

FIREPROOFING & ENGINEERING JUDGEMENTS EXTRAPOLATION, INTERPOLATION

Herbert W. Stansberry II

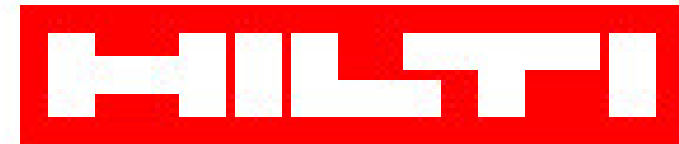
Program Manager, Building & Construction

Thanks Members...

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NFCA SILVER Sponsors



Thanks Members...

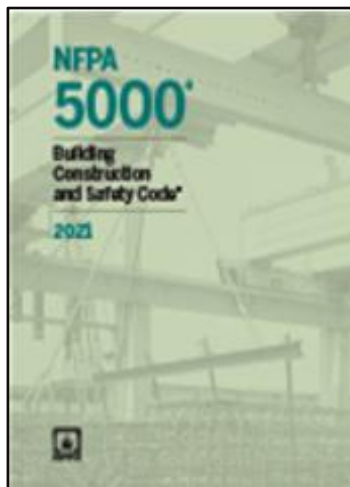
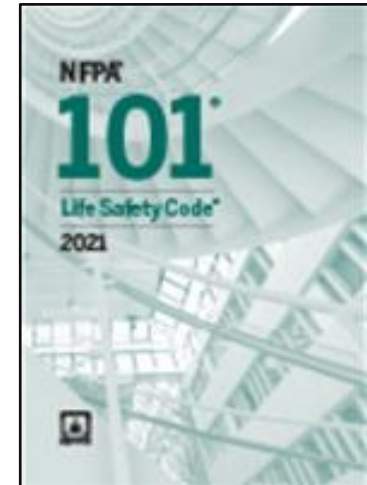
- NFCA Contractors
- NFCA Associates
- NFCA Manufacturers

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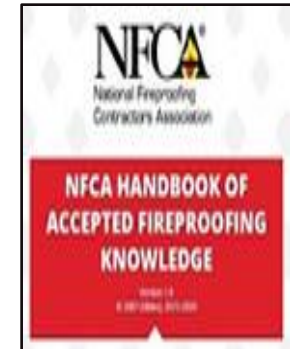


NFCA @ ICC, NFPA, Canada CDP



What Does NFCA Provide?

- **Fireproofing Education & Exams**
 - World-Class SFRM & IFRM Fireproofing Instruction
- **NFCA Contractor Accreditation Program for IFRM & SFRM**
 - Educated fireproofing Companies
- **Week of Learning - Educational Conference**
 - Network with top Fireproofing Contractors, Manufacturers, Associates
 - A forum for suppliers and contractors to learn from one another
- **NFCA 100-400 Standards** for quality and life safety
- **Technical expertise, Standards and Code development**
- **Fireproofing Handbook of Fireproofing Knowledge**
- **NFCA Website** to find Fireproofing Leaders – www.NFCA-online.org



What does NFCA Do?

- NFCA @ ICC Codes...
 - 2021/2024 SFRM/IFRM Proposals...
- NFCA @ ASTM Task Groups - Fireproofing
- NFCA @ NFPA Fire Protection Features
- NFCA @ AISC, AISI, CSI/CSC
- NFCA @ National Codes, Canada – NBCC, NFCC
- NFCA @ American Institute of Steel Construction & American Iron and Steel Institute
- Industry Articles
 - Thermal Barriers, Patching, more...
- NFCA @ SFPE/ASCE Meetings
- NFCA requests IAS add NFCA Fireproofing Exam
- NFCA Committee ACTIONS
- NFCA International



NFCA Contractor Accreditation Program

- **NFCA LIVE & VIRTUAL FIREPROOFING EDUCATION/EXAMS**
 - Contractor Designated Responsible Individual
 - Focus on Fire-Resistance & Fireproofing
 - 2024 August VIRTUAL
 - 2025 Week of Learning –
 - Omni Interlocken, Broomfield, CO
 - March 31-April 4, 2025



Contractor Qualifications – Step 1

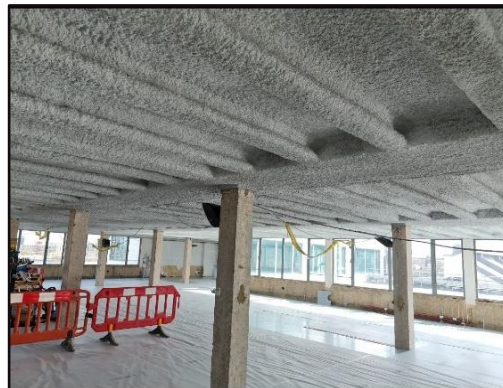
NFCA Contractor Accreditation Program (CAP)

- Fireproofing Education & Exams
- Commitment to Fireproofing Installation
- NFCA Accreditation “seal” - Registered NFCA mark



Contractor Qualifications – Step 2

- **UL Qualified SFRM Fireproofing Contractors**
 - **NFCA Education**
 - NFCA HAFK, DRI
 - UL Program Guide, Product iQ
 - **NFCA SFRM Fireproofing Exam**
 - **Management System**
 - **UL Audits –**
 - Office
 - Field

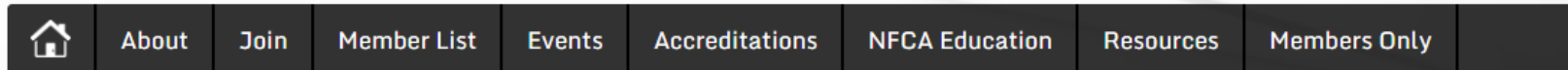


NFCA CAP & UL Contractors

- Successful Contractor meeting requirements
- Listed @ NFCA-Online.org



800 Roosevelt Rd, Bldg C- 312
Glen Ellyn, IL 60137
P 708-236-3411
F 708-449-0837
info@nfca-online.org



ABOUT

- Join
- Contact
- Board
- Committees

MEMBER LIST

- Contractors
 - NFCA IFRM Accredited Contractors
 - NFCA SFRM Accredited Contractors
 - NFCA Contractors
 - Interim Members
 - UL Qualified Contractors

NFCA Contractor Members

NFCA Contractor Members have completed a minimum of 2 years and 20 jobs in the passive fireproofing business. NFCA Interim Contractor Members have not yet fulfilled these requirements.

Sort by Company

Sort by State

Member's First Letter:



CONTRACTORS OPERATING IN...

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Guam
- Hawaii

Beams, Floors & Fire-Resistance Full Scale, Load Applied VIDEO...

SHORT
VIDEO

The NFCA represents **fireproofing contractors** and **manufacturers**, **equipment suppliers**, **inspection agencies**, who install, inspect or provide passive fire protection for structures as required by

preservation of the safety. Member **fireproofing contractors** install **Sprayed Fire-Resistive Material (SFRM)**, **Intumescent Fire-Resistive Material (IFRM)**

products to complex listings and manufacturers instructions.

The NFCA works to improve the proper use and application of fireproofing products through development of standard practices and educational programs for the industry.

[Learn more about NFCA](#)

LONG
VIDEO

BUILDING CODES & FIRE TESTING - The Building Codes require horizontal fire-resistance-rated assemblies to be full-scale tested (12' x 14', approx 3m x 4m) with a load applied where a load is expected. Why? Small-scale horizontal fire testing does not allow for a load to cause deflection of the assembly. **Small-scale fire testing for horizontal assemblies and without a load applied does not reflect real world conditions and is not safe, unless there is NEVER going to be a load applied in the field.** [Learn More](#)

FREE FIREPROOFING EDUCATION- NFCA's Fire-Resistance FIREPROOFING WEBINAR RECORDING- Get a detailed look at structural fireproofing and the acceptance criteria needed for approvals and substitution requests. Check out this program on fire test standards ASTM E119, UL 263 and CAN/ULC-S-101. Testing products - in a full scale furnace with loads applied where applicable - proves fire-resistance. [FREE NFCA Fire-Resistance Education PPT Slides](#)

Feb. 9, 2024 - Want to know what's going on in Fireproofing Industry that affects your business? Be IN THE KNOW by attending the [NFCA Week of Learning '24?](#) [Book your hotel room today!](#) Group rates expire Feb. 12! [Email us](#) if you don't get NFCA's Rate.

Feb. 7, 2024 - Want to know who's going to be at the [NFCA Week of Learning '24?](#) [Check out the attendees!](#) (Don't see

NFCA Membership

- Thank you NFCA Members – You make NFCA programs possible!
- **Not a Member? Join Now!**
- Annual Contractor Membership \$1495
- **NFCA CAP SFRM / IFRM Program**
- **UL Qualified Fireproofing Contractor Program**
- Contact info@NFCA-online.org for an application
- **NFCA Membership is an investment in your company and your industry**



NFCA Fireproofing Class

FIREPROOFING & ENGINEERING JUDGEMENTS EXTRAPOLATION, INTERPOLATION

Herbert W. Stansberry II

Program Manager, Building & Construction

BRIEF BIO HERBERT S. STANSBERRY II



- Program Manager at Intertek's Elmendorf, Texas testing facility
- First involved in fire testing in 1990, with Omega Point Laboratories
- Conducted standardized fire tests to include; ASTM E84 tunnel, furniture and room calorimetry, fire resistance testing of building materials of all types, testing for nuclear power plant installations, ISMA
- Primary role is the technical oversight and exploration/expansion of the laboratory's test programs and capabilities, standards development and Business Development
- Worked in the commercial construction industry as a system integrator with over a decade of experience engaging and/or partnering with facility owners, architects, specifying engineers, AHJs, inspectors and commissioning agents.
- Currently active in ASTM Committee E05 on Fire Standards, serving as the Chairman of Subcommittee E05.11 on Fire Resistance, Subcommittee E06.21, ISO TAG TC92 / SC 2, serving as TAG Vice-Chair, and sit on eight UL Standards Technical Panels.

SESSION OVERVIEW

FIREPROOFING & ENGINEERING JUDGEMENTS/EXTRAPOLATION, INTERPOLATION

1

Take a tour of the Intertek Online Directory

2

What is an Engineering Judgement (EJ)?

What does an EJ do?

When is an EJ needed?

3

When can an EJ extrapolation and interpolation be used?

4

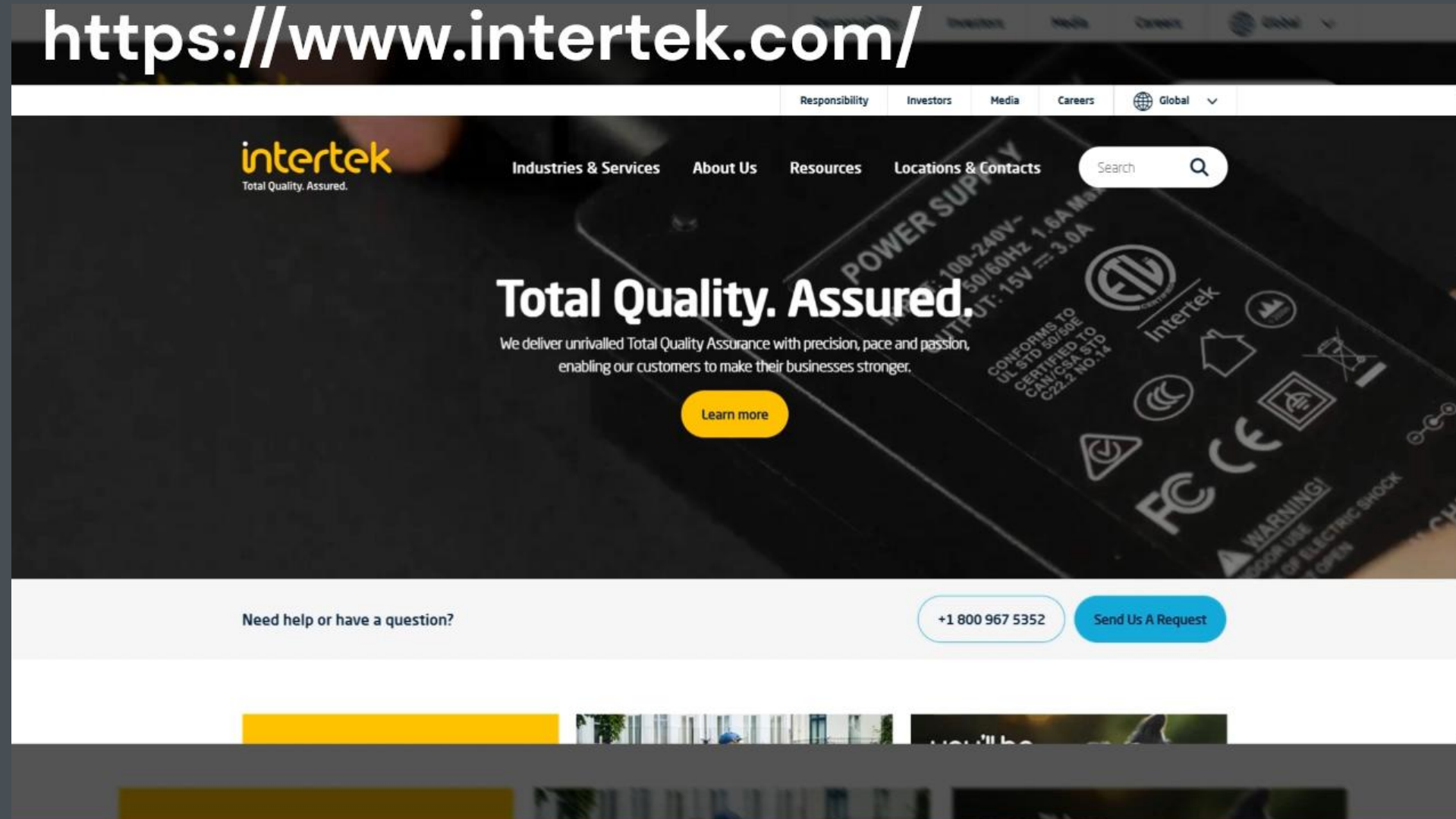
Why is an EJ extrapolation not possible with IFRM's?

5

Who should be writing EJ's



TOUR OF INTERTEK DIRECTORY OF LISTED PRODUCTS

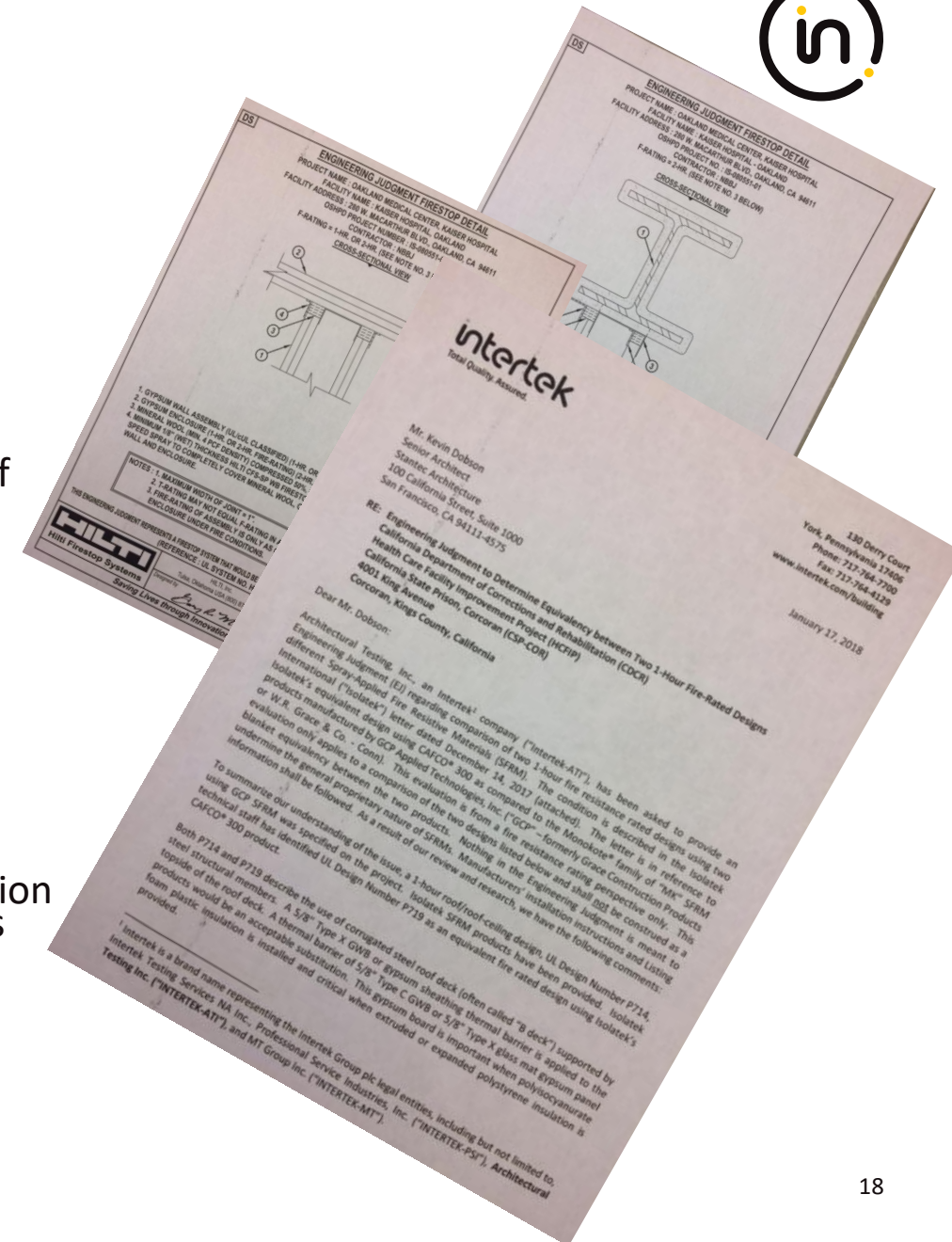




FIREPROOFING & ENGINEERING JUDGEMENTS EXTRAPOLATION, INTERPOLATION

ENGINEERING JUDGMENTS (EJ)

- Required when field conditions differ from original design
- Serves as a proposal of alternate methods that ensure that the performance of the protection system is not compromised
- Must be developed using sound engineering principles and good judgment
- Must be based upon full knowledge of the elements of the construction to be protected
- Must be based on an understanding of the expected behavior of the construction and the recommended protection system protecting that construction if it was tested in accordance with the appropriate Fire Test Standard for the rating indicated on the EJ





FIREPROOFING & ENGINEERING JUDGEMENTS

EXTRAPOLATION, INTERPOLATION

General EJ Guidelines:

- Limit the EJ to only the specific conditions and configurations upon which it is rendered
- Base the EJ upon reasonable performance expectations for the recommended protection system under those conditions
- EJ will apply for only for a single, specific job and project location and should not be transferred to any other job or project location
- EJ should be based upon interpolation or extension of previously tested systems that are sufficiently similar in nature or clearly bracket the conditions upon which the judgment is to be given.
- Technical interpretations should be based upon accepted engineering principles, fire science and fire testing guidelines such as ASTM E 2032 – Standard Guide for Extension of Data From Fire Resistance Tests Conducted in Accordance with ASTM E 119 or other similar data extension guiding documents.



FIREPROOFING & ENGINEERING JUDGEMENTS

EXTRAPOLATION, INTERPOLATION

INTERPOLATION?

- Most industry recognized data analysis methodologies used in certification schemes provide guidance on the selection of test programs to cover the desired field of application. These details include:
 - Minimum and maximum sample section factors
 - Minimum and maximum protection DFT
 - Range of expected Fire Resistance Rating periods
 - Means of proof of stickability of material during deflection
 - Guidance on interstitial sample selection between 'anchor' points at the corners of data set

EXTRAPOLATION?

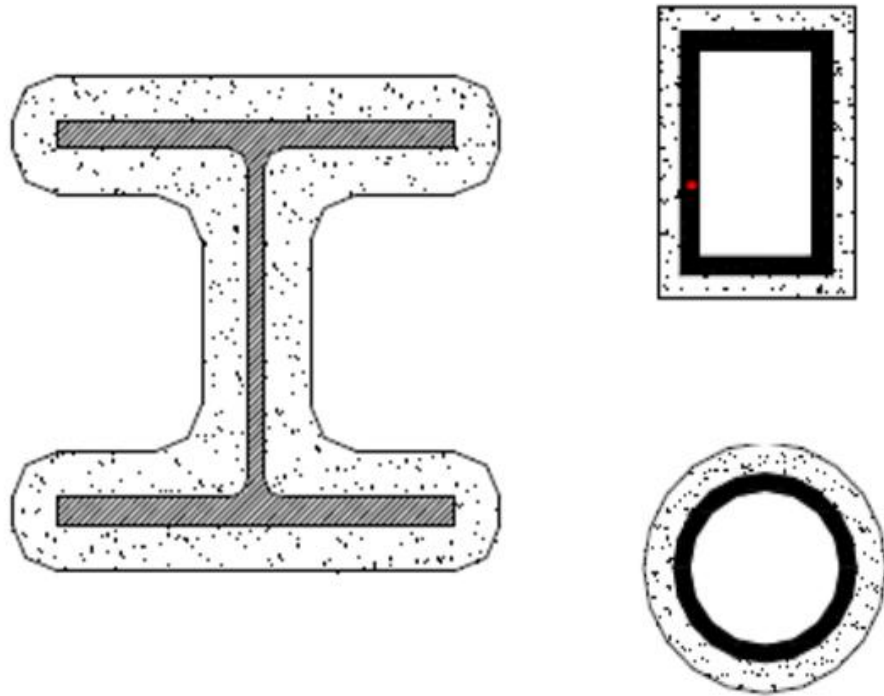
- Most industry recognized data analysis methodologies prohibit the ability to extrapolate applied protection thickness and section factor representation.
- IFRM systems are reactive and offer protection by way of the formation and growth of char layers in response to fire exposure.
 - These systems can be sensitive to effects that limit such growth, including excess thickness. These systems should never be installed at thicknesses greater than as listed and tested, especially in horizontal (beam) applications.

FIREPROOFING & ENGINEERING JUDGEMENTS

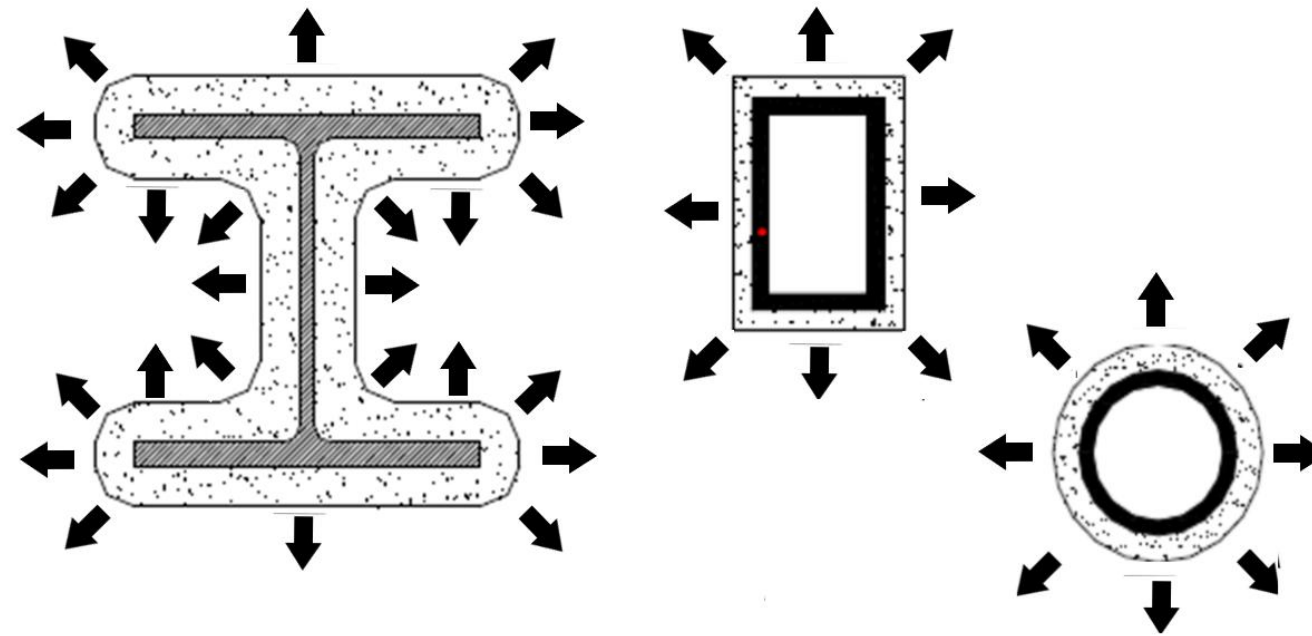
EXTRAPOLATION, INTERPOLATION



SFRM Applications – Dimensionally Stable in Fire



IFRM Applications – GROW in Fire





FIREPROOFING & ENGINEERING JUDGEMENTS

EXTRAPOLATION, INTERPOLATION

General EJ Guidelines – Who should issue EJ's?:

- EJ should only be issued by:
 - An applied fireproofing system manufacturer's qualified technical personnel or,
 - In concert with the manufacturer by:
 - A knowledgeable registered Professional Engineer,
 - A Fire Protection Engineer, or,
 - An independent testing agency that provides listing services for applied fireproofing systems

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Total Quality. Assured.