

**GI Part 19. Crawler, Locomotive, and Truck Cranes
Compared With
29 C.F.R. Subpart N – Materials Handling and Storage:
1910.180 Crawler, locomotive, and truck cranes**

Summary: The significant differences between GI Part 19. Crawler, Locomotive, and Truck Cranes and 29 C.F.R. 1910.180 Crawler, locomotive, and truck cranes are in:

- Employer responsibilities
- Employee responsibilities
- Operator selector
- Operator training
- Operator testing
- Rating charts
- Operating practices, general
- Operating practices
- Attaching and holding a load
- Moving a load
- Operating near a power line
- Work platform requirements
- Refueling
- Frequent inspections
- Periodic inspections
- Maintenance; generally
- Maintenance, wire rope

The below comparison show only those provisions where MIOSHA rules are different than OSHA or where MIOSHA rules are not included in 29 C.F.R.

****means there is a comparable OSHA rule to this paragraph

MIOSHA	OSHA
<p>R 408.11911 Employer responsibilities. Rule 1911. (1) An employer shall limit the use of a crawler, locomotive or truck crane to: (a) An employee who has been trained and qualified to operate the type crane to which he or she is assigned. (b) A learner under the direct supervision of a designated employee. (c) Authorized maintenance personnel during the performance of their duties. (2) An employer shall maintain a crane and its accessories in a condition which will not endanger an operator or other employees. (3) An employer shall limit the use of a crane to its maximum rated capacity.</p>	<p>1910.180 (b)(3) Designated personnel. Only designated personnel shall be permitted to operate a crane covered by this section.</p>

MIOSHA	OSHA
<p>R 408.11912 Employee responsibilities.</p> <p>Rule 1912. (1) An employee, except a learner, shall pass a qualification test including items in rule 1915 before operating a crane.</p> <p>(2) An operator shall report any defects of a crane to his or her supervisor.</p> <p>(3) An unauthorized employee shall not enter a crane cab.</p> <p>(4) An unauthorized employee shall not ride on any exterior part of a crane.</p>	<p>No comparable OSHA provision</p>
<p>R 408.11913 Operator selection.</p> <p>Rule 1913. (1) An employee selected to operate a crawler, locomotive or truck crane shall meet the following requirements:</p> <p>(a) Have corrected vision that meets the same requirements as vision for a valid Michigan driver's license. Possession of a Michigan driver's license or a doctor's certificate is evidence of meeting this requirement.</p> <p>(b) Have effective use of all 4 limbs.</p> <p>(c) Be of a height sufficient to operate the controls and to have an unobstructed view over the controls into the work area.</p> <p>(d) Have coordination between eyes, hands, and feet.</p> <p>(e) Be free of known convulsive disorders and episodes of unconsciousness.</p> <p>(f) Be able to hear and understand conversational levels of sound in an ordinary office environment.</p> <p>(g) Be able to read and understand signs, labels, and instruction manuals.</p> <p>(2) An employee assigned to operate a crawler, locomotive, or truck crane shall have his or her ability to meet the minimum requirements in this rule verified not less than every 3 years.</p> <p>(3) The requirements of this rule, except subrule (1)(e) of this rule, may be waived for an existing employee operating a crawler, locomotive, or truck crane, on the effective date of this part, who has demonstrated his or her ability to perform the duties in a safe manner.</p>	<p>No comparable OSHA provision</p>
<p>R 408.11914 Operator training.</p> <p>Rule 1914. An employer shall provide training to a prospective crane operator prior to assignment as an operator of a crane. Instruction shall include:</p> <p>(a) Capabilities of the equipment and attachments.</p> <p>(b) Purpose, use and limitations of the controls.</p> <p>(c) How to make daily inspections of the equipment.</p> <p>(d) Practice in operating assigned equipment through the functions necessary to perform the job.</p> <p>(e) A review of state standards, company rules and regulations applicable to crane operation.</p>	<p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>R 408.11915 Operator testing. Rule 1915. An employer shall determine the ability of an employee before authorizing the employee to operate a crane. This determination shall be based on the employee's:</p> <ul style="list-style-type: none"> (a) Operating ability. (b) Knowledge of the equipment. (c) Knowledge of state standards, company rules and regulations applicable to crane operation. (d) Knowledge of daily inspections of the equipment. 	<p>No comparable OSHA provision</p>
<p>CONSTRUCTION</p>	
<p>R 408.11923. Rating charts. Rule 1923. (1)****</p> <p>(2) The required parts of line for hoist reeving, including the size and construction of rope shall be on the rating chart or in the operating manual.</p>	<p>Equivalent</p> <p>No comparable OSHA provision</p>
<p>OPERATION</p>	
<p>R 408.11931 Operating practices, general. Rule 1931. (1) An operator shall respond to signals only from the designated signalman using appropriate signals, except where voice communications equipment is used. (See figure 1). An operator shall obey a stop signal from anyone.</p> <p>(2) A crane shall be equipped with an audible signaling device which shall be actuated before traveling and intermittently during travel when approaching an employee. When moving a crane, the following signals shall be used:</p> <ul style="list-style-type: none"> (a) Stop, 1 audible signal. (b) Go ahead, 2 audible signals. (c) Back up, 3 audible signals. <p>(3) An operator is responsible for those operations under his control. Whenever there is doubt as to safety, he shall stop operations until safety is assured.</p> <p>(4) An operator shall not close a switch or start an engine if there is a warning sign or tag on the starting controls until the sign or tag has been removed by the employee placing it or removed by an authorized employee after making sure the hazard is removed. Before closing a switch or starting an engine, an operator shall see that all controls are in the off position and all employees are in the clear.</p> <p>(5) If power fails during operation, the operator shall:</p> <ul style="list-style-type: none"> (a) Set all brakes and locking devices. (b) Move all clutches and other power controls to the off or neutral position unless such action would create an unsafe condition. (c) If practicable, land any suspended load under brake control. <p>(6) An operator shall test all controls at the start of a shift. Needed adjustments shall be made before operations begin.</p>	<p>No comparable OSHA provision</p>

MIOSHA	OSHA
<p>R 408.11932 Operating practices. Rule 1932. (1) An operator shall not leave a crawler, locomotive or truck crane unattended until: (a) Any attached load, bucket, lifting magnet or other device is landed. (b) The master clutch is disengaged. (c) The travel, swing and boom brakes and other locking devices are set. (d) The clutch controls are in the off or neutral position unless such action would create an unsafe condition. (e) The engine is stopped. (f) The crane is secured against accidental travel. (2) When assembling or disassembling a boom on the ground, it shall be blocked to prevent dropping the boom and boom sections. (3) When a boom section is manually telescoped it shall be positioned so that through and through pinning of the cylinder eye may be accomplished and shall be checked in a horizontal position.</p> <p>(4)****</p> <p>(5) A locomotive crane shall not be rotated into a position where other rail cars on an adjacent track might strike it, except where it has been ascertained that cars are not moving on the adjacent track and flag protection has been provided. (6) Specified tire pressures shall be maintained.</p>	<p>No comparable OSHA provisions except:</p> <p>1910.180 (h)(4) Holding the load. (i) The operator shall not be permitted to leave his position at the controls while the load is suspended</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p>
<p>R 408.11933 Attaching and holding a load. Rule 1933. (1) The hoist rope shall not be wrapped around a load except when setting or removing a pole.</p> <p>(2) to (4)****</p>	<p>No comparable OSHA provision</p> <p>Equivalent</p>
<p>R 408.11934 Moving a load. Rule 1934. (1) to (2)****</p> <p>(3) A load shall be secured and balanced before it is lifted more than 6 inches.</p> <p>(4) An operator shall test the hoisting brakes before moving a near rated load by raising the load a few inches and applying the hoisting brakes. This requirement applies to both single or multiple line reeving.</p> <p>(5) to (7)****</p>	<p>Equivalent</p> <p>1910.180 Crawler, locomotive, and truck cranes (h) Handling the load (3) Moving the load. (b) The load is will secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.</p> <p>(viii) The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.</p> <p>Equivalent</p>

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<p>R 408.11935 Moving a load. Rule 1935. (1) to (4)****</p> <p>(5) Before moving with a load, a designated employee shall determine:</p> <p>(5)(a) to (e)****</p> <p>(5)(f) Location of overhead wires.</p> <p>(6) to (8)****</p>	<p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provision</p> <p>Equivalent</p>															
<p>R 408.11936 Operating near a power line. Rule 1936. (1) Any overhead wire shall be considered an energized line until a representative of the owner or utility has checked and indicated otherwise.</p> <p>(2) Before any crane operation is started near a power line the owner or utility representative shall be notified.</p> <p>(3) Except where electrical power lines and equipment have been deenergized and visibly grounded at the point of work or where an insulating barrier, not a part of the crane has been erected, or the employee is insulated or isolated from the crane, a crane shall maintain clearances in accordance to the following:</p> <table border="1"> <thead> <tr> <th>Voltage</th> <th>Clearance Boom Raised</th> <th>Clearance in transit with Boom Lowered and No. Load</th> </tr> </thead> <tbody> <tr> <td>To 50 KV</td> <td>10 Feet</td> <td>4 Feet</td> </tr> <tr> <td>Over 50 KV</td> <td>10 Feet + .4 inch per KV</td> <td></td> </tr> <tr> <td>50 to 345 KV</td> <td></td> <td>10 Feet</td> </tr> <tr> <td>346 to 750 KV</td> <td></td> <td>16 Feet</td> </tr> </tbody> </table> <p>(4) A cage type boom guard, insulating link or proximity warning device may be used, but their use shall not change the requirement of subrule (3).</p>	Voltage	Clearance Boom Raised	Clearance in transit with Boom Lowered and No. Load	To 50 KV	10 Feet	4 Feet	Over 50 KV	10 Feet + .4 inch per KV		50 to 345 KV		10 Feet	346 to 750 KV		16 Feet	<p>1910.180 Crawler, locomotive, and truck cranes (j) Operations near overhead lines. For operations near overhead electric lines, see 1910.333(c)(3).</p>
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<p>R 408.11937. Work platform requirements. Rule 1937. If a work platform is attached to the loadline of a crawler, locomotive, or truck crane, the employer shall comply with the provisions of construction safety standard Part 10, Lifting and Digging Equipment, being R 408.41001 et seq. of the Michigan Administrative Code.</p>	<p>No comparable OSHA provision</p>															

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<p>R 408.11943. Refueling. Rule 1943. (1) to (2)****</p> <p>(3) Smoking or other sources of sparks and flame shall be not less than 25 feet from a refueling operation.</p>	<p>Equivalent</p> <p>No comparable OSHA provision</p>
<p>INSPECTION</p>	
<p>R 408.11953. Frequent inspections. Rule 1953. (1) A crawler, locomotive or truck crane shall be given the following daily to monthly visual inspections:</p> <p>(a) to (b)****</p> <p>(c) Hydraulic system for oil level, each daily use. (d) Hydraulic hoses and fittings for leaks and deterioration. (e) All running ropes, each daily use.</p> <p>(f) to (h)****</p> <p>(i) Tires for specified pressure.</p> <p>(2)****</p>	<p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>Equivalent</p> <p>No comparable OSHA provisions</p> <p>Equivalent</p>
<p>R 408.11954. Periodic inspections. Rule 1954. A crawler, locomotive or truck crane shall be given the following monthly to yearly inspections:</p> <p>(a) to (h)****</p> <p>(i) Radiators and oil coolers for leakage, blockage of air passages and improper performance. (j) Rust on piston rods and control valves. (k) Oil strainers and filters for blockage.</p>	<p>Equivalent</p> <p>No comparable OSHA provision</p>
<p>MAINTENANCE</p>	
<p>R 408.11971 Maintenance; generally. Rule 1971. (1) An employer shall establish and maintain a preventative maintenance program under the supervision of an authorized and trained employee or outside service.</p> <p>(2) Before adjustments and repairs to a crawler, locomotive, or truck crane are started, the following steps shall be taken:</p> <p>(a) The crawler, locomotive, or truck crane shall be placed where it does not interfere with other operations. (b) A "warning" or "out of order" sign shall be placed at the controls, and the controls shall be in the "off" position. The sign need not be used if the energy source is locked out. (c) The power plant shall be disconnected, locked out, or made safe by other means.</p>	<p>No comparable OSHA provisions</p>

MIOSHA	OSHA
<p>(d) The boom shall be lowered to the ground or otherwise secured against dropping.</p> <p>(e) All hydraulic cylinders used for boom hoist and boom telescope on a mobile hydraulic crane shall be retracted.</p> <p>(f) Hydraulic oil pressure from all hydraulic circuits shall be relieved before loosening or removing hydraulic components of a mobile hydraulic crane.</p> <p>(g) The load block shall be lowered to the ground or otherwise secured against dropping, except when operation is necessary for the adjustment.</p> <p>(3) After adjustments and repairs have been completed, the crawler, locomotive or truck crane shall not be returned to operations until all guards have been installed, safety devices activated, trapped air removed from the hydraulic system of a mobile hydraulic crane and maintenance equipment and warning signs or out of order signs removed.</p> <p>(4) Hazardous conditions disclosed by the inspection requirements of rule 1952 to 1956 shall be corrected before operation of the crawler, locomotive or truck crane is resumed.</p> <p>(5) Adjustments shall be maintained to assure correct functioning of such components as operating mechanisms, safety devices, control systems, power plants, brakes and clutches.</p> <p>(6) The original safety factor shall be maintained when repairs and replacements are made. Hooks showing defects indicated in rule 1953 shall be replaced. Pitted or burned electrical contacts affecting their operations shall be replaced in sets.</p> <p>(7) A crane or its wire rope shall not be used as a ground or to carry current. The ground shall be attached to the part being welded while welding.</p>	<p>No comparable OSHA provision</p>
<p>R 408.11972 Maintenance, wire rope.</p> <p>Rule 1972. (1) Running wire ropes shall be replaced when they show 6 random broken wires in 1 rope lay or 3 broken wires in 1 strand of a rope lay; wear of 1/3 of the original diameter of outside individual wires; kinking, crushing or bird caging; heat damage; reduction in nominal diameter of 3/64 inch for ropes to 3/4 inch, 1/16 inch for ropes 7/8 inch to 1 1/8 inch, 3/32 inch for ropes 1 1/4 inch to 1 1/2.</p> <p>(2) A standing wire rope shall be replaced if it has more than 2 broken wires in 1 lay section beyond an end connection or 1 broken wire at an end connection.</p> <p>(3) A wire rope having more than 1 broken wire at a socketed fitting shall be resocketed.</p> <p>(4) Wire rope shall be stored in a manner to prevent damage or deterioration and handled in a manner to prevent kinking or twisting.</p> <p>(5) Before cutting preformed rope, seizing shall be placed on each side of the cut to prevent unlaying of the strands. On nonpreformed rope 7/8 inch in diameter or smaller, 2 seizings shall be placed on each side of the cut, and for nonpreformed rope more than 7/8 inch in diameter, 3 seizings on each side shall be used.</p> <p>(6) During installation, wire rope shall not be dragged in dirt or around sharp objects.</p>	<p>No comparable OSHA provision</p>

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