



Florida Division of State Fire Marshal

The Florida Fire Marshals and Inspectors Association,
"Organization" (§633.026)

Informal Interpretation

Date:

NFPA Document Number: 13

Paragraph Reference: Chapter 8, Section 8.5.5.3.1.1

Open grate flooring *over* 4 ft. (1.2 m) in width shall require sprinkler protection below the grating.

Explain how the Petitioner's substantial interests are being affected by the LFO's interpretation of the NFPA citation above:

The LFO interprets that the open floor grating for the project does not qualify for the obstructions 4-foot and under exemption. They are requiring that sprinklers are to be installed under all the open floor grating.

Enter a statement of the LFO's interpretation of the NFPA citation above and identify the manner in which the statement was rendered:

As AHJ we do not believe that 69 feet of 4-foot aisles of open grate flooring separated by 4-foot wide rack storage of tires qualifies for the obstructions 4-foot and under exemption. With shop drawing submittal, please provide the under open grate flooring fire sprinklers per NFPA 13:8.5.5.3.1.1. or provide one of the following: (a) testing documents from a listed facility showing that the provided arrangement will provide adequate protection for the tire storage below or (b) a declaratory statement from the Florida State Fire Marshal approving the arrangement.

Enter a statement of the interpretation that the Petitioner contends should be given to the NFPA citation above and a statement supporting the Petitioner's interpretation:

Our fire sprinkler plans are included herein for reference.

As the Fire Protection Consultants for Discount Tire, EJ Engineering, Inc. design documents meets and/or exceeds NFPA-13 requirements. As shown on sheet FP2.0 (Lower Level Piping Plan), the open floor grating that is in excess of 4-ft in width has sprinkler protection underneath per NFPA-13 section 8.5.5.3.1.1. All other areas of the open floor grating are 4'-0" wide or less in width.

This building is to be protected with a Wet Automatic Fire Sprinkler system per NFPA-13, table 18.4(d) for all tire storage areas. Table 18.4(d) allows the use of 12 (4 per branch line), 25.2-K ESFR pendent sprinklers at 15-psi minimum each in a maximum building height of 30-ft (23'-3" AFF worst case) and a maximum pile height of 25 ft (18'-9" AFF back of store worst case). EJ Engineering's design intent is to utilize the large amount of water (approx. 100-gpm) discharged by the ESFR sprinklers at the ceiling level only in the event of a conflagration. We believe our specific approach is appropriate for this small tire store.

Rulings herein expressed are not the formal position of the Florida State Fire Marshal's Office

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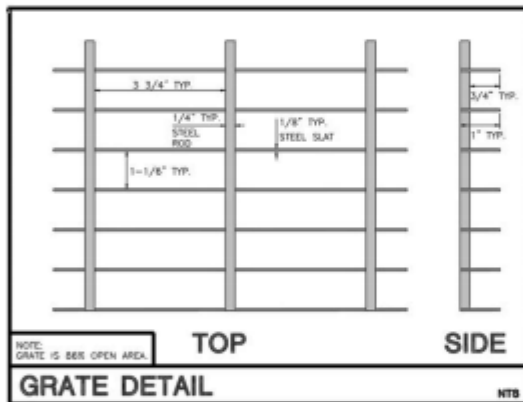


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The rubber tire storage racks are double and single row open steel racks, without shelves, with tires stored on-side or on-tread. No pallets and no horizontal barriers exist. The racks consist of 17-ft vertical upright members with an open floor access grating at 9-ft above finished floor. The 86% open floor grating is utilized for safe access/retrieval of tires at the upper half section of the racks and does not continue through the racks. Aisles are 4-ft wide, except at the West and East extremities of the catwalk. We understand that these two areas are indeed over 4-ft wide, and fire sprinkler protection is provided under the open floor grating at these two areas as shown on sheet FP2.0. The 2,500-sf tire storage area is not accessible to the public, and it is for employee use only.

The only section within NFPA-13 that references similar elements to open floor grating with openings is an open-grid ceiling under 8.15.14. In this section, open-grid ceilings are allowed to be located beneath sprinklers as long as the openings are 1/4-inch or larger in the least dimension; the thickness or depth does not exceed the least dimension, and the openings constitute 70% of the area. The proposed open-grating is more than 86% open, with a 1-inch maximum depth with a 1-1/6-inch maximum least dimension, all of which is greater than open-grid ceilings that are allowed to be installed under sprinklers. Therefore, sprinkler discharge development is not interrupted.



The installation of intermediate level sprinklers with the application of the preceding items may create a delay in the activation of the overhead sprinkler system. This delay may be crucial to suppression and/or control of the conflagration. Intermediate sprinklers, when installed below the grating are not a benefit to the system. If ever activated, they may cool the tire fire enough that the vertical heat and fire plume is not allowed to proceed to the deck as prescribed. Therefore, the overhead sprinkler system activation may be delayed.

The grating simply provides safe walkway aisle access to employees such that they may safely access the tires without the use of tall ladders (the alternative when not implementing the grating). The grating does not continue through the tire racks. In the event of a conflagration, NFPA-13 and Factory Mutual fire tests have shown the fire and heat plume to be one of a nearly vertical nature.

Discount Tire operates a very efficient and effective store. Tire storage does not occur on the grating except during active re-stocking periods. Horizontal obstructions such as floor mats or corrugated cartons are not permitted and do not exist in the store; especially on the grating.

Explain how the Petitioner's substantial interests are being affected by the question below:

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Enter the Petitioner's question concerning an interpretation of the FFPC:

Is open grate flooring 4 foot in width or less considered obstructions that prevents sprinkler discharge from reaching hazard, and thus require sprinkler installation under open grating?

Answer: NO

Although the LFO may have concerns that tires or other items "may" be stored or placed on the open grating causing obstructions to sprinkler discharge reaching hazards below, but this is more of an operational concern and not a sprinkler design issue.

Committee Answer Submitted by,
James Groff, Chairman
Informal Fire Code Interpretation Committee

Region 1: Vacant / Vacant

Region 2: Babette Ferris-No response / Vacant

Region 3: James Groff-**NO** / Robert Growick-

Region 4: Philip Guglietti- / Cheryl Edwards-**NO**

Region 5: Anthony Apfelbeck – **NO** / Timothy Ippolito **NO**

Region 6: Robert Salvaggio-**NO** /Alternate Janet Washburn-**NO**

Region 7: Bryan Parks-No Response / Vacant

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Committee Region Map



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