



Tentative Interim Amendment

# NFPA 13

## *Standard for the Installation of Sprinkler Systems* 2016 Edition

**Reference:** 17.2.3.5.6, A.17.2.3.5 and A.17.3.3.5

**TIA 16-1**

(SC 15-8-14 / TIA Log #1165)

**Note:** Text of the TIA was issued and approved for incorporation into the document prior to printing.

1. *Revise section 17.2.3.5.6 to read as follows:*

**17.2.3.5.6** The minimum operating pressure shall be either 30 psi (2.0 bar) or 60 psi (4.1 bar) based upon the applicable storage and ceiling height for the installation as follows:

- a) 30 psi (2.0 bar) for storage heights up to 25 ft (7.6 m) with a maximum ceiling height of 30 ft (9.1 m)
- b) 60 psi (4.1 bar) for storage heights up to 25 ft. (7.6 m) with a maximum ceiling height of 40 ft (12.2 m).

2. *Revise section A.17.2.3.5 to read as follows:*

**A.17.2.3.5** The Fire Protection Research Foundation conducted a series of full-scale fire tests at Underwriters Laboratories to develop protection criteria for the rack storage of exposed expanded Group A plastic commodities. The tests are documented in the report, "Protection of Rack Stored Exposed Expanded Group A Plastics with ESFR Sprinklers and Vertical Barriers." The criteria for exposed expanded plastics are based on Tests 2, 3, 7 and 8 of the series, which investigated a 40 ft (12.2 m) ceiling with a range of storage heights. The tests used K-25.2 intermediate-temperature ESFR sprinklers with vertical barriers attached to the rack uprights at nominal 16 ft (4.9 m) apart. Vertical barriers of sheet metal and 3/8 -in. plywood were both investigated. In Tests 1 through 6, transverse flue spaces between commodities were blocked. Comparing the results of Test 6 with blocked transverse flue spaces and Test 7 with no blocking of transverse flue spaces, the number of operated sprinklers decreased from 11 to 7 and improved suppression of the fire. The criteria for exposed expanded plastics are based on Tests 9 and 10 of the series, which investigated a 30 ft (9.1 m) ceiling with a range of storage heights. The tests used K-25.2 intermediate-temperature ESFR sprinklers with vertical barriers attached to the rack uprights at 16 ft (4.9 m) (nominal) apart. Vertical barriers of ~~3/8~~ -in. plywood was investigated.

The area limitation between the vertical barriers and aisles indicated in 17.3.3.5.9.2 will limit the depth of a multiple-row rack arrangement. The hose stream allowance and water supply duration requirements considered the burning characteristics of the exposed expanded plastic commodity that generates a high rate of heat release very quickly, but the commodity involved in the combustion process is then quickly consumed after fire suppression or control is achieved.

3. *Revise section A.17.3.3.5 to read as follows:*

**A.17.3.3.5** The Fire Protection Research Foundation conducted a series of full-scale fire tests at Underwriters Laboratories to develop protection criteria for the rack storage of exposed expanded Group A plastic commodities. The tests are documented in the report, “Protection of Rack Stored Exposed Expanded Group A Plastics with ESFR Sprinklers and Vertical Barriers.” The criteria for exposed expanded plastics are based on Tests 2, 3, 7 and 8 of the series, which investigated a 40 ft (12.2 m) ceiling with a range of storage heights. The tests used K-25.2 intermediate-temperature ESFR sprinklers with vertical barriers attached to the rack uprights at nominal 16 ft (4.9 m) apart. Vertical barriers of sheet metal and 3/8 -in. plywood were both investigated. In Tests 1 through 6, transverse flue spaces between commodities were blocked. Comparing the results of Test 6 with blocked transverse flue spaces and Test 7 with no blocking of transverse flue spaces, the number of operated sprinklers decreased from 11 to 7 and improved suppression of the fire.

The area limitation between the vertical barriers and aisles indicated in 17.3.3.5.9.2 will limit the depth of a multiple-row rack arrangement. The hose stream allowance and water supply duration requirements considered the burning characteristics of the exposed expanded plastic commodity that generates a high rate of heat release very quickly, but the commodity involved in the combustion process is then quickly consumed after fire suppression or control is achieved.

**Issue Date:** August 18, 2015

**Effective Date:** September 7, 2015

(Note: For further information on NFPA Codes and Standards, please see [www.nfpa.org/codelist](http://www.nfpa.org/codelist))

Copyright © 2015 All Rights Reserved  
NATIONAL FIRE PROTECTION ASSOCIATION