



IAQ RADIO+

Show Number: 746 Blog

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Rusty Amarante-Guest Co-host

## ANSI/IICRC S700 Standard for Fire and Smoke Damage Restoration

Good day and welcome to the IAQ Radio+ episode 746 blog. This week we welcomed S700 Consensus Body (CB) Chair Bran Lynch, Vice Chair John Pletcher, “Restoration Renaissance Man” Mark Springer and CB member Cliff Zlotnik. We also welcomed special guest Co-host Rusty Amarante for a look behind the scenes at the development of the ANSI/IICRC S700 Standard for Fire and Smoke Damage Restoration.

Guest Bios:

**Bran Lynch** has been in the property restoration business for over 25 years and is happy to be known as a utility player within BELFOR. He has worked as everything from warehouse helper, to senior project manager to expert witness. He is the S700 Chair the consensus body for the duration of the S700 development.

**John Pletcher** has 40 years in the disaster restoration industry. He is the Owner / operator of RestorTech in Herndon, VA for 34 years now. He is the Vice chair of IICRC S700 2019 – 2024. John was the RIA Martin L. King Award winner 2022.

**Mark Springer** is a highly regarded and experienced President/CEO skilled in successfully expanding a multi-location residential and commercial services company across a broad geographical region. He is RIA Past President and was instrumental in helping IICRC and RIA coordinate together to put this standard together.

**Cliff Zlotnik** needs no introduction and today’s co-host is **Rusty Amarante** President at Belfor Franchise Group.

### Meeting summary for IAQ Radio (01/17/2025)

#### Quick recap

- S700 is now available.
- 13 years in the making, the release of S700 culminates a truly historic and highly

successful collaborative effort between RIA and IICRC.

- The Consensus Body was comprised of appointees from both RIA and IICRC.
- Bran Lynch and John Pletcher were the chairs.
- A special shout out to Sheldon Yellen and Rusty Amarante from BELFOR; who were highly supportive to the efforts providing Larry Holder, Bran Lynch and Tom Yacobellis many hours of time away from work to work on the documents.

## **Summary**

### **ANSI/IICRC S700 Standard Presentation**

#### **S700 Standard Development and Alignment**

Rusty, Cliff, Mark, John, and others discussed the history and development of the S700 standard. Cliff explained that the predecessor documents to the S.700 standard began with a document in 1997 called "NIDR guidelines for fire and smoke damage repair" written by Martin King. The second edition was peer-reviewed and expanded. Mark discussed the concerns about having two fire standards in the industry and the efforts to align with IICRC. The RIA board initiated discussions with IICRC, leading to an agreement in 2019 where RIA sold its intellectual property from FS1 and FS2 to IICRC. The collaboration first resulted in the publication of Covid guidelines. The team expressed excitement about finally having a fire damage standard.

#### **Fire and Smoke Restoration Guidelines**

The S700 Standard provides guidance on restoring properties after fire and smoke damage. It focuses on assessing the extent of the damage, prioritizing mitigation efforts, removing residues from surfaces and contents, managing odors, and evaluating the success of the restoration project. The standard emphasizes the qualifications required for professional restoration contractors and aims to establish a consistent approach to fire and smoke restoration work. Key points include reading the appendices first for foundational information, determining the boundaries of the affected areas, using appropriate cleaning methods from gentle to aggressive as needed, and the importance of effective odor management for any remaining odors before completing the project.

#### **Fire Damage Restoration Principles Discussed**

The restoration team discussed the foundational principles guiding their fire damage restoration standard. Bran outlined that restorers use targeted sampling and test cleaning to determine the appropriate cleaning methods, which are site-specific combinations of products and processes. John emphasized that while firefighting is associated with occupational diseases, there is no known link between restoration work and diseases in restorers following proper safety protocols. The team highlighted that indoor air sampling cannot definitively identify fire-related contaminants due to ubiquitous background sources. The key criteria for project completion are the absence of visible residues and odors, determined through inspections involving the client. The principles aim to provide a rational, evidence-based approach to fire restoration without arbitrary clearance criteria.

## **Project Completion and Restoration Standards**

The guests and hosts discussed the completion of a project based on the confirmation of the scope of work and client acceptance. They also discussed the importance of client participation and acceptance in the project. The discussion pivoted to discuss the role of well-trained and experienced restorers in developing and managing a restoration work plan. They also touched on the issue of wildfires and how they are covered in the standard. The team expressed gratitude for the hard work and dedication of the consensus body members, and acknowledged the critical role of staff members like Mili Washington and Brandon Burton. The conversation ended with a discussion on the odor section of the standard and its potential benefits for the industry.

## **Global Restoration Watchdog Pete Consigli recalls the Evolution of Fire Restoration Standards**

" The summary focuses on the origin story and evolution of fire restoration standards according to Pete's recollections."

**Nuggets mined from today's episode:**

### **What is the history of IICRC S700 Standard for Professional Fire and Smoke Damage Restorations?**

#### Ancient History

1. NIDR guidelines for fire and smoke damage repair, 1997, National Institute of
2. Disaster Restoration, English, 1st Edition, 1997, written by Martin King, 135 pages. The first edition answered hundreds of questions regarding recommended fire and smoke damage practices and procedures.
3. NIDR guidelines for fire and smoke damage repair. 2002, National Institute of Disaster Repair, in English-2nd Edition Revised with comments from 300 reviewers. This edition was revised, expanded, and updated with a more extensive glossary and index.
4. NIDR guidelines for fire and smoke damage repair. National Institute of Disaster Restoration in English- United Kingdom edition. Credit to William Lakin, CR for anglicizing.

#### Modern History

Beginning in 2012 development work began on FS1. Significant contribution of volunteer time from: Mike McGuinness, Lee King, Larry Holder, Bran Lynch, John Pletcher and others went into the development of FS1 and FS2. Patti Harman was the editor.

***How did FS1 and FS2 morph into S700?*** The short story is that IICRC purchased the intellectual property within RIA's FS1 and FS2 documents. RIA and IICRC decided to collaborate on a uniform document rather than have competing documents with conflicting information and guidance. RIA was concerned about the stewardship of the work done on FS1 and FS2.

## *What topics are covered in the standard?*

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Section 7 Heating, Ventilation & Air-Conditioning (HVAC) and Air Conveyance Systems (ACS)

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Section 9 Fire and Smoke Damage Contents Restoration

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***What is the foundation of S700?*** The S700 is built upon 9 Foundational Principles:

- 1. Chemicals from a combination of indoor and outdoor sources are ubiquitous and present in background soils and dust found on the interior of buildings. There are no standards to distinguish concentrations measured in fire-damaged homes from normal background levels. Without pre-loss baseline testing of a property to establish which contaminants were present prior to the fire, it is not possible to determine the specific contaminants created and deposited directly as the result of the fire.
- 2. Restorers use targeted sampling (e.g., wipes, cellular sponges, or cosmetic sponges) combined with an olfactory inspection to rule-in or rule-out the presumptive presence or absence of fire-related residue and odor and to establish the boundaries of fire-related damage in a building.
- 3. Restorers use pilot test cleaning of fire residues on surfaces to determine the most effective cleaning products and processes that yield the most successful results.
  - combined with an olfactory inspection to rule-in or rule-out the presumptive presence or absence of fire-related residue and odor and to establish the boundaries of fire-related damage in a building.
- 4. The project-specific combination of restorative cleaning products and processes is designed to effectively remove fire-related residues and odors in addition to pre-existing residues, and dust. These products and processes generally leave conditions better than pre-loss. As restorative cleaning

physically removes soils and fire-related residues; Volatile Organic Compounds (VOCs) and other fire-related contaminants residing in smoke residues are also removed.

- 5. While there is a known association between firefighting and occupational disease in firefighters; there is no known association between fire and smoke damage restoration work and occupational disease in restorers working in cold fire scenes. As documented in this Standard, restorers are required by Authorities Having Jurisdiction (AHJ) to provide employees with appropriate training, PPE (Personal Protective Equipment), and engineering controls to reduce risks from hazardous substances which may release during and after a fire. Restoration firms have a long history of managing occupational exposures and have earned commensurate rates with workers' compensation insurers.
- 6. Indoor air typically contains chemicals from occupant activities, consumer products, building materials, and outdoor (ambient) air. Indoor air samples collected for site-specific assessment after a fire will detect chemicals from these sources as well as temporary off-gassing from products used during restoration and reconstruction activities (e.g., new building products, paints, etc.). Therefore, chemical or VOC air sampling following a fire for fire-related contaminants cannot be relied on to draw conclusions with respect to restoration, ongoing exposure, and health risk.
- 7. Development of disease is multi-faceted, and the relationship between environmental contamination, exposure, and disease is complex. The presence of a contaminant in the environment alone does not mean disease will occur. Therefore, basing project clearance on contaminant-measured concentrations is inconclusive and *should* be considered arbitrary
- 8. The criteria for post-restoration evaluation (PRE) of the project is that surfaces and materials are free and clear of visible fire residues and no fire-related odors are detectable. Quality control is achieved through periodic (unaided) visual and olfactory inspection of the work performed on the building and contents and supplemented by client participation at critical phases and at the end of the project. Satisfactory completion of a project is based on confirmation that the scope of work has been completed and client acceptance
- 9. Well-trained and experienced restorers with a history of past performance obtaining satisfactory results are qualified to develop and manage a restoration work plan (protocol). In contrast, third-party individuals are not as effective in this role unless they are specifically trained and experienced in fire damage assessment and restoration methodologies.

***Why doesn't the acronym IEP appear in the S700 standard?*** The CB felt that the term IEP wasn't broad enough as it only dealt solely with environmental issues and decided to use the term Specialized Expert: a person or firm that performs functions beyond the knowledge base and core skill set of the restorer or restoration company. The CB felt compelled not to subordinate the restorer to IEPs or IAs who lack firsthand remediation experience and are inexperienced with remediation methods.

***What is the role of sampling and analysis on fire losses?*** Healthcare facilities, schools, factories, etc. In the event of disputes, unusual or ambiguous circumstances. Sampling and analysis may be triggered by a request from Materially Interested Party.

***Why do the 3 words "other than wildfires" appear in the Scope of S700?*** Development work on S700 began in advance of the IICRC's decision to create a wildfire standard. The word "wildfire" appears twice in S700 Scope, Purpose, and Application.

After development of IICRC wildfire standard began 3 words were added to the end of the sentence originally written as: “The fire event can occur within the building, an adjoining building(s), or building(s) in the vicinity impacted by an external or internal fire. The sentence now reads: “The fire event can occur within the building, an adjoining building(s), or building(s) in the vicinity impacted by an external or internal fire, other than wildfires. It is anticipated that the three words will be removed when S700 is revised.

***Is wildfire remediation guidance found in S700?*** There are multiple types of fires: synthetic, protein, natural, puffbacks, chemical, wildfire, etc. Each type of fire has some idiosyncrasies. The guidance provided by S700 is applicable to wildfires.

Wildfires are exterior fires and as such they are a subset of fire damage. Restorers’ job is to separate undesirable material from substrate.

## RoundUp

- Evolution of Fire Damage Restoration Standards. Global Restoration Watchdog and Historian Pete Consigli recalled the evolution of fire damage restoration standards, Pete provided historical context and recognized leadership and contributors. Mike McGuinness, CIH volunteered to chair of FS1.

Pete labelled the 2012 IESO/RIA 6001 Standard on Evaluating HVAC Systems After Fire Damage as a major milestone. Members of the IESO/RIA 6001 development team included: Davidge Warfield, Tom Yacobellis, Dan Greenblat, Bob Baker. Pete emphasized the importance of having diverse perspectives on standard development Boards; as reflected in a quote by William Cavanaugh Past ASTM President “the best standards are written at a table of balanced biases”.

- Future Consensus Body members to continue refining and improving the S700 standard based on implementation of feedback.
- Incorporation of relevant information from S760 wildfire standard into future S700 revision.
- Mark Springer will incorporate language from S700 into his advocacy efforts with insurance companies.
- S700 is the first IICRC standard to contain photos. IICRC decided to use black/white photos to lower sales cost of the document.
- Z-Man opined that the “patch testing methodology” will assist restorers by: improving quality control, aiding location of odor sources, dispute resolution.
- Comment from S700 CB member Ed Light, CIH. “Our new Standard represents a major advance in the IAQ field. Although smoke damage exposure and decontamination are one of the most serious and widespread issues impacting occupants, they have been ignored by

researchers. Involvement of CIH's/IEP's has generally been ineffective and often interfered with the efforts of knowledgeable restoration contractors. I was honored to be made part of the IICRC Committee. In conjunction with this work, I conducted a comprehensive review of the scientific literature related to this subject and related this to my field experience (starting with Marty King 30 years ago). Our findings are controversial with respect to the role of sampling, Although these are currently promoted by testing labs and scientific consultants, we found current sampling procedures and interpretation criteria to be inconclusive. In contrast, visual and odor evaluation procedures used by experienced contractors can provide the basis for a successful restoration plan and verification."

➤ FEMA HOMEOWNER WILDFIRE REMEDIATION GUIDANCE

[https://www.fema.gov/sites/default/files/documents/fema\\_marshall-fire-mat-homeowners-guide-risk-reduction-remediation-residential-smoke-damage.pdf](https://www.fema.gov/sites/default/files/documents/fema_marshall-fire-mat-homeowners-guide-risk-reduction-remediation-residential-smoke-damage.pdf)

*Z-Man Signing Off*

*Trivia:*

*Name the founder of the organization now known as the IICRC?*

*Answer: Ed York*

*Answered by: Don Weekes, CIH Ottawa, Ontario CANADA*