

**5205.1200 CRANES AND HOISTS.**

Subpart 1. **Scope.** This part applies to any crane, derrick, or hoist having a maximum rated capacity of one ton or less; to railway and automobile wrecking cranes; skip hoists; hoistlike units used for horizontal pulling only; mine hoists; conveyors and shovels; drag line excavators; backhoes; and any equipment such as mobile scaffolds, towers, and platforms.

This part also applies to all monorail cranes, underhung cranes, and top running single girder cranes where the ends of the girders are fastened or fixed to the structure.

Subp. 2. **Initial inspection.** Before initial use, all new and altered cranes shall be inspected to ensure compliance with this part.

Subp. 3. **Frequent inspection.** Items A to F shall be inspected for defects at daily to monthly intervals, or as specifically indicated, including observation during operation for any defects that might appear between regular inspections. All deficiencies, such as those listed in items A to F, that constitute a safety hazard shall be corrected before placing the unit in service.

A. All functional operating mechanisms for maladjustment interfering with proper operation - daily.

B. Lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems for deterioration or leakage - daily.

C. Hooks with deformation or cracks - visual inspection daily, monthly inspection with signed reports. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than ten degrees twist from the plane of the unbent hook, refer to subpart 6, item B, subitem (1).

D. Hoist chains, including end connections, for excessive wear, twist, distorted links, or stretch beyond manufacturer's recommendations - visual inspection daily, monthly inspection with signed certification record.

E. All functional operating mechanisms for excessive wear of components.

F. Rope reeving for noncompliance with manufacturer's recommendations.

Subp. 4. **Periodic inspection.** Complete inspections of the crane shall be performed monthly or as indicated in subpart 5. These inspections shall include the requirements of subpart 3 and items A to I. All deficiencies, such as those listed in items A to I, that constitute a safety hazard shall be corrected before placing the unit in service:

A. deformed, cracked, or corroded members;

B. loose bolts or rivets;

C. cracked or worn sheaves and drums;

- D. worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, and locking and clamping devices;
- E. excessive wear on brake system parts, linings, pawls, and ratchets;
- F. load, wind, and other indicators over their full range, for any significant inaccuracies;
- G. gasoline, diesel, electric, or other power plants for improper performance or noncompliance with applicable safety requirements;
- H. excessive wear of chain drive sprockets and excessive chain stretch; and
- I. electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches, and push-button stations.

Subp. 4a. **Rope inspection.**

A. A thorough inspection of all ropes shall be made at least once a month and a certification record which includes the date of inspection, the signature of the person who performed the inspection, and an identifier for the ropes which were inspected shall be kept on file where readily available to appointed personnel. Any deterioration, resulting in appreciable loss of original strength, shall be carefully observed and a determination made as to whether further use of the rope would constitute a safety hazard. Some of the conditions that could result in an appreciable loss of strength are the following:

- (1) reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires;
  - (2) a number of broken outside wires and the degree of distribution or concentration of such broken wires;
  - (3) worn outside wires;
  - (4) corroded or broken wires at end connections;
  - (5) corroded, cracked, bent, worn, or improperly applied end connections;
- or
- (6) severe kinking, crushing, cutting, or unstranding.

B. All rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is used. This inspection shall be for all types of deterioration and shall be performed by an appointed person whose approval shall be required for further use of the rope. A certification record shall be available for inspection which includes the date of inspection, the signature of the person who performed the inspection, and an identifier for the rope which is inspected.

Subp. 5. **Cranes not in regular use.** A crane that has been idle for one month or more, but less than six months, shall be given an inspection conforming with the requirements of subpart 3 before being placed in service.

A crane that has been idle for over six months shall be given a complete inspection conforming with subparts 3 and 4 before being placed in service.

Standby cranes shall be inspected at least semiannually in accordance with subpart 3.

Subp. 6. **Adjustments and repairs.** Any condition disclosed by the inspections required by this part shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated, qualified personnel.

A. Adjustments shall be maintained to ensure correct functioning of all components, such as the following:

- (1) all functional operating mechanisms;
- (2) limit switches;
- (3) control systems;
- (4) brakes; and
- (5) power plants.

B. Repairs or replacements required by this part shall be provided promptly before resumed operation, including any deficiencies such as:

- (1) crane hooks showing defects described in subpart 3, item C, shall be discarded;
- (2) load attachment chains and rope slings showing defects described in subpart 3, items D and E, respectively;
- (3) all critical parts that are cracked, broken, bent, or excessively worn; and
- (4) pendant control stations shall be kept clean and function labels kept legible.

C. After adjustments and repairs have been made, the crane shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

**Statutory Authority:** *MS s 182.655*

**History:** *12 SR 634; 23 SR 2132*

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