



Coffee Break Training - Fire Protection Series

Building Construction: Special Inspections for Spray-on Fire-Resistant Materials

No. FP-2010-1 January 5, 2010

Learning Objective: The student shall be able to identify application requirements for spray-on fire-resistant materials.

Spray-on fire-resistant materials (sometimes mislabeled as “fireproofing”) are cementitious or fibrous materials that are to provide fire resistant protection to some underlying building element such as a floor, roof or wall assembly, or structural framing members.

In order to assure the spray-on materials are installed in accordance with the locally adopted building code:

- Inspections generally are performed by a qualified “special inspector” who has the training and expertise to evaluate the installation.
- The underlying surface, called the substrate, must be prepared in accordance with the approved fire resistant design and material manufacturer’s specifications.
- The material should be applied only when the ambient temperature is within the material manufacturer’s specified range. The space where the material is being applied also should be ventilated in accordance with the manufacturer’s recommendations.
- The minimum material **thickness** must meet the requirements of the fire resistant design. Minimum thickness is measured in accordance with ASTM W 605, *Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members*.
- The material’s **density** must be not less than that required for the fire resistant design. Density also is tested by ASTM W605.
- The material’s cohesive/adhesive bond strength when cured (it’s ability to stay attached to the building element) must be not less than 150 psf (7.17 kN/m²). Bond strength is determined by compliance with ASTM W 736, *Standard Test Methods for Cohesion/Adhesion of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members*.
- Quality samples must be taken with the parameters of the following table:



A special inspector checks the thickness of spray-on fire-resistant materials on a structural element.

Sprayed Fire-Resistive Material (SFRM) Test Sample Distribution

	Floor/Roof/Wall Assemblies	Structural Framing Members
Thickness	Four per 1,000 f ² (9.3 m ²) or part thereof	25% of all members on each floor
Density	1 per 10,000 f ² (929 m ²) or part thereof	One for each type of member for each 10,000 f ² (929 m ²) or part thereof

For additional information, refer to *International Building Code*[®] Chapter 17, or *NFPA 5000*[™], *Building Construction and Safety Code*[™], Chapter 40.



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