

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

CONSTRUCTION SAFETY STANDARDS

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These rules become effective immediately upon filing with the Secretary of State unless adopted under section 33, 44, or 45a(6) of 1969 PA 306.

Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the director of the department of licensing and regulatory affairs by sections 19 and 21 of 1974 PA 154, **MCL 408.1019 and 408.1021** and Executive Reorganization Order Nos. 1996-2, **2003-1**, ~~2003-18~~, 2008-4, and 2011-4, MCL **445.2001**, ~~408.1019, 408.1021, 445.2001~~, 445.2011, 445.2025, and 445.2030)

R 408.41001a, R 408.41003a, R 408.41074a of the Michigan Administrative Code are amended, as follows:

PART 10. LIFTING AND DIGGING EQUIPMENT

R 408.41001a Scope.

Rule 1001a. (1) This standard applies to power operated equipment, when used in construction, that can hoist, lower, and horizontally move a suspended load. Such equipment includes, but is not limited to, any of the following:

- (a) Articulating cranes, such as knuckle-boom cranes.
 - (b) Crawler cranes.
 - (c) Floating cranes.
 - (d) Cranes on barges.
 - (e) Locomotive cranes.
 - (f) Mobile cranes, such as wheel-mounted, rough-terrain, all-terrain, commercial **truck-mounted**, ~~truckmounted~~, and boom truck cranes.
 - (g) Multi-purpose machines when configured to hoist and lower by means of a winch or hook and horizontally move a suspended load.
 - (h) Industrial cranes, such as carrydeck cranes.
 - (i) Dedicated pile drivers.
 - (j) Service/mechanic trucks with a hoisting device.
 - (k) Crane on a monorail.
 - (l) Tower cranes, such as a fixed jib, for example, "hammerhead boom", luffing boom and self-erecting.
 - (m) Pedestal cranes.
 - (n) Portal cranes.
 - (o) Overhead and gantry cranes.
 - (p) Straddle cranes.
 - (q) Sideboom cranes.
 - (r) Derricks.
 - (s) Material and personnel hoists.
 - (t) Helicopter cranes, elevators, and excavation equipment and variations of such equipment.
- (2) Attachments. This standard applies to equipment included in subrule (1) of this rule when used with attachments. These attachments, whether crane-attached or suspended include, but are not limited, to any of the following:

- (a) Hooks.
 - (b) Magnets.
 - (c) Grapples.
 - (d) Clamshell buckets.
 - (e) Orange peel buckets.
 - (f) Concrete buckets.
 - (g) Drag lines.
 - (h) Personnel platforms.
 - (i) Augers or drills.
 - (j) Pile driving equipment.
- (3) Exclusions. This standard does not cover any of the following:
- (a) Machinery included in subrule (1) of this rule while it has been converted or adapted for a non-hoisting or lifting use. These conversions or adaptations include, but are not limited, to any of the following:
 - (i) Wheel loaders and backhoes.
 - (ii) Loader backhoes.

- (iii) Track loader.
- (iv) Concrete pumps.

This machinery is also excluded when used with chains, slings, or other rigging to lift suspended loads.

- (b) Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.
- (c) Digger derricks used in work subject to **Construction Safety Standard Part** ~~construction safety standard part 16~~ "Power Transmission and Distribution," shall comply with **General Industry Safety Standard Part** ~~general industry safety standard part 86~~ "Electric Power Generation, Transmission and Distribution." Digger derricks used in construction work for telecommunication service (as defined at **Construction Safety Standard Part** ~~construction safety standard part 30~~ "Telecommunications," 1910.268(s)(40)) shall comply with **Construction Safety Standard Part** ~~construction safety standard part 30~~ "Telecommunications". These rules are referenced in R 408.41003a.

(d) Machinery originally designed as vehicle-mounted aerial devices for lifting personnel and self-propelled elevating work platforms.

- (e) Telescopic or hydraulic gantry systems.
- (f) Stacker cranes.
- (g) Powered industrial trucks, such as, forklifts, except when configured to hoist and lower by means of a winch or hook and horizontally move a suspended load.
- (h) Mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair.
- (i) Machinery that hoists by using a come-a-long or chainfall.
- (j) Dedicated drilling rigs.
- (k) Gin poles when used for the erection of communication towers.
- (l) Tree trimming and tree removal work.
- (m) Anchor handling or dredge-related operations with a vessel or barge using an affixed A-frame.
- (n) Roustabouts.
- (o) Any of the following material delivery:

(i) Articulating knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.

(ii) Articulating knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork or cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. These sheet goods or packaged materials include, but are not limited to, sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.

(iii) This exclusion shall not apply under the following circumstances:

(A) The articulating knuckle-boom crane is used to hold, support, or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure.

(B) The material being handled by the articulating knuckle-boom crane is a prefabricated component. Prefabricated components include, but are not limited to, precast concrete members or panels, roof trusses constructed of wood, cold formed metal, steel, or other materials, prefabricated building sections such as, but not limited to, floor panels, wall panels, roof panels, roof structures, or similar items.

(C) The material being handled by the crane is a structural steel member, for example, steel joists, beams, columns, bundled or unbundled steel decking or a component of a systems-engineered metal building, as defined in **Construction Safety Standard Part** ~~construction safety standard part 26~~ "Steel Erection," as referenced in R 408.41003a.

(D) The activity is not specifically excluded under **R 408.41001a(3)(o)(i) and (ii)**. ~~R 408.41001a(3)(q)(i) and (ii)~~.

(4) All rules of this part apply to the equipment covered by this standard unless specified otherwise.

(5) The duties of controlling entities under this standard include, but are not limited to, the duties specified in R 408.41017a(2), R 408.41017a(4), and R 408.41022a(2).

(6) Where provisions of this standard direct an operator, crewmember, or other employee to take certain actions, the employer shall establish, effectively communicate to the relevant persons, and enforce, work rules to ensure compliance with the provisions.

(7) For work involving power transmission and distribution, compliance with **General Industry Safety Standard Part** ~~general industry safety standard part 86~~ "Electric Power Generation, Transmission and Distribution" R 1910.269(p) is deemed compliance with R 408.41016a through to R 408.41016e.

(8) R 408.41017a does not apply to cranes designed for use on railroad tracks, when used on railroad tracks that are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR part 213, and that comply with applicable Federal Railroad Administration requirements. See R 408.41017a(5).

R 408.41003a Adopted and referenced standards.

Rule 1003a. (1) The following standards are adopted by reference in these rules and are available from IHS Global, 15 Inverness Way East, Englewood, Colorado, 80112, USA, telephone number: 1-800-854-7179 or via the internet at website: <http://global.ihs.com>; at a cost as of the time of adoption of these rules, as stated in this subrule.

(a) American National Standards Institute (ANSI) standard A10.4 "Safety Requirements for Personnel Hoists and Employee Elevators for Construction and Demolition Operations," 2004 edition. Cost: \$128.00.

- (b) ANSI standard B20.1, "Safety Standard for Conveyors, and Related Equipment," 1999 edition. Cost: \$52.00
- (c) ANSI/ American Society of Mechanical Engineers (ASME) standard B30.5 "Mobile and Locomotive Cranes," 1994 edition. Cost: \$119.00.
- (d) ANSI/ASME standard B30.5 "Mobile and Locomotive Cranes," 2004 edition. Cost: \$60.00.
- (e) ANSI/American Society of Safety Engineers (ASSE) standard A10.5 "Safety Requirements for Material Hoists," 1992 edition. Cost: \$69.00.
- (f) ASME standard B30.14 "Side Boom Tractors," 2004 edition. Cost: \$64.00.
- (g) ASME standard B30.2 "Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)," 2005 edition. Cost: \$63.00.
- (h) ASME standard B30.7 "Base Mounted Drum Hoists," 1994 edition. Cost: \$60.00.
- (i) ASME standard B30.7 "Base Mounted Drum Hoists," 2001 edition. Cost: \$60.00.
- (j) American Welding Society (AWS) standard "IHS AWS Structural Welding Code," 2000 edition. Cost: \$601.00.
- (k) AWS standard D1.1/D1.1M "Structural Welding Code – Steel Updates Every 5 Years," 2002 edition. Cost: \$468.00.
- (l) AWS standard D14.1 "Welding of Industrial and Mill Cranes and Other Material Handling Equipment," 1997 edition. Cost: \$148.00.
- (m) AWS standard D14.3 "Specification for Welding Earthmoving and Construction Equipment," 1994 edition. Cost: \$109.00.
- (n) AWS standard D14.4 "Class and Application of Welded Joints for Machinery Equipment," 1997 edition. Cost: \$139.00.
- (o) International Organization for Standardization (ISO) standard 11660–1 "Cranes – Access, Guards and Restraints – Part 1: General," 2008 edition. Cost: \$139.00.
- (p) ISO standard 11660–2 "Cranes – Access, Guards and Restraints – Part 2: Mobile Cranes," 1994 edition. Cost: \$107.00.
- (q) ISO standard 11660–3 "Cranes – Access, Guards and Restraints – Part 3: Tower Cranes," 2008 edition. Cost: \$65.00.
- (r) Society of Automotive Engineers (SAE) standard J185, "Access Systems for Off- Road Machines," May 2003 edition. Cost: \$73.00.
- (s) SAE standard J987 "Lattice Boom Cranes – Method of Test," June 2003 edition. Cost: \$73.00
- (t) SAE standard J1063 "Cantilevered Boom Crane Structures – Method of Test," November 1993 edition. Cost: \$73.00.
- (2) The following standards are adopted by reference in these rules and are available from Techstreet, 3916 Ranchero Drive, Ann Arbor, Michigan, 48108, USA, telephone number: 1-800-699-9277 or via the internet at website: www.techstreet.com; at a cost as of the time of adoption of these rules, as stated in this subrule.
- (a) ANSI standard B20.1, "Safety Standard for Conveyors, and Related Equipment," 2000 edition. Cost: \$67.00.
- (b) AWS standard B1.10 "Guide for the Nondestructive Inspection of Welds," 1986 edition. Cost: \$60.00.
- (c) British European Standards (BS EN) standard 13000, "Cranes – Mobile Cranes," 2004 edition. Cost: \$244.61.
- (d) BS EN standard 14439, "Cranes – Safety – Tower Cranes," 2006 edition. Cost: \$202.18.
- (3) Power Crane and Shovel Association (PCSA) Standard No. 4 "Mobile Power Crane and Excavator and Hydraulic Crane Standards," 1983 edition, is adopted by reference in these rules. This standard is available from the Association of Equipment Manufacturers, 6737 West Washington Street, Suite 2400, Milwaukee, Wisconsin, 53214-5647, USA, telephone number: 1-414-272-0943 or via the internet at website: <http://shop.aem.org>; at a cost as of the time of adoption of these rules of \$3.00.
- (4) The following federal occupational safety and health administration's regulations promulgated by the United States department of labor are adopted by reference in this rule and are available from the United States Department of Labor, Occupational Safety and Health Administration, 315 West Allegan, room 315, Lansing, Michigan, 48917, or via the internet at website www.osha.gov, at no charge as of the time of adoption of these rules.
- (a) The provisions of 29 C.F.R. §1910.7 Definition and requirements for a nationally recognized testing laboratory.
- (b) The provisions of 29 C.F.R. §§1926.555 Conveyors, except as amended in this rule.
- (c) As of the effective date of this part, subpart G referenced in the provisions of 19 C.F.R. §1926.555 Conveyors means **Construction Safety Standard** ~~construction safety standard~~ Part 22 "Signals, Signs, Tags, and Barricades," as referenced in R 408.41003a.
- (d) The provisions of 29 C.F.R. §1926.556, as incorporated by reference under section 14(1) of 1974 PA 154, MCL 408.1014(1), are hereby rescinded as authorized by section 14(1).
- (e) Conveyors. The provisions of 29 C.F.R. §1926.555 are amended to read as follows:-
- (i) Means for stopping the motor or engine shall be provided at the operator's station. Conveyor systems shall be equipped with an audible warning signal to be sounded immediately before starting up the conveyor.
- (ii) If the operator's station is at a remote point, the employer shall provide similar provisions for stopping the motor or engine at the motor or engine location.
- (iii) Emergency stop switches shall be arranged so that the conveyor cannot be started again until the actuating stop switch has been reset to running or the "on" position.
- (iv) Screw conveyors shall be guarded to prevent employee contact with turning flights.
- (v) Where a conveyor passes over work areas, aisles, or thoroughfares, the employer shall provide suitable guards to protect employees required to work below the conveyors.

(vi) The employer shall ensure that all crossovers, aisles, and passageways are conspicuously marked by suitable signs, as required by subpart G of this part.

(vii) The employer shall ensure that conveyors are locked out or otherwise rendered inoperable, and tagged out with a "DO NOT OPERATE" tag during repairs and when operation is hazardous to employees performing maintenance work.

(viii) All conveyors in use shall meet the applicable requirements for design, construction, inspection, testing, maintenance, and operation, as prescribed in the ANSI Standard B20.1, "Safety Standard for Conveyors, and Related Equipment," 1999 edition.

(5) The provisions of 49 C.F.R. §§391.41 to 391.49 of the United States department of transportation are adopted by reference in this rule and are available from the United States Department of Transportation, 1200 New Jersey Avenue, SE, Washington, DC 20590, or via the internet at website www.access.gpo.gov/nara/cfr/waisidx_06/49cfr391_06.html, at no charge as of the time of adoption of these rules.

(6) The provisions of 1967 PA 227 and 1976 PA 333, MCL 408.801 to 408.824 and 338.2151, respectively, are adopted by reference in this rule and are available via the internet at website www.legislature.mi.gov, at no charge as of the time of adoption of these rules.

(7) The standards adopted in subrules (1) to (6) of this rule are also available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(8) Copies of the standards adopted in subrules (1) to (6) of this rule may be obtained from the publisher or may also be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost charged in subrules (1) to (6) of this rule, plus \$20.00 for shipping and handling.

(9) The following Michigan occupational safety and health standards are referenced in these rules. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143 or via the internet at website: www.michigan.gov/mioshastandards. For quantities greater than 5, the cost, as of the time of adoption of these rules, is 4 cents per page.

(a) Construction ~~Safety Standard Part safety standard part~~ 6 "Personal Protective Equipment," R 408.40601 to R 408.40641.

(b) Construction ~~Safety Standard Part safety standard part~~ 8 "Handling and Storage of Materials," R 408.40801 to R 408.40841.

(c) Construction ~~Safety Standard Part safety standard part~~ 13 "Mobile Equipment," R 408.41301.

(d) Construction ~~Safety Standard Part safety standard part~~ 16 "Power Transmission and Distribution," R 408.41601 to R 408.41658.

(e) Construction ~~Safety Standard Part safety standard part~~ 18 "Fire Protection and Prevention," R 408.41801 to R 408.41884.

(f) Construction ~~Safety Standard Part safety standard part~~ 22 "Signals, Signs, Tags, and Barricades," R 408.42201 to R 408.42243.

(g) Construction ~~Safety Standard Part safety standard part~~ 26 "Steel Erection," R 408.42601 to R 408.42656.

(h) Construction ~~Safety Standard Part safety standard part~~ 28 "Personnel Hoisting in Steel Erection," R 408.42801 to R 408.42809.

(i) Construction ~~Safety Standard Part safety standard part~~ 30 "Telecommunications," R 408.43001 to R 408.43006.

(j) Construction ~~Safety Standard Part safety standard part~~ 45 "Fall Protection," R 408.44501 to R 408.44501.

(k) General ~~Industry Safety Standard Part industry safety standard part~~ 18 "Overhead and Gantry Cranes," R 408.11801 to R 408.11875.

(l) General ~~Industry Safety Standard Part industry safety standard part~~ 59 "Helicopters," being R 408.15901 to R 408.15931.

(m) General ~~Industry Safety Standard Part industry safety standard part~~ 86 "Electric Power Generation, Transmission, and Distribution," R 408.18601 to R 408.18602.

R 408.41074a Wire rope for personnel hoists.

Rule 1074a. Wire rope used on personnel hoists shall be taken out of service when any of the following conditions exist:

(a) In running ropes, where 6 randomly distributed broken wires in 1 lay or 3 ~~three~~ broken wires in 1 strand in 1 lay are present.

(b) If abrasion or wear of 1/3 of the original diameter of outside individual wires, kinking, crushing, bird-caging, or any other damage that results in distortion of the rope structure occurs.

(c) If evidence of any heat damage or corrosion from any cause is present.

(d) If reductions from nominal diameter of more than 3/64 of an inch for diameters to and including 3/4 of an inch, 1/16 of an inch for diameters 7/8 of an inch to 1 1/8 inches, inclusive, or 3/32 of an inch for diameters 1 1/4 to 1 1/2 inches, inclusive, are present.

(e) In standing ropes where more than 2 broken wires in 1 lay in sections beyond end connections or more than 1 broken wire at an end connection, occur.