

Standard Interpretations (/laws-regs/standardinterpretations/publicationdate)  
/ Clarification of OSHA regulation 29 CFR 1910.159(c)(10), Sprinkler spacing.

1910.159(c)(10) ([https://www.osha.gov/pls/oshaweb/owalink.query\\_links?](https://www.osha.gov/pls/oshaweb/owalink.query_links?)

- **Standard Number:** src\_doc\_type=STANDARDS&src\_unique\_file=0&src\_anchor\_name=1910.159(c)(10))

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov> (/).

September 29, 2008

Ms. Jean Przybocki  
Medical Technologist  
Washington VA Medical Center  
Department of Pathology and Laboratory Medicine  
50 Irving Street, NW  
Washington, D.C. 20422

Dear Ms. Przybocki:

Thank you for your January 30, 2008 letter to the Occupational Safety and Health Administration (OSHA) requesting clarification of OSHA regulation 29 CFR 1910.159(c)(10), *Sprinkler spacing*. This letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any questions not delineated within your original correspondence. Your paraphrased questions and our responses are provided below. Please note, as an initial matter, that although 29 CFR 1910.159 is based on NFPA 13 (1969 edition), *Standard for the Installation of Sprinkler Systems*, OSHA considers that compliance with later versions of this consensus standard, such the 2007 edition, as de minimis violations of 29 CFR 1910.159, provided the later version provides equal or greater protection than provided by the standard. De minimis violations of standards are violations of existing OSHA standards that have no direct or immediate impact on the safety and health of workers. OSHA does not impose penalties or require abatement of de minimis violations.

**Question 1:** 29 CFR 1910.159(c)(10) in part states, "The minimum vertical clearance between sprinklers and material below shall be 18-inches (45.7 cm)." Does this apply only to materials placed directly below the sprinkler heads?

**Response 1:** No. The 18-inch vertical clearance requirement is treated as a horizontal plane throughout the storage area or room. All materials must be stored below this horizontal plane. The clear space between stored materials and the sprinkler deflectors allows discharge from sprinklers to overlap and pre-wet combustibles to effectively contain a fire.

**Question 2:** What are the requirements for storage items that are horizontal (to the side of) sprinkler systems?

**Response 2:** The general rule in our response to question 1 precludes any storage horizontally from a sprinkler head. However, materials stored on shelves against a wall are not subject to this requirement because they do not impede the overlap of spray from multiple sprinkler heads. Also, in the specific circumstances of library stacks (high-density book storage areas) and in medical records storage, section 8.15.9 of NFPA 13 (2007 edition), allows shelves to extend to the ceiling as long as every aisle is provided with sprinklers spaced no more than 12 feet apart along the aisle.

**Question 3:** Are there any instances where the 18-inch clearance is not needed?

**Response 3:** Since your letter does not contain adequate information on the types of sprinklers and obstructions in question, our response is based on the limited information provided. NFPA 13 (2007) mentions one instance where the 18-inch clearance is not needed. For example, section 8.5.6, NFPA 13 (2007), Clearance to Storage, has a requirement in 8.5.6.4, which states, "a minimum clearance to the top of storage and ceiling sprinkler deflectors to be less than 18-inches (457 mm) between the top of storage and ceiling sprinkler deflectors shall be permitted where proven by successful large scale fire tests of the particular hazard." The burden is on employers to demonstrate that they fall within this exception. If this exception applies, OSHA would consider this a de minimis violation, as noted above. In addition to the specific circumstances referenced in our response to question 2, the 18-inch clearance does not apply to vehicles in parking garages. Please note that there are situations in which specific sprinkler designs for high-challenge fires, such as rubber tire storage or high rack storage, would require clearance greater than 18 inches.

Additionally, please note that the answers given apply to clearance from stored materials only. NFPA 13 (2007 edition) contains numerous and varied requirements for obstructions to sprinkler discharge pattern development and obstructions that prevent sprinkler discharge from reaching the hazard. These obstructions (including structural members, lights, ducts, decks, open grate flooring, overhead doors, and partial height walls) should be considered in the initial design and installation of the sprinkler system. Furthermore, the rules differ for sprinkler types other than standard pendant and upright models.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards, and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov/> (/index.html). If you need further assistance, please contact the Office of General Industry Enforcement at (202) 693-1850.

Sincerely,

Richard E. Fairfax, Director  
Directorate of Enforcement Programs

# UNITED STATES DEPARTMENT OF LABOR

(<https://www.dol.gov>)

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