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## 29 C.F.R. § 1926.1435

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### Tower cranes.

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- (a) This section contains supplemental requirements for tower cranes; all sections of this subpart apply to tower cranes unless specified otherwise.
- (b) *Erecting, climbing and dismantling.* (1) Section 1926.1403 (Assembly/Disassembly—selection of manufacturer or employer procedures), § 1926.1404 (Assembly/Disassembly—general requirements (applies to all assembly and disassembly operations)), § 1926.1405 (Disassembly—additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures)), and § 1926.1406 (Assembly/Disassembly—employer procedures—general requirements), apply to tower cranes (except as otherwise specified), except that the term “assembly/disassembly” is replaced by “erecting, climbing and dismantling,” and the term “disassembly” is replaced by “dismantling.”
- (2) *Dangerous areas (self-erecting tower cranes).* In addition to the requirements in § 1926.1404(e), for self-erecting tower cranes, the following applies: Employees must not be in or under the tower, jib, or rotating portion of the crane during erecting, climbing and dismantling operations until the crane is secured in a locked position and the competent person in charge indicates it is safe to enter this area, unless the manufacturer's instructions direct otherwise and only the necessary personnel are permitted in this area.
- (3) *Foundations and structural supports.* Tower crane foundations and structural supports (including both the portions of the structure used for support and the means of attachment) must be designed by the manufacturer or a registered professional engineer.
- (4) *Addressing specific hazards.* The requirements in § 1926.1404(h)(1) through (9) apply. In addition, the A/D director must address the following:
- (i) *Foundations and structural supports.* The A/D director must determine that tower crane foundations and structural supports are installed in accordance with their design.
- (ii) *Loss of backward stability.* Backward stability before swinging self erecting cranes or cranes on traveling or static undercarriages.
- (iii) *Wind speed.* Wind must not exceed the speed recommended by the manufacturer or, where manufacturer does not specify this information, the speed determined by a qualified person.
- (5) *Plumb tolerance.* Towers must be erected plumb to the manufacturer's tolerance and verified by a qualified person. Where the manufacturer does not specify plumb tolerance, the crane tower must be plumb to a tolerance of at least 1:500 (approximately 1 inch in 40 feet).
- (6) *Multiple tower crane jobsites.* On jobsites where more than one fixed jib (hammerhead) tower crane is installed, the cranes must be located such that no crane can come in contact with the structure of another
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crane. Cranes are permitted to pass over one another.

(7) *Climbing procedures.* Prior to, and during, all climbing procedures (including inside climbing and top climbing), the employer must:

(i) Comply with all manufacturer prohibitions.

(ii) Have a registered professional engineer verify that the host structure is strong enough to sustain the forces imposed through the braces, brace anchorages and supporting floors.

(8) *Counterweight/ballast.* (i) Equipment must not be erected, dismantled or operated without the amount and position of counterweight and/or ballast in place as specified by the manufacturer or a registered professional engineer familiar with the equipment.

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