

WAC 296-155-53202 Additional inspection criteria and proof load testing—Mobile cranes. (1) After it is determined that the crane configurations meet the criteria in WAC 296-155-53200, the accredited crane certifier must conduct a visual inspection of the following components, if applicable, which can be visually inspected without disassembly (not including removal of inspection covers):

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

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

(c) Hydraulic system for proper fluid level;

(d) Safety latches on hooks for damage;

(e) Hooks for deformation, cracks, excessive wear, or damage such as from chemicals or heat;

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

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

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

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

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

(k) Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation;

(l) Tires (when in use) for proper inflation and condition;

(m) Ground conditions around the equipment for proper support, including ground settling under and around outriggers and supporting foundations, groundwater accumulation, or similar conditions;

(n) The equipment for level position;

(o) Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view;

(p) Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling;

(q) Equipment structure (including the boom and, if equipped, the jib):

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

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

(iii) Welds for cracks.

(r) Sheaves and drums for cracks or significant wear;

(s) Parts such as pins, bearings, shafts, gears, rollers and locking devices for distortion, cracks or significant wear;

(t) Brake and clutch system parts, linings, pawls and ratchets for excessive wear;

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

(v) Gasoline, diesel, electric, or other power plants for safety-related problems (such as leaking exhaust and emergency shut-down feature), condition and operation;

(w) Chains and chain drive sprockets for excessive wear of sprockets and excessive chain stretch;

(x) Travel steering, brakes, and locking devices, for proper operation;

(y) Tires for damage or excessive wear;

(z) 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.

(aa) 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.

(bb) 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.

(v) Rod eyes and connecting joints: Loose or deformed.

(cc) Outrigger pads/floats and slider pads for excessive wear or cracks; cribbing/dunnage for proper installation;

(dd) Electrical components and wiring for cracked or split insulation and loose or corroded terminations;

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

(ff) Operator seat: Missing or unusable;

(gg) Equipped with original, or the equivalent, steps, ladders, handrails, guards;

(hh) Steps, ladders, handrails, and guards are in safe and usable condition;

(2) **Crane deficiencies.** If the accredited crane certifier determines other findings need to be monitored, the accredited crane certifier must provide written notification to the owner or lessee.

(3) **Operational testing.** An operational test must be made without a load applied to the hook of the following items if they are applicable to the crane to ensure they function correctly:

(a) Load lifting/hoisting and lowering mechanisms;

(b) Boom lifting/hoisting and lowering mechanisms;

(c) Boom extension and retraction mechanism;

(d) Swing mechanism;

(e) Travel mechanism;

(f) Brakes and clutches;

(g) Limit, locking, and safety devices;

(h) Suspension systems for cranes that work on rubber (tires);

and

(i) During the operational testing, special attention must be paid to hydraulic and pneumatic valves: Spools (sticking, improper return to neutral, and leaks); leaks; valve housing cracks; relief valves.

(4) **Annual and quadrennial proof load testing.**

(a) Proof load tests must be completed on all hoist lines to at least 100% but not to exceed 110% as configured. Any hoist line not proof load tested is not considered certified. The test load must be

at least 100% but not to exceed 110% of rated capacity (i.e., for the crane's configuration of reeving, boom length, etc.). The rated capacity must be the capacity shown on the posted load chart or as limited by other factors such as hook block capacity or wire rope line pull if the crane is not fully reeved. The test load includes the weight of (or deduction values for) the hook, block, slings, and auxiliary lifting devices (and for some cranes hoist wire rope not accounted for in load charts), and the combined weight deduction values must be subtracted from the nominal test load in order to determine the amount of test weights to be used. Follow original equipment manufacturer (OEM) load chart instructions for weight deduction values. Check accuracy of load indicators where installed. Test procedures for these cranes must follow OEM procedures and recommendations.

(b) **Annual proof load testing.** After the crane has passed the visual and operational tests, a proof load test must be conducted in the as-configured condition and must be performed within the structural section of the manufacturer's load chart, as applicable. 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.

(c) **Free rated load test ("on rubber").** Check the stability and operation of crane, carrier, wheels, tires, tracks, brakes, etc., under load by performing the following tests, when lifting without outriggers and/or traveling with the load are permitted at the activity for the type of crane being tested.

Note: Ensure all free rated load tests "on rubber" lifting requirements established by the OEM are complied with. Attach taglines to the load to control oscillation. For cranes with outriggers, extend outriggers and maintain minimal clearance (3 to 4 inches) above ground. Test personnel must stand clear of tires during load tests. This test is only required if the owner/lessee wants an "on rubber" certification. If the crane has "on rubber" capabilities and the owner does not desire this certification, the crane certifier must document it on the certification document.

(i) **Maximum free rated load.** Hoist maximum free rated test load at minimum possible radius over the rear (or over the front as required by the OEM). Slowly boom down to the maximum radius for the load, with boom and load hoist pawls (dogs) engaged where applicable, complete (d)(i)(A) and (B) of this subsection.

(A) Rotate through the appropriate working arc;

(B) Travel a minimum of 50 feet with test load over the rear (or front as required by the OEM) with the boom parallel to the longitudinal axis of the crane carrier.

(ii) **Stability test.** Repeat the step in (d)(i) of this subsection with a test load corresponding to the radii determined as follows: For telescoping boom cranes, test with the boom approximately halfway between fully retracted and fully extended but do not exceed OEM's boom length limitation for lifting on rubber. If no ratings are governed by stability, no stability test is required.

Note: When lifting test loads, always lift the load well within the maximum radius and slowly boom down to a premeasured radius. Lift the test load only high enough to perform the required tests.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-53202, filed 4/19/16, effective 5/20/16. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.440, 49.17.060, and 29 C.F.R. 1926, Subpart CC. WSR 12-01-086, § 296-155-53202, filed 12/20/11, effective 2/1/12. Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 10-14-100, § 296-155-53202, filed 7/6/10, effective 9/1/10. 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, § 296-155-53202, filed 11/4/08, effective 1/1/10.]