



Coffee Break Training - Fire Protection Series

Storage Practices: Storage Shelves

No. FP-2012-4 January 24, 2012

Learning Objective: The student shall be able to define storage shelves.

When fire sprinkler systems are designed for storage applications, details on the eventual storage configuration are significant. Is the commodity stored on pallets, shelves, or racks? Is it banded or encapsulated? What is the commodity classification? (See Coffee Break Training 2010-6 for a description of encapsulation and 2009-33 for a description of commodities.)

Despite the fact that most people use the terms “storage racks” and “storage shelves” interchangeably, in fire protection there is a significant difference.

Accurate definitions are important because they provide the guidance for how sprinkler protection is provided. The descriptions affect such design details as sprinkler spacing, placement, and application densities.

The following table provides “shelf” definitions from National Fire Protection Association (NFPA) 13, *Standard for the Installation of Sprinkler Systems*:

Shelf Storage	Storage on structures up to and including 30-inches (0.76 m) deep and separated by aisles at least 30-inches wide.
Back-to-Back Shelf Storage	Two solid or perforated shelves up to 30 inches in depth each, not exceeding a total depth of 60 inches (1.52 m), separated by a longitudinal vertical barrier such as plywood, particleboard, sheet metal, or equivalent, with a maximum 0.25-inch (6.4 mm) diameter penetrations and no longitudinal flue space, and a maximum storage height of 15 ft (4.57 m).

Storage on structures that exceed these dimensions and descriptions is generally considered to be on “racks,” which will be covered in next week’s Coffee Break Training.

For additional information, refer to International Fire Code, Chapter 23 or NFPA 1, *Fire Code*[™], Chapter 20, or NFPA 13.



This shelf storage example is typical of retail environments. Photo courtesy Scott Stookey, Austin, Texas.

