

16.1: Introduction to Concrete and Masonry

Introduction

OSHA Subpart Q, Concrete and Masonry Construction, contains performance oriented requirements designed to help protect all construction workers from the hazards associated with concrete and masonry construction operations at construction, demolition, alteration or repair worksites.

Subpart Q is divided into seven sections. The first section defines the scope and application of Subpart Q. The second section deals with general provisions applicable to the entire subpart. The third section deals with specific requirements for tools and equipment used in concrete and masonry operations. Sections four thru six cover specific concrete operations and the last section covers masonry construction.

Subpart Q - Scope & Application

Subpart Q sets forth requirements to protect all construction employees from the hazards associated with concrete and masonry construction operations performed in workplaces covered under 29 CFR Part 1926. In addition to the requirements in Subpart Q, other relevant provisions in Parts 1910 and 1926 apply to concrete and masonry construction operations.

Definitions

In addition to the definitions set forth in 1926.32, the following definitions apply to this subpart:

Bull float: A tool used to spread out and smooth concrete.

Formwork: The total system of support for freshly placed or partially cured concrete, including the mold or sheeting (form) that is in contact with the concrete as well as all supporting members including shores, reshores hardware, braces, and related hardware.

Lift slab: A method of concrete construction in which floor, and roof slabs are cast on or at ground level and, using jacks, lifted into position.

Limited access zone: An area alongside a masonry wall, which is under construction, and which is clearly demarcated to limit access by employees.

Precast concrete: Concrete members (such as walls, panels, slabs, columns, and beams), which have been formed, cast, and cured prior to final placement in a structure.

Reshoring: The construction operation in which shoring equipment (also called reshores or reshoring equipment) is placed, as the original forms and shores are removed, in order to support partially cured concrete and construction loads.

Shore: A supporting member that resists a compressive force imposed by a load.

Vertical slip forms: Forms which are jacked vertically during the placement of concrete.

Jacking operation: The task of lifting a slab (or group of slabs vertically from one location to another (e.g., from the casting location to a temporary (parked) location, or to its final location in the structure), during the construction of a building/structure where the lift- slab process is being used.

General Requirements

Construction Loads

No construction loads shall be placed on a concrete structure or portion of a concrete structure unless the employer determines, based on information received from a person who is qualified in structural design, that the structure or portion of the structure is capable of supporting the loads.

Protruding reinforcing steel

All protruding reinforcing steel, onto and into which employees could fall shall be guarded to eliminate the hazard of impalement. OSHA has determined that protruding reinforcing steel, at any length, is a hazard and must be guarded. This is the most frequently cited Subpart Q violation.

Employee positioning

No employee (except those essential to the post-tensioning operations) shall be permitted to be behind the jack during tensioning operations. Signs and barriers shall be erected to limit employee access to the post-tensioning area during tensioning operations.

Concrete buckets

No employee shall be permitted to ride concrete buckets. No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered into position. To the extent practical, elevated concrete buckets shall be routed so that no employee, or the fewest number of employees, is exposed to the hazards associated with falling concrete buckets.

Protective equipment

No employee shall be permitted to apply a cement, sand, and water mixture through a pneumatic hose unless the employee is wearing protective head and face equipment.

Equipment and Tools

Troweling machines

Powered and rotating type concrete troweling machines that are manually guided shall be equipped with a control switch that will automatically shut off the power whenever the hands of the operator are removed from the equipment handles.

Concrete buggies

Concrete buggy handles shall not extend beyond the wheels on either side of the buggy.

Concrete pumping stations

Concrete pumping systems using discharge pipes shall be provided with pipe supports designed for 100 percent overload. Compressed air hoses used on concrete pumping system shall be provided with positive fail-safe joint connectors to prevent separation of sections when pressurized.

Concrete buckets

Concrete buckets equipped with hydraulic or pneumatic gates shall have positive safety latches or similar safety devices installed to prevent premature or accidental dumping. Concrete buckets shall be designed to prevent concrete from hanging up on top and/or on the sides of the buckets.

Bull floats

When bull float handles are used where they might contact energized electrical conductors, they shall be constructed of nonconductive material or insulated with a nonconductive sheath whose electrical and mechanical characteristics provide the equivalent protection of a handle constructed of nonconductive material.

Masonry saws

Masonry saws shall be guarded with a semicircular enclosure over the blade. A method for retaining blade fragments shall be incorporated in the design of the semicircular enclosure.

Maintenance and repair

No employee shall be permitted to perform maintenance or repair activity on equipment (such as compressors, mixers, screens or pumps used for concrete and masonry construction activities) where the inadvertent operation of the equipment could occur and cause injury, unless all potentially hazardous energy sources have been locked out and tagged. Tags shall read "Do Not Start" or similar language to indicate that the equipment is not to be operated.

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