

WAC 296-304-20003 Unit proof test and examination of cranes.

(1) Unit proof tests of cranes must be carried out at the following times:

(a) In the cases of new cranes, before initial use and every 4 years thereafter.

(b) In the cases of uncertificated cranes which have been in use, at the time of initial certification and every 4 years thereafter.

(c) After important alterations and renewals, and after repairs due to failure of, or damage to, major components.

(2) Unit proof load tests of cranes must be carried out where applicable with the boom in the least stable direction relative to the mounting, based on the manufacturer's specifications.

(3) Unit proof load tests must be based on the manufacturer's load ratings for the conditions of use and must, except in the case of bridge type cranes utilizing a trolley, consist of application of a proof load of 10 percent in excess of the load ratings at maximum and minimum radius, and at such intermediate radii as the certificating authority may deem necessary in the circumstances.¹ Trolley equipped cranes must be subject to a proof load of 25 percent in excess of the manufacturer's load rating. In cases of foreign manufacture, the manufacturer's specifications must be subject to approval by the certificating authority as being equivalent to U.S. practice.

¹ The manufacturer's load ratings are usually based upon percentage of tipping loads under some conditions and upon limitations of structural competence at others, as well as on other criteria such as type of crane mounting, whether or not outriggers are used, etc. Some cranes utilizing a trolley may have only one load rating assigned and applicable at any outreach. It is important that the manufacturer's ratings be used.

The weight of all auxiliary handling devices such as, but not limited to, magnets, hooks, slings, and clamshell buckets must be considered part of the load.

(4) An examination must be carried out in conjunction with each unit proof load test. The accredited person, or his authorized representative, must make a determination as to correction of deficiencies found. The examination must cover the following points as applicable:

(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 examination must include operation with partial load, in which all functions and movements, including, where applicable, maximum possible rotation in both directions, are performed.

(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) Loose gear components, such as hooks, including wire rope and wire rope terminals and connections, must be checked with particular attention to sections of wire rope exposed to abnormal wear and to sections not normally exposed for examination. The provisions of WAC 296-304-16023 shall apply in wire rope examinations. Cracked or deformed hooks must be discarded and not reused on any equipment subject to the provisions of chapter 296-56 WAC longshoring and WAC 296-304-130 through 296-304-13503.

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

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

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

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

(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 for any significant inaccuracy. A boom angle or radius indicator must be fitted.

(k) It must be ascertained that there is a durable rating chart visible to the operator, covering the complete range of the manufacturer's capacity ratings at all operating radii, for all permissible boom lengths and jib lengths, with alternate ratings for optional equipment affecting such ratings. Necessary precautions or warnings must be included. Operating controls must be marked or an explanation of controls must be posted at the operator's position to indicate function.

(l) Where used, clamshell buckets or other similar equipment such as magnets, etc., 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 as may be appropriate.

(m) 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.

(n) It must be ascertained that no counterweights in excess of the manufacturer's specifications are fitted.

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

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 17-18-075, § 296-304-20003, filed 9/5/17, effective 10/6/17; Order 74-25, § 296-304-20003, filed 5/7/74.]