

VOSHA Subpart S: 29 CFR 1926.800(t) Annotated Text

§1926.800(t) Hoisting unique to underground construction. Employers must comply with §1926.1501(g) of §1926 subpart DD. Except as modified by this paragraph (t), the following provisions of subpart N of this part apply: Requirements for material hoists are found in §§1926.552(a) and (b) of this part. Requirements for personnel hoists are found in the personnel hoists requirements of §§1926.552(a) and (c) of this part and in the elevator requirement of §§1926.552(a) and (d) of this part.

§1926.800(t)(1) General requirements for cranes and hoists.

—— §1926.800(t)(1)(i) Materials, tools, and supplies being raised or lowered, whether with a cage or otherwise, shall be secured or stacked in a manner to prevent the load from shifting, snagging or falling into the shaft.

—— §1926.800(t)(1)(ii) A warning light suitable located to warn employees at the shaft bottom and subsurface shaft entrances shall flash whenever a load is above the shaft bottom or subsurface entrances, or the load is being moved in the shaft. This paragraph does not apply to fully enclosed hoistways.

—— §1926.800(t)(1)(iii) Whenever a hoistway is not fully enclosed and employees are at the shaft bottom, conveyances or equipment shall be stopped at least 15 feet (4.57 m) above the bottom of the shaft and held there until a signalman at the bottom of the shaft directs the operator to continue lowering the load, except that the load may be lowered without stopping if the load or conveyance is within full view of the bottom signalman who is in constant voice communication with the operator.

—— §1926.800(t)(1)(iv)[A] Before maintenance, repairs, or other work is commenced in the shaft served by a cage, skip, or bucket, the operator and other employees in the area shall be informed and given suitable instructions.

—— §1926.800(t)(1)(iv)[B] A sign warning that work is being done in the shaft shall be installed at the shaft collar, at the operators station, and at each underground landing.

—— §1926.800(t)(1)(v) Any connection between the hoisting rope and the cage or skip shall be compatible with the type of wire rope used for hoisting.

—— §1926.800(t)(1)(vi) Spin type connections, where used, shall be maintained in a clean condition and protected from foreign matter that could affect their operation.

—— §1926.800(t)(1)(vii) Cage, skip, and load connections to the hoist rope shall be made so that the force of the hoist pull, vibration, misalignment, release of lift force, or impact will not disengage the connection. Moused or latched open throat hooks do not meet this requirement.

—— §1926.800(t)(1)(viii) When using wire rope wedge sockets, means shall be provided to prevent wedge escapement and to insure wedge is properly seated.

§1926.800(t)(2) Additional requirements for cranes. Cranes shall be equipped with a limit switch to prevent overtravel at the boom tip. Limit switches are to be used only to limit travel of loads when operational controls malfunction and shall not be used as a substitute for other operational controls.

§1926.800(t)(3) Additional requirements for hoists.

—— §1926.800(t)(3)(i) Hoists shall be designed so the the load hoist drum is powered in both directions of rotation, and so that brakes are automatically applied upon power release or failure.

—— §1926.800(t)(3)(ii) Control levers shall be of the “dead-man” type” which return automatically to their center (neutral) position upon release.

—— §1926.800(t)(3)(iii) When a hoist is used for both personnel hoisting and material hoisting, load and speed ratings for personnel and for materials shall be assigned to the equipment.

—— §1926.800(t)(3)(iv) Material hoisting may be performed at speeds higher than the rated speed for personnel hoisting if the hoist and components have been designed for such higher speeds and if shaft conditions permit.

—— §1926.800(t)(3)(v) Employees shall not ride on top of any cage, skip or bucket except when necessary to perform inspection or maintenance of the hoisting system, in which case they shall be protected by a body belt/harness system to prevent falling.

—— §1926.800(t)(3)(vi) Personnel and materials (other than small tools and supplies secured in a manner that will not create hazards to employees) shall not be hoisted together in the same conveyance. However, if the operator is protected from shifting materials, then the operator may ride with materials in cages or skips which are designed to be controlled by an operator within the cage or skip.

—— §1926.800(t)(3)(vii) Line speed shall not exceed the design limitations of the systems.

—— §1926.800(t)(3)(viii) Hoists shall be equipped with landing level indicators at the operators station. Marking of the hoist rope does not satisfy this requirement.

—— §1926.800(t)(3)(ix) Whenever glazing is used in the hoist house, it shall be safety glass, or its equivalent, and be free of distortions and obstructions.

—— §1926.800(t)(3)(x) A fire extinguisher rated at least 2A:10B:C (multipurpose dry chemical) shall be mounted in each hoist house.

—— §1926.800(t)(3)(xi) Hoist controls shall be arranged so that the operator can perform all operating cycle functions and reach the emergency power cutoff without having to reach beyond the normal operating position.

—— §1926.800(t)(3)(xii) Hoists shall be equipped with limit switches to prevent overtravel at the top and bottom of the hoistway.

—— §1926.800(t)(3)(xiii) Limit switches are to be used only to limit travel of loads when operational controls malfunction and shall not be used as a substitute for other operational controls.

—— §1926.800(t)(3)(xiv) Hoist operators shall be provided with a closed-circuit voice communication system to each landing station, with speaker microphones so located the operator can communicate with individual landing stations during hoist use.

—— §1926.800(t)(3)(xv) When sinking shafts 75 Feet (22.86 m) or less in depth, cages, skips, and buckets that may swing, bump, or snag against shaft sides or other structural protrusions shall be guided by fenders, rails, ropes, or a combination of those means.

—— §1926.800(t)(3)(xvi) When sinking shafts more than 75 feet (22.86 m) in depth, all cages skips, and buckets shall be rope or rail guided to within a rail length from the sinking operation.

—— §1926.800(t)(3)(xvii) Cages, skips, and buckets in all completed shafts, or in all shafts being used as completed shafts, shall be rope or rail guided for the full length of their travel.

———§1926.800(t)(3)(xviii) Wire rope used in load lines of material hoists shall be capable of supporting, without failure, at least five times the maximum intended load or the factor recommended by the rope manufacturer, whichever is greater. Refer to Sec. 1926.552(c)(14)(iii) of this part for design factors for wire rope used in personnel hoists. The design factor shall be calculated by dividing the breaking strength of wire rope, as reported in the manufacturers rating tables, by the total static load, including the weight of the wire rope in the shaft when fully extended.

———§1926.800(t)(3)(xix) A competent person shall visually check all hoisting machinery, equipment, anchorages, and hoisting rope at the beginning of each shift and during hoist use as necessary.

———§1926.800(t)(3)(xx) Each safety device shall be checked by a competent person at least weekly during hoist use to insure suitable operation and safe condition.

———§1926.800(t)(3)(xxi) In order to insure suitable operation and safe condition of all functions and safety devices, each hoist assembly shall be inspected and load tested to 100 percent of its rated capacity: at the time of installation; after any repairs or alterations affecting it's structural integrity; after the operation of any safety device; and annually when in use. The employer shall prepare a certification record which includes the date each inspection and load test was performed; the signature of the person who performed the inspection and test; and a serial number or other identifier for the hoist that was inspected and tested. The most recent certification record shall be maintained on file until completion of the project.

———§1926.800(t)(3)(xxii) Before hoisting personnel or material, the operator shall perform a test run of any cage or skip whenever it has been out of service for one complete shift, and whenever the assembly or components have been repaired or adjusted.

———§1926.800(t)(3)(xxiii) Unsafe conditions shall be corrected before using the equipment.

§1926.800(t)(4) Additional requirements for personnel hoists.

———§1926.800(t)(4)(i) Hoist drum systems shall be equipped with at least two means of stopping the load, each of which shall be capable of stopping and holding 150 percent of the hoists rated line pull. A broken rope safety, safety catch, or arrestment device is not a permissible means of stopping under this paragraph.

———§1926.800(t)(4)(ii) The operator shall remain within sight and sound of the signals at the operators station.

———§1926.800(t)(4)(iii) All sides of personnel cages shall be enclosed by one half inch (12.70 mm) wire mesh (not less than 14 gage or equivalent) to a height of not less than 6 feet (1.83 m). However, when the cage or skip is being used as a work platform, it's sides may be reduced in height to 42 inches (1.07 m) when the conveyance is not in motion.

———§1926.800(t)(4)(iv) All personnel cages shall be provided with positive locking door that does not open outward.

———§1926.800(t)(4)(v) All personnel cages shall be provided with a protective canopy. The canopy shall be made of steel plate, at least 3/16 inch (4.763 mm) in thickness, or material of equivalent strength and impact resistance. The canopy shall be slopped to the outside, and so designed that a section may be readily pushed upward to

afford emergency egress. The canopy shall cover the top in such a manner as to protect those inside from objects falling in the shaft.

~~§1926.800(t)(4)(vi) Personnel platforms operating on guide rails or guide ropes shall be equipped with broken rope safety devices, safety catches or arrestment devices that will stop and hold 150 percent of the weight of the personnel platform and its maximum rated load.~~

~~§1926.800(t)(4)(vii) During sinking operations in shafts where guides and safeties are not yet used, the travel speed of the personnel platform shall not exceed 200 feet (60.96 m) per minute. Governor controls set for 200 feet (60.96 m) per minute shall be installed in the control system and shall be used during personnel hoisting.~~

~~§1926.800(t)(4)(viii) The personnel platform may travel over the controlled length of the hoistway at rated speeds up to 600 feet (182.88 m) per minute during sinking operations in shafts where guides and safeties are used.~~

~~§1926.800(t)(4)(ix) The personnel platform may travel at rated speeds greater than 600 feet (182.88 m) per minute in completed shafts.~~

1926.800(t)

Hoisting unique to underground construction. Except as modified by this paragraph (t), employers must: Comply with the requirements of subpart CC of this part, except that the limitation in Sec. 1926.1431(a) does not apply to the routine access of employees to an underground worksite via a shaft; ensure that material hoists comply with Sec. 1926.552(a) and (b) of this part; and ensure that personnel hoists comply with the personnel-hoists requirements of Sec. 1926.552(a) and (c) of this part and the elevator requirements of Sec. 1926.552(a) and (d) of this part.

1926.800(t)(1)

General requirements for cranes and hoists

1926.800(t)(1)(i)

Materials, tools, and supplies being raised or lowered, whether within a cage or otherwise, shall be secured or stacked in a manner to prevent the load from shifting, snagging or falling into the shaft.

1926.800(t)(1)(ii)

A warning light suitably located to warn employees at the shaft bottom and subsurface shaft entrances shall flash whenever a load is above the shaft bottom or subsurface entrances, or the load is being moved in the shaft. This paragraph does not apply to fully enclosed hoistways.

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Whenever a hoistway is not fully enclosed and employees are at the shaft bottom, conveyances or equipment shall be stopped at least 15 feet (4.57 m) above the bottom of the shaft and held there until the signalman at the bottom of the shaft directs the operator to continue lowering the load, except that the load may be lowered without stopping if the load or conveyance is within full view of a bottom signalman who is in constant voice communication with the operator.

1926.800(t)(1)(iv)

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1926.800(t)(1)(iv)(A)

Before maintenance, repairs, or other work is commenced in the shaft served by a cage, skip, or bucket, the operator and other employees in the area shall be informed and given suitable instructions.

1926.800(t)(1)(iv)(B)

A sign warning that work is being done in the shaft shall be installed at the shaft collar, at the operator's station, and at each underground landing.

1926.800(t)(1)(v)

Any connection between the hoisting rope and the cage or skip shall be compatible with the type of wire rope used for hoisting.

1926.800(t)(1)(vi)

Spin-type connections, where used, shall be maintained in a clean condition and protected from foreign matter that could affect their operation.

1926.800(t)(1)(vii)

Cage, skip, and load connections to the hoist rope shall be made so that the force of the hoist pull, vibration, misalignment, release of lift force, or impact will not disengage the connection. Moused or latched openthroat hooks do not meet this requirement.

1926.800(t)(1)(viii)

When using wire rope wedge sockets, means shall be provided to prevent wedge escapement and to ensure that the wedge is properly seated.

1926.800(t)(2)

Additional requirements for cranes. Cranes shall be equipped with a limit switch to prevent overtravel at the boom tip. Limit switches are to be used only to limit travel of loads when operational controls malfunction and shall not be used as a substitute for other operational controls.

1926.800(t)(3)

Additional requirements for hoists.

1926.800(t)(3)(i)

Hoists shall be designed so that the load hoist drum is powered in both directions of rotation, and so that brakes are automatically applied upon power release or failure.

1926.800(t)(3)(ii)

Control levers shall be of the "deadman type" which return automatically to their center (neutral) position upon release.

1926.800(t)(3)(iii)

When a hoist is used for both personnel hoisting and material hoisting, load and speed ratings for personnel and for materials shall be assigned to the equipment.

1926.800(t)(3)(iv)

Material hoisting may be performed at speeds higher than the rated speed for personnel hoisting if the hoist and components have been designed for such higher speeds and if shaft conditions permit.

1926.800(t)(3)(v)

Employees shall not ride on top of any cage, skip or bucket except when necessary to perform inspection or maintenance of the hoisting system, in which case they shall be protected by a body belt/harness system to prevent falling.

1926.800(t)(3)(vi)

Personnel and materials (other than small tools and supplies secured in a manner that will not create a hazard to employees) shall not be hoisted together in the same conveyance. However, if the operator is protected from the shifting of materials, then the operator may ride with materials in cages or skips which are designed to be controlled by an operator within the cage or skip.

1926.800(t)(3)(vii)

Line speed shall not exceed the design limitations of the systems.

1926.800(t)(3)(viii)

Hoists shall be equipped with landing level indicators at the operator's station. Marking the hoist rope does not satisfy this requirement.

1926.800(t)(3)(ix)

Whenever glazing is used in the hoist house, it shall be safety glass, or its equivalent, and be free of distortions and obstructions.

1926.800(t)(3)(x)

A fire extinguisher that is rated at least 2A:10B:C (multi-purpose, dry chemical) shall be mounted in each hoist house.

1926.800(t)(3)(xi)

VOSHA Subpart T: 29 CFR 1926.856 Annotated

1926.856(a)

Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are of sufficient strength to support the imposed load.

1926.856(b)

Floor openings shall have curbs or stop-logs to prevent equipment from running over the edge.

~~§1926.856(c)~~

~~Mechanical equipment used shall meet the requirements specified in subparts N and O and §1926.1501 of §1926 subpart DD.~~

1926.856(c)

Cranes, derricks, and other mechanical equipment. Employers must meet the requirements specified in subparts N, O and CC of this part.

VOSHA Subpart T: 29 CFR 1926.858 Annotated Text

1926.858(a)

When floor arches have been removed, planking in accordance with 1926.855(b) shall be provided for the workers engaged in razing the steel framing.

~~§1926.858(b)~~

~~Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in §1926.1501 of §1926 subpart DD~~

1926.858(b)

Cranes, derricks, and other hoisting equipment. Employers must meet the requirements specified in subparts N and CC of this part.

1926.858(c)

Steel construction shall be dismantled column length by column length, and tier by tier (columns may be in two-story lengths).

1926.858(d)

Any structural member being dismembered shall not be overstressed.

VOSHA Subpart DD: 29 CFR 1926.1500 (Repealed) Annotated

§ 1926.1500 Scope.

This subpart applies only to employers engaged in demolition work covered by § 1926.856 and § 1926.858, and underground construction work covered by § 1926.800. This subpart applies in lieu of § 1926 subpart CC.

§ 1926.1501 Cranes and derricks.

~~(a) General requirements.~~

~~(1) The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of any and all cranes and derricks. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a qualified engineer competent in this field and such determinations will be appropriately documented and recorded. Attachments used with cranes shall not exceed the capacity, rating, or scope recommended by the manufacturer.~~

~~(2) Rated load capacities, and recommended operating speeds, special hazard warnings, or instruction, shall be conspicuously posted on all equipment. Instructions or warnings shall be visible to the operator while he is at his control station.~~

~~(3) [Reserved]~~

~~(4) Hand signals to crane and derrick operators shall be those prescribed by the applicable ANSI standard for the type of crane in use. An illustration of the signals shall be posted at the job site.~~

~~(5) The employer shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use.~~

~~(6) A thorough, annual inspection of the hoisting machinery shall be made by a competent person, or by a government or private agency recognized by the U.S. Department of Labor. The employer shall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment.~~

~~(7) Wire rope shall be taken out of service when any of the following conditions exist:~~

~~(i) In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay;~~

~~(ii) Wear of one third the original diameter of outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure;~~

~~(iii) Evidence of any heat damage from any cause;~~

~~(iv) Reductions from nominal diameter of more than one sixty fourth inch for diameters up to and including five sixteenths inch, one thirty second inch for diameters three eighths inch to and including one half inch, three sixty fourths inch for diameters nine sixteenths inch to and including three fourths inch, one sixteenth inch for diameters seven eighths inch to 1 1/8 inches inclusive, three thirty seconds inch for diameters 1 1/4 to 1 1/2 inches inclusive;~~

~~(v) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.~~

~~(vi) Wire rope safety factors shall be in accordance with American National Standards Institute B30.5-1968 or SAE J959-1966.~~

~~(8) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or other moving parts or equipment shall be guarded if such parts are exposed to contact by employees, or otherwise create a hazard. Guarding shall meet the requirements of the American National Standards Institute B15.1-1958 Rev., Safety Code for Mechanical Power Transmission Apparatus.~~

~~(9) Accessible areas within the swing radius of the rear of the rotating superstructure of the crane, either permanently or temporarily mounted, shall be barricaded in such a manner as to prevent an employee from being struck or crushed by the crane.~~

~~(10) All exhaust pipes shall be guarded or insulated in areas where contact by employees is possible in the performance of normal duties.~~

~~(11) Whenever internal combustion engine powered equipment exhausts in enclosed spaces, tests shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.~~

~~(12) All windows in cabs shall be of safety glass, or equivalent, that introduces no visible distortion that will interfere with the safe operation of the machine.~~

~~(13)~~

~~(i) Where necessary for rigging or service requirements, a ladder, or steps, shall be provided to give access to a cab roof.~~

~~(ii) Guardrails, handholds, and steps shall be provided on cranes for easy access to the car and cab, conforming to American National Standards Institute B30.5.~~

~~(iii) Platforms and walkways shall have anti-skid surfaces.~~

~~(14) Fuel tank filler pipe shall be located in such a position, or protected in such manner, as to not allow spill or overflow to run onto the engine, exhaust, or electrical equipment of any machine being fueled.~~

~~(i) An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.~~

~~(ii) All fuels shall be transported, stored, and handled to meet the rules of subpart F of this part. When fuel is transported by vehicles on public highways, Department of Transportation rules contained in 49 CFR Parts [177](#) and [393](#) concerning such vehicular transportation are considered applicable.~~

~~(15) Except where electrical distribution and transmission lines have been deenergized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:~~

~~(i) For lines rated 50 kV. or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet;~~

~~(ii) For lines rated over 50 kV., minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV. over 50 kV., or twice the length of the line insulator, but never less than 10 feet;~~

~~(iii) In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV., and 10 feet for voltages over 50 kV., up to and including 345 kV., and 16 feet for voltages up to and including 750 kV.~~

~~(iv) A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;~~

~~(v) Cage type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation;~~

~~(vi) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;~~

~~(vii) Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:~~

~~(a) The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and~~

~~(b) Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.~~

~~(c) Combustible and flammable materials shall be removed from the immediate area prior to operations.~~

~~(16) No modifications or additions which affect the capacity or safe operation of the equipment shall be made by the employer without the manufacturer's written approval. If such modifications or changes are made, the capacity, operation, and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.~~

~~(17) The employer shall comply with Power Crane and Shovel Association Mobile Hydraulic Crane Standard No. 2.~~

~~(18) Sideboom cranes mounted on wheel or crawler tractors shall meet the requirements of SAE J743a-1964.~~

~~(19) All employees shall be kept clear of loads about to be lifted and of suspended loads.~~

~~**(b) Crawler, locomotive, and truck cranes.**~~

~~(1) All jibs shall have positive stops to prevent their movement of more than 5° above the straight line of the jib and boom on conventional type crane booms. The use of cable type belly slings does not constitute compliance with this rule.~~

~~(2) All crawler, truck, or locomotive cranes in use shall meet the applicable requirements for design, inspection, construction, testing, maintenance and operation as prescribed in the ANSI B30.5-1968, Safety Code for Crawler, Locomotive and Truck Cranes. However, the written, dated, and signed inspection reports and records of the monthly inspection of critical items prescribed in section 5-2.1.5 of the ANSI B30.5-1968 standard are not required. Instead, the employer shall prepare a certification record which includes the date the crane items were inspected; the signature of the person who inspected the crane items; and a serial number, or other identifier, for the crane inspected. The most recent certification record shall be maintained on file until a new one is prepared.~~

~~**(c) Hammerhead tower cranes.**~~

~~(1) Adequate clearance shall be maintained between moving and rotating structures of the crane and fixed objects to allow the passage of employees without harm.~~

~~(2) Each employee required to perform duties on the horizontal boom of hammerhead tower cranes shall be protected against falling by guardrails or by a personal fall arrest system in conformance with subpart M of this part.~~

~~(3) Buffers shall be provided at both ends of travel of the trolley.~~

~~(4) Cranes mounted on rail tracks shall be equipped with limit switches limiting the travel of the crane on the track and stops or buffers at each end of the tracks.~~

~~(5) All hammerhead tower cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed by the manufacturer.~~

~~**(d) Overhead and gantry cranes.**~~

~~(1) The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block, and this marking shall be clearly legible from the ground or floor.~~

~~(2) Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.~~

~~(3) Except for floor-operated cranes, a gong or other effective audible warning signal shall be provided for each crane equipped with a power traveling mechanism.~~

~~(4) All overhead and gantry cranes in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, inspection, and operation as prescribed in the ANSI B30.2.0-1967, Safety Code for Overhead and Gantry Cranes.~~

~~**(e) Derricks.** All derricks in use shall meet the applicable requirements for design, construction, installation, inspection, testing, maintenance, and operation as prescribed in American National Standards Institute B30.6-1969, Safety Code for Derricks.~~

~~**(f) Floating cranes and derricks —**~~

~~**(1) Mobile cranes mounted on barges.**~~

~~(i) When a mobile crane is mounted on a barge, the rated load of the crane shall not exceed the original capacity specified by the manufacturer.~~

~~(ii) A load rating chart, with clearly legible letters and figures, shall be provided with each crane, and securely fixed at a location easily visible to the operator.~~

~~(iii) When load ratings are reduced to stay within the limits for list of the barge with a crane mounted on it, a new load rating chart shall be provided.~~

~~(iv) Mobile cranes on barges shall be positively secured.~~

~~**(2) Permanently mounted floating cranes and derricks.**~~

~~(i) When cranes and derricks are permanently installed on a barge, the capacity and limitations of use shall be based on competent design criteria.~~

~~(ii) A load rating chart with clearly legible letters and figures shall be provided and securely fixed at a location easily visible to the operator.~~

~~(iii) Floating cranes and floating derricks in use shall meet the applicable requirements for design, construction, installation, testing, maintenance, and operation as prescribed by the manufacturer.~~

~~**(3) Protection of employees working on barges.** The employer shall comply with the applicable requirements for protection of employees working onboard marine vessels specified in § [1926.605](#).~~

~~**(g) Crane or derrick suspended personnel platforms—**~~

~~**(1) Scope, application and definitions—**~~

~~(i) **Scope and application.** This standard applies to the design, construction, testing, use and maintenance of personnel platforms, and the hoisting of personnel platforms on the load lines of cranes or derricks.~~

~~(ii) **Definitions.** For the purposes of this paragraph (g), the following definitions apply:~~

~~(A) **Failure** means load refusal, breakage, or separation of components.~~

~~(B) **Hoist** (or hoisting) means all crane or derrick functions such as lowering, lifting, swinging, booming in and out or up and down, or suspending a personnel platform.~~

~~(C) **Load refusal** means the point where the ultimate strength is exceeded.~~

~~(D) **Maximum intended load** means the total load of all employees, tools, materials, and other loads reasonably anticipated to be applied to a personnel platform or personnel platform component at any one time.~~

~~(E) **Runway** means a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria.~~

~~(2) **General requirements.** The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous, or is not possible because of structural design or worksite conditions.~~

~~**(3) Cranes and derricks—**~~

~~**(i) Operational criteria.**~~

~~(A) Hoisting of the personnel platform shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.~~

~~(B) Load lines shall be capable of supporting, without failure, at least seven times the maximum intended load, except that where rotation resistant rope is used, the lines shall be capable of supporting without failure, at least ten times the maximum intended load. The required design factor is achieved by taking the current safety factor of 3.5 (required under paragraph (b)(2)) of this section and applying the 50 per cent derating of the crane capacity which is required by paragraph (g)(3)(i)(F) of this section.~~

~~(C) Load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs shall be engaged when the occupied personnel platform is in a stationary working position.~~

~~(D) The crane shall be uniformly level within one percent of level grade and located on firm footing. Cranes equipped with outriggers shall have them all fully deployed following manufacturer's specifications, insofar as applicable, when hoisting employees.~~

~~(E) The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane or derrick.~~

~~(F) The use of machines having live booms (booms in which lowering is controlled by a brake without aid from other devices which slow the lowering speeds) is prohibited.~~

~~**(ii) Instruments and components.**~~

~~(A) Cranes and derricks with variable angle booms shall be equipped with a boom angle indicator, readily visible to the operator.~~

~~(B) Cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting personnel.~~

~~(C) A positive acting device shall be used which prevents contact between the load block or overhaul ball and the boom tip (anti-two blocking device), or a system shall be used which deactivates the hoisting action before damage occurs in the event of a two blocking situation (two block damage prevention feature).~~

~~(D) The load line hoist drum shall have a system or device on the power train, other than the load hoist brake, which regulates the lowering rate of speed of the hoist mechanism (controlled load lowering.) Free fall is prohibited.~~

~~**(4) Personnel platforms—**~~

~~**(i) Design criteria.**~~

~~(A) The personnel platform and suspension system shall be designed by a qualified engineer or a qualified person competent in structural design.~~

~~(B) The suspension system shall be designed to minimize tipping of the platform due to movement of employees occupying the platform.~~

~~(C) The personnel platform itself, except the guardrail system and personal fall arrest system anchorages, shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load. Criteria for guardrail systems and personal fall arrest system anchorages are contained in subpart M of this Part.~~

~~**(ii) Platform specifications.**~~

~~(A) Each personnel platform shall be equipped with a guardrail system which meets the requirements of subpart M, and, shall be enclosed at least from the toeboard to mid-rail with either solid construction or expanded metal having openings no greater than 1/2 inch (1.27 cm).~~

~~(B) A grab rail shall be installed inside the entire perimeter of the personnel platform.~~

~~(C) Access gates, if installed, shall not swing outward during hoisting.~~

~~(D) Access gates, including sliding or folding gates, shall be equipped with a restraining device to prevent accidental opening.~~

~~(E) Headroom shall be provided which allows employees to stand upright in the platform.~~

~~(F) In addition to the use of hard hats, employees shall be protected by overhead protection on the personnel platform when employees are exposed to falling objects.~~

~~(G) All rough edges exposed to contact by employees shall be surfaced or smoothed in order to prevent injury to employees from punctures or lacerations.~~

~~(H) All welding of the personnel platform and its components shall be performed by a qualified welder familiar with the weld grades, types and material specified in the platform design.~~

~~(I) The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity or maximum intended load.~~

~~**(iii) Personnel platform loading.**~~

~~(A) The personnel platform shall not be loaded in excess of its rated load capacity. When a personnel platform does not have a rated load capacity then the personnel platform shall not be loaded in excess of its maximum intended load.~~

~~(B) The number of employees occupying the personnel platform shall not exceed the number required for the work being performed.~~

~~(C) Personnel platforms shall be used only for employees, their tools, and the materials necessary to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel.~~

~~(D) Materials and tools for use during a personnel lift shall be secured to prevent displacement.~~

~~(E) Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.~~

~~**(iv) Rigging.**~~

(A) When a wire rope bridle is used to connect the personnel platform to the load line, each bridle leg shall be connected to a master link or shackle in such a manner to ensure that the load is evenly divided among the bridle legs.

(B) Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

(C) Wire rope, shackles, rings, master links, and other rigging hardware must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant rope is used, the slings shall be capable of supporting without failure at least ten times the maximum intended load.

(D) All eyes in wire rope slings shall be fabricated with thimbles.

(E) Bridles and associated rigging for attaching the personnel platform to the hoist line shall be used only for the platform and the necessary employees, their tools and the materials necessary to do their work, and shall not be used for any other purpose when not hoisting personnel.

(5) Trial lift, inspection, and proof testing.

(i) A trial lift with the unoccupied personnel platform loaded at least to the anticipated lightweight shall be made from ground level, or any other location where employees will enter the platform, to each location at which the personnel platform is to be hoisted and positioned. This trial lift shall be performed immediately prior to placing personnel on the platform. The operator shall determine that all systems, controls and safety devices are activated and functioning properly; that no interferences exist; and that all configurations necessary to reach those work locations will allow the operator to remain under the 50 percent limit of the hoist's rated capacity. Materials and tools to be used during the actual lift can be loaded in the platform, as provided in paragraphs (g)(4)(iii) (D), and (E) of this section for the trial lift. A single trial lift may be performed at one time for all locations that are to be reached from a single set up position.

(ii) The trial lift shall be repeated prior to hoisting employees whenever the crane or derrick is moved and set up in a new location or returned to a previously used location. Additionally, the trial lift shall be repeated when the lift route is changed unless the operator determines that the route change is not significant (i.e. the route change would not affect the safety of hoisted employees.)

(iii) After the trial lift, and just prior to hoisting personnel, the platform shall be hoisted a few inches and inspected to ensure that it is secure and properly balanced. Employees shall not be hoisted unless the following conditions are determined to exist:

(A) Hoist ropes shall be free of kinks;

(B) Multiple part lines shall not be twisted around each other;

(C) The primary attachment shall be centered over the platform; and

(D) The hoisting system shall be inspected if the load rope is slack to ensure all ropes are properly stowed on drums and in sheaves.

(iv) A visual inspection of the crane or derrick, rigging, personnel platform, and the crane or derrick base support or ground shall be conducted by a competent person immediately after the trial lift to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure.

(v) Any defects found during inspections which create a safety hazard shall be corrected before hoisting personnel.

(vi) At each job site, prior to hoisting employees on the personnel platform, and after any repair or modification, the platform and rigging shall be proof tested to 125 percent of the platform's rated capacity by holding it in a suspended position for five minutes with the test load evenly distributed on the platform (this may be done concurrently with the trial lift). After proof testing, a competent person shall inspect the platform and rigging. Any deficiencies found shall be corrected and another proof test shall be conducted. Personnel hoisting shall not be conducted until the proof testing requirements are satisfied.

(6) Work practices.

- ~~(i) Employees shall keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.~~
- ~~(ii) Before employees exit or enter a hoisted personnel platform that is not landed, the platform shall be secured to the structure where the work is to be performed, unless securing to the structure creates an unsafe situation.~~
- ~~(iii) Tag lines shall be used unless their use creates an unsafe condition.~~
- ~~(iv) The crane or derrick operator shall remain at the controls at all times when the crane engine is running and the platform is occupied.~~
- ~~(v) Hoisting of employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.~~
- ~~(vi) Employees being hoisted shall remain in continuous sight of and in direct communication with the operator or signal person. In those situations where direct visual contact with the operator is not possible, and the use of a signal person would create a greater hazard for that person, direct communication alone such as by radio may be used.~~
- ~~(vii) Except over water, employees occupying the personnel platform shall use a body belt/harness system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for employees using the anchorage. When working over water, the requirements of § ~~1926.106~~ shall apply.~~
- ~~(viii) No lifts shall be made on another of the crane's or derrick's loadlines while personnel are suspended on a platform.~~

~~**(7)Traveling.**~~

- ~~(i) Hoisting of employees while the crane is traveling is prohibited, except for portal, tower and locomotive cranes, or where the employer demonstrates that there is no less hazardous way to perform the work.~~
- ~~(ii) Under any circumstances where a crane would travel while hoisting personnel, the employer shall implement the following procedures to safeguard employees:
 - ~~(A) Crane travel shall be restricted to a fixed track or runway;~~
 - ~~(B) Travel shall be limited to the load radius of the boom used during the lift; and~~
 - ~~(C) The boom must be parallel to the direction of travel.~~
 - ~~(D) A complete trial run shall be performed to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by paragraph (g)(5)(i) of this section which tests the route of the lift.~~
 - ~~(E) If travel is done with a rubber tired carrier, the condition and air pressure of the tires shall be checked. The chart capacity for lifts on rubber shall be used for application of the 50 percent reduction of rated capacity. Notwithstanding paragraph (g)(3)(i)(E) of this section, outriggers may be partially retracted as necessary for travel.~~~~

~~**(8)Pre-lift meeting.**~~

- ~~(i) A meeting attended by the crane or derrick operator, signal person(s) (if necessary for the lift), employee(s) to be lifted, and the person responsible for the task to be performed shall be held to review the appropriate requirements of paragraph (g) of this section and the procedures to be followed.~~
- ~~(ii) This meeting shall be held prior to the trial lift at each new work location, and shall be repeated for any employees newly assigned to the operation.~~

~~[44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, as amended at 52 FR 36382, Sept. 28, 1987; 53 FR 29139, Aug. 2, 1988; 54 FR 15406, Apr. 18, 1989; 54 FR 24334, June 7, 1989; 58 FR 35183, June 30, 1993; 59 FR 40730, Aug. 9, 1994; [61 FR 5510](#), Feb. 13, 1996. Redesignated at [75 FR 48134](#), Aug. 9, 2010]~~

**VOSHA Subpart CC: 29 CFR 1926.1400 – 1926.6 – incorporated by reference
Annotated**

Subpart DD—Cranes and Derricks Used in Demolition and Underground Construction

9. New subpart DD, consisting of § 1926.1500 is added to read as follows:

Subpart DD—Cranes and Derricks Used in Demolition and Underground Construction; Repealed VOSHA Subpart S, 29 CFR 1926.800 (t): VOSHA Subpart T, 29 CFR

1926.856(c); 29 CFR 1926.858(b)

Authority: Section 3704 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3701); Sections 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order Nos. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (49 FR 35736), and 5-2007 (72 FR 31159).

§ 1926.1500 Scope.

This subpart applies only to employers engaged in demolition work covered by § 1926.856 and § 1926.858, and underground construction work covered by § 1926.800.

This subpart applies in lieu of § 1926 subpart CC.; **Repealed VOSHA Subpart S, 29 CFR 1926.800 (t): VOSHA Subpart T, 29 CFR 1926.856(c); 29 CFR 1926.858(b)**

§ 1926.800 Underground construction.

* * * * *

(t) Hoisting unique to underground construction. Employers must comply with § 1926.1501(g) of § 1926 subpart DD. Except as modified by this paragraph (t), the following provisions of subpart N of this part apply: Requirements for material hoists are found in §§ 1926.552(a) and (b) of this part. Requirements for personnel hoists are found in the personnel hoists requirements of §§ 1926.552(a) and (c) of this part and in the elevator requirement of §§ 1926.552(a) and (d) of this part.

(t) Hoisting unique to underground construction. Except as modified by this paragraph (t), employers must: Comply with the requirements of subpart CC of this part, except that the limitation in Sec. 1926.1431(a) does not apply to the routine access of employees to an underground worksite via a shaft; ensure that material hoists comply with Sec. 1926.552(a) and (b) of this part; and ensure that personnel hoists comply with the personnel-hoists requirements of Sec. 1926.552(a) and (c) of this part and the elevator requirements of Sec. 1926.552(a) and (d) of this part.

§ 1926.856 Removal of walls, floors, and material with equipment.

* * * * *

(c) Mechanical equipment used shall meet the requirements specified in subparts N and O and § 1926.1501 of § 1926 subpart DD.

(c) Cranes, derricks, and other mechanical equipment. Employers must meet the requirements specified in subparts N, O and CC of this part.

23. Section 1926.858 is amended by revising paragraph (b) to read as follows:

§ 1926.858 Removal of walls, floors, and material with equipment.

* * * * *

~~(b) Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in § 1926.1501 of § 1926 subpart DD.~~

(b) Cranes, derricks, and other hoisting equipment. Employers must meet the requirements specified in subparts N and CC of this part.

§ 1926.1427 Operator qualification and certification.

(k) *Phase-in.*

~~(1) The provisions of this section are applicable [INSERT DATE 90 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER], except for paragraphs (a)(2) and (f) which are applicable [INSERT DATE 4 YEARS AND 90 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].~~

~~(2) When § 1926.1427(a)(1) is not applicable, all of the requirements in paragraphs (k)(2)(i) and (ii) of this section apply until [INSERT DATE 4 YEARS AND 90 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].~~

~~(i) The employer must ensure that operators of equipment covered by this standard are competent to operate the equipment safely.~~

~~(ii) Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employer must train that employee prior to operating the equipment. The employer must ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.~~

(1) The provisions of this section became applicable on November 8, 2010, except for paragraphs (a)(2) and (f), which are applicable November 10, 2017.

(2) When § 1926.1427(a)(1) is not applicable, all of the requirements in paragraphs (k)(2)(i) and (ii) of this section apply until November 10, 2017.

(i) The employer must ensure that operators of equipment covered by this standard are competent to operate the equipment safely.

(ii) When an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employer must train that employee prior to operating the equipment. The employer must ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.

