

DEPARTMENT OF LABOR AND ECONOMIC OPPORTUNITY

DIRECTOR'S OFFICE

CONSTRUCTION SAFETY AND HEALTH STANDARD

(By authority conferred on the director of the department of labor and economic opportunity by sections 14, 19, and 21 of the Michigan occupational safety and health act, 1974 PA 154, MCL 408.1014, MCL 408.1019, and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, 2011-4, and 2019-3, MCL 445.2001, 445.2011, 445.2025, 445.2030, and 125.1998)

PART 26. STEEL ERECTION

R 408.42601 Scope, application, adoption, and availability of standards.

Rule 2601. (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. The requirements of this part apply to employers engaged in steel erection unless otherwise specified. This part does not apply to electrical transmission towers, communication and broadcast towers, or tanks. Examples of structures where steel erection may occur, include, but are not limited to, the following:

- (a) Single and multistory buildings.
- (b) Systems-engineered metal buildings.
- (c) Lift slab/tilt-up structures.
- (d) Energy exploration structures.
- (e) Energy production, transfer and storage structures, and facilities.
- (f) Auditoriums.
- (g) Malls.
- (h) Amphitheaters.
- (i) Stadiums.
- (j) Power plants.
- (k) Mills.
- (l) Chemical process structures.
- (m) Bridges.
- (n) Trestles.
- (o) Overpasses.
- (p) Underpasses.
- (q) Viaducts.
- (r) Aqueducts.
- (s) Aerospace facilities and structures.
- (t) Radar and communication structures.
- (u) Light towers
- (v) Signage.

- (w) Billboards.
 - (x) Scoreboards.
 - (y) Conveyor systems.
 - (z) Conveyor supports and related framing.
 - (aa) Stairways.
 - (bb) Stair towers.
 - (cc) Fire escapes.
 - (dd) Draft curtains.
 - (ee) Fire containment structures.
 - (ff) Monorails.
 - (gg) Aerialways.
 - (hh) Catwalks.
 - (ii) Curtain walls.
 - (jj) Window walls.
 - (kk) Store fronts.
 - (ll) Elevator fronts.
 - (mm) Entrances.
 - (nn) Skylights
 - (oo) Metal roofs.
 - (pp) Industrial structures.
 - (qq) Hi-bay structures.
 - (rr) Rail marine, and other transportation structures.
 - (ss) Sound barriers.
 - (tt) Water process and water containment structures.
 - (uu) Air and cable-supported structures.
 - (vv) Space frames.
 - (ww) Geodesic domes.
 - (xx) Canopies.
 - (yy) Racks and rack support structures and frames.
 - (zz) Platforms.
 - (aaa) Walkways.
 - (bbb) Balconies.
 - (ccc) Atriums.
 - (ddd) Penthouses.
 - (eee) Car dumpers.
 - (fff) Stacker and reclaimers.
 - (ggg) Cranes and craneways.
 - (hhh) Bins.
 - (iii) Hoppers.
 - (jjj) Ovens.
 - (kkk) Furnaces.
 - (lll) Stacks.
 - (mmm) Amusement park structures and rides.
 - (nnn) Artistic and monumental structures.
- (2) Steel erection activities include all of the following:

(a) Hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing, and rigging structural steel, steel joists, and metal buildings.

(b) Installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron, and similar materials.

(c) Moving point-to-point while performing the activities specified in this subrule.

(3) All of the following activities are covered by this part when they occur during and are a part of steel erection activities:

(a) Rigging.

(b) Hoisting.

(c) Laying out.

(d) Placing.

(e) Connecting.

(f) Guying.

(g) Bracing.

(h) Dismantling.

(i) Burning.

(j) Welding.

(k) Bolting.

(l) Grinding.

(m) Sealing.

(n) Caulking.

(o) All related activities for construction, alteration, or repair of materials and assemblies such as any of the following:

(i) Structural steel.

(ii) Ferrous metals and alloys.

(iii) Nonferrous metals and alloys.

(iv) Glass.

(v) Plastics and synthetic composite materials.

(vi) Structural metal framing and related bracing and assemblies.

(vii) Anchoring devices.

(viii) Structural cabling.

(ix) Cable stays.

(x) Permanent and temporary bents and towers.

(xi) Falsework for temporary supports of permanent steel members.

(xii) Stone and other non-precast concrete architectural materials mounted on steel frames.

(xiii) Safety systems for steel erection.

(xiv) Steel and metal joists.

(xv) Metal decking and raceway systems and accessories.

(xvi) Metal roofing and accessories.

(xvii) Metal siding.

(xviii) Bridge flooring.

(xix) Cold formed steel framing.

(xx) Elevator beams.

(xxi) Grillage.

- (xxii) Shelf racks.
- (xxiii) Multipurpose supports.
- (xxiv) Crane rails and accessories.
- (xxv) Miscellaneous, architectural, and ornamental metals and metal work.
- (xxvi) Ladders.
- (xxvii) Railings.
- (xxviii) Handrails.
- (xxix) Fences and gates.
- (xxx) Gratings.
- (xxxi) Trench covers.
- (xxxii) Floor plates.
- (xxxiii) Castings.
- (xxxiv) Sheet metal fabrications.
- (xxxv) Metal panels and panel wall systems.
- (xxxvi) Louvers.
- (xxxvii) Column covers.
- (xxxviii) Enclosures and pockets.
- (xxxix) Stairs.
- (xl) Perforated metals.
- (xli) Ornamental iron work.
- (xlii) Expansion control, including bridge expansion joint assemblies.
- (xliii) Slide bearings.
- (xliv) Hydraulic structures.
- (xlv) Fascias.
- (xlvi) Soffit panels.
- (xlvii) Penthouse enclosures.
- (xlviii) Skylights.
- (xlix) Joint fillers.
- (l) Gaskets.
- (li) Sealants and seals.
- (lii) Doors.
- (liii) Windows.
- (liv) Hardware.
- (lv) Detention and security equipment and doors, windows, and hardware.
- (lvi) Conveying systems.
- (lvii) Building specialties.
- (lviii) Building equipment.
- (lix) Machinery and plant equipment, furnishings, and special construction.

(4) The duties of controlling contractors under this part include, but are not limited to, the duties specified in R 408.42608(1) and (3), R 408.42626(6), R 408.42644(2), and R 408.42651(4).

(5) The federal Occupational Safety and Health Administration (OSHA) regulations, 29 CFR 1926, Subpart R, "Steel erection," as amended February 18, 2020, are adopted by reference in these rules, except for the following:

- (a) 29 CFR 1926.753 is replaced with R 408.42609 and R 408.42610.
- (b) 29 CFR 1926.761 is replaced with R 408.42655.

(6) A reference to 29 CFR 1926.502 means Construction Safety Standard Part 45. “Fall Protection.”

(7) The adopted federal regulations have the same force and effect as a rule promulgated under the Michigan occupational safety and health act, 1974 PA 154, MCL 408.1001 to 408.1094.

(8) The OSHA regulations adopted in these rules are available from the United States Department of Labor, Occupational Safety and Health Administration, 200 Constitution Avenue, NW, Washington, DC 20210, or via the internet at www.OSHA.gov, at no charge, as of the time of adoption of these rules.

(9) The regulations adopted in these rules are available for inspection at the Department of Labor and Economic Opportunity, MIOSHA, Standards and FOIA Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(10) The regulations adopted by reference in these rules may be obtained from the publisher or may be obtained from the Department of Labor and Economic Opportunity, MIOSHA, Standards and FOIA Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(11) The following Michigan occupational safety and health administration (MIOSHA) standards are referenced in these rules. Up to 5 copies of the following Michigan occupational safety and health administrative standards that are referenced in this standard may be obtained at no charge from the Department of Labor and Economic Opportunity, FOIA and Standards Section, 530 West Allegan Street, P.O. Box 30643, Lansing, Michigan 48909-8143, or via the internet at: www.michigan.gov/mioshastandards, and for quantities greater than 5, the cost, at the time of adoption of these rules, is 4 cents per page:

(a) Construction Safety and Health Standard Part 10. “Cranes and Derricks,” R 408.41001 to R 408.41099a.

(b) Construction Safety Standards Part 28. “Personnel Hoisting in Steel Erection,” R 408.42801 to R 408.42809.

History: 1954 ACS 78, Eff. Mar. 2, 1974; 1954 ACS 88, Eff. Sept. 16, 1976; 1954 ACS 100, Eff. Sept. 16, 1976; 1979 AC; 1985 AACS; 2002 AACS; 2010 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42602 Rescinded.

History: 2002 AAC; 2007 AACS; 2013 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42604 Rescinded.

History: 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42605 Rescinded.

History: 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42606 Rescinded.

History: 1954 ACS 100, Eff. Sept. 5, 1979; 1979 AC; 1985 AACS; 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42608 Rescinded.

History: 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42609. Hoisting and rigging.

Rule 2609. (1) All the provisions of Construction Safety and Health Standard Part 10. "Cranes and Derricks," as referenced in R 408.42601 apply to hoisting and rigging.

(2) The headache ball, hook or load shall not be used to transport personnel except as provided in subrule (3) of this rule.

(3) Cranes or derricks may be used to hoist employees when work under this rule is being conducted, provided either of the following provisions is met:

(a) All of the requirements of the Construction Safety and Health Standard Part 10. "Cranes and Derricks," R 408.41001, except for R 408.41001(1), as referenced in R 408.42601.

(b) All of the requirements of the Construction Safety Standards Part 28. "Personnel Hoisting in Steel Erection," as referenced in R 408.42601.

(4) Safety latches on hooks shall not be deactivated or made inoperable, except in either of the following situations:

(a) When a qualified rigger has determined that the hoisting and placing of purlins and single joists can be performed more safely by doing so.

(b) When equivalent protection is provided in a site-specific erection plan.

(5) Routes for suspended loads shall be preplanned to ensure that no employee is required to work directly below a suspended load, except for the following employees:

(a) Employees engaged in the initial connection of the steel.

(b) Employees necessary for the hooking or unhooking of the load.

(6) When working under suspended loads, all of the following criteria shall be met:

(a) Materials being hoisted shall be rigged to prevent unintentional displacement.

(b) Hooks with self-closing safety latches or their equivalent shall be used to prevent components from slipping out of the hook.

(c) All loads shall be rigged by a qualified rigger.

History: 1985 AACS; 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42610 Multiple lift rigging procedure.

Rule 2610. (1) A multiple lift shall only be performed if all of the following criteria are met:

(a) A multiple lift rigging assembly is used.

(b) A maximum of 5 members are hoisted per lift.

(c) Only beams and similar structural members are lifted.

(d) All employees engaged in the multiple lift have been trained in multiple lift procedures in accordance with R 408.42655(1).

(e) A crane shall not be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.

(2) Components of the multiple lift rigging assembly shall be specifically designed and assembled with a maximum capacity for total assembly and for each individual attachment point. This capacity, certified by the manufacturer or a qualified rigger, shall be based on the manufacturer's specifications with a 5 to 1 safety factor for all components.

(3) The total load shall not exceed either of the following:

(a) The rated capacity of the hoisting equipment specified in the hoisting equipment load charts.

(b) The rigging capacity specified in the rigging rating chart.

(4) The multiple lift rigging assembly shall be rigged with members attached at their center of gravity and maintained reasonably level, rigged from top down, and rigged not less than 7 feet (2.1 m) apart.

(5) The members on the multiple lift rigging assembly shall be set from the bottom up.

(6) Controlled load lowering shall be used whenever the load is over the connectors.

History: 1985 AACCS; 2002 AACCS.

R 408.42614 Rescinded.

History: 1985 AACCS; 2002 AACCS; 2010 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42615 Rescinded.

History: 1985 AACCS; 2002 AACCS.

R 408.42616 Rescinded.

History: 2002 AACCS; 2007 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42617 Rescinded.

History: 1985 AACCS; 2002 AACCS.

R 408.42618 Rescinded.

History: 1985 AACS; 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42620 Rescinded.

History: 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42621 Rescinded.

History: 1954 ACS 100, Eff. Sept. 5, 1979; 1979 AC; 1985 AACS; 2002 AACS.

R 408.42622 Rescinded.

History: 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42623 Rescinded.

History: 1985 AACS; 2002 AACS.

R 408.42624 Rescinded.

History: 1954 ACS 100, Eff. Sept. 5, 1979; 1979 AC; 2007 AACS.

R 408.42625 Rescinded.

History: 1954 ACS 100, Eff. Sept. 5, 1979; 1979 AC; 2007 AACS.

R 408.42626 Rescinded.

History: 2002 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42628 Rescinded.

History: 2002 AACS; 2007 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42629 Rescinded.

History: 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42630 Rescinded.

History: 1985 AACCS; 2002 AACCS.

R 408.42632 Rescinded.

History: 1985 AACCS; 2002 AACCS.

R 408.42634 Rescinded.

History: 2002 AACCS; 2007 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42636 Rescinded.

History: 2002 AACCS; 2007 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42638 Rescinded.

History: 2002 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42640 Rescinded.

History: 1985 AACCS; 2002 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42642 Rescinded.

History: 1985 AACCS; 2002 AACCS.

R 408.42643 Rescinded.

History: 2002 AACCS; 2014 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42644 Rescinded.

History: 2002 AACCS; 2013 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42645 Rescinded.

History: 2002 AACCS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42646 Rescinded.

History: 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42648 Rescinded.

History: 2002 AACS; 2007 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42650 Rescinded.

History: 1985 AACS; 2002 AACS.

R 408.42651 Rescinded.

History: 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42653 Rescinded.

History: 2002 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42654 Rescinded.

History: 1985 AACS; 2002 AACS.

R 408.42655 Special training.

Rule 2655. (1) An employer shall ensure that each employee who performs multiple lift rigging has been provided training in both of the following areas:

(a) The nature of the hazards associated with multiple lifts.

(b) The proper procedures and equipment to perform multiple lifts required by R 408.42610.

(2) An employer shall ensure that each connector has been provided training in all of the following areas:

(a) The nature of the hazards associated with connecting.

(b) The establishment, access, proper connecting techniques, and work practices required by 29 CFR 1926.756(c) and 29 CFR 1926.760(b).

(c) Specific training on personnel hoisting as prescribed in Construction Safety Standards Part 28. "Personnel Hoisting in Steel Erection," as referenced in R 408.42601.

(3) Where CDZs are being used, an employer shall assure that each employee has been provided training in both of the following areas:

(a) The nature of the hazards associated with work within a controlled decking zone.

(b) The establishment, access, proper installation techniques, and work practices required by 29 CFR 1926.760(c) and 29 CFR 1926.754(e).

History: 2002 AACS; 2007 AACS; 2014 AACS; 2023 MR 24, Eff. Jan. 3, 2024.

R 408.42656 Rescinded.

History: 1985 AACS; 2002 AACS.