

# Protecting Life and Property: Fire and Smoke Barrier Doors

*Properly selected and installed, fire and smoke barrier doors save lives and property.*

By Joann Robertson



**F**ire and smoke barrier doors are essential for schools, especially in long hallways, stairwells, and high-hazard areas, such as boiler and mechanical rooms. Fire and smoke barrier doors that are properly selected, installed, and maintained can help reduce the effects of a fire by decreasing its spread, heat, and smoke within the school, thereby providing the occupants with an alternative means to exit the school safely, in addition to minimizing damage to the building.

The National Fire Protection Association (NFPA) has set standards for fire and smoke doors:

- **NFPA 80—Standard for Fire Doors and Other Opening Protectives** provides guidance on the installation and maintenance of assemblies and devices used to protect openings in walls, floors, and ceilings against the spread of fire and smoke within, into, or out of buildings. Fire doors should be clearly labeled by the manufacturer.
- **NFPA 105—Standard for Smoke Door Assemblies and Other Opening Protectives** provides the minimum requirements for smoke doors, which prevent the spread of smoke through the door openings.



The association's publication *NFPA 101: Life Safety Code* offers strategies to protect people from the effects of fire and related hazards, addressing building construction, protection, and occupancy features. According to *NFPA 101*, schools must have fire doors for

- Protection of stairwells, known as vertical openings
- Protection from hazards, such as boiler rooms and combustible storage rooms

In addition, smoke doors are required for subdividing building spaces.

### Door Design Options

A variety of fire and smoke door design options are available.

When there is a great deal of activity in and out of an area, to eliminate the constant opening and closing of doors, the school might consider installing fire doors that can be held open with magnetic door holders that are triggered to release by the activation of smoke and fire alarms. When an alarm goes off, the doors automatically close and latch.

When a school wants to secure and protect an area, it has the option of selecting a door that is fire or smoke rated, with door closers that ensure that the door closes and locks each time it is opened.

When a school wants to keep a door closed, but wants to reduce the risk of injury from its opening unexpectedly, an option is to install a fire-rated door with glass

panels. Fire door window glazing material must be in compliance with NFPA standards to maintain the protection level of the door.

### Be Aware

Schools are busy places with students and staff moving throughout the building during the day. The inconvenience of constantly opening and closing doors in hallways and stairwells may prompt them to prop open the doors with wedges, chains, bungee cords, or rope. Fire and smoke doors that are propped open will not provide the protection intended. Typically, doors are propped open (a) to ease the flow of students between class periods and to reduce the noise from banging doors; (b) to enable facilities staff, contractors, or vendors to more easily move equipment or make deliveries; and (c) to increase ventilation for kitchen staff.

To improve the effectiveness of fire doors and smoke barrier doors, take the following steps:

- Select and install the appropriate doors to accommodate the needs of school operations and activities. For example, cafeteria doors may be held open with automatic openers during period changes and closed when the cafeteria is unoccupied and is being cleaned.
- Inspect the school regularly to ensure that fire and smoke doors are not obstructed or otherwise made inoperable.
- Encourage staff to report problems with door assemblies and have them repaired promptly.
- Remove door chocks or wedges, hooks, fold-down feet, bungee cords, and other makeshift hold-open devices.
- Explain the importance of closed doors, automatic hold openers, and unobstructed exits at staff meetings.
- Post signs on doors in common problem areas to remind users not to prop them open.
- Accompany the local code inspector during fire inspections to learn more about fire safety.

### Summary

Fire and smoke barrier doors can impede the spread of heat and smoke during a fire within a school. Door selection, installation, and maintenance are an important part of a school's fire safety program. A number of design options can facilitate activities while providing fire protection and security. The school needs to educate its staff on the importance of fire and smoke barrier door assemblies so that they work effectively to help protect students, staff, and the general public who use school facilities.

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