

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

CONSTRUCTION CODE

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These rules take effect September 27, 2013

(By authority conferred on the director of the department of licensing and regulatory affairs by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1, 2008-4 and 2011-4, MCL 445.2011, 445.2025 and 445.2030)

R 408.30901a, R 408.30906a, R 408.30910a, R 408.30912a, R 408.30915a, R 408.30918a, R 408.30923a, R 408.30927a, R 408.30928a, R 408.30935a, R 408.30945a, R 408.30946, R 408.30947, R 408.30948, and R 408.30995a of the Michigan Administrative Code are amended and R 408.30947a, R 408.30948a, and R 408.30996 are added to the code as follows:

PART 9A. MECHANICAL CODE

AMENDMENTS AND ADDITIONS TO BASIC MECHANICAL CODE

R 408.30901a International mechanical code; adoption by reference.

Rule 901a. The provisions of the international mechanical code, 2012 edition, except for sections 102.10, 102.11, 103.2, 103.4, 106.5.1 to 106.5.3, 107.2.5 to 107.2.5.3, 109.2 to 109.7, 1011 to 1011.2, 1101.10 and appendix B govern the construction, alteration, relocation, demolition, use, and occupancy of buildings and structures. With the exceptions noted, the code is adopted in these rules by reference. All references to the International Building Code, International Residential Code, International Energy Conservation Code, National Electrical Code, International Mechanical Code, and International Plumbing Code mean the Michigan Building Code, Michigan Residential Code, Michigan Uniform Energy Code, Michigan Electrical Code, Michigan Mechanical Code, and Michigan Plumbing Code respectively. The code is available for inspection at the Okemos office of the Michigan department of licensing and regulatory affairs, bureau of construction codes. The code may be purchased from the International Code Council, 500 New Jersey Avenue, N.W. 6th Floor, Washington, D.C. 20001, or from the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2501 Woodlake Circle, Okemos, Michigan 48864, at a cost as of the time of adoption of these rules of \$71.00 each.

R 408.30906a Work permit; submitting plans and specifications to authority.

Rule 906a. Sections 106.1, 106.2, 106.3, 106.3.1 106.4, 106.4.3 and 106.4.4 of the code are amended to read as follows:

106.1. Permits required. A contractor licensed under 1984 PA 192, MCL 338.971 to 338.988 who desires to erect, install, enlarge, alter, repair, remove, convert, or replace a mechanical

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system, the installation of which is regulated by this code, or to cause such work to be done, shall first make application in accordance with the requirements of the act.

106.2. Permits not required. A person is not required to obtain a permit to perform mechanical work on any of the following items:

- (a) A portable heating or gas appliance that has inputs of less than 30,000 Btu's per hour.
- (b) Portable ventilation appliances and equipment.
- (c) A portable cooling unit.
- (d) Steam, hot water, or chilled water piping within any heating or cooling equipment or appliances regulated by the code.
- (e) The replacement of any minor part that does not alter the approval of equipment or an appliance or make such equipment or appliance unsafe.
- (f) A portable evaporative cooler.
- (g) Self-contained refrigeration systems that contain 10 pounds or less of refrigerant, or that are actuated by motors of 1 horsepower or less.
- (h) Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.
- (i) An oil burner that does not require connection to a flue, such as an oil stove and a heater equipped with a wick.
- (j) A portable gas burner that has inputs of less than 30,000 Btu's per hour.
- (k) When changing or relocating a gas meter or regulator, a permit is not required when installing gas piping which shall be limited to 10 feet in length and not more than 6 fittings.
- (l) When installing geothermal vertical closed loops under the supervision of a mechanical contractor licensed in HVAC as long as the company meets both the following:
 - (1) Has obtained a certificate of registration as a well drilling contractor pursuant to part 127 of the public health code.
 - (2) Has installed the geothermal vertical closed loops in accordance with the department of environmental quality's best practices regarding geothermal heat pump closed loops.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for work to be done in violation of the provisions of this code or other laws or ordinances of this jurisdiction.

106.3 Application for permit. Each application for a permit, along with the required fee, shall be filed with the code official on a form furnished for that purpose and shall contain a general description of the proposed work and its location. The contractor who is performing the work shall sign the application. The permit application shall indicate the proposed occupancy of all parts of the building and of that portion of the site or lot, if any, not covered by the building or structure and shall contain the information required by the act.

106.3.1 Construction documents. (1) Construction documents, engineering calculations, diagrams, and other data shall be submitted in 2 or more sets with each application for a permit. The code official shall require construction documents, computations, and specifications to be prepared and designed by a registered design professional in accordance with 1980 PA 299, MCL 339.101 to 339.2919.

Exceptions:

1. The code official may waive the submission of construction documents, calculations, or other data if the nature of the work applied for is such that reviewing of construction documents is not necessary to determine compliance with the code.

2. Construction documents shall not be required when obtaining a permit from the State of Michigan, bureau of construction codes for any of the following circumstance:

- a. One-and 2-family dwellings when the heating or cooling input rating is 375,000 Btu's or less.
- b. Alterations and repair work determined by the mechanical official to be of a minor nature.
- c. Business, mercantile, and storage buildings having HVAC equipment only, with 1 fire area and not more than 3,500 square feet.
- d. Work completed by a governmental subdivision or state agency costing less than \$15,000.00.

Bureau code officials may require construction documents in unusual designs and where questions arise as a result of a system design beyond conventional system parameters.

(2) Where special conditions exist, the code official may require additional construction documents to be prepared by a registered design professional.

(3) Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed and show in detail that the work conforms to the provisions of this code.

(4) Construction documents for buildings more than 2 stories in height shall indicate where penetrations will be made for mechanical systems, and the materials and methods for maintaining required structural safety, fire-resistance rating, and fire blocking.

106.4. Permit issuance. The enforcing agency shall review the application, construction documents, and other data filed by an applicant for permit in accordance with the act. If the enforcing agency finds that the proposed work conforms to the requirements of the act, the code, and all other applicable laws and ordinances thereto, and that all fees prescribed by the act have been paid, then the enforcing agency shall issue a permit to the applicant.

106.4.3. Expiration. Each permit issued by the code official under the provisions of the code shall expire by limitation and become null and void if the work authorized by the permit is not begun within 180 days from the date of the permit, or if the work authorized by the permit is suspended or abandoned at any time after the work is begun for a period of 180 days. Before work is recommenced, the permit shall be reinstated if the code has not changed. If the code has changed and the work was not started, a new permit shall be first obtained, provided no changes have been made or will be made in the original construction document and that suspension or abandonment has not exceeded 1 year.

106.4.4. Extensions. A permittee holding an unexpired permit may apply for an extension of the time within which the permittee may begin work under that permit if for good and satisfactory reasons. The code official shall extend the time for action by the permittee for a period not exceeding 180 days if there is reasonable cause. No permit shall be extended more than once.

R 408.30910a Stop work orders.

Rule 910a. Section 108.5 of the code is amended to read as follows:

108.5. Stop work orders. Notice shall be in accordance with the act. A person who is served with a stop work order, except for work that a person is directed to perform to remove a violation or unsafe condition, is subject to the penalty provisions prescribed by the act.

R 408.30912a Enclosed parking garages.

Rule 912a. Section 404.1 of the code is amended to read as follows:

404.1. Enclosed parking garages. Mechanical ventilation systems for enclosed parking garages are not required to operate continuously where the system is arranged to operate automatically upon detection of carbon monoxide (CO) not to exceed 25 parts per million (ppm) and nitrogen dioxide (NO₂) not to exceed 3 ppm by approved automatic detection devices. Upon activation such systems shall operate for 30 minutes.

404.1.1 Testing. Testing of detection devices shall be per manufacturer's installation instructions. All detectors shall be calibrated per the manufacturer's instructions at an interval not to exceed 1 year.

R 408.30915a Scope of article; adoption by reference.

Rule 915a. Section 601.1 of the code is amended to read as follows:

601.1. The provisions of this article govern the construction, installation, alteration, maintenance, and repair of duct systems. Duct systems shall be in compliance with the provisions of the code, the provisions of NFPA 90A-2012 and NFPA 90B-2012, the standards of the national fire protection association, and the provisions of air conditioning contractors of America (ACCA) manual D-2009, manual J-2006, manual N-2009, and manual Q-1990, as listed in chapter 15.

R 408.30918a Registers, grilles, and diffusers.

Rule 918a. Section 603.18.2 of the code is amended to read as follows:

603.18.2. Prohibited locations. Diffusers, registers, and grilles shall be prohibited in the floor or its upward extension within toilet and bathing rooms required by the Michigan building code to have smooth, hard, nonabsorbent surfaces.

Exception: Dwelling units. Within dwelling units, floor registers may be located in a room or space containing water closets, but shall be located a minimum of 3 feet from the water closet.

R 408.30923a Equipment installation.

Rule 923a. Sections 301.10.1 is added to the code and section 309.1 of the code is amended to read as follows:

301.10.1. Electrical disconnect. The mechanical contractor shall ensure that all equipment have an electrical disconnect switch on, or immediately adjacent to, the equipment.

309.1. Occupiable space heating system. Interior spaces intended for human occupancy shall be provided with heating facilities capable of maintaining a minimum room temperature of 68 degrees Fahrenheit at a point 3 feet above the floor and 2 feet from exterior walls at the design temperature. The installation of portable space heaters shall not be used to achieve compliance with this section.

Exception: Interior spaces where the primary purpose is not associated with human comfort.

R 408.30927a Equipment and appliances on roofs or elevated structures.

Rule 927a. Section 306.5 of the code is amended to read as follows:

306.5 Equipment and appliances on roofs or elevated structures. Where equipment or appliances requiring access are located on an elevated structure or the roof of a building so that personnel will have to climb higher than 16 feet above grade to access this equipment or appliances, an interior or exterior means of access shall be provided. Such access shall not require climbing over obstructions greater than 30 inches high or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). Such access shall not

require the use of portable ladders. Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

Permanent ladders installed to provide the required access shall comply with all of the following minimum design criteria:

- (1) The side railing shall extend above the parapet or roof edge not less than 30 inches.
- (2) Ladders shall have rung spacing not to exceed 14 inches on center. The uppermost rung shall be a maximum of 24 inches below the upper edge of the roof hatch, roof, or parapet, as applicable.
- (3) Ladders shall have a toe spacing not less than 6 inches deep.
- (4) There shall be a minimum of 18 inches between rails.
- (5) Rungs shall have a minimum 0.75-inch diameter and be capable of withstanding a 300-pound load.
- (6) Ladders over 30 feet in height shall be provided with offset sections and landings capable of withstanding 100 pounds per square foot. Landing dimensions shall be not less than 18 inches and not less than the width of the ladder served. A guard rail shall be provided on all open sides of the landing.
- (7) Climbing clearance. The distance from the center line of the rungs to the nearest permanent object on the climbing side of the ladder shall be a minimum of 30 inches measured perpendicular to the rungs. This distance shall be maintained from the point of ladder access to the bottom of the roof hatch. A minimum clear width of 15 inches shall be provided on both sides of the ladder measured from the midpoint of and parallel with the rungs, except where cages or wells are installed.
- (8) Landing required. A ladder shall be provided with a clear and unobstructed bottom landing area having a minimum dimension of 30 inches by 30 inches centered in front of the ladder.
- (9) Ladders shall be protected against corrosion by approved means.
- (10) Access to ladders shall be provided at all times.

Catwalks installed to provide the required access shall be not less than 24 inches wide and shall have railings as required for service platforms.

Exception 1: An approved, permanent building mounted ladder receiver which prevents the ladder from sliding sideways off the building or slipping backward and meets the ladder safety standard of OSHA regulations (Standard - 29 CFR) Ladders. - 1926.1053 (b)(1) may be installed on buildings under 20 feet in height above grade to access such equipment or appliances.

Exception 2: This section shall not apply to group R-3 occupancies.

306.5.1 Sloped roofs. Where appliances are installed on a roof having a slope of 3 units vertical in 12 units horizontal or greater and having an edge more than 30 inches above grade at such edge, a level platform shall be provided on each side of the appliance to which the access is required for service, repair, or maintenance. The platform shall not be less than 30 inches in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches above the platform, shall be constructed so as to prevent the passage of a 21-inch-diameter sphere, and shall comply with the loading requirements for guards specified in the Michigan building code. Access to appliances shall not require climbing over obstructions greater than 30 inches high or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal permanent ladders, or equivalent, shall be provided on both sides requiring access in accordance with the ladder requirements of section 306.5.

Exception: This section shall not apply to group R-3 occupancies.

R 408.30928a Solid fuel burning equipment.

Rule 928a. Sections 901.5, 929.0 and 929.1 are added to the code to read as follows:

901.5 Solid fuel burning equipment. Solid fuel burning equipment shall be listed and labeled in accordance with section 301.4, installed in accordance with the manufacturer's installation instructions, and NFPA 211-2010 requirements.

929.0 Solid fuel hydronic heaters.

929.1 Solid fuel hydronic heaters must be listed and labeled, or approved by the code official in accordance with the Michigan mechanical code section 105, or have certificate of acceptability issued by the Michigan construction code commission.

R 408.30935a Commercial kitchens; ventilation.

Rule 935a Sections 506.1, 506.3.6, 507.1, 507.2.2, and 507.9, of the code are amended and sections 507.16.1.1 is added to the code to read as follows:

506.1. Ventilation requirements for commercial kitchens. Commercial kitchen hood ventilation ducts and exhaust equipment shall be in compliance with NFPA-96-2011, the standard of the national fire protection association listed in chapter 15.

506.3.6 Grease duct clearances. Grease duct systems and exhaust equipment serving a type I hood shall have clearances to combustibles as required by NFPA 96-2011, as listed in chapter 15.

Exception: Listed and labeled factory-built commercial kitchen grease ducts and exhaust equipment installed in accordance with section 304.1 of the code.

507.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of this section and NFPA 96-2011, as listed in chapter 15. Hoods shall be type I or type II and shall be designed to capture and confine cooking vapors and residues.

Exceptions:

1. Factory-built commercial exhaust hoods which are tested in accordance with UL 710-2007, as listed in chapter 15, listed, labeled, and installed in accordance with section 304.1 shall not be required to comply with sections 507.4, 507.7, 507.11, 507.12, 507.13, 507.14, and 507.15 of the code.

2. Factory-built commercial cooking recirculating systems which are tested in accordance with UL 710B-2011, as listed in chapter 15, listed, labeled, and installed in accordance with section 304.1 of the code shall not be required to comply with sections 507.4, 507.5, 507.7, 507.12, 507.13, 507.14, and 507.15 of the code. Spaces in which these systems are located shall be considered to be kitchens and shall be ventilated in accordance with table 403.3. For the purpose of determining the floor area required to be ventilated, each individual appliance shall be considered as occupying not less than 100 square feet.

3. Net exhaust volumes for hoods may be reduced during no-load cooking conditions, where engineered or listed multi-speed or variable-speed controls automatically operate the exhaust system to maintain capture and removal of cooking effluents as required. Reduced volumes shall not be below that required to maintain, capture, and remove effluents from the idle cooking appliances that are operating in a standby mode.

507.9. Clearances for type I hood. A type I hood shall be installed with clearances from combustibles as required by NFPA 96-2011 as listed in chapter 15.

507.16.1.1 Smoke test. The field test identified in section 507.16.1 of the code shall be conducted in accordance with the smoke testing procedures established by the bureau of construction codes, which are available at no cost from the bureau's web site at

www.michigan.gov/bcc, or, from the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2501 Woodlake Circle, Okemos, Michigan, 48864.

R 408.30945a Ventilation; exhaust.

Rule 945a. Sections 501.3.1, 504.4, and 504.8 of the code are amended to read as follows:

501.2.1.1 Exhaust discharge. Exhaust air shall not be directed onto walkways. Exhaust openings shall not terminate within 3 feet of a ventilated section in a soffit.

504.4 Exhaust installation. Dryer exhaust ducts for clothes dryers shall terminate on the outside of the building, shall not terminate within 3 feet of a ventilated section in a soffit, and shall be equipped with a back draft damper. Screens shall not be installed at the duct termination. Ducts shall not be connected or installed with sheet metal screws or other fasteners that will obstruct the exhaust flow. Clothes dryer exhaust ducts shall not be connected to a vent connector, vent, or chimney. Clothes dryer exhaust ducts shall not extend into or pass through ducts or plenums.

504.8 Common exhaust systems for clothes dryers located in multistory structures. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the system shall be engineered by a registered design professional and installed in accordance with the Michigan building codes.

R 408.30946 Alterations and repairs.

Rule 946. Section 1001.3 is added to the code to read as follows:

1001.3. Alterations and repairs to boilers shall be in accordance with the Michigan boiler act, 1965 PA 290, MCL 408.751 to MCL 408.776.

R 408.30947 Standards.

Rule 947. Section 1004.1 of the code is amended to read as follows:

1004.1. (1) Oil fired boilers and their control systems shall be listed and labeled in accordance with UL726-1995 (R2011).

(2) Gas fired boilers and their control systems shall be listed and labeled in accordance with ANSI Z21.13-2010 or UL795-2006.

(3) Electric boilers and their control systems shall be listed and labeled in accordance with UL834.

(4) Boilers shall be installed in accordance with the requirements of ASME CSD-1-2009 and as applicable constructed to ASME boiler and pressure vessel code, sections I or IV; as referenced in chapter 15.

(5) Boiler controls and safety devices shall be assembled, installed, maintained, and operated in accordance with ASME CSD-1.

(6) Solid-fuel-fired boilers shall be listed and labeled in accordance with UL 2523-2009.

R 408.30947a Boiler connections.

Rule 947a. Section 1005.1 of the code is amended to read as follows:

1005.1 Valves. Every boiler or modular boiler shall have a shutoff valve in the supply and return piping. For multiple boiler or multiple modular boiler installations, each boiler or modular boiler shall have individual shutoff valves in the supply and return piping.

Exception: Shutoff valves are not required in a system having a single low-pressure steam boiler. When a boiler is located above the system and can be drained without draining the system, stop valves may be eliminated.

R 408.30948 Boiler safety devices.

Rule 948. Section 1006.6.1 is added and 1006.7 of the code is amended to read as follows:

1006.6.1 Safety and safety relief inlets. The opening or connection between the boiler and any safety or safety relief valve shall have at least the area of the valve inlet.

1006.7. Boilers shall be equipped with controls and limit devices as required by ASME, CSD-1-2009 and the manufacturer's installation instructions and the conditions of the listing. All controls and safety devices shall be tested and maintained in accordance with ASME code CSD-1-2009.

R 408.30948a Gauges.

Rule 948a. Sections 1010.1 and 1010.2 are amended and 1010.1.2 of the code is added to read as follows:

1010.1 Hot water boiler gauges. Every hot water boiler shall have a pressure gauge and a temperature gauge, or a combination pressure and temperature gauge. The scale on the dial of the pressure or altitude gage shall be not less than approximately 1-1/2 nor more than approximately 3-1/2 the pressure at which the safety relief valve is set.

1010.1.2 . Pressure and temperature gauge. A thermometer shall be installed and may be in combination with the pressure gauge. The thermometer shall at all times indicate the temperature of the water in the boiler or near the outlet.

1010.2 Steam boiler gauges. Every steam boiler shall have a water-gauge glass and a pressure gauge. The scale on the dial of the gauge shall be graduated to not less than 30 psi and not more than 60 psi.

R 408.30995a Automatic sprinkler systems generally.

Rule 995a. Sections 1600.0, 1600.1, and 1600.2 are added to the code to read as follows:

1600.0. Automatic sprinkler systems; fire suppression systems.

1600.1 Scope. The provisions of this article provide the minimum requirements for the design and installation of automatic sprinkler systems in all occupancies, except for 1- and 2-family dwellings.

1600.2. Installations. Installations shall be in compliance with the provisions of the code. Fire suppression systems shall be in compliance with the provisions of the building code and shall be installed in accordance with the code and NFPA-13-2010, NFPA-13D-2010, NFPA-13R-2010, and NFPA-24-2010, installation of sprinkler systems, installation of sprinkler systems in 1- and 2-family dwellings and manufactured homes, installation of sprinkler systems in residential occupancies up to 4 stories in height, and standards of the national fire protection association listed in chapter 15.

R 408.30996 Process piping.

Rule 996. Sections 1700.0 and 1700.1 are added to the code to read as follows:

1700.0. Process piping.

1700.1 Scope. The provisions of this chapter provide the minimum requirements for the design and installation of process piping systems pursuant to ASME B31.3-2010

1700.2 Process piping. Piping which is not part of a refrigeration system or part of a system designed to provide air conditioning. Process piping includes pipes which transfer chemicals and

other fluids, gases, or vapors for systems other than air conditioning systems as covered by the Michigan mechanical code.