



## Standpipe and Hose Systems -- OSHA Standard 1910.158<sup>1</sup>

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### The Impact of Safety on Florida Agriculture

Florida agriculture, including forestry and fishing, made an annual economic impact of \$53 billion in 1998. More than 81,000 people work on the 40,000 farms in the state, and more than 50,000 are employed in other activities related to agriculture. The state's agricultural enterprises range from large citrus, vegetable and cattle operations to small family-operated farms.

From 1989 to 1998, there were approximately 240 deaths related to agriculture in Florida, according to data compiled by the Deep-South Agricultural Health and Safety Center. In addition, agriculture has one of the highest injury and death rates among U.S. industries.

Safety in Florida agriculture is challenging because:

- the state's agricultural enterprises are diverse,

- safety knowledge among workers varies,
- manual labor is used extensively,
- the climate creates year-round heat stress.

Therefore, it is vital to assist the public in learning about OSHA documents related to agriculture. More related information is available at the following Web sites:

Florida AgSafe: <<http://www.flagsafe.ufl.edu>>

OSHA Regulations:  
<<http://www.osha.gov/comp-links.html>>

### Overview

This document, a condensation of Section 1910.158 of the Occupational Safety and Health Act (29 CFR), is not intended to be totally inclusive but rather to highlight the information and requirements in the complete OSHA standard that owners and managers of agricultural businesses should

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1. This document is AbE195, one of a series of the Agricultural and Biological Engineering Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date December 2000. Reviewed February 2008. Visit the EDIS Web Site at <http://edis.ifas.ufl.edu>.

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understand. Refer to the OSHA Web site given above for the complete standard and for court interpretations of the standard.

## Contents of OSHA Standard 1910.158

- Section 1910.158(a) -- Scope and Application
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- Section 1910.158(c) -- Equipment
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- Section 1910.158(e)(1) -- Tests and Maintenance

NOTE: Some sections of OSHA standards are labeled "Reserved." This label implies either that information has been deleted from the previous version of the standard or that additions to the standard are anticipated. Because standards often reference other standards, it is important that paragraph numbers remain consistent.

### Section 1910.158(a) -- Scope and Application

**1910.158(a)(1) -- Scope.** This section applies to all small hose, Class II, and Class III standpipe systems installed to meet the requirements of a particular OSHA standard.

**1910.158(a)(2) -- Exception.** This section does not apply to Class I standpipe systems.

### Section 1910.158(b) -- Protection of Standpipes

The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly.

## Section 1910.158(c) -- Equipment

**1910.158(c)(1) -- Reels and cabinets.** Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

### 1910.158(c)(2) -- Hose outlets and connections

**(i) --** The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

**(ii) --** The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

### 1910.158(c)(3) -- Hose

**(i) --** The employer shall assure that every 1 1/2 inch (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is readily available and can be connected when needed.

**(ii) --** Standpipe systems installed after January 1, 1981, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

**(iii) --** The employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

**1910.158(c)(4) -- Nozzles.** The employer shall assure that standpipe hose is equipped with shut-off type nozzles.

## Section 1910.158(d) -- Water Supply

The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of at least thirty minutes.

## Section 1910.158(e)(1) -- Tests and Maintenance

### 1910.158(e)(1) -- Acceptance tests

(i) -- The employer shall assure that the piping of Class II and Class III systems installed after January 1, 1981, including yard piping, is hydrostatically tested for a period of at least 2 hours at not less than 200 psi (1380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1030 kPa).

(ii) -- The employer shall assure that hose on all standpipe systems installed after January 1, 1981, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1380 kPa), before it is placed in service. This pressure shall be maintained for at least 15 seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

### 1910.158(e)(2) -- Maintenance

(i) -- The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

(ii) -- The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

(iii) -- The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

(iv) -- When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

(v) -- The employer shall assure that hemp or linen hose on existing systems is unracked, physically inspected for deterioration, and racked using a different fold pattern at least annually. The employer shall assure that defective hose is replaced in accordance with paragraph (c)(3)(ii).

(vi) -- The employer shall designate trained persons to conduct all inspections required under this section.