

AMENDATORY SECTION (Amending WSR 00-14-058, filed 7/3/00, effective 10/1/00)

**WAC 296-155-680 General provisions.** (1) General. All equipment, material and construction techniques used in concrete construction and masonry work shall meet the applicable requirements for design, construction, inspection, testing, maintenance and operations as prescribed in ANSI (~~A10.9-1970~~) A10.9-1997, (~~(Safety Requirements for)~~) Concrete ((Construction)) and Masonry Work Safety Requirements.

(2) 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.

(3) Vertical loads. Vertical loads consist of a dead load plus an allowance for live load. The weight of formwork together with the weight of freshly placed concrete is dead load. The live load consists of the weight of workers, equipment, runways and impact, and shall be computed in pounds per square foot (psf) of horizontal projection.

(4) Lateral loads. Braces and shores shall be designed to resist all foreseeable lateral loads such as wind, cable tensions, inclined supports, impact of placement, and starting and stopping of equipment. The assumed value of load due to wind, impact of concrete, and equipment acting in any direction at each floor line shall not be less than one hundred pounds per lineal foot of floor edge or two percent of total dead load of the floor, whichever is greater. Wall forms shall be designed for a minimum wind load of ten psf, and bracing for wall forms should be designed for a lateral load of at least one hundred pounds per lineal foot of wall, applied at the top. Walls of unusual height require special consideration.

(5) Special loads. Formwork shall be designed for all special conditions of construction likely to occur, such as unsymmetrical placement of concrete, impact of machine-delivered concrete, uplift, and concentrated loads.

(6) Form supports and wedges shall be checked during concrete placement to prevent distortion or failure.

(7) Reinforcing steel.

(a) All protruding reinforcing steel, onto and into which employees could fall, shall be guarded to eliminate the hazard of impalement.

(b) Wire mesh rolls: Wire mesh rolls shall be secured at each end to prevent dangerous recoiling action.

(c) Guying: Reinforcing steel for walls, piers, columns, and similar vertical structures shall be guyed (~~(and)~~) or supported to

prevent overturning and to prevent collapse.

(8) Post-tensioning operations.

(a) No employee (except those essential to the post-tensioning operations) shall be permitted to be behind the jack during tensioning operations.

(b) Signs and barriers shall be erected to limit employee access to the post-tensioning area during tensioning operations.

(9) Working under loads.

(a) No employee shall be permitted to work under concrete buckets while buckets are being elevated or lowered into position.

(b) To the extent practical, elevated concrete buckets shall be routed so that no employee, or the fewest number of employees, are exposed to the hazards associated with falling concrete buckets.

(10) Personal protective equipment.

(a) 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.

(b) No employee shall be permitted to place or tie reinforcing steel more than six feet (1.8 m) above any adjacent working surface unless the employee is protected by personal fall arrest systems, safety net systems, or positioning device systems meeting the criteria of chapter 296-155 WAC, Part C-1.

(c) Each employee on the face of formwork or reinforcing steel shall be protected from falling 6 feet (1.8m) or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems meeting the criteria of chapter 296-155 WAC, Part C-1.

AMENDATORY SECTION (Amending WSR 98-05-046, filed 2/13/98, effective 4/15/98)

**WAC 296-155-683 Concrete finishing.** (1) Scaffolds for use of cement finishers shall comply with the requirements of chapter ((296-155)) 296-874 WAC, ((Part J-1,)) Scaffolds.

(2) Where grinders, chippers, and other equipment is used which creates a thrust force while working on scaffolding, such scaffold shall be securely tied to a structure or held in with weighted drop lines.

(3) Grinding and dressing operations carried on within closed rooms, stairwells, elevator shafts, etc., shall be provided with forced air ventilation.

(4) Grinding machine operators shall wear respirators whenever machines are in operation or where dust hazard exists.

(5) Eye protection shall be worn by workers engaged in grinding, chipping, or sacking concrete as required by WAC 296-155-215.