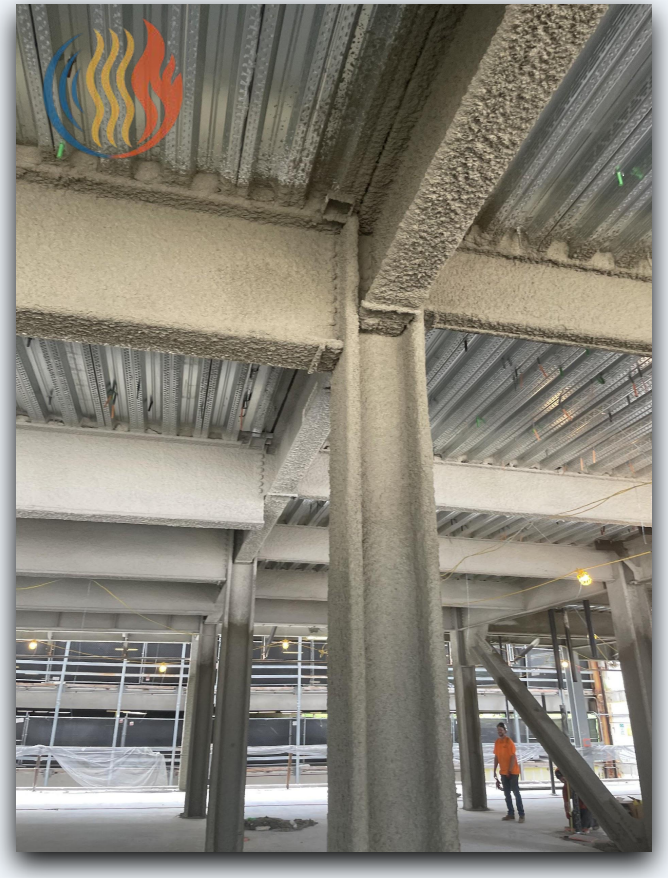
- Define clear sampling & testing rules specific to each material system.
- Standard forms and report requirements enable consistent documentation across projects, improving record accuracy.



How These Standards Help Applicators & Installers

- Clear expectations up front via complete inspection documentation.
- Predictable inspection scheduling that won’t interfere with installation.
- Faster feedback from inspectors through streamlined reports

How These Standards Help Applicators & Installers (cont.)



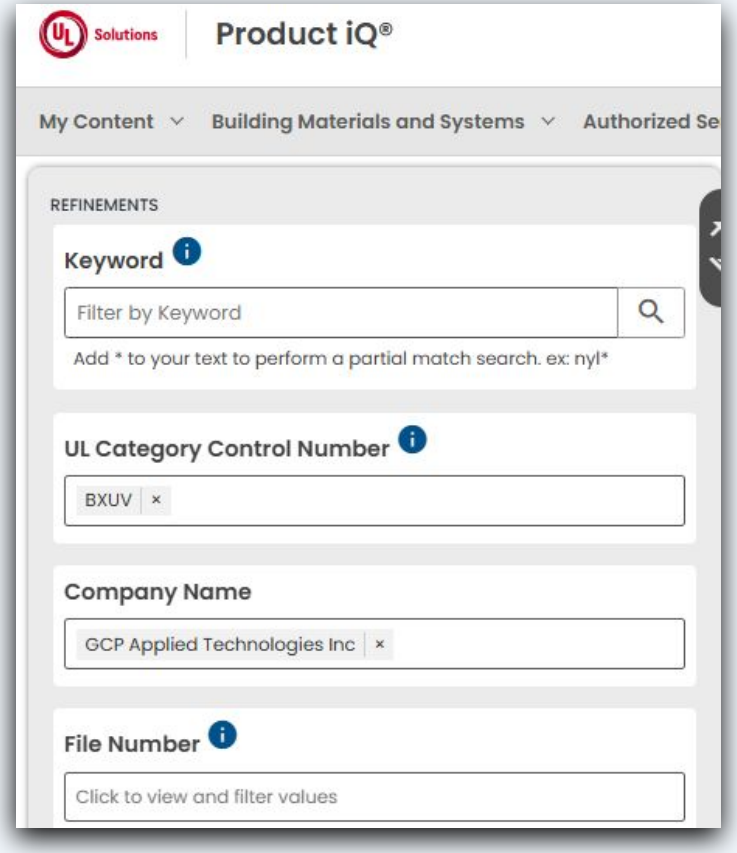
- Isolated non-conformances reduce rework to the specific failing elements.
- Continues Inspector independence to reduce bias or conflict.
- Reduced disputes with GCs/AHJs due to structured, defensible documentation.

Fire-Resistance Ratings and Listed Designs

- Fire-Resistance Ratings Defined
- Ratings are determined by standardized lab tests measuring fire endurance and structural integrity over set durati
- Impo
- Only ng teste ble fire p compliance.

Fire-Resistance Ratings and Listed Designs (cont.)

- Handling Deviations and Engineering Judgments
- Substitutions or changes require expert evaluation to verify continued safety and performance.
- Inspection Practices for Compliance
- Inspectors verify labels,



Implementation Recommendations

- Building Codes – Created to be immediately adopted into model building codes, such as IBC. These practices can be specified by project teams even if not an IBC requirement.
- Pre-Construction Coordination - Conduct pre-construction

Implementation Recommendations (cont.)

- Ensure Inspector Credibility - Select inspection bodies compliant with ISO/IEC 17020 and ASTM E2833 to maintain independence and competency.
- ISO/IEC 17020 - is an international standard specifying requirements for the competence, impartiality, and consistency of bodies performing inspections. It applies to Type A, B, or C inspection bodies across various sectors (e.g., manufacturing, construction, cybersecurity) to ensure credible

Summary

- Encourages integration of standards into professional practice to advance fire safety and construction quality.
- The standards follow recognized international principles, positioning them for widespread industry integration and acceptance.
- Standards will evolve by incorporating feedback from inspectors, specifiers, and code officials to improve quality and address new materials.