

§ 1919.16

wires and sheaves. The accredited person may supplement such examination by requesting any operational tests he may deem appropriate.

(6) Winch and other operating drums for excessive wear or defect.

§ 1919.16 Heat treatment.

(a) All chains (other than bridle chains attached to derricks or masts), rings, hooks, shackles, and swivels made of wrought iron, which are used in hoisting or lowering, shall be annealed in accordance with § 1919.36 at the following intervals:

(1) Half-inch and smaller chains, rings, hooks, shackles and swivels in general use, at least once every six months; and

(2) All other chains, rings, hooks, shackles, and swivels in general use, at least once every twelve months.

(3) In the case of gear used solely on lifting machinery worked by hand, twelve months shall be substituted for six months in paragraph (a)(1) of this section and two years for twelve months in paragraph (a)(2) of this section.

(4) When used in this paragraph, the term "in general use" means used on fifty-two or more days in a year. In any case, however, the period between annealings shall not exceed two years.

(b) Chains, rings, hooks, shackles, and swivels made of material other than wrought iron or steel shall be heat treated when necessary in accordance with § 1919.36(b).

§ 1919.17 Exemptions from heat treatment.

Gear made of steel, or gear which contains (as in ball bearings swivels), or is permanently attached to (as with blocks) equipment made of materials which cannot be subjected to heat treatment shall be exempt from the requirements of § 1919.16. Such gear, however, shall be thoroughly examined in the manner described in § 1919.15(c).

§ 1919.18 Grace periods.

Grace periods allowed in connection with the requirements of this subpart are as follows:

(a) Annual or six-month requirements—by the end of the voyage during which they become due;

(b) Quadrennial requirements—with- in six months after the date when due;

(c) Grace periods shall not be deemed to extend subsequent due dates.

§ 1919.19 Gear requiring welding.

Chains or other gear which have been lengthened, altered or repaired by welding shall be properly heat treated where necessary, and, before again being put into use, shall be tested and reexamined in the manner set forth in subpart E of this part.

§ 1919.20 Damaged components.

(a) Pursuant to § 1918.51(b) of this chapter, any derrick or associated permanent fitting which is deformed in service between surveys shall be subjected to proof test to determine its suitability for continued service. If a proof test indicates that the derrick or associated permanent fitting may be continued in service without repair, a note of the existing deformity shall be made on the test certificate. When, in the opinion of the accredited person, it is unsafe to conduct a proof test with an existing deformity, the derrick or associated permanent fitting shall be replaced or repaired and then subjected to proof test in accordance with subpart E of this part.

(b) Any loose gear components which are injured or deformed by a proof load shall be replaced before a certificate is issued.

(c) Any derrick, other fixed installation, or associated permanent fitting which is injured or deformed by a proof load shall be replaced or repaired and another proof load test shall be conducted without damage before a certificate is issued.

§ 1919.21 Marking and posting of safe working loads.

(a) The safe working load of the assembled gear and the minimum angle to the horizontal at which this load may be applied shall be plainly marked at the heels of all booms along with the date of the test. Where gear is certificated for use in union purchase, the union purchase safe working load shall also be plainly marked. Any limitations shall be noted in the vessel's papers.

(b) The safe working load shall be marked on all blocks used in hoisting or lowering.

(c) When the capacity of the boom of a crane or derrick has been or will be rated in accordance with the variance of its radius, the maximum safe working loads for the various working angles of the boom and the maximum and minimum radii at which the boom may be safely used shall be conspicuously posted near the controls and visible to the crane operator. Ratings may be stated in pounds. When they are stated in tons of 2,000 pounds, this fact shall be indicated.

§ 1919.22 Requirements governing braking devices and power sources.

All types of winches and cranes shall be provided with means to stop and hold the proof load in any position, and the efficiency of such means shall be demonstrated. Electric winches, electrohydraulic winches fitted with electromagnetic or hydraulic brakes at the winch, or electric cranes shall be equipped so that a failure of the electric power shall stop the motion and set the brakes without any action on the part of the operator. Current for operation of electric winches and cranes during the tests shall be taken from the vessel's circuits. Shore current may be used if it passes through the vessel's main switchboard.

§ 1919.23 Means of derrick attachment.

Appropriate measures shall be taken to prevent the foot of a derrick from being accidentally lifted from its socket or support during the test.

§ 1919.24 Limitations on use of wire rope.

(a) An eye splice made in any wire rope shall have at least three tucks with a whole strand of rope and two tucks with one-half of the wires cut out of each strand. However, this requirement shall not operate to preclude the use of another form of splice or connection which can be shown to be as efficient and which is not prohibited by part 1918 of this chapter.

(b) Except for eye splices in the ends of wires, each wire rope used in hoisting or lowering, in guying derricks, or as a topping lift, preventer or pendant

shall consist of one continuous piece without knot or splice.

(c) Eyes in the ends of wire rope cargo falls shall not be formed by knots and, in single part falls, shall not be formed by wire rope clips.

(d) The ends of falls shall be secured to the winch drums by clamps, U-bolts, shackles or some other equally strong method. Fiber rope fastenings shall not be used.

(e) Wire rope shall not be used for the vessel's cargo gear if in any length of eight diameters, the total number of visible broken wires exceeds 10 percent of the total number of wires, or if the rope shows other signs of excessive wear, corrosion, or defect. Particular attention shall 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.

§ 1919.25 Limitations on use of chains.

Chains forming a part of vessel's cargo gear shall not be used when, due to stretch, the increase of length of a measured section exceeds five percent, when a link is damaged, or when other external defects are evident. Chains shall not be shortened by bolting, wiring, or knotting.

Subpart E—Certification of Vessels: Tests and Proof Loads; Heat Treatment; Competent Persons

§ 1919.26 Visual inspection before tests.

Before any test under this subpart E is carried out, a visual inspection of the gear involved shall be conducted and any visibly defective gear shall be replaced or repaired. The provisions of § 1919.15(d) shall be adhered to.

§ 1919.27 Unit proof tests—winches, derricks and gear accessory thereto.

(a) Winches, with the whole of the gear accessory thereto (including derricks, goosenecks, eye plates, eye bolts, or other attachments), shall be tested with a proof load which shall exceed the safe working load as follows: