Informal Interpretation Report
Number 7540

Date July 20, 2015

Edition 2010

Section 513.3

Question:

Is it the intent of FBC 2010 Mechanical 513.3 Special Inspection and Test Requirements, to require the use of smoke bombs / generators, creating smoke, for testing of the smoke control/ evacuation systems?

Answer

No, it is not the intent to use smoke bombs. The code does not specify the method used for testing smoke control the systems, it is the designers responsibility to include the method of testing.

Commentary:

While the code does not specify how to do the test, cold smoke is a poor method which does not accurately indicate how the system will work under real time conditions.
A Special Inspector (FBC 909.18.8) is responsible to oversee all phases of a smoke control system. He checks the system for compliance to plans and rational analysis, during erection of ductwork and prior to concealment, test for leakage and record device locations. He is responsible to review, inspect, test, and report integrity sealing deficiencies as outlined in the projects specifications. The Special Inspector is required by the code and hired by the owner. Generally special inspection agencies for smoke control have expertise in fire protection engineering, mechanical engineering and certification as air balancers.
The Special Inspector has to be present, prior to occupancy and after sufficient completion for the purposes of pressure-difference testing, flow measurements, and detection and control verification.
In the pressurization method, the primary means of

controlling smoke utilizes mechanical equipment, such as AHUs, exhaust/supply fans, fire/smoke dampers, etc., to provide a minimum positive-pressure differential relative to adjacent spaces. A manometer is used to verify the pressure differentials are achieved. Areas to be tested may be between the floor of incident and the adjacent rooms or if designed to the adjacent floors, between the stair enclosure and the adjacent floor and/or vestibule without exceeding a 30-lb door opening force. I have used smoke to show velocity of the system and direction of flow.
