

South Carolina Department of Labor, Licensing and Regulation
Division of Labor
Office of Occupational Safety and Health
Columbia, South Carolina 29211

OSH Program Directive Number 79-1910.27-3

Subject: Clarification of Fixed Ladders, Relative to Manhole (Rungs) Steps.

Standard: Article VI, Section 1910.27, Figure D-1, Rules and Regulations, Commission of Labor, State of South Carolina.

Cross Reference to Federal Standards: 29 CFR 1910.27, Figure D-1.

Cancellation: The State's OSH Program Directive Number 75-1910.27-2 is cancelled.

Background: To establish official guidance in the clarification of 29 CFR 1910.27, Figure D-1, as it relates to walls of risers or conical top sections of manholes.

Interpretation: Some OSHA personnel have been enforcing the suggested design, Figure D-1, as depicted in Article VI, Section 1910.27, as the overall design criteria for fixed rungs installed in the walls of risers or conical top sections of manholes. This is in error, since:

- a) On December 13, 1971, the Federal Office of Standards Development advised the American Concrete Pipe Association that the language used in 29 CFR 1910.27 does not indicate specifications for fixed ladders in conical-shaped sanitary sewer manhole steps.
- b) The American Society for Testing Materials (ASTM) specifications for "Precast Reinforced Concrete Manhole Sections," C-478 specifies wall thicknesses according to design requirements, thereby approving walls as thin as 4 inches, which precludes the 6-inch embedments as suggested in Figure D-1. Appurtenances penetrating the manhole walls are forbidden, thus the requirements for at least 3-inch embedment for individual steps as specified in the proposed standard are reasonable.
- c) The proposed federal revision of Subpart D, "Walking and Working Surfaces", published in the Federal Register on September 6, 1973, addresses itself to the design specifications for fixed embedded steps in walls of risers or in the conical top

sections of manholes, which is entirely different from the dimensions depicted in Figure D-1.

Therefore the following action shall be taken.

- a) The Safety Specialist shall continue to enforce the standard as written for fixed ladders in all instances except for manhole steps in walls of risers or conical top sections of manholes.
- b) The Safety Specialist shall assure that individual rungs or steps used for access or egress, embedded in the walls of risers or the conical top sections of manholes shall be safe, well constructed and installed in accordance with good engineering practices. Specifically, individual rungs or steps shall be uniformly spaced from 12 inches to 16 1/2 inches.
 1. The Safety Specialist will cite the use of manhole steps in manholes not designed to prevent the foot from sliding off the end as a violation of both the present and proposed standards.
 2. The Safety Specialist will cite the use of steps found to be unsafe due to corrosion as a violation of the General Duty Clause, if the conditions warrant it.

Effective Date: This instruction is effective upon receipt and will remain in effect until cancelled or superseded by amendment to the regulation or program directive.

William M. Lybrand
April 13, 1979