



DEPARTMENT OF LABOR AND ECONOMIC OPPORTUNITY
CONSTRUCTION STANDARD

Filed with the Secretary of State on **March 14, 2007**

These rules take effect 14 days after filing with the Secretary of State

(By authority conferred on the director of the department of labor and economic growth by sections 19 and 21 of 1974 PA 154, and Executive Reorganization Order Nos. 1996-2 and 2003-18, MCL 408.1019, 408.1021, 445.2001, and 445.2011)

R 408.42801, R 408.42804, R 408.42806, and R 408.42809 are added to the Michigan Administrative Code as follows:

PART 28. PERSONNEL HOISTING IN STEEL ERECTION

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R 408.42801 Scope.

Rule 2801. (1) This part sets forth requirements to protect employees from the hazards associated with steel erection activities involved in the construction, alteration, or repair of single and multistory buildings, bridges, and other structures where steel erection occurs.

R 408.42804 Definitions.

Rule 2804. (1) "Competent person" means a person who is experienced and capable of identifying an existing or potential hazard in surroundings, or under working conditions, that are hazardous or dangerous to an employee and who has the authority and knowledge to take prompt corrective measures to eliminate the hazards.

(2) "Connector" means an employee who, working with hoisting equipment, is placing and connecting structural members or components.

(3) "Controlled load lowering" means lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.

(4) "Headache ball" means a solid iron weight, usually spherical, used to keep the loadline taut and positioned above the hook.

(5) "Load line standing platform" means an attachment to the headache ball of a crane that

provides adequate footing for the safe transport of connectors.

(6) "Personal fall arrest system" means a system used to arrest an employee in a fall from a working level. A personal fall arrest system consists of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combination of these. The use of a body belt for fall arrest is prohibited.

(7) "Positioning device system" means a body belt or body harness rigged to allow an employee to be supported on an elevated, vertical surface, such as a wall or column, and work with both hands free while leaning.

(8) "Purlin, in systems-engineered metal buildings," means a "Z" or "C" shaped member formed from sheet steel spanning between primary framing and supporting roof material.

(9) "Steel erection" means the construction, alteration, or repair of steel buildings, bridges, and other structures, including the installation of metal decking and all planking used during the process of erection.

R 408.42806 Reference of standards.

Rule 2806. (1) The following occupational safety and health administrative standards are referenced in this standard. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of Labor and Economic Growth, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan 48909-8143, or via the internet at: www.michigan.gov/mioshastandards. For quantities greater than 5, the cost, at the time of adoption of these rules, is 4 cents per page.

(a) Construction Safety Standard Part 26. "Steel Erection" being R 408.42601 to R 408.42655 of the Michigan administrative code.

(b) Construction Safety Standard Part 45. "Fall Protection," being R 408.44501 to R 408.44502 of the Michigan administrative code.

R 408.42809 Personnel hoisting.

Rule 2809. (1) All the provisions of construction safety standard Part 26. "Steel Erection" being R 408.42601 to R 408.42655, which is referenced in R 408.42806, apply to all hoisting.

(2) Riding the headache ball is prohibited except when the work area is inaccessible or hazardous to reach by other means, a maximum of 2 connectors may ride the headache ball to and from the workstation with the knowledge and consent of the employer or the employer's designated representative. The connector or connectors may be lifted to the workstation only when all of the following conditions exist:

(a) Connectors riding a load line standing platform shall be protected from falling by a positioning device system or a personal fall arrest system as prescribed in construction safety standard Part 45. "Fall Protection," R 408.44501 to R 408.44502 which is referenced in R 408.42806.

(b) The connector or connectors and his or her immediate supervisor, who shall be a competent person, and the operator who will perform the lift shall verbally agree and certify in writing that using the load line standing platform is the safest alternative. They shall plan the lift together to minimize the transport distance. A minimum distance of 20 feet shall be maintained between the load line standing platform and the top sheave.

(c) A load line standing platform shall be a minimum of 3/8 of an inch thick steel plate not less than 12 inches nor more than 18 inches in diameter and shall provide means for slip resistant footing. The platform shall be secured in such a manner to prevent tipping and shall be placed between the headache ball and the wedge socket. (See figure 1.) As an alternative, a shackle rated not less than 25 tons may be used. (See figure 2.)

FIGURE 1

**TWO PIECE LOAD LINE STANDING PLATFORM
(Half Installed Cut Away View)**



**HEADACHE BALL WITH
LOAD LINE STANDING PLATFORM**

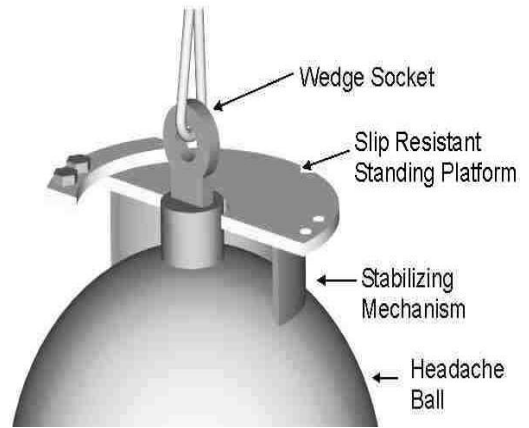
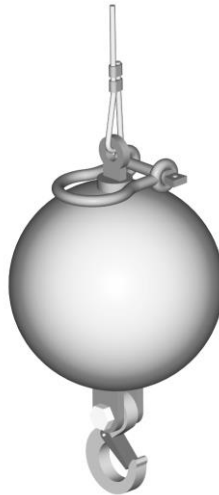


FIGURE 2



HEADACHE BALL WITH SHACKLE

(d) No rigging or load shall be attached to the crane or derrick during the use of a load line standing platform by the connector or connectors.

(e) The maximum rate of travel for the connector or connectors riding the load line standing platform shall be 100 feet per minute. Free-spooling and live booms are prohibited. Controlled load lowering shall be used when the load line standing platform is used to lower the connector or connectors.

(f) There shall be a communication system between the connector or connectors on a load line standing platform and the operator of the crane or derrick. The system may be hand signals or a closed 2-way selective frequency radio system. Hand signals shall be followed according to appendix A of this part.

(g) An operator of a crane or derrick shall:

(i) Not be authorized to raise or lower the connector or connectors on a load line standing platform unless the operator is certified by the national commission for the certification of crane operators or an equivalent crane certification organization.

(ii) Be trained in all of the provisions of R 408.42809(2) before being allowed to transport the connector or connectors on a load line standing platform.

(h) When a load line standing platform is in use by the connector or connectors, the operator of a crane or derrick shall maintain the minimum distance from an energized power transmission or distribution line as required in table 1, as follows:

TABLE 1

VOLTAGE	MINIMUM CLEARANCE
Up to 50 kV	20 feet
Over 50 kV	20 feet + 0.8 inch per kV over 50 kV

(i) The load line of a crane or derrick that is used to raise or lower the connector or connectors on a load line standing platform shall have a safety factor of 10 for the anticipated load, and be equipped with a swivel to prevent any rotation of the load line standing platform. A minimum of 1/2-inch diameter load line shall be used.

(j) Neither the load line standing platform nor the boom shall be lowered below the point where less than 3 full wraps of the wire rope remain on their respective drums.






(k) A crane or derrick that is used to raise or lower a load line standing platform shall be set level according to the crane or derrick manufacturer's specifications. The travel lock shall be engaged on a crane when the load line standing platform is in use.

(l) A crane that is equipped with outriggers shall have the beams and jacks fully extended to provide maximum stability and the floats shall have a stable bearing when the load line standing platform is in use by the connector or connectors. A crawler crane shall have its crawlers fully extended when the load line standing platform is in use.






(m) Where a crane or derrick will be used to elevate the connector or connectors on the load line standing platform to an area where there has been no previous lift of structural members, a trial lift shall be performed and consist of positioning the load line standing platform to the position it is to be used with an assumed minimum anticipated load of 1,000 pounds. The operator shall determine that all configurations necessary to reach the work location will allow the crane or derrick to remain under the 50% limit of the hoisting capacity; that all systems, controls, and safety devices are activated and functioning properly; and that interferences do not exist. This will be done at each set-up location of a crane or derrick prior to elevating the connector or connectors.



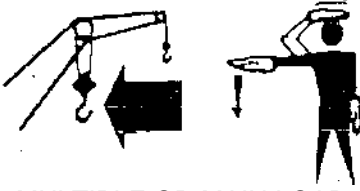
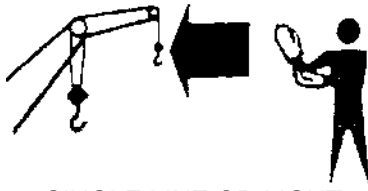
APPENDIX A – HAND SIGNALS





(Non-Mandatory)

				
HOIST LOAD	LOWER LOAD	BOOM UP	BOOM DOWN	SWING

STOP SIGNALS			TELESCOPING BOOMS	
				
STOP	EMERGENCY STOP	DOG EVERYTHING	SHORTEN BOOM	EXTEND BOOM

SLOW SIGNALS				
				
MAKE MOVEMENTS SLOWLY	RAISE LOAD SLOWLY	LOWER LOAD SLOWLY	LOWER BOOM SLOWLY	RAISE BOOM SLOWLY

FLEX FINGERS FOR LOAD MOVEMENT		SELECTING SINGLE OR MULTIPLE REEVED LINES	
			
LOWER THE BOOM AND RAISE THE LOAD	RAISE THE BOOM AND LOWER THE LOAD	MULTIPLE OR MAIN LOAD LINE BY TAPPING HEAD BEFORE DIRECTION	SINGLE LINE OR LIGHT LOAD BY HOLDING ELBOW BEFORE SIGNALLING DIRECTIONS

CLAM BUCK SIGNALS		CRAWLER OR TRACK SIGNALS	
			
OPEN	CLOSE	TRAVEL BOTH CRAWLER BELTS IN DIRECTION INDICATED BY REVOLVING FISTS	LOCK THE CRAWLER BELT ON THE SIDE INDICATED BY RAISED FIST TRAVEL OPPOSITE CRAWLER BELT IN DIRECTION INDICATED BY REVOLVING FIST



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For technical questions of this standard – Ph: 517-284-7680 (CSHD) or 517-284-7720 (CETD)
To order copies of this standard – Ph: 517-284-7740

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