

NFCA Contractor Accreditation
Program

&

UL Qualified Spray-Applied Fire
Resistive Material Contractor
Program

“What’s the Big Deal?”



Bill McHugh, NFCA
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UL Qualified
Fireproofing
Contractor
Program
Management
System
Requirements

Outline for Today

- NFCA Handbook of Fireproofing Knowledge
- Management System – General, Why?
- 1-Construction Document Requirements & Review
- 2-Procurement of SFRM
- 3-Storage, Handling, Delivery
- 4-Installation, Application, Field Quality
- 5-Inspection, Testing & Calibration
- 6-NonConforming
- 7-Training & Qualification of Staff
- 8-Corrective & Preventative Action
- 9-Management System Monitoring & Improvement
- 10-Documentation & Record Keeping

NFCA Handbook of Fireproofing Knowledge

- **Chapter 1 General Information**
- **Chapter 2 Standards for Fireproofing Building Construction**
- **Chapter 3 Standards for Fireproofing Petrochemical Facilities**
- **Chapter 4 Code Requirements for Fireproofing**
- **Chapter 5 Understanding the UL Product iQ Online Directory**
- **Chapter 6 Installation Considerations Common to Sprayed Fire-Resistive Materials and Intumescent Fire-Resistive Materials**
- **Chapter 7 Installation Considerations for Sprayed Fire-Resistive Materials**

NFCA Handbook of Fireproofing Knowledge

- **Chapter 8 Installation Considerations for Intumescent Fire-Resistive Materials**
- **Under Development**
 - **Quality Management Systems**
 - **Reference Materials - Glossary**
 - **Expanded Material Descriptions—SFRM, IFRM, Boards, Wraps - Product Type Descriptions, Advantages, Disadvantages, Limitations**
 - **NFCA Standards on Boards, Wraps**
 - **Fireproofing Project Management**
 - **Glossary & Acronyms**
 - **Canada Standards Chapter**
 - **Special Chapter—NFCA Contractor Accreditation Program & UL Qualified Fireproofing Contractor Program**
 - **Expanded Inspection Chapter**
 - **Fireproofing Issues and Answers**
 - **Expanded Section on UL 1709 Fire Testing**

Management System - General

- **Management System (MS)** — Management systems to direct and control an organization with regards to quality (includes organizational structure, responsibilities, procedures, processes, and resources).
 - Required
- **Management System Manual** — Document Specifying the Contractor's Management System.
 - Required
- **Designated Responsible Individual – (DRI)** – Employed by the Contractor, meets requirements.
 - Required

Management System - General

- UL Qualified Spray-Applied Fire Resistive Material Contractor Program
 - Contractor that has been determined by UL to comply with the applicable Program Requirements.
 - **SFRM's Now**
 - **IFRM, Boards, Wraps – Next...**

Why UL QFCP??

- **Why UL Qualified Spray-Applied Fire Resistive Material Contractor Program?**
- **Fireproofing Focused Program**
 - Tested and Listed Systems Designs
 - Manufacturers Instructions
 - Industry Protocols
 - NFCA CAP Required
 - NFCA DRI

Management System - General

- **Why UL Qualified Spray-Applied Fire Resistive Material Contractor Program?**
- **Tool to Differentiate Fireproofing Contractors**
 - What Tested and Listed Systems Designs?
 - Branding – UL's Billion Dollar Mark
 - Some Specs Require
 - MasterSpec
 - Random Specifications
 - Possible Code Proposals
 - Better Quality Processes
 - Look Inside Your Company = Process Improvements
 - Reliable Fireproofing = Defence against Trade Offs

Management System - General

- **Management Policy – Sample**

- It is the policy of this [NFCA Contractor] management that applications of Fireproofing (SFRM, IFRM, Boards, Wraps) shall be in accordance with project specifications which communicate building code & regulatory requirements to the company.
- Company procedures and personnel are in place to ensure that applications in fact conform to those specification and customer requirements. The operations are documented with written reports, where needed.

- **Maintenance of Quality Control System – Sample**

- The Company shall maintain this Management/Quality Control System Manual and shall revise and update its content with modifications as needed.

1-Construction Document Requirements & Review

- The Contractor shall have defined processes for communicating the requirements for SFRM installations.
 - Office
 - Field
 - As-Built Documentation
 - Office Records
 - Keep for 7 Years, or as regulated

1-Construction Document Requirements & Review

- The Contractor shall review applicable construction documents (architectural drawings, structural drawings, project specifications), project scope, applicable published systems and designs to determine the type of Certified product or products to be used, the Fire Resistive Design specified for the project, to identify any inconsistencies, and to adequately define and understand all requirements..
- *It is the design professional's responsibility to communicate whether the project was designed using restrained or unrestrained criteria in the construction documents.*
- Review Drawings & Specs
- Communicate Changes
- If no Specs, Communicate Scope to Customer

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2-Procurement of SFRM

- The Contractor shall have defined processes and capability for verifying that purchased product conforms to specified requirements.
 - Record of Supplier Selection, Evaluation, Re-Evaluation
 - Record of Corrective Actions
 - Record of Project Materials Purchased, Shipped
 - Receipt Verification

2-Procurement of SFRM

- A record of all material purchased or shipped for each project shall be maintained showing the following:
 - **Supplier Name, Location**
 - **Product Name, Type**
 - **Approval Agency & Product Label**
 - **Quantity**
- A record shall also be maintained showing
 - Material non-conformances,
 - Disposition of bad material,
 - Corrective actions - the reason for such deviation.
 - If the nonconforming material was installed, a disposition needs to be addressed.

4-Installation, Application & Field Quality Assurance Procedures

- The Contractor shall use NFCA 100 – “Standard Practice for the Application of Spray-Applied Fire Resistive Materials (SFRMs)”
 - Field Installation Procedure
- The Contractor shall use NFCA 200 – “Field Quality Assurance Procedure for Application of Spray-Applied Fire Resistive Materials (SFRMs)”
- Manufacturers Installation Instructions
- Establish QC tests performed during application,
- Establish OWN frequency for tests, equipment and calibration procedures.

4-Installation, Application & Field Quality Assurance Procedures

- The Contractor shall maintain a record of...
 - Field application test results – PASS/FAIL ONLY.
 - Repairs in accordance with manufacturers instructions, listed designs and NFCA 200.

5-Inspection, Testing and Calibration

- Self Inspection
 - Contractor Personnel, Inspection Agency
 - Contractor Established Frequency, Conformance
 - Destructive or Non-Destructive Testing in place or Mock Up Samples
 - Verify Requirements Fulfilled – MII, Tested and Listed Designs
- Retain Self Inspection Records

5-Inspection, Testing and Calibration

- Understand 3rd Party Inspection/Testing Requirements
 - Code Required Special Inspection –
 - ASTM Standards
 - International Building Code Ch. 17
 - Others, (i.e. Civil Defence) if applicable.
 - Retain Inspection Records, if provided
 - Record of Repairs due to Nonconformances

5-Inspection, Testing and Calibration

- Testing Equipment/Calibration
 - Contractor Selects Inspection Equipment, Monitoring Devices
 - Maintain for self inspection of work.
 - **Shall be calibrated with device traceable to national standard**
 - Adjusted or Readjusted where necessary
 - Safeguarded from adjustments that invalidate the results.
 - Protect Equipment, Monitoring Devices from Damage
 - Handling, Storage, Maintenance
 - Assess and record validity of measurement results if nonconformances appear.

6-Controlling Nonconforming SFRM

- UL Definition
- *Nonconformity* - Nonfulfillment of a requirement, including any issue identified and documented by the UL Auditor during the audit process that reflects deviation from the Program Requirements.
 - Minor – Not likely to result in failure of MS
 - Major –
 - Total Breakdown of MS
 - Lots of Minor = Major
 - Safety Risk
 - Shipment of Nonconforming Material
 - Results in Failure of MS to Control Processes
and comply with Tested and Listed System Design

6-Controlling Nonconforming SFRM

- Nonconforming SFRM's – The Material...
 - Identification & Control of Nonconforming SFRM's
 - Prevent Unintended Use or Delivery – Markings
 - Identify Who's Responsible –
 - Field Sup't? Foreman? Workers? PM?
 - Records of *Nature of the Nonconformance* Maintained
 - Nonconforming material shall be set aside for Disposition
 - Isolate & Mark
 - Jobsite
 - Contractor Warehouse

6-Controlling Nonconforming SFRM

- SFRM Nonconformity - Test results
 - Corrections in accordance With
 - Tested and Listed System Designs
 - NFCA 200
 - Possible Repair or Replacement of Applied SFRM.
 - A record of corrective action @ project location shall be maintained in the project file.

6-Controlling Nonconforming SFRM

- Management System Nonconformances
 - Audit Discovery
 - Corrective Actions
 - Communicate – UL & Contractor

7-Training & Qualification of Staff

- The Contractor shall determine and provide the resources needed to implement and maintain the Management System and fulfill requirements for the installation of SFRMs in accordance with requirements.
- Personnel performing SFRM material selection, material installation, inspection, and/ or testing shall be competent....

7-Training & Qualification of Staff

- The Contractor shall
 - Determine & Provide Resources
 - Maintaining Management System
 - Appoint competent Personnel
 - Material Selection, Installation, Inspection/Testing
 - Keep Training, Qualification, Evaluation Records
 - Determine Personnel Roles, Skills
 - Designate **at least one** NFCA CAP DRI:
 - DRI's Pass NFCA Exam with a minimum of 80%.

7-Training & Qualification of Staff

- One or More **NFCA SFRM CAP DRI's** @ Each Contractor Office Location
 - Demonstrate Proficiency - Exam
 - Employed by Contractor
 - Oversight & Documented Management System Responsibility
 - Responsible for
 - Determining Staff Education Levels, Training
 - Contractor Fireproofing Expert/Resource
 - Records of Training, Qualification...

7-Training & Qualification of Staff

- NFCA Fireproofing Exams
 - NFCA Handbook of Accepted Fireproofing Knowledge
 - NFCA 100 - SFRM
 - NFCA 200 - SFRM
 - **UL Qualified Spray-Applied Fire Resistive Material Contractor Program**
 - **Soon, IFRM, Boards, Wraps**

7-Training & Qualification of Staff

- **NFCA SFRM CAP DRI Requirements**
 - Verification that the contractor's DRI has **Passed the NFCA SFRM Fireproofing Exam & employed at an NFCA Accredited Contractor.**
 - The DRI shall receive specific training in appropriate areas and shall demonstrate his/her knowledge level by passing the initial Fireproofing Exam with a minimum score of 80%.
 - The DRI shall maintain CEU's – 1 CEU = 10 hours
 - UL QFCP – 6 CEU's - 60 Hours, every 3 years.
 - NFCA CAP – 30 hours, every 3 years.

7-Training & Qualification of Staff

- NFCA DRI Requirements – Hours –
 - Instruction @ Industry Events - Limited to 20 hours
 - NFCA Membership – 10 hours
 - NFCA Conferences
 - Fire-Resistance Educational Webinars – NFCA, Others
 - Building Codes
 - Loss Prevention
 - Life Safety
 - Construction Safety
 - University & Other Courses...
- **NFCA Administers DRI Program**
 - Report DRI CEU's to NFCA

7-Training & Qualification of Staff

- NFCA DRI's Contingency Plan
 - At Least One DRI Per Location...
 - If DRI Leaves Company...
 - Contingency Plan to ensure continuity if DRI is no longer employed by the Contractor.
 - Replace within 120 Days
 - Consider keeping two DRI's employed...

8-Corrective/Preventative Action

- The Contractor shall have a documented procedure for corrective and preventive action and use corrective action as a tool to address nonconformities and as a tool for improvement.
- Corrective actions should be focused on eliminating causes of nonconformities in order to prevent recurrence.

8-Corrective/Preventative Action

- Sources of information for corrective action should include
 - SFRM customer complaints,
 - process and product nonconformity reports,
 - audit results,
 - test results,
 - measurements and inspections,
- The Management System documentation shall include a procedure for:

8-Corrective/Preventative Action

- Reviewing Nonconformities (including test failures and complaints);
 - Determining the causes of Nonconformities;
 - Determining and implementing the actions needed to correct the nonconformity and prevent the nonconformity from recurrence;
 - Recording the results of actions taken;
- At a planned intervals...

9-Management System Monitoring & Improvement

- Management shall provide evidence of their commitment to the development and implementation of a Management System.
- This can be effectively achieved if management communicates to the Contractor Organization
 - Importance of meeting requirements;
 - Establishes a policy and related fireproofing objectives;
 - Defines and communicates organization personnel responsibilities and authorities
 - Conducts management reviews;
 - Provides adequate resources.

9-Management System Monitoring & Improvement

- Contractor Shall....
 - Continually improve MS effectiveness – Inspection Results
 - Data Analysis
 - Corrective and preventive actions,
 - Management review.
- DRI shall audit the MS – Is it being implemented?
 - Audits shall be planned
 - Audits focus on operations, previous strengths & weaknesses.
 - Staff Competency
 - Customer Feedback
 - Nonconformances
 - UL Feedback
 - Corrective/Preventative Actions
 - Previous Reviews

10- Documentation & Record Keeping

- DRI & Company Self MS Audits
 - Plans
 - Conducts
 - Reports audit results
 - Maintains audit records.
- DRI Reviews MS – Planned Intervals

10- Documentation & Record Keeping

- The Contractor shall have a documented system in place to define the controls required for:
 - Approval of documents for adequacy prior to use;
 - Review and update of documents;
 - Changes and identification of revision status of documents;
 - Availability of relevant documents at points of use;
 - Document identification;
 - Documents of external origin (identification and distribution control);
 - Prevention of unintended use of obsolete documents.
- Records are a special type of document that require specific controls:
 - Identification, Storage, Protection, Retrieval, Retention, Disposition).
- The contractor shall establish a documented system for the control of records.

10- Documentation & Record Keeping

- Included in the Management System documentation is a manual (or equivalent), which contains documented statements of a policy and objectives for fulfillment of requirements; procedures established for the Management System (or reference to them); documents needed by the Contractor for the effective operation of the Management System;
- Responsibilities, including responsibilities of the DRI.
- Records shall remain legible, readily identifiable and retrievable, and shall be retained for a period of 7 years or as required by code or government regulation.

10- Documentation & Record Keeping

- The following records shall be maintained, at a minimum:
 - Construction records, including scopes, contracts, systems designs , manufacturers installation instructions, and amendments;
 - Incoming material inspection;
 - Installation inspection and test records;
 - Equipment records including calibration when applicable;
 - Customer complaints records, with Corrective Action (and Preventative Action as appropriate);
 - Corrective and Preventive Action records;
 - Non-conforming material records;
 - Staff education, training competency evaluations and training effectiveness;
 - DRI Audits;
 - Management review records.

10- Documentation & Record Keeping

Questions ?

UL Qualified Spray-Applied Fire Resistive Material Contractor Program

- **NFCA Free Webinar Series Upcoming Dates:**
 - **Wednesday, June 24: Fireproofing Board – Advantages, Disadvantages & More,** presented by Matt Auchy and Daryl Orlich, Albi Protective Coatings
 - **Thursday, July 23: Intumescent Fireproofing,** presented by George Guanci, The Sherwin Williams Company
 - **Register at www.NFCA-online.org**

- **NFCA 2020 Fireproofing Educational Conference POSTPONED ... Stay Tuned**





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National Fireproofing
Contractors Association

NFCA FREE Webinars

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Reference Documents & Record Forms

Attached as appendix materials are:

- Appendix A: NFCA 100 & NFCA 200
- Appendix B: ASTM Standards
- Appendix C: AWCI 12-A
- Appendix D: Record Keeping Forms

Record Keeping Forms

- Forms Included in Word Document As Part of This Training Manual Section
- CD Contains Word Document of Quality Management Manual Developed by NFCA

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