



Coffee Break Training - Fire Protection Series

Building Construction: Windowless Buildings

No. FP-2014-26 July 1, 2014

Learning Objective: The student will be able to describe the fire protection requirements for windowless buildings.

This illustration is seen in thousands of places throughout American downtown neighborhoods: In an effort to modernize the appearance of an old storefront, a permanent, noncombustible facade has been erected over the second and third stories of this commercial occupancy.

The original building consisted of a mercantile operation that was conducted in a Type III construction building. It has masonry exterior front and rear walls and a wood-framing system that supports the floor and roof assemblies. It shared side walls with the adjacent buildings, which was a common means of construction in the late 19th and early 20th centuries. When constructed, the street side of the building had tall windows to provide light and ventilation.

The addition of the noncombustible facade, however, has created an unintended consequence. Building stories that are more than 1,500 square feet (139.4 meters squared (m²)) and do not have adequate openings for fire rescue and ventilation should be equipped with automatic sprinkler systems.

According to the model codes, adequate openings in this circumstance consist of openings entirely above the adjacent ground level totaling at least 20 square feet (1.86 m²) in each linear 50 feet (15.24 meters (m)), including fractions of that distance, on at least one side of the building. The openings should be distributed so the linear distance between openings does not exceed 50 feet (15.24 m).

When the openings are provided along only one side of the building, such as the alley in this case, if the distance from the opening to the opposite wall (the front wall) exceeds 75 feet (22.86 m), then a sprinkler system must be provided or approved openings should be provided on a second side.¹ The 75-foot (22.86-m) distance is based on the estimated reach of a fire hose stream.

To protect firefighters and the public, the fire code official should become an active participant in the code adoption and enforcement process by offering professional advice on what many would consider simply a cosmetic change to a building to improve its appearance.

For additional information, consider attending the National Fire Academy course, “Fire Inspection Principles” (R0220). You can obtain more information and apply at <http://apps.usfa.fema.gov/nfacourses/catalog/details/47>.

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The addition of this noncombustible facade has created a windowless building for the second and third stories of this occupancy.

