

WAC 296-155-53208 Additional inspection criteria and proof load testing—Self-erecting tower cranes. (1) After it is determined that the crane configurations meet the criteria in WAC 296-155-53200, the accredited crane certifier must visually inspect the following items, if applicable, on cranes for sound physical condition and that they are functional within the manufacturer's recommendations (not including removal of inspection covers):

(a) For cranes that telescope the internal tower by a climbing frame, the climbing mechanism is structurally sound; is free of cracks, distortion, excessive wear or corrosion; operates within the manufacturer's specifications;

(b) Structural bolts are tightened;

(c) All control and drive mechanisms for interfering with proper operation and for excessive wear or contamination by lubricants or other foreign matter;

(d) Motion limiting devices for proper operation with the crane unloaded; each motion should be inched into its limiting device by carefully running at slow speed;

(e) Load limiting devices for proper operation and accuracy of settings;

(f) Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation;

(g) Hydraulic system for proper fluid level;

(h) Hydraulic, pneumatic and other pressurized hoses, fittings and tubing, as follows:

(i) Flexible hose or its junction with the fittings for indications of leaks.

(ii) Threaded or clamped joints for leaks.

(iii) Outer covering of the hose for blistering, abnormal deformation or other signs of failure/impending failure.

(iv) Outer surface of a hose, rigid tube, or fitting for indications of excessive abrasion or scrubbing;

(i) Hydraulic and pneumatic pumps and motors, as follows:

(i) Performance indicators: Unusual noises or vibration, low operating speed.

(ii) Loose bolts or fasteners.

(iii) Shaft seals and joints between pump sections for leaks;

(j) Hydraulic and pneumatic cylinders, as follows:

(i) Drifting.

(ii) Rod seals and welded joints for leaks.

(iii) Cylinder rods for scores, nicks and dents.

(iv) Case (barrel) for significant dents;

(k) Electrical components for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation, wiring for cracked or split insulation, and loose or corroded terminations;

(l) Ensure crane is grounded per manufacturer's specifications;

(m) Hooks and safety latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat;

(n) Crane structure (including the boom, jib and counter jib):

(i) Structural members: Deformed, cracked, or significantly corroded.

(ii) Bolts, rivets and other fasteners: Loose, failed or significantly corroded.

(iii) Welds for cracks;

(o) Cracked or worn sheaves and drums;

(p) Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices, sprockets, and drive chains or belts;

(q) Excessive wear on brake and clutch system parts, linings, pawls, and ratchets;

(r) Load, wind, and other indicators for inaccuracies outside the tolerances recommended by the manufacturer;

(s) A legible and applicable operator's manual and load chart is in the operator's station;

(t) Crane cleanliness and housekeeping. Inspect for trash, oil, grease, debris or excessive dirt on crane components and catwalks, if applicable;

(u) A portable fire extinguisher, with a basic minimum extinguishing rating of 10 BC must be installed in the cab or at the machinery housing;

(v) Ballast blocks in place and secured per manufacturer's recommendations;

(w) Wire rope reeving for compliance with the manufacturer's specifications;

(x) Wire rope, in accordance with WAC 296-155-53200(5);

(y) Safety devices and operational aids for proper operation (including significant inaccuracies);

(z) Legible warning labels and decals as required by the manufacturer;

(aa) Steps, ladders, handrails and guards are in safe and usable condition.

(2) Additional requirements for self-erecting tower cranes prior to performing a proof load test.

Note: General requirements relating to preproof load tests for all cranes are located in WAC 296-155-53200.

(a) Functional motion test must be at crane manufacturer's rated load. Each test must include:

(i) Load hoisting and lowering;

(ii) Jib (boom) hoisting and lowering, or trolley travel;

(iii) Slewing motion;

(iv) Brakes and clutches;

(v) Limit, locking, and safety devices.

(b) The functional motion test listed in (a) of this subsection must continue until all controls, drives, and braking systems have been engaged and have functioned per the crane manufacturer's specifications.

(c) Order in which tests of self-erecting tower cranes are to be performed is as follows:

(i) Functional motion test without rated load;

(ii) Functional motion test at crane manufacturer's rated load. These tests may be combined with test of base structural support or foundation system given in (a) of this subsection.

(d) During functional motion tests, the crane's base structural support or foundation system must be visually checked by the accredited crane certifier. If any part of the crane's base structural support or foundation system shows excessive visual displacement, visual distress, or audible distress, then the lifted load must be lowered at hoist creep speed and all crane operations are to cease. An evaluation must then be made by the accredited crane certifier.

(3) Annual proof load testing of self-erecting tower cranes.

(a) **Annual proof load testing.** After the crane has passed the visual and operational tests, the accredited crane certifier must en-

sure a proof load test is conducted and must be performed according to the manufacturer's recommendations. This test must be documented on the form or in the format approved by the department. A copy of this completed form and inspection worksheets must be sent to the department within 10 working days upon completion of the examination.

(b) The structural support or foundation examination during proof load test:

(i) This test must be conducted with the rated load placed at maximum radius permitted by site conditions. The superstructure must be rotated through 360 degrees with 5-minute stops at each outrigger position. If any part of the support structure becomes displaced or distressed, all crane operations must stop until an evaluation is made by a qualified person.

(ii) For rail-mounted cranes, a load test must be conducted with the jib in the position causing maximum loading on one wheel or bogie. The test must comprise traveling the entire length of the runway, then returning with the same load on the other rail. If a sleeper or support becomes displaced or damaged, crane operations must stop until an evaluation is made by a qualified person or until track ballast has been reset, or repairs made and a satisfactory test performed.

(c) Self-erecting tower crane hoist load limit switches must be set in accordance with the manufacturer's specifications using specified certified weights. Procedure is to be verified by the accredited crane certifier.

(d) Setting of hoist load limits must be documented on the form provided by the department. A copy of the completed form and inspection worksheets must be sent to the department within 10 days upon completion of the examination.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-53208, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, 49.17.400, 49.17.410, 49.17.420, 49.17.430, and 49.17.440. WSR 08-22-080, § 296-155-53208, filed 11/4/08, effective 1/1/10.]