

DEPARTMENT OF ENERGY, LABOR, AND ECONOMIC GROWTH

DIRECTOR'S OFFICE

CONSTRUCTION CODE

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These rules take effect October 21, 2010

(By authority conferred on the director of the department of energy, labor, and economic growth by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1 and 2008-4, MCL 445.2011 and 445.2025)

R 408.30901a, R 408.30906a, R 408.30912a, R 408.30915a, R 408.30916, R 408.30918a, R 408.30923a, R 408.30927a, R 408.30928a, R 408.30935a, R 408.30945a, R 408.30995a of the Michigan Administrative Code are amended, and R 408.30916, R 408.30946, R 408.30946a, R 408.30947, and R 408.30948 are added to the code as follows:

PART 9A. MECHANICAL CODE

AMENDMENTS AND ADDITIONS TO BASIC MECHANICAL CODE

R 408.30901a Adoption by reference of international mechanical code.

Rule 901a. The provisions of the international mechanical code, 2009 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, 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, International 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 energy, labor, and economic growth, 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 Energy, Labor, and Economic Growth, Bureau of Construction Codes, 2501 Woodlake Circle, Okemos, Michigan 48864, at a cost as of the time of adoption of these rules of \$62.00 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.

Exception: A person who holds a valid boiler installer license issued under 1965 PA 290, MCL 408.751 to 408.776 shall secure a permit for the installation of a steam or hot water boiler which carries a pressure of not more than 15 psig for steam and 160 degrees Fahrenheit for hot water, and which is located in a private residence or in an apartment building having 5 or fewer dwelling units.

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 (4.5 kg) or less of refrigerant, or that are actuated by motors of 1 horsepower (0.75 kW) 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) A boiler or pressure vessel for which a permit is required by sections 17 and 18 of 1965 PA 290, MCL 408.767 and 408.768.
- (j) An oil burner that does not require connection to a flue, such as an oil stove and a heater equipped with a wick.
- (k) A portable gas burner that has inputs of less than 30,000 Btu's per hour.
- (l) 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.
- (m) When installing vertical 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 vertical loop in accordance with the final determination and notice, regarding geothermal heat pump closed loops issued by department of environmental quality under part 31, water resources protection, of the natural resources and environmental protection act, 1994 PA 451.

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 one 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, 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 408.30912a 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 on a yearly basis or as per the manufacturer's instructions.

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-2009 and NFPA 90B-2009, 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-2008, and manual Q-1990, as listed in chapter 15.

R 408.30916 Duct construction.

Rule 916. Table 603.4 of the code is amended to read as follows:

TABLE 603.4
DUCT CONSTRUCTION MINIMUM SHEET METAL
THICKNESSES FOR SINGLE DWELLING UNITS

DUCT SIZE	GALVANIZED		Approximate Aluminum B&S Gauge
	Minimum thickness (inches)	Equivalent galvanized gauge no	
Round ducts and enclosed rectangular ducts 14" or less Over 14"	0.013	30	26
	0.016	28	24
Exposed rectangular ducts 14" or less Over 14"	0.016	28	24
	0.019	26	22

R 408.30918a Registers, grilles, and diffusers.

Rule 918a. Section 603.17.2 of the code is amended to read as follows:

603.17.2. 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 301.7.1 is added to the code and section 309.1 of the code is amended to read as follows:

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

309.1. Heating system. Each dwelling unit 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 in all habitable rooms at the design temperature. The installation of 1 or more portable space heaters shall not be used to achieve compliance with this section.

R 408.30927a Roofs and elevated structures.

Rule 927a. Sections 306.5 and 306.5.1 of the code are amended to read as follows:

306.5 Equipment and appliances on roofs or elevated structures. Where equipment and appliances requiring access are installed on roofs or elevated structures at a height that requires access exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, the extent of which shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). Where access involves obstructions greater than 30 inches in height, permanent ladders or equivalent, shall be provided on both sides requiring access in accordance with the ladder requirements of this section.

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 (762 mm).
- (2) Ladders shall have rung spacing not to exceed 14 inches (356 mm) on center.
- (3) Ladders shall have a toe spacing not less than 6 inches deep.
- (4) There shall be a minimum of 18 inches (457 mm) between rails.
- (5) Rungs shall have a minimum 0.75-inch (19 mm) diameter and be capable of withstanding a 300-pound (136.1kg) load.
- (6) Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding 100 pounds (488.2 kg/m²) per square foot. Landing dimensions shall be not less than 18 inches (457 mm) and not less than the width of the ladder served. A guard rail shall be provided on all open sides of the landing.
- (7) Ladders shall be protected against corrosion in accordance with section 104.1 of the code.

Catwalks installed to provide the required access shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

Exception: 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 (762 mm) 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, 928.0 and 928.1 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 211-2006 requirements.

928.0 Solid fuel hydronic heaters.

928.1 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 Ventilation requirements for commercial kitchens.

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-96-2008, 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 96-2008, 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 96-2008, 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 710-2004, 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-2004 or UL 197SB-2003, 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.

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.

507.9. Clearances for type I hood. A type I hood shall be installed with clearances from combustibles as required by NFPA 96-42008 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 Energy, Labor, and Economic Growth, Bureau of Construction Codes, 2501 Woodlake Circle, Okemos, Michigan 48864.

R 408.30945a Ventilation; exhaust.

Rule 945a. Sections 501.2.1.1, 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 1001.2 is added to the code to read as follows:

1001.2. 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 408.30946a Welding.

Rule 946a. Section 1003.3 of the code is amended to read as follows:

1003.3. Welding on pressure vessels shall be in accordance with ASME boiler and pressure vessel code section VIII and IX.

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.

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

(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 or as applicable in accordance with the requirements of the NFPA installation standards and as applicable constructed to ASME boiler and pressure vessel code, sections I or IV; NPFA 8501; NFPA 8502 or NFPA 8504 as referenced in chapter 15.

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

R 408.30948 Boiler safety devices.

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

1006.7. Boilers shall be equipped with controls and limit devices as required by ASME, CSD-1 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.

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-13-2007, NFPA-13D-2007, NFPA-13R-2007, and NFPA-24-2007, 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.