WAC 296-56-60098 Examination and inspection of cranes and derricks. (1) You must carry out an examination in conjunction with each annual unit proof load test. The accredited person, or their authorized representative, must make a determination as to correction of deficiencies found. The examination must include the following: (Refer to WAC 296-56-60093(8) for definition of accredited person.)

(a) All functional operating mechanisms must be examined for improper function, maladjustment, and excessive component wear, with particular attention to sheaves, pins, and drums. The examinations must include operation with partial load, in which all functions and movements, including maximum possible rotation in both directions, are checked.

(b) All safety devices must be examined for malfunction.

(c) Lines, tanks, valves, drains, pumps, and other parts of air or hydraulic systems must be examined for deterioration or leakage.

(d) Rope reeving must comply with the manufacturer's recommendations.

(e) Deformed, cracked, or excessively corroded members in crane structure and boom must be repaired or replaced as necessary.

(f) Loose bolts, rivets, or other connections must be corrected.

(g) Worn, cracked, or distorted parts affecting safe operation must be corrected.

(h) All brakes, used to control the load, boom or travel of the crane, must be tested. Air, hydraulic, or electrically operated brakes must be of such design as to set and stop the load if the source of power fails.

(i) Brake and clutch system parts, linings, pawls, and ratchets must be examined for excessive wear and free operation.

(j) Load, boom angle, or other indicators must be checked over their full range. Defects in such indicators must be immediately corrected.

(k) Where used, clamshell buckets or other similar equipment, such as magnets, must be carefully examined in all respects, with particular attention to closing line wires and sheaves. The accredited person may supplement such examination by requesting any operational tests deemed appropriate.

(l) Careful examination of the junction areas of removable boom sections, particularly for proper seating, cracks, deformities, or other defects in securing bolts and in the vicinity of such bolts, must be made.

(m) All platforms, steps and footwalks located on cranes where workers are exposed to the hazard of slipping must be of a nonslip material. Wire rope used for railings on cranes must be kept taut at all times.

Note: In critical areas such as footwalks along booms, a grating material should be used.

(n) No counterweights in excess weight of the manufacturer's specifications must be fitted or used.

(o) Such other examination or supplemental functional tests must be made as may be deemed necessary by the accredited person under the circumstances.

(2) You must meet the following requirements for wire rope:

(a) All wire rope must be inspected at least once a month, dependent upon conditions to which the wire ropes are subjected, and at intervals not exceeding a twelve-month period. Records of inspection of wire rope must be kept and must be available to the department of labor and industries representative. Records must be kept for one

year. Refer to the general safety and health standards, WAC 296-24-24013.

(b) Wire rope must not be used if in any length of eight diameters, the total number of visible broken wires exceeds ten percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect. Particular attention must be given to the condition of those sections of wire rope adjacent to any terminal connections, those sections exposed to abnormal wear, and those sections not normally exposed for examination.

(c) Documentation available for inspection must include wire rope test certificates relating to any replacements made since the last unit test or annual examination as required.

(d) Wire rope and replacement wire rope must be of the same size, same or better grade, and same construction as originally furnished by the equipment manufacturer or contemplated in the design, unless otherwise recommended by the equipment or wire rope manufacturer due to actual working conditions. In the absence of specific requirements, wire rope must be of a size and construction suitable for the purpose, and must have the capacity to handle five times the heaviest expected load, verified by wire rope test certificate.

(e) Wire rope in use on equipment previously constructed and prior to initial certification of said equipment must not be required to be tested but must be subject to thorough examination at the time of initial certification of the equipment.

(3) You must meet the following requirements for accessory components:

(a) Container spreader bar twist locks must be carefully examined periodically and at the time of annual examination and inspection. Cracked or deformed hooks must be discarded immediately and not reused.

(b) Crane hooks and container spreader bar twist lock. Magnetic particle or other suitable crack detecting inspection must be performed at least once each year. When testing by X-ray, the pertinent provisions of the Nuclear Regulatory Commission's standards for protection against radiation, relating to protection against occupational radiation exposure, must apply.

(4) You must make sure, in the event that heat treatment of any loose gear is recommended by the manufacturer, the latest heat treatment certificate attesting to compliance with the manufacturer's specifications must be part of the available documentation. Heat treatment must be carried out in accordance with the specifications of the manufacturer by persons competent to perform such work.

(5) You must make sure replacement parts are of equal or better quality than the original equipment and suitable for the purpose. Repairs or modifications must be such as to render the equipment equal to or better than the original construction or design.

(6) You must make sure, in cases of foreign manufactured cranes, there is an owner's warranty that the design is adequate for the intended use. The warranty must be based on a thorough examination of the design specifications by a registered professional engineer familiar with the equipment.

(7) You must make sure the certifications required by this section are performed in accordance with WAC 296-56-60093 by persons accredited by the assistant director of DOSH.

(8) You must make sure the marine terminal material handling devices listed below are certified in the following manner:

(a) Each crane and derrick must be tested and examined as a unit annually. A copy of the certificate of tests and examinations must be posted in the crane operator's cab.

(b) Bulk cargo spouts and suckers, together with any portable extensions and rigging or outriggers supporting them vertically, must be examined annually. Certificates attesting to the required examination must be made readily available for inspection.

(c) Vertical pocket or bucket conveyors such as banana, sugar, and grain marine legs (other than those within a grain elevator structure) used within a marine terminal facility must be examined annually. The annual examination must include all supporting structures, rigging, mechanical components and observation of all steps of operations. Certificates attesting to the required examinations must be readily available for inspection.

(d) House fall cargo-handling gear must be proof load tested as a unit upon initial certification and every fourth year thereafter.

(i) An examination must be carried out in conjunction with each unit proof load test and annually thereafter. The unit test must consist of a proof load of twenty-five percent in excess of the rated safe working load. Examinations must include all supporting structures and components. Certificates attesting to the required tests and examinations must be readily available for inspection.

(ii) House fall span beams or other house fall block supports must be marked with the safe working load, which must not be exceeded.

(e) You must meet the following requirements for special gear:

(i) Special stevedoring gear provided by the employer, the strength of which depends upon components other than commonly used stock items such as shackles, ropes or chains, must be tested as a unit in accordance with the following table before initially being put into use (see Table A). In addition, any special stevedoring gear that suffers damage necessitating structural repair must be inspected and retested after repair and before being returned to service.

Table A

Safe Working Load	Proof Load
Up to 20 short tons	25 percent in excess
Over 20 to 50 short tons	5 short tons in excess
Over 50 short tons	10 percent in excess

(ii) Special stevedoring gear provided by the employer that has a SWL of five short tons (10,000 or 4.54 metric tons) or less must be inspected and tested as a unit before initial use according to (d) and (e) of this subsection or by a designated person (see Table A).

(iii) Every spreader not a part of ship's gear and used for hoisting intermodal containers must be tested to a proof load equal to twenty-five percent in excess of its rated capacity. Additionally, any spreader which suffers damage necessitating structural repair must be retested after repair and before being returned to service.

(iv) Certificates attesting to the required tests must be available for inspection.

(v) All cargo handling gear covered by this section with a SWL greater than five short tons (10,000 lbs. or 4.54 metric tons) must be proof load tested according to Table A every four years in accordance with subsection (7) of this section or by a designated person.

(f) Wire rope and loose gear used for material handling must be tested and certified before being placed into use in accordance with

the provisions of WAC 296-56-60097. Certificates attesting to the required tests, inspections and examinations must be available.

(9) You do not need to recertify equipment that has been disassembled and reassembled provided that the equipment is reassembled and used in a manner consistent with its certification.

(10) Equipment certified in Washington and transferred to a site in another state does not require recertification in this state upon its return, until the next inspection or examination becomes due as if it had not been moved.

(11) You must make sure certification procedures are not construed as a substitute for, or cause for elimination of, normal operational inspection and maintenance routine throughout the year.

(12) You must make sure every unit of equipment requiring annual certification has had such annual certification within the previous twelve months.

(a) Equipment requiring annual certification must have had such annual certification within the previous twelve months, except that no annual certification is required within twelve months after any required certification. Annual examinations for certification may be accomplished up to one month early without effect on subsequent due dates.

(b) When certified equipment is out of service for six months or more beyond the due date of a certification inspection, an examination equivalent to an initial certification, including unit proof load test, must be performed before the equipment reenters service.

(13) You must make sure loose gear bears a legible mark indicating that it has been tested (see WAC 296-56-60097). Single sheave blocks must be marked with safe working loads and proof test loads. Marks relating to testing must be identifiable on the related certificates, which must be available.

(14) The certification requirements of this section do not apply to the following equipment:

(a) Industrial trucks and small industrial crane trucks; and

(b) Any straddle truck not capable of straddling two or more intermodal containers sixteen feet (4.88 m) in width.

(15) You must meet the following requirements for a safe working load:

(a) The safe working load of gear as specified in this section must not be exceeded.

(b) All cargo handling gear provided by the employer with a safe working load greater than five short tons (10,000 lbs. or 4.54 metric tons) must have its safe working load plainly marked on it.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 15-24-102, § 296-56-60098, filed 12/1/15, effective 1/5/16. Statutory Authority: RCW 49.17.010, [49.17].040, and [49.17].050. WSR 00-21-103, § 296-56-60098, filed 10/18/00, effective 2/1/01. Statutory Authority: RCW 49.17.040. WSR 99-02-024, § 296-56-60098, filed 12/30/98, effective 3/30/99. Statutory Authority: Chapter 49.17 RCW. WSR 95-04-007, § 296-56-60098, filed 1/18/95, effective 3/1/95. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-064 (Order 86-02), § 296-56-60098, filed 1/17/86; WSR 85-10-004 (Order 85-09), § 296-56-60098, filed 4/19/85; WSR 85-01-022 (Order 84-24), § 296-56-60098, filed 12/11/84.]