



International Fireproof Technology, Inc.

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Validating the Thickness of Field Applied Fire Protective Coatings

Lacking the requirement and defined criteria for inspections IFTI, the manufactures of DC315, understand the need to provide documentation to Code Officials/Inspectors and our contractors when using alternative materials. IFTI has worked to establish a method and means for applicators to complete the project in a way that provides the information and documentation to complete their inspection, and approve the assembly in accordance with Section 1703 "Approvals" and ICC-ESR 3702, Section 4.0 which I will outline below.

The applicator of DC315 completes our training and certification program with a passing grade on the exam. Once completed applicators are issued a "Certificate of Completion" to document to the code official the successful completion of this program. Our training program can be accessed here [Become a DC315 Certified Applicator](#)

In addition to training on the physical properties and installation requirements for our product, applicators are trained on the use of "Medallions" as a method to verify the applied thickness of the DC315 coating. This was established to provide a means to physically measure the coating thickness as there is currently no tool or device that can establish a dry film thickness of coating when applied over a non-ferrous substrate. The structural steel market uses a tool that uses Magnetic or Eddie current to establish the thickness on steel.

"Medallions" are the acceptable method of thickness verification found in ICC-ES AC456 "ACCEPTANCE CRITERIA FOR FIRE-PROTECTIVE COATINGS APPLIED TO SPRAY-APPLIED FOAM PLASTIC INSULATION INSTALLED WITHOUT A CODE-PRESCRIBED THERMAL BARRIER" as they provide a flat surface to take wet film thickness measurements using a wet film thickness gauge as well as provided retainable evidence of the applied thickness without having to complete destructive testing. (See attached "How to Measure Wet Film Thickness"). This can and should be used for all who want proof of correct installation and wet and dry film thickness of a coating. The thickness of the applied coating in all testing of DC315 assemblies listed in Tables 1, 2 and 3 of ICC-ESR 3702 have been verified using the Wet Film Method shown in AC456 Section 3.4.2. The associated Dry Film and Theoretical Application Rate shown in these tables have been calculated in accordance with Appendix A of AC456.

Using "Medallions" placed throughout the job site, the intumescent coating is spray applied and the applicator measures the applied wet film thickness of coating on the "Medallions" using the Wet Film thickness gauge and records it to our attached "Job Work Record".

Section 3.4.2 of AC456 states *"The fire-protective coating must be applied per the manufacturer's stated instructions and (Tested Evaluation Report). WFT must be measured within 5 minutes after the conclusion of the application or area sprayed. Measure the fire-protective coating WFT at two random locations of each medallion sample, avoiding the thinnest and the thickest spots on the samples. The average of these measurements must be used to determine the average fire-protective coating thickness."* This average applied thickness is the required thickness that is noted on our ICC-ESR-3702 and our other Evaluation Reports, and is what the average thickness, determined by the applicator on site, shall meet. The language in AC456 such as "avoid the

thinnest and thickest” and “determine the average” it is clear that the intent of AC456 is to recognize that there will be variation in the applied coating thickness during application which is a known variable in ALL intumescent coating applications, and even more so when being applied to the non-uniform, undulating and bubbly surface that spray foam provides.

Once the project is completed, and the coating has dried, the “Medallions” should be collected, signed, dated, and noted with the job site and location on the back of the medallion. These “Medallions” shall be retained and provided to the inspector in order to verify that the now dry film thickness meets the required application rate or the “Medallions” can be left in place until the inspection is conducted and the applied thickness is verified by the Inspector. (Please see attached “How to Measure Wet Film).

Section 3.4.1.2 of AC456 states: *“Using an optical comparator or caliper, measure the fire-protective coating Dry Film Thickness at four random locations of each medallion sample, avoiding the thinnest and the thickest spots on the samples. The average of these measurements must be used to determine the average fire-protective coating thickness.”*

Applicators shall complete a “Job Work Record” which documents the installation including surface conditions, temperature, humidity, ventilation and film thickness measurements to support the application was conducted in accordance with the manufactures instructions and the average applied thickness meets the requirement of the tested assembly. In addition to the application guidelines aforementioned, the “Job Work Record” also records important details like, SPF Brand used, Coating brand and Evaluation Report, Climate, who did the job and much more valuable information insuring anyone in the future that a “SPF Professional” did the work.

We understand the impression that more coating is better, but it is important to note that the application of additional coating, beyond that which was tested, is no longer representative of the tested assembly and is against manufacturer’s instructions. Intumescent coatings expand once exposed to heat and swell several thousand times to provide a protective layer of char over the substrate. This expansion can bridge and cover minor voids, holes, gaps and area of uncoated foam common to this type of application. (See Attached images and letter from Fire Testing facilities).

I have attached a copy of our “Application and Ventilation Guides” along with a “Job Work Record” and “How to Measure Wet Film Thickness”. **Most importantly we hope it is clear that, “IFTI is following existing standards not creating them”.**

If you could please review these documents and let me know a time that we can have a call to discuss in detail and ensure your concerns are addressed.



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