

Michigan Register

Issue No. 8—2015 (Published May 15, 2015)



GRAPHIC IMAGES IN THE MICHIGAN REGISTER

COVER DRAWING

Michigan State Capitol:

This image, with flags flying to indicate that both chambers of the legislature are in session, may have originated as an etching based on a drawing or a photograph. The artist is unknown. The drawing predates the placement of the statue of Austin T. Blair on the capitol grounds in 1898.

(Michigan State Archives)

PAGE GRAPHICS

Capitol Dome:

The architectural rendering of the Michigan State Capitol's dome is the work of Elijah E. Myers, the building's renowned architect. Myers inked the rendering on linen in late 1871 or early 1872. Myers' fine draftsmanship, the hallmark of his work, is clearly evident.

Because of their size, few architectural renderings of the 19th century have survived. Michigan is fortunate that many of Myers' designs for the Capitol were found in the building's attic in the 1950's. As part of the state's 1987 sesquicentennial celebration, they were conserved and deposited in the Michigan State Archives.

(Michigan State Archives)

East Elevation of the Michigan State Capitol:

When Myers' drawings were discovered in the 1950's, this view of the Capitol – the one most familiar to Michigan citizens – was missing. During the building's recent restoration (1989-1992), this drawing was commissioned to recreate the architect's original rendering of the east (front) elevation.

(Michigan Capitol Committee)

Michigan Register

Published pursuant to § 24.208 of
The Michigan Compiled Laws



Issue No. 8— 2015

(This issue, published May 15, 2015, contains
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Rick Snyder, Governor



Brian Calley, Lieutenant Governor

PREFACE

PUBLICATION AND CONTENTS OF THE MICHIGAN REGISTER

The Office of Regulatory Reform publishes the *Michigan Register*.

While several statutory provisions address the publication and contents of the *Michigan Register*, two are of particular importance.

24.208 Michigan register; publication; cumulative index; contents; public subscription; fee; synopsis of proposed rule or guideline; transmitting copies to office of regulatory reform.

Sec. 8.

(1) The office of regulatory reform shall publish the Michigan register at least once each month. The Michigan register shall contain all of the following:

- (a) Executive orders and executive reorganization orders.
- (b) On a cumulative basis, the numbers and subject matter of the enrolled senate and house bills signed into law by the governor during the calendar year and the corresponding public act numbers.
- (c) On a cumulative basis, the numbers and subject matter of the enrolled senate and house bills vetoed by the governor during the calendar year.
- (d) Proposed administrative rules.
- (e) Notices of public hearings on proposed administrative rules.
- (f) Administrative rules filed with the secretary of state.
- (g) Emergency rules filed with the secretary of state.
- (h) Notice of proposed and adopted agency guidelines.
- (i) Other official information considered necessary or appropriate by the office of regulatory reform.
- (j) Attorney general opinions.
- (k) All of the items listed in section 7(m) after final approval by the certificate of need commission under section 22215 of the public health code, 1978 PA 368, MCL 333.22215.

(2) The office of regulatory reform shall publish a cumulative index for the Michigan register.

(3) The Michigan register shall be available for public subscription at a fee reasonably calculated to cover publication and distribution costs.

(4) If publication of an agency's proposed rule or guideline or an item described in subsection (1)(k) would be unreasonably expensive or lengthy, the office of regulatory reform may publish a brief synopsis of the proposed rule or guideline or item described in subsection (1)(k), including information on how to obtain a complete copy of the proposed rule or guideline or item described in subsection (1)(k) from the agency at no cost.

(5) An agency shall electronically transmit a copy of the proposed rules and notice of public hearing to the office of regulatory reform for publication in the Michigan register.

4.1203 Michigan register fund; creation; administration; expenditures; disposition of money received from sale of Michigan register and amounts paid by state agencies; use of fund; price of Michigan register; availability of text on internet; copyright or other proprietary interest; fee prohibited; definition.

Sec. 203.

- (1) The Michigan register fund is created in the state treasury and shall be administered by the office of regulatory reform. The fund shall be expended only as provided in this section.
- (2) The money received from the sale of the Michigan register, along with those amounts paid by state agencies pursuant to section 57 of the administrative procedures act of 1969, 1969 PA 306, MCL 24.257, shall be deposited with the state treasurer and credited to the Michigan register fund.
- (3) The Michigan register fund shall be used to pay the costs of preparing, printing, and distributing the Michigan register.
- (4) The department of management and budget shall sell copies of the Michigan register at a price determined by the office of regulatory reform not to exceed the cost of preparation, printing, and distribution.
- (5) Notwithstanding section 204, beginning January 1, 2001, the office of regulatory reform shall make the text of the Michigan register available to the public on the internet.
- (6) The information described in subsection (5) that is maintained by the office of regulatory reform shall be made available in the shortest feasible time after the information is available. The information described in subsection (5) that is not maintained by the office of regulatory reform shall be made available in the shortest feasible time after it is made available to the office of regulatory reform.
- (7) Subsection (5) does not alter or relinquish any copyright or other proprietary interest or entitlement of this state relating to any of the information made available under subsection (5).
- (8) The office of regulatory reform shall not charge a fee for providing the Michigan register on the internet as provided in subsection (5).
- (9) As used in this section, "Michigan register" means that term as defined in section 5 of the administrative procedures act of 1969, 1969 PA 306, MCL 24.205.

CITATION TO THE MICHIGAN REGISTER

The *Michigan Register* is cited by year and issue number. For example, 2001 MR 1 refers to the year of issue (2001) and the issue number (1).

CLOSING DATES AND PUBLICATION SCHEDULE

The deadlines for submitting documents to the Office of Regulatory Reinvention for publication in the *Michigan Register* are the first and fifteenth days of each calendar month, unless the submission day falls on a Saturday, Sunday, or legal holiday, in which event the deadline is extended to include the next day which is not a Saturday, Sunday, or legal holiday. Documents filed or received after 5:00 p.m. on the closing date of a filing period will appear in the succeeding issue of the *Michigan Register*.

The Office of Regulatory Reinvention is not responsible for the editing and proofreading of documents submitted for publication.

Documents submitted for publication should be delivered or mailed in an electronic format to the following address: MICHIGAN REGISTER, Office of Regulatory Reinvention, Ottawa Building – Second Floor, 611 W. Ottawa Street, Lansing, MI 48909.

RELATIONSHIP TO THE MICHIGAN ADMINISTRATIVE CODE

The *Michigan Administrative Code* (1979 edition), which contains all permanent administrative rules in effect as of December 1979, was, during the period 1980-83, updated each calendar quarter with the publication of a paperback supplement. An annual supplement contained those permanent rules, which had appeared in the 4 quarterly supplements covering that year.

Quarterly supplements to the Code were discontinued in January 1984, and replaced by the monthly publication of permanent rules and emergency rules in the *Michigan Register*. Annual supplements have included the full text of those permanent rules that appear in the twelve monthly issues of the *Register* during a given calendar year. Emergency rules published in an issue of the *Register* are noted in the annual supplement to the Code.

SUBSCRIPTIONS AND DISTRIBUTION

The *Michigan Register*, a publication of the State of Michigan, is available for public subscription at a cost of \$400.00 per year. Submit subscription requests to: Office of Regulatory Reinvention, Ottawa Building – Second Floor, 611 W. Ottawa Street, Lansing, MI 48909. Checks Payable: State of Michigan. Any questions should be directed to the Office of Regulatory Reinvention (517) 335-8658.

INTERNET ACCESS

The *Michigan Register* can be viewed free of charge on the Internet web site of the Office of Regulatory Reinvention: www.michigan.gov/orr.

Issue 2000-3 and all subsequent editions of the *Michigan Register* can be viewed on the Office of Regulatory Reinvention Internet web site. The electronic version of the *Register* can be navigated using the blue highlighted links found in the Contents section. Clicking on a highlighted title will take the reader to related text, clicking on a highlighted header above the text will return the reader to the Contents section.

Mike Zimmer, Director
Licensing and Regulatory Affairs

2015 PUBLICATION SCHEDULE

Issue No.	Closing Date for Filing or Submission Of Documents (5 p.m.)	Publication Date
1	January 15, 2015	February 1, 2015
2	February 1, 2015	February 15, 2015
3	February 15, 2015	March 1, 2015
4	March 1, 2015	March 15, 2015
5	March 15, 2015	April 1, 2015
6	April 1, 2015	April 15, 2015
7	April 15, 2015	May 1, 2015
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**ADMINISTRATIVE RULES
FILED WITH THE SECRETARY OF STATE**

MCL 24.208 states in part:

“Sec. 8. (1) The Office of Regulatory Reinvention shall publish the Michigan register at least once each month. The Michigan register shall contain all of the following:

* * *

(f) Administrative rules filed with the secretary of state.”

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

OCCUPATIONAL HEALTH STANDARDS

Filed with the Secretary of State on December 9, 2014

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 14 and 24 of 1974 PA 154, MCL 408.1014 and MCL 408.1024, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 325.51451, R 325.51452, R 325.51454, R 325.51457, R 325.51458, R 325.51459, R 325.51460, R 325.51461, R 325.51462, R 325.51463, R 325.51464, R 325.51465, R 325.51467, R 325.51468, R 325.51469, R 325.51470, R 325.51473, and R 325.51474 of the Michigan Administrative Code are amended, R 325.51451a, R 325.51461a, R 325.51463a, R 325.51472a, R 325.51472b, R 325.51472c, R 325.51472d, R 325.51474a, R 325.51474b, R 325.51474c, R 325.51474d, and R 325.51474e are added, and R 325.51472, R 325.51475, R 325.51476, and R 325.51477 are rescinded, as follows:

PART 306 FORMALDEHYDE

R 325.51451 Scope and application.

Rule 1. (1) The rules in this part apply to exposures to any of the following:

- (a) Formaldehyde from any source.
- (b) Formaldehyde gas.
- (c) Formaldehyde solutions.
- (d) Materials that release formaldehyde.

(2) The rules in this part apply to all employment situations, including general industry and construction industry employment.

R 325.51451a Referenced standards.

Rule 1a. (1) 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, at the time of adoption of these rules, is 4 cents per page.

(a) Construction Safety Standard Part 6 “Personal Protective Equipment,” R 408.40601 to R 408.40641.

(b) General Industry Safety Standard Part 33 “Personal Protective Equipment,” R 408.13301 to R 408.13398.

(c) Occupational Health Standard Part 433 “Personal Protective Equipment,” R 325.60001 to R 325.60013.

(d) Occupational Health Standard Part 430 “Hazard Communication,” R 325.77001 to R 325.77003.

(e) Occupational Health Standard Part 451 “Respiratory Protection,” R 325.60051 to R 325.60052.

(f) Occupational Health Standard Part 470 “Employee Medical Records and Trade Secrets,” R 325.3451 to R 325.3476.

(g) Occupational Health Standard Part 474 “Sanitation,” R 325.47401 to R 325.47425.

(2) Appendices A, B, C, and D to these rules are informational only and are not intended to create any additional obligations or requirements not otherwise imposed by these rules or to detract from any established obligations or requirements.

R 325.51452 Definitions.

Rule 2. (1) "Action level" means a concentration of 0.5 parts formaldehyde per million parts of air (0.5 ppm) calculated as an 8-hour, time-weighted average (TWA) concentration.

(2) "Authorized person" means any person who is required by work duties to be present in regulated areas or who is authorized to be present in regulated areas by the employer, by these rules, or by the Michigan Occupational Safety and Health Act (MIOSHA), 1974 PA 154, MCL 408.1001 to 408.1094.

(3) "Director" means the director of the Michigan department of licensing and regulatory affairs or his or her designee.

(4) "Emergency" means any occurrence, such as an equipment failure, the rupture of containers, or the failure to control equipment, that results in an uncontrolled release of a significant amount of formaldehyde.

(5) "Employee exposure" means the exposure to airborne formaldehyde that would occur without the use of a respirator.

(6) "Formaldehyde" means the chemical substance HCHO, chemical abstracts service registry no. 50-00-0.

EXPOSURE MONITORING

R 325.51454 Exposure monitoring generally.

Rule 4. (1) An employer shall monitor to determine employee exposure to formaldehyde.

(2) An employer shall not be required to monitor exposures if it can be documented, using objective data, that the presence of formaldehyde or formaldehyde-releasing products in the workplace could not possibly expose an employee at or above the action level or STEL under foreseeable conditions of use.

(3) Employee exposure to formaldehyde shall be determined by representative monitoring for each job classification, in each work area, for each shift, and during the full shift or for a short-term exposure, as appropriate. Other work shift monitoring shall not be conducted if objective data can document equivalent exposures for different work shifts.

(4) Monitoring shall be accurate, at the 95% confidence level, to within plus or minus 25% for airborne concentrations of formaldehyde at the TWA and the STEL and to within plus or minus 35% for airborne concentrations of formaldehyde at the action level.

R 325.51457 Exposure monitoring; notification and observation.

Rule 7. (1) The employer shall, within 15 working days after the receipt of the results of any monitoring performed under this rule, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to employees. If employee exposure is

above the PEL, the employer shall provide affected employees with a description of the corrective actions being taken by the employer to decrease exposure.

(2) An employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to formaldehyde required by these rules.

(3) When observation of the monitoring of employee exposure to formaldehyde requires entry into an area where the use of protective clothing or equipment is required, an employer shall provide the clothing and equipment to the observer, require the observer to use such clothing and equipment, and assure that the observer complies with all other applicable safety and health procedures.

REGULATED AREAS

R 325.51458 Signs for regulated areas.

Rule 8. (1) An employer shall establish regulated areas where the concentration of airborne formaldehyde is more than either the TWA or the STEL and post all entrances and accessways with signs bearing the following information:

DANGER FORMALDEHYDE MAY CAUSE CANCER CAUSES SKIN, EYE, AND RESPIRATORY IRRITATION AUTHORIZED PERSONNEL ONLY

(2) Prior to June 1, 2016, an employer may use the following legend instead of that specified in subrule (1) of this rule:

DANGER FORMALDEHYDE IRRITANT AND POTENTIAL CANCER HAZARD AUTHORIZED PERSONNEL ONLY

(3) An employer shall limit access to regulated areas to authorized persons who have been trained to recognize the hazards of formaldehyde

(4) An employer at a multiemployer worksite who establishes a regulated area shall communicate the access restrictions and location of the area to other employers with work operations at that worksite.

METHODS OF COMPLIANCE

R 325.51459 Engineering and work practice controls.

Rule 9. (1) An employer shall institute engineering and work practice controls to reduce and maintain employee exposures to formaldehyde at or below the TWA and the STEL.

(2) If an employer has established that feasible engineering and work practice controls cannot reduce employee exposure to or below either of the PELs, the employer shall apply these controls to reduce employee exposures to PELs to the extent feasible and shall supplement them with respirator protection pursuant to the provisions of R 325.51460 to R 325.51461a.

RESPIRATORY PROTECTION

R 325.51460 Respiratory protection generally.

Rule 10. For employees who use respirators required by these rules, the employer shall provide each employee an appropriate respirator that complies with the requirements of these rules. An employer shall ensure that an employee uses a respirator during all of the following:

- (a) Periods necessary to install or implement feasible engineering and work practice controls.
- (b) Work operations, such as maintenance and repair activities or vessel cleaning, for which the employer establishes that engineering and work practice controls are not feasible.
- (c) Work operations for which feasible engineering and work practice controls are not yet sufficient to reduce exposure to or below the PELs.
- (d) Emergencies.

R 325.51461 Respirator program.

Rule 11. (1) An employer shall implement a respiratory protection program pursuant to Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 325.51451a, that covers each employee required by these rules to use a respirator.

(2) If an employee uses air-purifying respirators with chemical cartridges or canisters that do not contain end-of-service-life indicators approved by the National Institute for Occupational Safety and Health (NIOSH), the employer shall replace these cartridges or canisters as specified in Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 325.51451a, or at the end of the workshift, whichever condition occurs first.

(3) The cartridge shall be replaced after 3 hours of use or at the end of the work shift, whichever occurs first, unless the cartridge contains a NIOSH-approved end-of-service-life indicator (ESLI) to show when breakthrough occurs.

(4) Unless the canister contains a NIOSH-approved ELSI to show when breakthrough occurs, replace canisters used in atmospheres up to 7.5 ppm (10 x PEL) every 4 hours and industrial-size canisters used in atmospheres up to 75 ppm (100 x PEL) every 2 hours, or at the end of the work shift, whichever occurs first.

R 325.51461a Respirator selection.

Rule 11a. (1) The employer shall do all of the following:

(a) Select, and provide to employees, the appropriate respirators specified in Occupational Health Standard Part 451 “Respiratory Protection,” as referenced in R 325.51451a.

(b) Equip each air-purifying, full facepiece respirator with a canister or cartridge approved for protection against formaldehyde.

(c) For escape, provide employees with 1 of the following respirator options:

- (i) A self-contained breathing apparatus operated in the demand or pressure-demand mode.
- (ii) A full facepiece respirator having a chin-style.
- (iii) A front-or back-mounted industrial-size, canister or cartridge approved for protection against formaldehyde.

(2) An employer may substitute an air-purifying, half mask respirator for an air-purifying, full facepiece respirator when the half mask respirator is equipped with a cartridge approved for protection against formaldehyde and provide the affected employee with effective gas-proof goggles.

(3) An employer shall provide employees who have difficulty using negative pressure respirators with powered air-purifying respirators permitted for use under subrule (1)(a) of this rule, and that affords adequate protection against formaldehyde exposures.

PROTECTIVE EQUIPMENT AND CLOTHING

R 325.51462 Protective equipment and clothing.

Rule 12. (1) An employer shall comply with the provisions of General Industry Safety Standard Part 33 “Personal Protective Equipment,” Occupational Health Standard Part 433 “Personal Protective Equipment,” and Construction Safety Standard Part 6 “Personal Protective Equipment,” as referenced in R 325.51451a. If protective equipment or clothing is provided under these rules, then an employer shall provide the protective devices at no cost to the employee and assure that the employee wears the devices.

(2) An employer shall select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

(3) An employer shall ensure all of the following:

(a) All contact of the eyes and skin with liquids containing 1% or more formaldehyde is prevented by the use of chemical protective clothing made of material impervious to formaldehyde and the use of other personal protective equipment, such as goggles and face shields, as appropriate to the operation.

(b) Contact with irritating or sensitizing materials is prevented to the extent necessary to eliminate the hazard.

(c) Where a face shield is worn, chemical safety goggles are required if there is a danger of formaldehyde reaching the area of the eye.

(d) Full body protection is worn for entry into areas where concentrations exceed 100 ppm and for emergency reentry into areas of unknown concentration.

R 325.51463 Maintenance of protective equipment and clothing.

Rule 13. (1) An employer shall assure that protective equipment and clothing that has become contaminated with formaldehyde is cleaned or laundered before its reuse.

(2) When ventilating formaldehyde-contaminated clothing and equipment, an employer shall establish a storage area so that employee exposure is minimized.

R 325.51463a Signs.

Rule 13a. (1) Storage areas for contaminated clothing and equipment shall have signs bearing the following legend:

<p>DANGER FORMALDEHYDE-CONTAMINATED [CLOTHING] EQUIPMENT MAY CAUSE CANCER CAUSES SKIN, EYE AND RESPIRATORY IRRITATION DO NOT BREATHE VAPOR DO NOT GET ON SKIN</p>

(2) The employer shall ensure containers for contaminated clothing and equipment are labeled consistent with the Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a, and shall, as a minimum, include the following:

DANGER
FORMALDEHYDE-CONTAMINATED [CLOTHING] EQUIPMENT
MAY CAUSE CANCER
CAUSES SKIN, EYE, AND RESPIRATORY IRRITATION
DO NOT BREATHE VAPOR
DO NOT GET ON SKIN

(3) Prior to June 1, 2016, an employer may use the following legend instead of that specified in subrule (1) of this rule:

DANGER
FORMALDEHYDE-CONTAMINATED
CLOTHING/EQUIPMENT
AVOID INHALATION AND SKIN CONTACT

(4) Prior to June 1, 2015, an employer may include the following information on containers of protective clothing and equipment in lieu of the labeling requirements in subrule (2) of this rule:

DANGER
FORMALDEHYDE-CONTAMINATED
[CLOTHING] EQUIPMENT
AVOID INHALATION AND SKIN CONTACT

(5) An employer shall assure that only persons who are trained to recognize the hazards of formaldehyde remove the contaminated items from the storage areas or container for the purposes of cleaning, laundering, or disposal.

(6) An employer shall assure that an employee does not take his or her formaldehyde contaminated clothing or equipment home.

(7) An employer shall repair or replace all required protective clothing and equipment for each affected employee as necessary to assure its effectiveness.

(8) An employer shall inform any person who launders, cleans, or repairs contaminated clothing or equipment of formaldehyde's potentially harmful effects and of procedures to safely handle the clothing and equipment.

HYGIENE PROTECTION

R 325.51464 Hygiene facilities.

Rule 14. (1) An employer shall provide change rooms, as described in Occupational Health Standard Part 474 "Sanitation," as referenced in R 325.51451a, for employees who are required to change from work clothing into protective clothing to prevent skin contact with formaldehyde.

(2) If the possibility of employee skin contact with solutions containing 1% or more formaldehyde exists, for example because of equipment failure or improper work practices, an employer shall provide

conveniently located quick drench showers and assure that affected employees use these facilities immediately.

(3) If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1% or more formaldehyde, an employer shall provide acceptable facilities for flushing eyes within the immediate work area for emergency use.

HOUSEKEEPING

R 325.51465 Housekeeping.

Rule 15. For operations involving formaldehyde liquids or gas, an employer shall conduct a program to detect leaks and spills, including regular visual inspections. The program shall include all of the following that are applicable:

(a) Preventative maintenance of equipment, including surveys for leaks, shall be undertaken at regular intervals.

(b) In work areas where spillage may occur, an employer shall provide for containing the spill, decontaminating the work area, and disposing of the waste.

(c) An employer shall assure that all leaks are repaired and spills are cleaned promptly by employees wearing suitable protective equipment and trained in the proper methods for cleanup and decontamination.

(d) Formaldehyde-contaminated waste and debris resulting from leaks or spills shall be placed for disposal in sealed containers bearing a label warning of formaldehyde's presence and of the hazards associated with formaldehyde. The employer shall ensure that the labels are in accordance with R 325.51472a to R 325.51472d.

MEDICAL SURVEILLANCE

R 325.51467 Medical surveillance, generally.

Rule 17. (1) An employer shall institute medical surveillance programs for all employees who are exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL.

(2) An employer shall make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees who are exposed to formaldehyde in emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, an employer may rely on the evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in materials in concentrations less than 0.1%.

(3) All medical procedures, including the administration of medical disease questionnaires, shall be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(4) An employer shall make the following medical surveillance documents available to employees before assignment to a job where formaldehyde exposure is at or above the action level or above the STEL and annually thereafter. The employer shall also make the following medical surveillance documents available promptly upon determining that an employee is experiencing signs and symptoms indicative of possible overexposure to formaldehyde:

(a) An employer-administered medical disease questionnaire, such as in appendix D to these rules, which is designed to elicit information in the following areas:

(i) Work history.

- (ii) Smoking history.
- (iii) Any evidence of eye, nose, or throat irritation.
- (iv) Chronic airway problems or hyperactive airway disease.
- (v) Allergic skin conditions or dermatitis.
- (vi) Upper or lower respiratory problems.

(b) A written determination by the physician, based on evaluation of the medical disease questionnaire, of whether a medical examination is necessary for employees who are not required to wear respirators to reduce the exposure to formaldehyde.

R 325.51468 Medical examinations.

Rule 18. (1) Medical examinations shall be given to any employee who the physician feels, based on information in the medical disease questionnaire, may be at increased risk from exposure to formaldehyde and shall be given at the time of initial assignment and at least annually thereafter to all employees who are required to wear a respirator to reduce exposure to formaldehyde. The medical examination shall include all of the following:

(a) A physical examination, with an emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

(b) Laboratory examinations for respirator wearers consisting of baseline and annual pulmonary function tests. At a minimum, these tests shall consist of forced vital capacity (FVC), forced expiratory volume in 1 second (FEV(1)), and forced expiratory flow (FEF).

(c) Any other test which the examining physician deems necessary to complete the written opinion.

(d) Counseling of employees who have medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde on the increased risk of impairment of their health.

(2) An employer shall make medical examinations available as soon as possible to all employees who have been exposed to formaldehyde in an emergency.

(3) The examination shall include a medical and work history with an emphasis on any evidence of any of the following:

(a) Upper or lower respiratory problems.

(b) Allergic conditions.

(c) Skin reaction or hypersensitivity.

(d) Eye, nose, or throat irritation.

(4) Other examinations shall consist of those elements considered appropriate by the examining physician.

(5) An employer shall provide all of the following information to the examining physician:

(a) A copy of these rules and appendices A, C, and D.

(b) A description of the affected employee's job duties as they relate to the employee's exposure to formaldehyde.

(c) The representative exposure level for the employee's job assignment.

(d) Information concerning any personal protective equipment and respiratory protection used or to be used by the employee.

(e) Information from previous medical examinations of the affected employee within the control of the employer.

(f) For a nonroutine examination because of an emergency, an employer shall provide, as soon as possible, a description of how the emergency occurred and the exposure the victim may have received.

R 325.51469 Physician's written opinion.

Rule 19. (1) For each examination pursuant to these rules, an employer shall obtain a written opinion from the examining physician. This written opinion shall contain the results of the medical examination, except that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde. The written opinion shall include all of the following:

(a) The physician's opinion as to whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde.

(b) Any recommended limitations on the employee's exposure or changes in the use of personal protective equipment, including respirators.

(c) A statement that the employee has been informed by the physician of any medical conditions which would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

(2) An employer shall provide for retention of the results of the medical examination and tests conducted by the physician.

(3) An employer shall provide a copy of the physician's written opinion to the affected employee within 15 days of its receipt.

R 325.51470 Employee medical removal procedures.

Rule 20. (1) This rule applies if an employee reports any of the following symptoms attributed to workplace formaldehyde exposure:

(a) Significant irritation of the mucosa of the eyes or of the upper airways.

(b) Respiratory sensitization.

(c) Dermal irritation.

(d) Dermal sensitization.

Note: This rule does not apply in the case of dermal irritation or sensitization if the product that is suspected of causing the dermal condition contains less than 0.05% formaldehyde.

(2) A physician shall evaluate an employee's report of signs or symptoms of possible overexposure to formaldehyde. An employer shall select the physician under R 325.51467. If the physician determines that a medical examination is not necessary, then there shall be a 2-week evaluation and remediation period to permit the employer to ascertain whether the signs or symptoms subside untreated or with the use of creams, gloves, first aid treatment, or personal protective equipment. An employer may also implement industrial hygiene measures that limit an employee's exposure to formaldehyde during the 2-week period. An employer shall immediately refer an employee to a physician before the end of the 2-week period if the signs or symptoms worsen. An employer shall not alter earnings, seniority, and benefits during the 2-week period because of an employee's medical report.

(3) If an employee's signs or symptoms of possible overexposure to formaldehyde have not subsided or been remedied by the end of the 2-week period, or earlier if the signs or symptoms warrant, then a physician who is selected by the employer shall examine the employee. The physician shall presume, absent contrary evidence, that observed dermal irritation or dermal sensitization is not attributable to formaldehyde when products to which the affected employee is exposed contain less than 0.1% formaldehyde.

(4) An employer shall ensure that a medical examination is conducted in compliance with R 325.51468. Additional guidelines for conducting medical exams are contained in appendix C to these rules.

(5) If the physician finds that significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization results from workplace formaldehyde exposure and recommends restrictions or removal of the employee from formaldehyde exposure, then

the employer shall promptly comply with the restrictions or recommendation of removal. If there is a recommendation of removal, then the employer shall remove the affected employee from the current formaldehyde exposure and, if possible, transfer the employee to work that does not result in exposure to formaldehyde or that results in significantly less exposure to formaldehyde.

(6) If an employee is removed under subrule (5) of this rule, then an employer shall transfer the employee to comparable work for which the employee is qualified or can be trained in not more than a 6-month period and work where the formaldehyde exposures are as low as possible, but not higher than the action level. The employer shall maintain the employee's current earnings, seniority, and other benefits. If comparable work is not available, then the employer shall maintain the employee's current earnings, seniority, and other benefits until comparable work becomes available, until the employee is determined to be unable to return to workplace formaldehyde exposure, until the employee is determined to be able to return to the original job status, or for 6 months, whichever occurs first.

(7) An employer shall arrange for a follow-up medical examination to take place within 6 months after an employee is removed from formaldehyde exposure under this rule. The examination shall determine if the employee can return to the original job status or if the removal is to be permanent. A physician shall make a decision within 6 months of the date that an employee was removed as to whether the employee can be returned to the original job status or if the removal is to be permanent.

(8) An employer's obligation to provide earnings, seniority, and other benefits to an employee who is removed from formaldehyde exposure may be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program or from employment with another employer that is made possible by the employee's removal.

(9) In making determinations of the formaldehyde content of materials under this rule, an employer may rely on objective data.

HAZARD COMMUNICATION

R 325.51472a Hazard communication generally.

Rule 22a. (1) Chemical manufacturers, importers, distributors and employers shall comply with all requirements of the Occupational Health Standard Part 430 "Hazard Communication," as referenced in R 325.51451a, for formaldehyde.

(2) In classifying the hazards of formaldehyde, at least all of the following hazards shall be addressed:

- (a) Cancer.
- (b) Skin and respiratory sensitization.
- (c) Eye, skin and respiratory tract irritation.
- (d) Acute toxicity effects.
- (e) Flammability.

(3) An employer shall include formaldehyde in the hazard communication program established to comply with the Occupational Health Standard Part 430 "Hazard Communication." An employer shall ensure that each employee has access to labels on containers of formaldehyde and to safety data sheets, and is trained in accordance with the requirements of R 325.51473 and Occupational Health Standard Part 430 "Hazard Communication," as referenced in R 325.51451a.

(4) Subrules (1), (2), and (3) of this rule apply to chemicals associated with formaldehyde gas, all mixtures or solutions composed of greater than 0.1 percent formaldehyde, and materials capable of releasing formaldehyde into the air at concentrations reaching or exceeding 0.1 ppm.

(5) In making the determinations of anticipated levels of formaldehyde release, the employer may rely on objective data indicating the extent of potential formaldehyde release under reasonably foreseeable conditions of use.

(6) In addition to the requirements in subrules (1) to (4) of this rule, for materials listed in subrule (4) of this rule capable of releasing formaldehyde at levels above 0.5 ppm, labels shall appropriately address all hazards as defined in Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a, and Appendices A and B, including cancer and respiratory sensitization, and shall contain the hazard statement “May Cause Cancer.”

(7) At a minimum, for all materials listed in subrules (1) and (4) of this rule capable of releasing formaldehyde at levels of 0.1 ppm to 0.5 ppm, labels shall include all of the following:

(a) Identify that the product contains formaldehyde.

(b) List the name and address of the responsible party.

(c) State that physical and health hazard information is readily available from the employer and from safety data sheets.

(8) Prior to June 1, 2015, an employer may include the phrase “Potential Cancer Hazard” instead of “May Cause Cancer” as specified in subrule (6) of this rule.

R 325.51472b Hazard warning labels.

Rule 22b. (1) The employer shall assure that hazard warning labels complying with the requirements of Occupational Health Standard Part 430 “Hazard Communication,” are affixed to all containers of materials listed in R 325.51472a(1), except to the extent that Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a, is inconsistent with this rule.

(2) For materials listed in R 325.51472a(1) capable of releasing formaldehyde at levels above 0.5 ppm, labels shall appropriately address all hazards as defined in Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a, and Appendices A and B, including respiratory sensitization, and shall contain the words “Potential Cancer Hazard.”

(3) In making the determinations of anticipated levels of formaldehyde release, the employer may rely on objective data indicating the extent of potential formaldehyde release under reasonably foreseeable conditions of use.

(4) The employer may use warning labels required by other statutes, regulations, or ordinances which impart the same information as the warning statements required by these rules.

R 325.51472c Safety data sheets.

Rule 22c. (1) An employer who uses formaldehyde-containing materials listed in R 325.51472a(1) shall comply with the requirements of Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a, with regard to the development and updating of safety data sheets.

(2) Manufacturers, importers, and distributors of formaldehyde-containing materials listed in R 325.51472a(1) shall assure that safety data sheets and updated information are provided to all employers purchasing such materials at the time of the initial shipment and at the time of the first shipment after a safety data sheet is updated.

R 325.51472d Written hazard communication program.

Rule 22d. (1) The employer shall develop, implement, and maintain at the workplace, a written hazard communication program for formaldehyde exposures in the workplace, which at a minimum describes how the requirements specified in this rule for labels and other forms of warning and safety data sheets, and R 325.51473 for employee information and training, will be met.

(2) Employers in multi-employer workplaces shall comply with the requirements of Occupational Health Standard Part 430 “Hazard Communication,” as referenced in R 325.51451a.

R 325.51472 Rescinded.

EMPLOYEE INFORMATION AND TRAINING

R 325.51473 Employee information and training.

Rule 23. (1) An employer shall ensure that all employees who are assigned to workplaces where there is exposure to formaldehyde at or above 0.1 ppm participate in a training program.

(2) An employer shall provide employees with information and training on formaldehyde at the time of their initial assignment and when a new exposure to formaldehyde is introduced into their work areas. An employers shall provide such information and training at least annually.

(3) The training program shall be conducted in a manner that an employee is able to understand and shall include all of the following:

(a) A discussion of the contents of these rules and the contents of the safety data sheet.

(b) An explanation of the purpose for, and a description of, the medical surveillance program required by these rules, including both of the following:

(i) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde.

(ii) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure.

(c) A description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job.

(d) An explanation of the purpose for, and proper use and limitations of, personal protective clothing and equipment.

(e) Instructions for the handling of spills, emergencies, and clean-up procedures.

(f) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls.

(g) A review of emergency procedures, including the specific duties or assignments of each employee in an emergency.

(4) An employer shall inform all affected employees of the location of written training materials and shall make these materials readily available, without cost, to the affected employees.

(5) The employer shall provide to the director, upon request, all training materials relating to the employee training program.

RECORDKEEPING

R 325.51474 Recordkeeping.

Rule 24. An employer shall establish and maintain an accurate record of all measurements taken to monitor employee exposure to formaldehyde. This record shall include all of the following information:

(a) The date of measurement.

(b) The operation being monitored.

(c) The methods of sampling and analysis and evidence of their accuracy and precision.

(d) The number, durations, time, and results of samples taken.

(e) The types of protective devices worn.

(f) The names, job classifications, social security numbers, and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

R 325.51474a Exposure determinations.

Rule 24a. If an employer has determined that monitoring is not required pursuant to these rules, the employer shall maintain a record of the objective data relied upon to support the determination that employees are not exposed to formaldehyde at or above the action level.

R 325.51474b Medical surveillance.

Rule 24b. An employer shall establish and maintain an accurate record for each employee who is subject to medical surveillance pursuant to these rules. This record shall include all of the following information:

- (a) The name and social security number of the employee.
- (b) The physician's written opinion.
- (c) A list of any employee health complaints that may be related to exposure to formaldehyde.
- (d) A copy of the medical examination results, including medical disease questionnaires and results of any medical tests required by these rules or mandated by the examining physician.

R 325.51474c Respirator fit testing.

Rule 24c. An employer shall establish and maintain accurate records for employees who are subject to negative-pressure respirator fit testing required by these rules. These records shall include all of the following information:

- (a) A copy of the protocol selected for respirator fit testing.
- (b) A copy of the results of any fit testing performed.
- (c) The size and manufacturer of the types of respirators available for selection.
- (d) The date of the most recent fit testing, the name and social security number of each tested employee, and the respirator type and facepiece selected.

R 325.51474d Record retention.

Rule 24d. An employer shall retain records required by these rules for not less than the following periods:

- (a) Exposure records and determinations shall be kept for not less than 30 years.
- (b) Medical records shall be kept for the duration of employment, plus 30 years.
- (c) Respirator fit testing records shall be kept until replaced by a more recent record.

R 325.51474e Availability of records.

Rule 24e. All of the following provisions apply with regard to the availability of records:

(a) Upon request, an employer shall make all records maintained as a requirement of these rules available for examination and copying to the director.

(b) An employer shall make employee exposure records, including estimates made from representative monitoring, available upon request for examination and copying to the subject employee or former employee and to employee representatives in accordance with Occupational Health Standard Part 470 "Employee Medical Records and Trade Secrets," as referenced in R 325.51451a.

(c) Employee medical records required by these rules shall be provided upon request for examination and copying to the subject employee or former employee or to anyone who has the specific written consent of the subject employee or former employee in accordance with Occupational Health Standard Part 470 "Employee Medical Records and Trade Secrets," as referenced in R 325.51451a.

R 325.51475 Rescinded.

R 325.51476 Rescinded.

R 325.51477 Rescinded.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State on April 22, 2015

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 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 408.10601, R 408.10603, R 408.10604, R 408.10605, R 408.10606, R 408.10611, R 408.10612, R 408.10613, R 408.10621, R 408.10623, R 408.10624, R 408.10631, R 408.10632, R 408.10633, R 408.10634, R 408.10636, R 408.10639, R 408.10641, R 408.10643, R 408.10644, R 408.10645, R 408.10647, R 408.10661, R 408.10664, R 408.10671, R 408.10673, R 408.10675, R 408.10677, R 408.10685, R 408.10686, R 408.10695, and R 408.10696, are amended, and R 408.10627 and R 408.10680 are added and R 408.10637 and R 408.10638, are rescinded, to the Michigan Administrative Code as follows:

PART 6. FIRE EXITS

GENERAL PROVISIONS

R 408.10601 Scope.

Rule 601. (1) These rules specify requirements for means of egress for employee use required by the advent of hazardous conditions such as fire, explosion, and natural disaster.

(2) These rules apply to workplaces in general industry except mobile workplaces such as vehicles or vessels.

(3) These rules cover the minimum requirements for exit routes that employers must provide in their workplace so that employees may evacuate the workplace safely during an emergency. These rules cover the minimum requirements for emergency action plans and fire prevention plans.

R 408.10603 Definitions; B to F.

Rule 603. (1) "Breakaway door" means a door that is designed to slide in normal operation and which will swing open in any position when a maximum pressure of 50 pounds is applied to the latch side of the door in an emergency.

(2) "Draw bolt" means a metal bar or rod in the mechanism of a lock that is thrown or withdrawn by turning the key or retracting a lever.

(3) "Electroluminescent" means a light-emitting capacitor. Alternating current excites phosphor atoms when placed between the electrically conductive surfaces to produce light. This light source is typically contained inside the device.

(4) "Fire area of a building" means that space contained within component structural parts that has a fire resistance sufficient to prevent the further spread of fire that originates therein.

(5) "Fire door" means a fire-resistive door assembly, including the frame and hardware.

(6) "Fire resistance" means the property of a material or assembly to withstand fire or give protection from it.

(7) "Flammable" means subject to easy ignition and rapid flaming combustion.

(8) "Floor area" or "gross area" means the floor area within the perimeter of the outside walls of a building, with no deductions for any of the following:

(a) Hallways.

(b) Stairs.

(c) Closets.

(d) Thickness of walls.

(e) Columns.

(f) Other features.

(9) "Flush bolt" means a door bolt that is designed so that when applied it is flush with the face or edge of the door.

R 408.10604 Definitions; H to M.

Rule 604. (1) "Hasp and staple" means a fastening device that consists of a slotted hinge plate and a loop (staple).

(2) "Hazardous area" means an area of a building, or portion thereof, used for purposes that involve highly combustible, highly flammable, or explosive products or materials which are likely to burn with extreme rapidity or which may produce poisonous fumes or gases, including highly toxic or noxious acids, alkalines, or irritant hazards; which cause the division of material into fine particles or dust subject to explosion or spontaneous combustion; or which constitute a high fire hazard because of the form, character, or volume of the material used.

(3) "Hazard of contents" means the relative danger of the start and spread of fire, the danger of smoke or gases generated, and the danger of explosion or other occurrence potentially endangering the lives and safety of employees in a building. Where certain features of a building are such as to involve a hazard greater than the hazard of the contents, the greater degree of hazard shall govern.

(4) "High hazard area" means an area inside a workplace in which operations include high hazard materials, processes, or contents.

(5) "High hazard contents" means combustibles of a character or quantity that burn with extreme rapidity or from which extremely poisonous fumes or explosions are to be expected in the case of fire.

(6) "Horizontal exit" means a way of passage from a building to an area of refuge in another building on approximately the same level or a way of passage through or around a fire-resistant wall or fire-resistant partition to an area of refuge on approximately the same level in the same building which affords safety from fire or smoke in the area of escape and areas communicating therewith.

(7) "Listed" means equipment that is listed if it is of a kind mentioned in a list that is published by a nationally recognized testing laboratory that makes periodic inspections of the production of such equipment and that states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

(8) "Low hazard contents" means combustibles of such low combustibility that self-propagating fire cannot occur and that consequently the only probable danger will be from panic, fumes, smoke, or fire from some external source.

(9) "Means of egress" also known as an "exit route" means a continuous and unobstructed path of exit travel from any point within a workplace to a place of safety, including refuge areas. A means of egress includes both vertical and horizontal areas along the route of travel. A means of egress or an exit route consists of 3 separate parts and are defined as follows:

(a) "Exit access" means that portion of a means of egress or an exit route which leads to an exit. An example of an exit access is a corridor on the 5th floor of an office building that leads to a 2-hour fire resistance-rated enclosed stairway.

(b) "Exit" means that portion of a means of egress or an exit route that is separated from the area of a building from which escape is to be made by a wall, floor, door, or other means which provides the protected path necessary to proceed with reasonable safety to the exterior of the building. An example of an exit is a 2-hour fire resistance-rated enclosed stairway that leads from the 5th floor of an office building to the outside of the building.

(c) "Exit discharge" means that portion of an exit route that leads directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside. An example of an exit discharge is a door at the bottom of a 2-hour fire resistance-rated enclosed stairway that discharges to a place of safety outside the building.

R 408.10605 Definitions; N to S.

Rule 605. (1) "Nationally recognized testing laboratory." See 29 C.F.R. §1910.7 "Definition and requirements for a nationally recognized testing laboratory," as adopted in R 408.10606, for the definition.

(2) "Noncombustible building" means a building that is constructed of materials that do not support fire.

(3) "Occupant load" means the total number of persons that may occupy a workplace or portion of a workplace at any one time. The occupant load of a workplace is calculated by dividing the gross floor area of the workplace or portion of the workplace by the occupant load factor for that particular type of workplace occupancy. Information regarding the "Occupant load" is located in NFPA 101 "Life Safety Code," 2009 edition and in the "International Fire Code" 2009 edition, as adopted in R 408.10606.

(4) "Ordinary hazard contents" means combustibles that are liable to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither extremely poisonous fumes nor explosions are to be expected in case of fire.

(5) "Refuge area" means either of the following:

(a) A space along an exit route that is protected from the effects of fire by separation from other spaces within the building by a barrier with at least a 1-hour fire resistance-rating.

(b) A floor with at least 2 spaces, separated from each other by smoke-resistant partitions, in a building protected throughout by an automatic sprinkler system that complies with General Industry Safety Standard Part 9 "Fixed Fire Equipment," as referenced in R 408.10606.

(6) "Self-closing" means equipped with an approved device which will ensure closing without manual assistance after having been opened.

(7) "Sprinklered" means equipped with an approved automatic sprinkler system that is properly maintained.

(8) "Street" means a public thoroughfare that is 30 or more feet in width, that has been dedicated or deeded to the public for public use, and that is accessible for use by a fire department in fighting fires.

An enclosed space or tunnel, even though used for vehicular and pedestrian traffic, is not considered a street.

(9) “Self-luminous” means a light source that is illuminated by a self-contained power source, like tritium, and that operates independently from external power sources. Batteries are not acceptable self-contained power sources. The light source is typically contained inside the device.

(10) "Surface bolt" means a locking bolt that is installed on the surface of a door.

R 408.10606 Adoption of standards by reference; access to other MIOSHA rules.

Rule 606. (1) The National Fire Protection Association NFPA 101 “Life Safety Code,” 2009 edition, is adopted by reference in these rules and is 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 of \$93.00.

(2) The “International Fire Code” 2009 edition, is adopted by reference in these rules and is available from International Code Council, 500 New Jersey Avenue, NW, 6th floor, Washington, DC 20001, USA, telephone number: 1-800-786-4452, or via the internet at website: www.iccsafe.org; at a cost as of the time of adoption of these rules of \$113.00.

(3) The following federal occupational safety and health administration (OSHA) regulations from the code of federal regulations are adopted by reference in these rules:

(a) 29 C.F.R. §1910.7 “Definition and requirements for a nationally recognized testing laboratory.”

(b) 29 C.F.R. 1910.165 “Employee alarm systems”

(4) The standards adopted in these rules are 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.

(5) Copies of the standards adopted in these rules may be obtained from the publisher or may 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 this rule, plus \$20.00 for shipping and handling.

(6) The following Michigan occupational safety and health standards (MIOSHA) 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, at the time of adoption of these rules, is 4 cents per page.

(a) General Industry Safety Standard Part 2 “Floor and Wall Openings, Stairways, and Skylights,” R 408.10201 to R 408.10241.

(b) General Industry Safety Standard Part 3 “Fixed Ladders,” R 408.10301 to R 408.10372.

(c) General Industry Safety Standard Part 9 “Fixed Fire Equipment,” R 408.10901 to R 408. 10999.

R 408.10611 Design of buildings and structures.

Rule 611. (1) The danger to employees must be minimized.

(2) A building or structure designed for human occupancy shall be provided with exits, as prescribed in this part, that permit prompt escape in case of fire or other emergency.

(3) Exits and other safeguards shall be designed so that an employee's safety or preservation of life in case of fire or other emergency is not dependent solely on a single safeguard. Additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to human or mechanical failure.

(4) Exit routes shall be kept free of explosive or highly flammable furnishings or other decorations.

(5) A building or structure shall be constructed, arranged, equipped, maintained, and operated to avoid undue danger to the lives and safety of the employees from fire, smoke, fumes, or panic during the period of time necessary for escape from the building or structure.

(6) An employee alarm system must be operable. Employers shall install and maintain an operable employee alarm system that has a distinctive signal to warn employees of fire or other emergencies, unless employees can promptly see or smell a fire or other hazard in time to provide adequate warning to them. The employee alarm system must comply with General Industry Safety Standard Part 9 “Fixed Fire Equipment,” and 29 C.F.R. 1910.165 “Employee alarm systems” as adopted in R 408.10606

R 408.10612 Occupancy of new buildings.

Rule 612. During new construction, employees shall not occupy a workplace until the exit routes required by these rules are completed and ready for employee use for the portion of the workplace they occupy.

R 408.10613 Occupancy and use during repairs and alterations.

Rule 613. (1) During repairs or alterations, employees shall not occupy a workplace unless the exit routes required by these rules are available and existing fire protections are maintained, or until alternate fire protection is furnished that provides an equivalent level of safety.

(2) Employees shall not be exposed to hazards of flammable or explosive substances or equipment used during construction, repairs, or alterations, that are beyond the normal permissible conditions in the workplace, or that would impede exiting the workplace.

CLASSES OF OCCUPANCY AND HAZARD OF CONTENTS

R 408.10621 Classes of occupancy.

Rule 621. A building or part thereof shall be classified as follows:

(a) A hotel, which includes a building, portion of a building, or group of buildings which is under the same management and in which there are more than 16 sleeping accommodations for hire that are primarily used by transients, whether designated as a hotel, apartment hotel, inn, club, or motel or by any other name.

(b) Mercantile occupancy, which includes a store, market, and other room or building for the display and sale of merchandise. Examples of this occupancy are as follows:

- (i) Supermarkets.
- (ii) Department stores.
- (iii) Shopping centers.
- (iv) Drugstores.
- (v) Auction rooms.

(c) Business occupancy, which means a place used for the transaction of business, other than that covered under mercantile occupancy, for the keeping of accounts and records and for similar purposes.

Examples of this occupancy are as follows:

- (i) Doctors' and dentists' offices.
- (ii) City and township halls.
- (iii) Courthouses.
- (iv) Libraries.
- (v) Schools.

(d) An industrial occupancy, which includes a factory that makes products of all kinds and a property devoted to operations such as processing, assembling, mixing, packaging, finishing or decorating, repairing, and similar operations. Examples of this group are as follows:

- (i) Laboratories.
- (ii) Dry cleaning plants.
- (iii) Power plants.
- (iv) Pumping stations.
- (v) Smokehouses.
- (vi) Laundries.
- (vii) Creameries.
- (viii) Gas plants.
- (ix) Refineries.
- (x) Sawmills.

(e) A storage occupancy, which includes a building that is used primarily for the storage or sheltering of goods, merchandise, products, vehicles, or animals. Examples of this group are as follows:

- (i) Warehouses.
- (ii) Cold storage operations.
- (iii) Freight terminals.
- (iv) Truck and marine terminals.
- (v) Bulk oil storage.
- (vi) Parking garages.
- (vii) Hangars.
- (viii) Grain elevators.
- (ix) Barns.
- (x) Stables.

(f) Miscellaneous occupancies, which means those buildings covered in the provisions of R 408.10691 to R 408.10697.

R 408.10623 Employee emergency action plans.

Rule 623. (1) An employer shall have an emergency action plan whenever required by a particular Michigan occupational safety and health act standard. The requirements in these rules apply to each such emergency action plan.

(2) An emergency action plan shall be in writing, kept in the workplace, and available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.

(3) An emergency action plan shall include at a minimum all of the following:

- (a) Procedures for reporting a fire or other emergency.
- (b) Procedures for emergency evacuation, including type of evacuation and exit route assignments.
- (c) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.
- (d) Procedures to account for all employees after evacuation.
- (e) Procedures to be followed by employees performing rescue or medical duties.
- (f) The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

(4) An employer shall establish an employee alarm system that is in compliance with the provisions of General Industry Safety Standard Part 9 “Fixed Fire Equipment,” and 29 C.F.R. 1910.165 “Employee

alarm systems” as adopted in R 408.10606. If the employee alarm system is used for alerting fire brigade members or for other purposes, a distinctive signal for each purpose shall be used.

(5) An employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

(6) Before implementing the emergency action plan, an employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

(7) The employer shall review the plan, at the following times, with each employee to whom the plan applies:

(a) When the plan is developed.

(b) If an employee's responsibilities or designated actions under the plan change.

(c) If the plan is changed.

(8) An employer shall review, with each employee, upon initial assignment, those parts of the plan that the employee must know to protect the employee in an emergency.

R 408.10624 Fire prevention plans.

Rule 624. (1) An employer shall have a fire prevention plan whenever they are required by a particular Michigan occupational safety and health act standard. The requirements in these rules apply to each such fire prevention plan.

(2) A fire prevention plan must be in writing, be kept in the workplace, and be made available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees.

(3) An employer shall control the accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The control procedures shall be included in the written fire prevention plan.

(4) An employer shall inform employees of the fire hazards of the materials and processes to which they are exposed.

(5) An employer shall review, with each employee, upon initial assignment, those parts of the fire prevention plan that the employee must know to protect the employee in an emergency.

(6) An employer shall regularly and properly maintain, according to established procedures, equipment and systems that are installed on heat-producing equipment to prevent the accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

(7) Minimum elements of a fire prevention plan shall include all of the following information:

(a) A list of all major fire hazards, proper handling and storage procedures for hazardous materials, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard.

(b) Procedures to control accumulations of flammable and combustible waste materials.

(c) Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials.

(d) The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires.

(e) The name or job title of employees responsible for the control of fuel source hazards.

R 408.10627 Compliance with alternate exit-route codes.

Rule 627. MIOSHA shall deem an employer demonstrating compliance with the exit-route provisions of the NFPA 101 “Life Safety Code,” 2009 edition or the exit-route provisions of the “International Fire Code” 2009 edition, as adopted in R 408.10606, to be in compliance with the corresponding requirements in these rules.

MEANS OF EGRESS

R 408.10631 Construction, maintenance, and changes.

Rule 631. (1) The components of a means of egress including doors, stairs, ramps, passages, and signs shall be of substantial construction and shall be maintained in an operable condition.

(2) An exit shall be not less than 28 inches (71.1 cm) wide at all points, except where specifically permitted elsewhere in this part. Where there is only 1 exit access leading to an exit or exit discharge, the width of the exit and exit discharge shall be at least equal to the width of the exit access.

(3) The ceiling of an exit route shall be at least 7 feet 6 inches (2.3 m) high. Any projection from the ceiling shall not reach a point less than 6 feet 8 inches (2.0 m) from the floor.

(4) The width of an exit route shall be sufficient to accommodate the maximum permitted occupant load of each floor served by the exit route.

(5) Objects that project into the exit route shall not reduce the width of the exit route to less than the minimum width requirements for exit routes.

(6) Exit routes must be kept free of explosive or highly flammable furnishings or other decorations.

(7) A space formed with movable or folding partitions and occupied by more than 20 persons shall have an approved means of egress.

(8) An alteration, addition, or change of occupancy that would reduce means of egress below the requirements for a new building is prohibited.

(9) Furnishings and decorations of an explosive or highly flammable character shall not be used in any occupancy.

(10) Where fire retardant paints or solutions are used, they shall be renewed, as necessary to maintain their fire retardant properties.

R 408.10632 Obstructions.

Rule 632. (1) An employer shall ensure that exit routes are free and unobstructed. No materials or equipment may be placed, either permanently or temporarily, within the exit route. The exit access shall not go through a room that can be locked, such as a bathroom, to reach an exit or exit discharge, nor may it lead into a dead-end corridor. Stairs or a ramp shall be provided where the exit route is not substantially level.

(2) A lock, fastening device, or barrier shall not be installed or used on a means of egress in a manner that will prevent or hinder free escape from the inside of a building.

(3) Exit route doors shall be free of any device or alarm that could restrict emergency use of the exit route if the device or alarm fails.

(4) Devices such as turnstiles and gates shall not be placed so as to obstruct a means of egress.

(5) No combustible or flammable debris, waste, or other material, the burning of which would render hazardous egress from the building shall be placed, stored, or kept on, under, at the bottom of, or adjacent to a means of egress or elevator. Where a means of egress is being obstructed by the placement of movable objects, aisles shall be marked and railings or permanent barriers provided to protect the means of egress against encroachment. Railing or standard barrier as per General Industry Safety Standard Part 2 "Floor and Wall Openings, Stairways, and Skylights," as referenced in R 408.10606.

(6) Each exit route door shall be free of decorations or signs that obscure the visibility of the exit route door. A mirror shall not be placed on an exit door or be placed in or adjacent to an exit in a manner to confuse the direction of exit.

R 408.10633 Permissible exits and exit components.

Rule 633. (1) Approved exits for all occupancies regulated by this part shall be restricted to the following permissible types: doors, inside or outside stairs, horizontal exits, ramps, escalators, and fire escapes for existing occupancies.

(2) An exit shall consist only of approved components. An exit shall be constructed as an integral part of the building or permanently affixed thereto.

(3) Stairs, landings, and other exit components shall be guarded against falls over open edges, and guards and handrails shall continue the full length of the guarded exit component.

(4) An exit protected by separation from other parts of the building shall have the separating construction meet the following:

(a) The separation shall have not less than a 1-hour fire-resistance rating when the exit connects 3 stories or less. This applies whether the stories connected are above or below the story at which the exit discharge is located.

(b) The separation shall have not less than a 2-hour fire-resistance rating when the exit connects 4 or more stories, whether above or below the floor of discharge.

(c) An opening into an exit must be protected by a self-closing fire door that remains closed or automatically closes in an emergency upon the sounding of a fire alarm or employee alarm system.

(d) An opening in an exit enclosure shall be confined to that which is necessary for access to the enclosure from a normally occupied space and for egress from the enclosure.

(5) Each exit route shall be a permanent part of the workplace.

(6) Each fire door, including its frame and hardware, shall be listed or approved by a nationally recognized testing laboratory. For the definition of a "nationally recognized testing laboratory," see 29 C.F.R. §1910.7 "Definition and requirements for a nationally recognized testing laboratory," as adopted in R 408.10606

R 408.10634 Number of exits.

Rule 634. (1) An employer shall ensure that there are an adequate number of exit routes.

(2) Where the contents of a building are classified as high hazard, there shall be not less than 2 exits which are accessible in different directions. All doors shall swing in the direction of exit travel. Where floor areas are divided into rooms, there shall be not less than 2 ways of escape from every room, however small, except for toilet rooms that are not located in areas of high hazard classification-

(3) The exit routes shall be located as far away as practical from each other so that if 1 exit route is blocked by fire or smoke, employees can evacuate using the second exit route.

(4) At least 2 exit routes shall be available in a workplace to permit prompt evacuation of employees and other building occupants during an emergency, except as allowed in subrule (6) of this rule.

(5) More than 2 exit routes shall be available in a workplace if the number of employees, the size of the building, its occupancy, or the arrangement of the workplace is such that all employees would not be able to evacuate safely during an emergency.

(6) A single exit route is permitted where the number of employees, the size of the building, its occupancy, or the arrangement of the workplace is such that all employees would be able to evacuate safely during an emergency.

Note: For assistance in determining the number of exit routes necessary for your workplace, consult NFPA 101 "Life Safety Code," 2009 edition or "International Fire Code" 2009 edition, as adopted in R 408.10606.

R 408.10636 Maximum travel distance to exits.

Rule. 636. Table 1 reads as follows:

TABLE 1			
Type of occupancy	Maximum travel distance to exits (in feet)		Dead-end limits (in feet)
	Unsprinklered	Sprinklered	
Mercantile, ordinary hazard	150	250	50
Mercantile, high hazard	75	75	0
Business	200	300	50
Industrial	200	250	50
Industrial, high hazard	0	75	0
Storage, low and ordinary hazard	200	400	100
Storage, high hazard	75	100	0
Hotels	100	200	50
Note: For miscellaneous structures, See R 408.10691 to R 408.10697			

R 408.10637 Rescinded.

R 408.10638 Rescinded.

R 408.10639 Capacity as affected by population.

Rule 639. (1) The capacity of a means of egress from a building, floor, balcony, tier, or other occupied space shall be sufficient for the population thereof. The population for industrial and storage occupancies shall be based on the maximum number of employees or persons that may be in the space at any time as determined by actual count. All other types of occupancies shall be not less than the number computed in accordance with the provisions of table 2.

(2) Mercantile occupancy in a single-story, noncombustible building with an approved, fully equipped automatic sprinkler system that is in compliance with General Industry Safety Standard Part 9 “Fixed Fire Equipment,” as referenced in R 408.10606, may increase the square footage requirement in table 2 by 100%.

(3) The population of an occupancy shall be limited to the existing exit capacity of a building or space.

(4) Where an exit serves more than 1 floor, only the population of each floor considered individually need be used in computing the capacity of the exit at that level, if the exit capacity is not decreased in the direction of exit travel. Where a means of egress from floors above and below converge at an intermediate level, the capacity of the exit from the point of convergency shall be not less than the combined capacity of the converging exits.

(5) Table 2 reads as follows:

TABLE 2	
Type of occupancy	Square feet per person

Mercantile, street floor or sales basement	30
Mercantile, other floors	60
Mercantile, office	100
Mercantile, storage	300
Business	100
Hotel	200
Industrial	100
<p>Note: The computed population of an occupancy is obtained by dividing the total floor area of a building, floor, or fire area by the indicated square feet per person. Total floor area means the floor area within the perimeter of the outside walls of a building, with no deductions for any of the following:</p> <ul style="list-style-type: none"> (a) Hallways. (b) Stairs. (c) Closets. (d) Thickness of walls. (e) Columns. (f) Other features. 	

(6) The capacity of an exit route shall be adequate. Information regarding the "Occupant load" is located in NFPA 101 "Life Safety Code," 2009 edition and in the "International Fire Code" 2009 edition, as adopted in R 408.10606.

(7) Exit routes shall support the maximum permitted occupant load for each floor served.

(8) The capacity of an exit route shall not decrease in the direction of exit route travel to the exit discharge.

R 408.10641 Exit access and discharge.

Rule 641. (1) An exit access shall not be through a room subject to locking.

(2) An exit access shall be so arranged that it will not be necessary to travel through any area of high hazard occupancy in order to reach the nearest exit.

(3) The minimum width of an exit access shall be at least equal to the required width of the exit to which it leads, but not less than 34 inches. The headroom clearance shall be not less than 6 feet 8 inches from the floor.

(4) An exit discharge shall discharge directly outside or to a street, walkway, refuge area, public way, or to a yard, court or other open space with access to the outside.

(5) Stairs and other exits shall be arranged to make clear the direction of egress to the street. Where an exit stairs continues beyond the floor of discharge, it shall be interrupted at the floor of discharge by a partition, door or other effective means.

(6) Exit access by the way of an exterior balcony, porch, gallery, or roof shall be in compliance with all of the following:

(a) Be kept free from accumulations of snow and ice.

(b) Be permanent direct route without obstructions, such as railings, gates, barriers, or other objects, that might divide the space into sections or rooms. Where furniture or other movable objects might block the path of travel, they shall be secured in place or a standard barrier as prescribed in General Industry

Safety Standard Part 2 “Floor and Wall Openings, Stairways, and Skylights,” as referenced in R 408.10606, shall protect the path of travel.

- (c) Have no dead ends in excess of 20 feet.
- (d) Comply with this part as to requirements for width and arrangement.
- (7) The street, walkway, refuge area, public way, or open space to which an exit discharge leads shall be large enough to accommodate the building occupants likely to use the exit route.
- (8) An exit door shall be unlocked.
- (9) An outdoor exit route is permitted.
- (10) The outdoor exit route shall have all of the following:
 - (a) Guardrails to protect unenclosed sides if a fall hazard exists.
 - (b) Be covered if snow or ice is likely to accumulate along the route, unless the employer can demonstrate that any snow or ice accumulation will be removed before it presents a slipping hazard.
 - (c) Be reasonably straight and have smooth, solid, substantially level walkways.
 - (d) Not have a dead-end that is longer than 20 feet (6.2 m).
- (11) An exit access shall be so arranged that employees will not have to travel toward a high hazard area, unless the path of travel is effectively shielded from the high hazard area by suitable partitions or other physical barriers.

DOORS AND STAIRS

R 408.10643 Doors; general provisions.

Rule 643. (1) A door assembly, including the doorway, frame, door, and necessary hardware, may be used as a component in a means of egress when it conforms to the requirements of this part. As such, the assembly is designated as an exit door.

- (2) A single leaf of an exit door shall be not less than 28 inches nor more than 48 inches in width.
- (3) Where a door or gate opens directly on a stairway, a platform shall be provided, and the swing of the door or gate shall not reduce the floor area leading to the stairs to a width less than 20 inches.

R 408.10644 Door swing.

Rule 644. (1) A side-hinged exit door shall be used. The force required to fully open any door in the means of egress shall not be more than 5 pounds applied to the latch side of the door. The door shall swing with exit travel when serving an area of high hazard occupancy or a building, floor, or area with a population of more than 50 persons.

(2) If 1 or more approved exits are provided and the travel distance requires additional exits, a mechanically aided sliding door may be used to exit to the outside of a building constructed before May 15, 1970, under the following conditions:

- (a) The occupancy shall be classified as a low or ordinary storage hazard or an ordinary mercantile hazard.
- (b) The mechanical aid to the door shall allow the door to be opened quickly and easily by 1 person.
- (c) The mechanical aid of the door shall not be rendered inoperative by fire or the lack of maintenance.
- (3) An exit door that gives access to a stairway shall swing in the direction of exit travel, shall not block stairs or landings during its swing, and shall not interfere with the full use of the stairway when open.
- (4) An exit door at the foot of stairs from upper floors or at the head of stairs from basements shall swing with exit travel.
- (5) A screen door or storm door that is part of a required exit shall not swing against the direction of exit travel in any case where doors are required to swing with exit travel.
- (6) A side-hinged door shall be used to connect any room to an exit route.

(7) The door that connects any room to an exit route shall swing out in the direction of exit travel if the room is designed to be occupied by more than 50 people or if the room is a high hazard area; for example, it contains contents that are likely to burn with extreme rapidity or explode.

R 408.10645 Locks, fastening devices, and closing mechanism.

Rule 645. (1) Employees shall be able to open an exit route door from the inside at all times without keys, tools, or special knowledge. A device such as a panic bar that locks only from the outside is permitted on exit discharge doors.

(2) A latch or other fastening device on an exit door shall be provided with a knob, handle, panic bar, or other simple type of releasing device. Slide bolts, hasps, hooks and eyes, and similar types of locking devices that are difficult to open against door pressure shall not be installed or used.

(3) A fire door to a stair enclosure or horizontal exit shall be provided with a reliable self-closing mechanism and shall not, at any time, be secured in the open position.

(4) An exit route door may be locked from the inside only in mental, penal, or correctional facilities and then only if supervisory personnel are continuously on duty and the employer has a plan to remove occupants from the facility during an emergency.

R 408.10647 Revolving doors.

Rule 647. (1) A revolving door shall be considered an approved exit door only if all of the following conditions are satisfied:

(a) The door shall be installed before the prohibition listed in subrule (2) of this rule.

(b) The number of revolving doors used as exit doors shall not be more than the number of swinging doors used as exit doors within 20 feet thereof.

(c) A revolving door without an adjacent swinging door may serve as an exit for a street floor elevator lobby if no stairway or door from other parts of the building discharges through the lobby and the lobby has no occupancy other than as a means of travel between elevators and the street.

(d) A revolving door shall be equipped with means to prevent its rotation at more than 12 1/2 revolutions per minute.

(e) A revolving door shall not be used at the foot of stairs from upper floors or at the head of stairs from the basement or other lower floors.

(f) A revolving door credited as an exit door shall have a rated capacity of 1/2 unit of exit width.

(2) A revolving door that is installed after June 15, 1990, shall not be considered an approved exit door.

HORIZONTAL EXITS, RAMPS, AND ESCALATORS

R 408.10661 Horizontal exits.

Rule 661. (1) A fire area or area of refuge with a horizontal exit shall have, in addition to the horizontal exit or exits, at least 1 means of egress leading to the outside, or have access to an adjacent fire area containing an outside means of egress.

(2) Where either side of a horizontal exit is occupied, the doors used in connection with the horizontal exit shall be unlocked.

(3) The floor area on either side of a horizontal exit shall be sufficient to hold the occupants of both floor areas allowing not less than 3 square feet clear floor area per person.

(4) Where a horizontal exit serves areas on both sides of a wall, there shall be adjacent openings with swinging doors at each, opening in opposite directions, with signs on each side of the wall or partition indicating as the exit door which swings with the travel from that side; or other approved arrangements providing doors always swinging with any possible exit travel.

R 408.10664 Ramps.

Rule 664. (1) A ramp may be a component in a means of egress when it conforms to the requirements of this part. A ramp which is constructed after June 15, 1990, and which is less than the minimum measurements prescribed in this rule shall not be considered as an approved part of a means of egress.

(2) A ramp and the platforms and landings associated therewith shall be designed for not less than 100 pounds per square foot live load.

(3) The slope of a ramp shall not vary between landings. A landing shall be level and the changes in direction of travel, if any, shall be made only at landings.

(4) A ramp in a building that is more than 3 stories in height shall be made of noncombustible construction. A ramp floor and landings shall be solid and without perforations.

(5) A ramp shall have a nonslip surface.

(6) A ramp shall have a minimum width of 44 inches and a maximum slope of 1 inch in 12 inches.

FIRE ESCAPES

R 408.10671 Fire escape stairs.

Rule 671. (1) Fire escape stairs may be used as a required exit only in existing buildings. Fire escape stairs shall not constitute more than 50% of the required exit capacity. Fire escape stairs shall not constitute any part of the required exits for a new building.

(2) Fire escape stair dimensions shall be in accordance with table 4.

TABLE 4	
Minimum Width	22 inches clear between rails
Minimum horizontal dimension of a landing or platform	22 inches
Maximum rise	9 inches
Minimum tread, exclusive of nosing	9 inches
Spiral winders	Not permitted
Maximum height between landings	12 feet

(3) Fire escape stairs shall have walls or approved guards, and handrails on both sides.

R 408.10673 Exposure to fire escape stairs.

Rule 673. Fire escape stairs shall be so arranged that they will be subject to exposure by the smallest possible number of window and door openings. Every opening, any portion of which is within the following limits, shall be completely protected by approved fire doors or metal frame wired glass windows, as follows:

(a) A horizontal opening if within 15 feet of a balcony, platform or stairway constituting a part of the escape proper. This does not apply to a platform or walkway leading from the same floor to the escape proper. Protection need not extend around a right angle corner (outside angle 270 degrees) of the building.

(b) An opening below if within 3 stories or 36 feet of a balcony, platform, walkway or stairway constituting a part of the escape proper, or within 2 stories or 24 feet of a platform or walkway leading from any story to the escape proper.

(c) An opening above if within 10 feet of a balcony, platform or walkway, as measured vertically, or from any stair treads, as measured vertically from the face of the outside riser.

(d) An opening on a top story. Protection for wall openings is not required where stairs do not lead to the roof.

R 408.10675 Swinging stairs.

Rule 675. (1) A swinging stair section shall not be used for a fire escape stairs, except where termination is over a sidewalk, alley, or driveway.

(2) A swinging stair section shall not be located over doors, over the path of travel from another exit, nor be in any location where there are obstructions.

(3) The width of a swinging stair section shall be at least equal to that of the stairs above and the pitch shall not be steeper than that of the stairs above.

(4) A counterweight shall be provided for a swinging stair section and this shall be of the type balancing about a pivot, no cables being used. Counter-balancing shall be such that a weight of 150 pounds 1 step from pivot will not start swinging section, and a weight of 150 pounds, 1/4 of the length of the swinging stairs from the pivot, will positively cause the stairs to swing down.

(5) A latch or other device shall not be installed or used to lock a swinging stair section in the up position.

R 408.10677 Ladders.

Rule 677. No form of ladder shall be used as a fire escape except that a ladder conforming to General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606, may be used to provide a means of escape from a boiler room, storage elevator, or tower, as permitted for special miscellaneous occupancies, elevated platforms around machinery, or similar spaces subject to routine simultaneous occupancy by not more than 3 persons.

ILLUMINATION AND MARKING

R 408.10680 Lighting.

Rule 680. (1) Lighting and marking shall be adequate and appropriate.

(2) Each exit route shall be adequately lighted so that an employee with normal vision can see along the exit route.

R 408.10685 Signs.

Rule 685. (1) A means of egress to an exit not immediately apparent from any point in an occupancy shall be marked by directional signs. Additionally, the line-of-sight to an exit sign shall be clearly visible at all times.

(2) A door, passage, or stairway, which is neither an exit nor an exit access, and which is so located or arranged as to be likely mistaken for an exit, shall be identified by a sign reading "NOT AN EXIT" or similar designation, or be identified by a sign indicating its actual use or character.

(3) A sign shall designate an exit and shall be located and be of such size and color and design as to be readily visible and identifiable from the distance of travel for that particular occupancy.

(4) Each exit must be clearly visible and marked by a sign reading "EXIT."

R 408.10686 Sign illumination and letter size.

Rule 686. (1) An exit sign shall be illuminated to a surface value of at least 5 foot-candles (54 lux) by a reliable light source and be distinctive in color. Self-luminous or electroluminescent signs that have a minimum luminance surface value of at least .06 foot lamberts (0.21 cd/m²) are permitted.

(2) An exit sign shall have the word "EXIT" in plainly legible letters not less than 6 inches (15.2 cm) high, with the principal strokes of the letters in the word "EXIT" not less than 3/4 of an inch (1.9 cm) wide.

(3) An internally illuminated exit sign shall be provided where the reduction of normal illumination is permitted and less than 5 footcandles would appear on the exit sign.

R 408.10695 Storage elevators for combustible commodities.

Rule 695. (1) In a storage elevator for combustible commodities there shall be at least 1 stairway from the basement to the first floor and from the first floor to the top floor of the working house which is enclosed in a dust-tight, noncombustible shaft.

(2) A noncombustible door of the self-closing type shall be provided at each floor landing.

(3) An exterior stair or basket ladder-type fire escape, as prescribed in General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606, shall be provided from the roof of the working house to ground level or to the roof of an adjoining annex with access from all floors above the first.

(4) An exterior stair or basket ladder-type fire escape, as prescribed in General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606, shall be provided from the roof of each storage annex to ground level.

(5) A fire escape ladder shall be provided adjacent to a manlift for the up and down sides.

(6) A storage elevator shall have an opening that leads to a fire escape ladder from each floor or work level.

(7) Storage elevators for combustible commodities that exist before April 30, 1974, do not need to comply with the provisions of subrules (1) and (2) of this rule.

R 408.10696 Towers.

Rule 696. (1) A tower occupied for purposes such as observation or signaling, either an independent structure or on top of a building, shall be permitted with a single stairway or ramp exit if all of the following conditions are met:

(a) The tower is of such size as not to be subject to occupancy by more than 25 persons on any 1 floor level.

(b) The tower is subject only to occupancy by persons capable of descending the stairway and is not used for living or sleeping purposes.

(c) The construction is fire-resistive, noncombustible, or heavy timber, with no quick-burning interior finish. There shall be no combustible materials in, under, or in the immediate vicinity of the tower, except as necessary to perform the requirements of occupancy.

(2) Stairs shall conform to the requirements of this part, except that for existing towers fire escape type stairs may be used. See General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606.

(3) A tower, such as a forest fire observation tower and a railroad signal tower designed for occupancy by not more than 3 persons employed therein, need not be constructed of fire-resistive, noncombustible material and may be served by ladders instead of stairs. See General Industry Safety Standard Part 3 "Fixed Ladders," as referenced in R 408.10606.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State of April 22, 2015

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 16 and 21 of 1974 PA 154 MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 408.15001, R 408.15002, R 408.15003, and R 408.15004 of the Michigan Administrative Code are amended, as follows:

PART 50. TELECOMMUNICATIONS

R 408.15001 Adoption of standard by reference.

Rule 5001. (1) The provisions of federal occupational safety and health administration regulation 29 C.F.R. 1910.268 "Telecommunications," effective January 5, 2005, are adopted by reference in these rules, except as noted in subrule (2) of this rule.

(2) The subrules 29 C.F.R. §1910.268(a)(2)(i) and (a)(3) are excepted.

(3) The words "for purposes of 29 CFR 1910.34," as used in 29 C.F.R. §1910.268(b)(1)(iii), are excepted.

(4) A reference to §1910.110 "Storage and handling of liquefied petroleum gases," means General Industry Safety Standard Part 56 "Storage and Handling of Liquefied Petroleum Gases," as referenced in R 408.15004.

(5) The words "Assistant Secretary for Occupational Safety and Health," means director of the department of licensing and regulatory affairs.

(6) A reference to §1910.137, "Electrical protective devices," means General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15004.

(7) A reference to "Subpart D of this part," means General Industry Safety Standard Part 3 "Fixed Ladders," and General Industry Safety Standard Part 4 "Portable Ladders," as referenced in R 408.15004.

(8) A reference to §1910.25(c)(5), means Construction Safety Standard Part 30 "Telecommunications," as referenced in R 408.15004.

(9) A reference to §1910.133, means General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15004.

(10) A reference to subpart Q, means General Industry Safety Standard Part 12 "Welding and Cutting," as referenced in R 408.15004.

(11) A reference to "Subpart W of Part 1926 of this title," means Construction Safety Standard Part 13 "Mobile Equipment," as referenced in R 408.15004.

(12) A reference to American National Standards Institute Standard ANSI J6.6 – 1971 edition, means American Society for Testing and Materials Standard ASTM D 120 "Standard Specification for Rubber Insulating Gloves," 1977 edition, as referenced in R 408.15004.

(13) A reference to §1910.97, means Occupational Health Standard Part 382 "Nonionizing Radiation," as referenced in R 408.15004.

(14) The adopted federal regulations have the same force and effect as a rule promulgated under the Michigan Occupational Safety and Health Act, 1974 PA Act No. 154, MCL 408.1001 to 408.1094.

R 408.15002 Applicability.

Rule 5002. Operations or conditions not specifically covered by these rules are subject to all the applicable standards promulgated by the Michigan Occupational Safety and Health Act (MIOSHA).

R 408.15003 Employer responsibility.

Rule 5003. Where personal protective equipment is required by 29 C.F.R. §1910.268 "Telecommunications," as adopted by reference in these rules, the personal protective equipment shall be provided for as prescribed in General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15004.

R 408.15004 Availability of documents.

Rule 5004. (1) The federal regulations adopted by reference in these rules are available from the United States Department of Labor, Occupational Safety and Health Administration website: www.osha.gov, at no charge, as of the time of adoption of these rules.

(2) The federal regulations adopted in these rules are also available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, Lansing, Michigan, 48909-8143.

(3) The federal regulations adopted in these rules may be obtained from the publisher or may also be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost charged in this rule, plus \$20.00 for shipping and handling.

(4) The following standards are referenced in these rules and are available from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado, 80112, telephone number 1-800-854-7179, website: www.global.ihs.com, at a cost as of the time of adoption of these rules, as stated in this rule:

(a) American Society for Testing and Materials Standard ASTM B117 "Standard Practice for Operating Salt Spray (Fog) Apparatus," 1964 edition. Cost: \$40.00.

(b) ASTM D120 "Standard Specification for Rubber Insulating Gloves," 1977 edition. Cost: \$54.00.

(c) American National Standards Institute Standard ANSI A92.2 "Vehicle-Mounted Elevating and Rotating Devices," 1969 edition. Cost: \$20.00.

(d) ANSI B30.6 "Safety Code for Derricks," 1969 edition. Cost: \$40.00.

(e) ANSI Z89.2 "Industrial Protective Helmets for Electrical Workers," 1971 edition. Cost: \$25.00.

(5) The following Michigan occupational safety and health (MIOSHA) 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 Regulatory Services 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 13 “Mobile Equipment,” R 408.41301.
- (b) General Industry Safety Standard Part 3 “Fixed Ladders,” R 408.10301 to R 408.10372.
- (c) General Industry Safety Standard Part 4 “Portable Ladders,” R 408.10401 to R 408.10456.
- (d) General Industry Safety Standard Part 12 “Welding and Cutting,” R 408.11201 to R 408.11299.
- (e) General Industry Safety Standard Part 33 “Personal Protective Equipment,” R 408.13301 to R 408.13398.
- (f) General Industry Safety Standard Part 56 “Storage and Handling of Liquefied Petroleum Gases,” R 408.15601.
- (g) Occupational Health Standard Part 382 “Nonionizing Radiation,” R 325.60701 to R 325.60704.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State on April 22, 2015

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 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 408.15501 of the Michigan Administrative Code is amended, as follows:

PART 55. EXPLOSIVES AND BLASTING AGENTS

R 408.15501 Adoption of standard by reference.

Rule 5501. (1) The provisions of federal occupational safety and health administration regulation C.F.R. 1910.109 “Explosives and blasting agents” effective June 18, 1998, is adopted by reference in these rules.

(2) The standard adopted in this rule is available from the United States Department of Labor, Occupational Safety and Health Administration website: www.osha.gov, at no charge as of the time of adoption of these rules.

(3) The standard adopted in this rule is available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, Lansing, Michigan, 48909-8143.

(4) The standard adopted in this rule may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost of the standard plus \$20.00 for shipping and handling.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State on April 23, 2015

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 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 408.15601 of the Michigan Administrative Code is amended, as follows:

PART 56. STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES

R 408.15601 Adoption of standard by reference.

Rule 5601. (1) The provisions of federal occupational safety and health administration regulation C.F.R. 1910.110 “Storage and handling of liquefied petroleum gases” effective December 14, 2007, is adopted by reference in these rules.

(2) The standard adopted in this rule is available from the United States Department of Labor, Occupational Safety and Health Administration website: www.osha.gov, at no charge as of the time of adoption of these rules.

(3) The standard adopted in this rule is available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, Lansing, Michigan, 48909-8143.

(4) The standard adopted in this rule may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost of the standard plus \$20.00 for shipping and handling.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State on April 23, 2015

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 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-1, 2008-4, and 2011-4, MCL 445.2001, 445.2011, 445.2025, and 445.2030)

R 408.17801 of the Michigan Administrative Code is amended, as follows:

PART 78. STORAGE AND HANDLING OF ANHYDROUS AMMONIA

R 408.17801 Adoption of standard by reference.

Rule 7801. (1) The provisions of federal occupational safety and health administration regulation C.F.R. 1910.111 “Storage and handling of anhydrous ammonia” effective December 14, 2007, is adopted by reference in these rules.

(2) The standard adopted in this rule is available from the United States Department of Labor, Occupational Safety and Health Administration website: www.osha.gov, at no charge as of the time of adoption of these rules.

(3) The standard adopted in this rule is available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, Lansing, Michigan, 48909-8143.

(4) The standard adopted in this rule may be obtained from the publisher or may be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Regulatory Services Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost of the standard plus \$20.00 for shipping and handling.

**PROPOSED ADMINISTRATIVE RULES,
NOTICES OF PUBLIC HEARINGS**

MCL 24.242(3) states in part:

“... the agency shall submit a copy of the notice of public hearing to the Office of Regulatory Reform for publication in the Michigan register. An agency's notice shall be published in the Michigan register before the public hearing and the agency shall file a copy of the notice of public hearing with the Office of Regulatory Reform.”

MCL 24.208 states in part:

“Sec. 8. (1) The Office of Regulatory Reform shall publish the Michigan register at least once each month. The Michigan register shall contain all of the following:

** * **

(d) Proposed administrative rules.

(e) Notices of public hearings on proposed administrative rules.”

ADMINISTRATIVE RULES

**DEPARTMENT OF ENERGY, LABOR AND ECONOMIC GROWTH LICENSING AND
REGULATORY AFFAIRS**

DIRECTOR'S OFFICE

CONSTRUCTION CODE

Proposed Draft April 13, 2015

Filed with the Secretary of State on
These rules take effect 120 days after filing with the Secretary of State

(By authority conferred on the director of the department of ~~energy, labor, and economic growth~~ **licensing and regulatory affairs** by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1, and 2008-~~420~~ **2011-4**, MCL 445.201,1 and ~~MCL-445.2025~~, and **445.2030**)

R 408.30501, R 408.30505, R 408.30506, R 408.30507, R 408.30510, R 408.30512, R 408.30513, R 408.30514, R 408.30518, R 408.30520, R 408.30522, R 408.30522a, R 408.30527, R 408.30528a, R 408.30529, R 408.30536, 408.30536a, R 408.30537, R 408.30537a, R 408.30537b, R 408.30537c, R 408.30541, R 408.30542, R 408.30544, R 408.30545, R 408.30545a, and R 408.30546 of the Michigan Administrative Code are amended and R 408.30500, R 408.30501a, R 408.30509a, R 408.30510a, R 408.30521a, R 408.30523, R 408.30523a, R 408.30525a, R 408.30533a, R 408.30533b, R 408.30537d, R 408.30541a, R 408.30544b, R 408.30544c, R 408.30547a, R 408.30547b, R 408.30547c, R 408.30547d, R 408.30547e, R 408.30547f and R 408.30547g are added and R 408.30526, R 408.30531, R 408.30543, and R 408.30547 are rescinded as follows:

PART 5. RESIDENTIAL CODE

R 408.30500 Applicable code.

Rule 500. The provisions of the international residential code, 2015 edition, including appendices A, B, C, D, E, F, G, J, K, N, O, P, R, and S except for Sections R103.2, R103.3, R104.8, R104.8.1, R108.2, R108.3, R108.4, R108.5, R108.6, R313.1.1 to R313.2.1, R602.11, R602.12, N1102.3.2, tables R507.2.3, N1101.12.3(3) and figure R507.2.1(2), R507.2.3(1), R507.2.3(2), and 507.2.4, sections M1411.8, G2411.1.1.1 to G2411.1.1.5, G2439.7.2, P2503.9, P2709.2.3, P2904.1.1 to P2904.8.2, P2905.1, P2905.2, figure P2904.2.4.2, table P2904.2.2, tables P2904.6.2(1) to P2904.6.2(9), P3009.1 to P3009.11.1, E3902.15, E3902.16, E3902.17, and AJ102.4. The IBC-2015, IECC-2015, IMC-2015, IPC-2015, NFPA 70-2014 listed in chapter 44 govern the construction, alteration, relocation, demolition, use, and occupancy of buildings and structures, and, with exceptions noted, the international residential code is adopted by reference in these rules. All references to the International Building Code, International Residential Code, International Energy Conservation

Code, National Electrical Code, International Existing Building Code, International Mechanical Code, and International Plumbing Code mean the Michigan Building Code, Michigan Residential Code, Michigan Energy Code, Michigan Electrical Code, Michigan Rehabilitation Code for Existing Buildings, Michigan Mechanical Code, and Michigan Plumbing Code respectively. The codes are available for inspection at the Okemos office of the Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes. The codes 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 amendatory rules of \$114.00.

R 408.30501 Title.

Rule 501. Section R101.1 of the code is amended to read as follows:

R101.1. **Title.** These provisions shall be known and cited as the Michigan residential code for 1-and 2-family dwellings and will be referred to as “the code.”

R 408.30501a Scope.

Rule 501a. Section R101.2 of the code is amended to read as follows:

R101.2. Scope. The provisions of the Michigan residential code for 1- and 2-family dwellings shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached 1- and 2-family dwellings and townhouses not more than 3 stories above grade plane in height with a separate means of egress and their accessory structures.

Exceptions:

1. Live/work units complying with the requirements of Section 419 of the Michigan building code may be built as 1- and 2-family dwellings or townhouses. Fire suppression required by Section 419.5 of the Michigan building code when constructed under the Michigan residential code for 1- and 2-family dwellings shall conform to Section P2904.

2. Owner-occupied bed and breakfast and board and room facilities may be constructed in accordance with sections 4b and 13c of the Stille-DeRossett-Hale single state construction code act, 1972 PA 230, MCL 125.1504b and MCL 125.1513c.

R 408.30505 Work exempt from permit.

Rule 505. Section R105.2 of the code is amended to read as follows:

R105.2. Work exempt from permit. Exemption from the permit requirements of the code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of the code or any other laws or ordinances of this jurisdiction. Permits are not required for any of the following:

(a) Building permits shall not be required for any of the following:

(i) One-story detached accessory structures, if the floor area does not exceed 200 square feet (18.58 m²).

(ii) A fence that is not more than 67 feet (18292 134 mm) high.

(iii) A retaining wall that is not more than 4 feet (1 219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge.

(iv) A water tank supported directly upon grade if the capacity is not more than 5,000 gallons (18 927 L) and the ratio of height to diameter or width is not greater than 2 to 1.

(v) A sidewalk ~~or~~**and** driveway ~~that is not~~ more than 30 inches (762 mm) above adjacent grade and is not over any basement or story below **and are not part of an accessible route.**

(vi) Painting, papering, tiling, carpeting, cabinets, counter tops, and similar finish work.

(vii) A prefabricated swimming pool that is less than 24 inches (610 mm) deep, **and not greater than 5,000 gallons (18 925 L), and is installed entirely above ground.**

(viii) Swings and other playground equipment accessory to **detached** 1- or 2-family dwellings.

~~(ix) Window awnings supported by an exterior wall which do not project more than 54 inches (1372 mm) from the exterior wall and do not require additional support.~~**Window awnings in group R-3 and U occupancies, supported by an exterior wall that do not project more than 54 inches (1 372 mm) from the exterior wall and do not require additional support, as applicable in Section 101.2 and group U occupancies.**

(x) Decks not exceeding 200 square feet (18.58 m²) in area, that are not more than 30 inches (762 mm) above grade at any point as prescribed by Section R312.1.1, are not attached to a dwelling or its accessory structures, are not within 36 inches (914 mm) of a dwelling or its accessory structures, and do not serve any ingress or egress door of the dwelling or its accessory structures.

(b) Electrical permits shall not be required, as in accordance with the Michigan electrical code, R 408.30801 to R 408.30880, for any of the following:

(i) Repairs and maintenance: Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.

(ii) Radio and television transmitting stations: The provisions of the code do not apply to electrical equipment used for radio and television transmissions, but do apply to equipment and wiring for power supply and to the installation of towers and antennas.

(iii) Temporary testing systems: A permit is not required for the installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.

(c) Mechanical permits shall not be required for any of the following:

(i) A portable heating or gas appliance that has inputs of less than 30,000 ~~Btu's~~**BTU's** per hour.

(ii) Portable ventilation appliances and equipment.

(iii) A portable cooling unit.

(iv) Steam, hot water, or chilled water piping within any heating or cooling equipment or appliances regulated by this code.

~~(v) The replacement~~**Replacement** of any minor part that does not alter the approval of equipment or an appliance or make such equipment or appliance unsafe.

(vi) A portable evaporative cooler.

(vii) Self-contained refrigeration systems that contain 10 pounds (4.5 kg) or less of refrigerant, or that are actuated by motors of 1 horsepower (0.75kW) or less.

(viii) Portable fuel cell appliances that are not connected to a fixed piping system and are not interconnected to a power grid.

~~(ix) 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.~~

~~(x)~~**(ix)** An oil burner that does not require connection to a flue, such as an oil stove and a heater equipped with a wick.

~~(xi)~~**(x)** A portable gas burner that has inputs of less than 30,000 ~~Btu's~~**BTU's** per hour.

~~(xii)~~**(xi)** 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 (3 005 mm) in length and not more than 6 fittings.

(xii) 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:

(A) Has obtained a certificate of registration as a well drilling contractor pursuant to part 127 of the public health code.

(B) 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.

(d) Plumbing permits shall not be required for ~~any~~**either** of the following:

(i) The stopping of leaks in drains, water, soil, waste or vent pipe; ~~if~~**if** any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, then the work is considered as new work and a permit shall be obtained and inspection made as provided in the code.

(ii) The clearing of stoppages or the repairing of leaks in pipes, valves, or fixtures, and the removal and reinstallation of water closets, if the repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

R 408.30506 Submittal documents.

Rule 506. Sections R106.1, **R106.1.1**, and R802.10.1 of the code are amended and Section R106.1.4 and figure 802.10.1 are added to the code to read as follows:

R106.1. Submittal documents. Construction documents, special inspection and structural program and other data shall be submitted in 1 or more sets with each application for a permit. The construction documents shall be prepared by or under the direct supervision of a registered design professional when required by 1980 PA 299, MCL 339.101 to 339.2919, and known as the Michigan occupational code. Where special conditions exist, the building official may require additional construction documents to be prepared by a registered design professional.

R106.1.1. Information on construction documents. Construction documents shall be drawn upon suitable material. Electronic media documents may be submitted when approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature, and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, and rules and regulations, as determined by the building official.

R106.1.4. Truss design data. As an alternative to the submission of truss design drawings, figure R802.10.1, the truss design data sheet, may be provided to the building official as part of the construction documents at the time of application. Truss design drawings shall be submitted to the building official prior to truss installation as required by Section R802.10.1.

R802.10.1 Truss design drawings. Truss design drawings, prepared in conformance with Section R802.10.1, shall be provided to the building official and approved prior to installation. The truss design data sheet, figure R802.10.1, may be provided to the building official at the time of permit application, as an alternative to design drawings as permitted in Section R106.1.4. Truss design drawings shall include, at a minimum, the information specified below. Truss design drawings shall be provided with the shipment of trusses delivered to the jobsite.

- (1) Slope or depth, span, and spacing.
- (2) Location of all joints.
- (3) Required bearing widths.
- (4) Design loads as applicable.
 - (a) Top chord live load (including snow loads).
 - (b) Top chord dead load.
 - (c) Bottom chord live load.

- (d) Bottom chord dead load.
- (e) Concentrated loads and their points of application.
- (f) Controlling wind and earthquake loads.
- (5) Adjustments to lumber and joint connector design values for conditions of use.
- (6) Each reaction force and direction.
- (7) Joint connector type and description (e.g., size, thickness, or gauge) and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface.
- (8) Lumber size, species, and grade for each member.
- (9) Connection requirements for the following:
 - (a) Truss to truss girder.
 - (b) Truss ply to ply.
 - (c) Field splices.
- (10) Calculated deflection ratio and/or maximum description for live and total load.
- (11) Maximum axial compression forces in the truss members to enable the building designer to design the size, connections, and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss design drawing or on supplemental documents.
- (12) Required permanent truss member bracing location.

Figure 802.10.1 Roof Loading Data Sheet

Roof Loading Data Sheet

Authority: 1972 PA 230
 form is to be completed and given to the building official with the application for plan review and building permit. The applicant shall give a copy of the completed form to the truss manufacturer.

Completion: This form is to be completed by the permit applicant or design professional. The flat roof snow load, P_f is defined as: $P_f = .7P_g(C_e)(C_t)(I)$. For factors C_e , C_t , and I , place an "X" in the appropriate box below that best describes the structure and the particular jobsite and substitute the corresponding values in the formula above. The result is the flat roof snow load and is applied as the truss top chord live load, T CLL1. All live loads and snow loads, including unbalanced loads and minimum loads, are to be applied per ASCE 7, chapters 4 and 7 and this code.

Jurisdictional information should be included in this space	
Township	County
Applicant's Name:	
Date:	
Applicant's Address:	
Permit Number:	
City:	State:
Zip:	
Applicant's Signature:	
Job Location:	
Address:	
Township/Village/City:	County:

Where prescriptive design is used, the ground snow load, P_g , from Table R301.2(1) shall be used as the design roof snow except, where section R802.10.2.1 applies the design roof snow load shall be $.7P_g$. Additional unbalanced loads for drifting across the ridge are not required. Where engineered design is used, this form is to be completed by the permit applicant or design professional. The flat roof snow load, P_f is defined as: $P_f = .7P_g(C_e)(C_t)(I)$. For factors C_e , C_t , and I , place an "X" in the appropriate box below that best describes the structure and the particular jobsite and substitute the corresponding values in the formula above. The result is the flat roof snow load and is applied as the truss top chord live load, T CLL1. All live loads and snow loads, including unbalanced loads and minimum loads, are to be applied per ASCE 7, chapters 4 and 7 and this code.

Ground Snow Load, $P_g =$ _____	From Figure R301.2(5) or MRC Table R301.2(5)
Exposure Factor C_e	
Exposure	Fully Exposed ¹ Partially Exposed ² Sheltered ³
A Large city center with at least 1/2 the buildings exceeding 70 ft. in height.	N/A +.1 +.3
BA Urban and suburban areas, wooded areas or other terrain with closely spaced objects having the size of single-family dwellings or larger.	0.9 + +.2
CB Open terrain with scattered obstructions having heights less than 30 ft. (flat open country)	0.9 + N/A
DC Flat unobstructed areas exposed to wind flowing over open water for a distance of at least 1 mile. (i.e. Great Lakes.)	0.8 0.9 N/A

Mark only one of the 9 boxes under the exposure factor with an "X". Do not mark "X" in grayed-out boxes.

¹Fully Exposed: Roofs exposed on all sides with no shelter by terrain, higher structures, or trees.

²Partially Exposed: All roofs except those designated as "fully exposed" or "sheltered."

³Sheltered: Roofs located tight among conifers that qualify as obstructions.

Thermal Factor C_t	
Thermal Condition ⁴	C_t
All structures except as listed below	+
Structures kept just above freezing and those with cold, ventilated roofs with an R factor of 25 or greater between the ventilated and heated spaces, such as attics	+.1
Unheated structures and those intentionally kept below freezing, such as seasonal building or storage buildings	+.2
Continuously heated greenhouse with a roof R Value less than 2 and having an interior temperature maintained at about 50 degrees 3 ft above the floor during winter months and a temperature alarm system or an attendant to warn of a heating failure.	-0.85

Mark only 1 of the 4 boxes under the Thermal Factor with an "X".

Importance Factor (I)	
Category	+
I Building and other structures representing low hazard to human life, i.e.: Agricultural, Temporary, and Minor Storage Facilities.	0.8
II All buildings except those listed in Categories III and IV.	+
III Building and other structures representing substantial hazard to human life in the event of failure.	+.1
IV Buildings and other structures designated as essential facilities.	+.2

Mark only 1 of the 4 boxes under the Importance Factor with an "X"

Note: All roof trusses have additional live (storage) loads applied to the bottom chord where required per Table R301.5.

R 408.30507 Exhaust installation. Duct termination.

Rule 507. Section G2439.3 (614.4) **M1502.3** of the code is amended to read as follows:

~~G2439.3 (614.4). 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 backdraft 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 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 through ducts or plenums.~~ **M1502.3. Exhaust ducts shall terminate on the outside of the building. Exhaust duct terminations shall be in accordance with the dryer**

manufacturer's installation instructions. If the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate no less than 3 feet (914 mm) in any direction from openings into buildings or ventilated section in a soffit. Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination.

R 408.30509a Approval required.

Rule 509a. Section R109.4 of the code is amended to read as follows:

R109.4. Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the building official. The building official upon notification shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or shall notify the permit holder or agent of the permit holder wherein portion of the construction fails to comply with this code. The notification shall include specific reference to the code chapter and section numbers in violation in writing. Any portions that do not comply shall be corrected and such portion shall not be covered or concealed until authorized by the building official.

R 408.30510 Use and occupancy.

Rule 510. Sections R110.1, ~~and R110.2,~~ and **R110.3** of the code are amended to read as follows:

R110.1. Use and occupancy. A building or structure shall not be used or occupied, and a change in the existing occupancy classification of a building or structure or portion thereof shall not be made, until a certificate of occupancy has been issued in accordance with the act.

R110.2. Change in use. A change in the character or use of an existing structure shall not be made, except as specified in the Michigan building code, R 408.30401 to ~~R 408.30547~~ **R 408.30499**.

R110.3 Certificate issued. After the building official inspects the building or structure and finds no violations of the provisions of this code or other laws that are enforced by the department of building safety, the building official shall issue a certificate of occupancy which shall contain the following:

- (a) The building permit number.
- (b) The address of the structure.
- (c) A description of that portion of the structure for which the certificate is issued.
- (d) A statement that the described portion of the structure has been inspected for compliance with the requirements of this code.
- (e) The name of the building official.
- (f) The edition of the code under which the permit was issued.
- (g) Any special stipulations and conditions of the building permit.

R408.30510a Fire classification.

Rule 510a. Section R902.1 is amended and Sections R902.3 and R902.4 of the code are added to read as follows:

R902.1. Roof covering materials. Roofs shall be covered with materials as set forth in Sections R904 and R905. Class A, B, or C roofing shall be installed in jurisdictions designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a lot line. Classes A, B, and C roofing required by this section to be listed shall be tested in accordance with UL 790 or ASTM E 108.

Exceptions:

1. **Class A roof assemblies include those with coverings of brick, masonry, and exposed concrete roof deck.**
2. **Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible decks.**
3. **Class A roof assemblies include minimum 16 ounces per square foot copper sheets installed over combustible decks.**
4. **Class A roof assemblies include slate installed over underlayment over combustible decks.**

R 408.30512 Notice to owner.

Rule 512. Section R114.1 of the code is amended to read as follows:

R114.1. Notice to owner. ~~Upon notice from the enforcing agency, work on any building or structure that is being done contrary to the code or in a dangerous or unsafe manner shall immediately cease.~~ The notice shall be in accordance with the act. Any person who is served with a stop work order, except for work that the person is directed to perform to remove a violation or unsafe condition, is subject to the penalty provisions in the act.

R 408.30513 Definitions.

Rule 513. The definitions of agricultural or agricultural purposes and building inspector are added to the code and the definitions of building, building official, registered design professional, and sunroom addition in Section R202 of the code are amended, the definition of residential building type is deleted, and the definition of structure is added to Section R202 to read as follows:

R202. Definitions.

“Agricultural or agricultural purposes” means of, or pertaining to, or connected with, or engaged in agriculture or tillage which is characterized by the act or business of cultivating or using land and soil for the production of crops for the use of animals or humans, and includes, but is not limited to, purposes related to agriculture, farming, dairying, pasturage, horticulture, floriculture, viticulture, and animal and poultry husbandry.

“Attic, uninhabitable with limited storage” means uninhabitable attics with limited storage are those where the minimum clear height between joists and rafters is 42 inches (1 063 mm) or greater or where there are not 2 or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1 063 mm) high by 24 inches (610 mm) in width, or greater, within the plane of the trusses.

“Attic, uninhabitable without storage” means uninhabitable attics without storage are those where the maximum clear height between joists and rafters is less than 42 inches (1 063 mm), or where there are not 2 or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1 063 mm) high by 24 inches (610 mm) in width, or greater, within the plane of the trusses.

"Building" means a combination of materials, whether portable or fixed, forming a structure affording a facility or shelter for use or occupancy by persons, animals, or property. The term does not include a building incidental to the use for agricultural purposes of the land on which the building is located if it is not used in the business of retail trade. The term shall be construed as though followed by the words "or part or parts of the building and all equipment in the building" unless the context clearly requires a different meaning.

"Building inspector" means the person who is appointed and employed by a governmental subdivision, who is charged with the administration and enforcement of the state codes specified in R 408.30499, and who is registered in compliance with 1986 PA 54, MCL 338.2301 to 338.2313.

"Building official" means the person who is appointed and employed by a governmental subdivision, who is charged with the administration and enforcement of the state codes specified in R 408.30499, and who is registered in compliance with 1986 PA 54, MCL 338.2301 to 338.2313.

"Registered design professional" means an individual who is licensed under **the occupational code**, 1980 PA 299, MCL 339.101 to 339.2919.

"Structure" means that which is built or constructed, an edifice or building of any kind, or a piece of work artificially built up or composed of parts joined together in some definite manner. Structure does not include a structure incident to the use for agricultural purposes of the land on which the structure is located and does not include works of heavy civil construction including, without limitation, any of the following:

- (a) A highway.
- (b) A bridge.
- (c) A dam.
- (d) A reservoir.
- (e) A lock.
- (f) A mine.
- (g) A harbor.
- (h) A dockside port facility.
- (i) An airport landing facility.
- (j) A facility for the generation, or transmission, or distribution of electricity.

Structure shall be construed as though followed by the word "or part or parts of the structure and all equipment in the structure," unless the context clearly indicates otherwise.

"Sunroom addition" means a new structure with glazing in excess of 40% of the gross area of the structure's exterior walls and roof added to an existing dwelling.

R 408.30514 Means of appeal.

Rule 514. Sections R112.1 and R112.3 of the code are amended to read as follows:

R112.1 Means of appeal. An interested person has the right to appeal a decision of the enforcing agency to the board of appeals in accordance with the act. An application for appeal shall be based on a claim that the true intent of the code or the rules governing construction have been incorrectly interpreted, the provisions of the code do not apply, or an equal or better form of construction is proposed. The decision of a local board of appeals may be appealed to the construction code commission in accordance with the act and time frames.

Exception: Requests for barrier free design exception shall be in accordance with 1966 PA 1, MCL 125.1351 to 125.1356.

112.3 Qualifications. The board of appeals shall consist of members who are qualified in accordance with the act **and are not employees of the governmental subdivision or the agency enforcing the code.**

R 408.30516 Design criteria.

Rule 516. Table R301.2(1) of the code is amended and figures R301.2(7) and R301.2(8) are added to the code to read as follows:

TABLE R-301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground Snow Load	Wind Speed ^d (mph)	Seismic Design Category ^f	Subject to Damage From			Winter Design Temp ^e	Ice Barrier Underlayment Required ^h	Flood Hazards ^g	Air Freezing Index ⁱ	Mean Annual Temp ^j
			Weathering ^a	Frostline depth ^b	Termite ^c					
Table R301.2(5)	90	See Sec.R301 .2.2.1 & Figure R301.2(2)	Severe	42” See Note b	Figure R301.2(6)	See Note e	Yes	See Note g	Figure R403.3(2)	See footnote J

For SI: 1 pound per square foot = 0.0479 kN/m², 1 mile per hour = 1.609 km/h.

(a) Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., “negligible”, “moderate” or “severe”) for concrete as determined from the weathering probability map [figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652 as listed in chapter 44.

(b) The frost line depth may be modified as provided in section R403.1.4 of the code.

(c) The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local damage.

(d) The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [figure R301.2(4)]. Wind exposure category shall be determined on a site-specific basis in accordance with section R301.2.1.4 of the code.

(e) The winter design temperature criteria shall be taken from appendix D of the Michigan plumbing code, R 408.30701 to R 408.30796.

(f) Design category determined from section R301.2.2.1 of the code.

(g) The jurisdiction shall fill in this part of the table with both of the following:

(i) The date of the jurisdiction’s entry into the national flood insurance program (date of adoption of the first code or ordinance for management of flood hazard areas).

(ii) The date(s) of the currently effective FIRM and FBFM or other flood hazard map adopted by the community, as may be amended. Absent (i) or (ii), flood hazard areas as determined by the state under its administration of the Part 31, floodplain regulatory authority of the natural resources and environmental protection act, 1994 PA 451, MCL 324.101 to 324.90106, shall become the basis

for regulation of floodplain development within the community and section ~~R324~~**R408.7** of the code shall apply to buildings and structures within those areas.

(h) In accordance with sections ~~R905.2.7.1~~**R905.2.7**, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1 of the code, for areas where the average daily temperature in January is 25 degrees Fahrenheit (-4 degrees Celsius) or less, or where there has been a history of local damage from the effects of ice damming, the jurisdiction shall fill in this part of the table with “YES”. Otherwise, the jurisdiction shall fill in this part of the table with “NO”.

(i) The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (bf-days) from figure R403.3(2) or from the 100-year (99%) value on the national climatic data center data table “air freezing index-USA method (base 32 degrees Fahrenheit)”.

(j) The jurisdiction shall fill in this part of the table with the mean annual temperature from the national climatic data center data table “air freezing index-USA method (base 32 degrees Fahrenheit)” at www.ncdc.noaa.gov/fpsf.html.

R 408.30518 Means of egress.

Rule 518. Sections R311.6.4 and R311.2.1 are added to the code and R311.2 of the code is amended to read as follows:

R311.6.4 Modular ramps. Modular ramp systems approved pursuant to the act are not required to comply with the requirements of section R403.1.4 of the code.

R311.2. Door type and size. The required exit door shall be a side-hinged door not less than 3 feet (914 mm) in width and 6 feet (~~1828.8 mm~~), 8 inches (~~2032 mm~~ **2 032 mm**) in height. Other exterior hinged or sliding doors shall not be less than 24 inches (6096 mm) in width and 6 feet (~~1828.8 mm~~), 6 inches (~~1524 mm~~ **1 981 mm**) in height.

R311.2.1. Interior doors. Interior doors shall be not less than 24 inches (6096 mm) in width and 6 feet (~~1828.8~~), 6 inches (1524 mm) in height.

Exception: Doors to areas less than 10 square feet of floor area.

R 408.30520 Where required in existing dwellings.

Rule 520. Section ~~R315.2~~ **R315.3** of the code is amended to read as follows:

~~R315.2~~ **R315.3**. Where required in existing dwellings. Where work requiring a building permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be provided in accordance with Section R315.1.

R 408.30521a Rooftop mounted photovoltaic panel systems.

Rule 521a. Sections R909.1, R909.2, and R909.3 of the code are added to read as follows:

R909.1. General. The installation of photovoltaic panel systems that are mounted on or above the roof covering shall comply with the provisions of this code, Section R324, and NFPA 70.

R909.2. Structural requirements. Rooftop mounted photovoltaic panel systems shall be designed to structurally support the system and withstand gravity loads in accordance with chapter 3. The roof upon which these systems are installed shall be designed and constructed to support the loads imposed by such systems in accordance with chapter 8.

R909.3. Installation. Rooftop mounted photovoltaic systems shall be installed in accordance with the manufacturer's instructions. Roof penetrations shall be flashed and sealed in accordance with this chapter.

R 408.30522 Minimum depth.

Rule 522. Section R403.1.4 of the code is amended to read as follows:

R403.1.4. Minimum depth. All exterior footings and foundation systems shall extend 42 inches below actual grade. Where applicable, the depth of the footings shall also conform to ~~sections~~ **section** R403.1.4.1 to R403.1.4.2 of the code.

Exception:

Upon evidence of the existence of any of the following conditions, the building official may modify the footing depth accordingly:

- (a) Freezing temperatures (freezing degree days).
- (b) Soil type.
- (c) Ground water conditions.
- (d) Snow depth experience.
- (e) Exposure to the elements.
- (f) Other specific conditions identified by the building official that may affect the foundation system.

R 408.30522a Vapor retarders.

Rule 522a. Section R601.3R702.7 of the code is amended to read as follows:

R601.3R702.7. Vapor retarders. Class I or II vapor retarders shall be provided on the interior side of frame walls in zones 5, 6, and 7, 8 and marine 4.

Exceptions:

1. Class III vapor retarders shall be installed on the interior side of **above grade** frame walls when insulating sheathing having a class I or II permeating vapor retarder is installed on the exterior side **or integral to the wall assembly.**

2. **Class III or no vapor retarder shall be permitted on the interior side of below grade wall assemblies.** Class I or II vapor retarders shall not be installed **be permitted** on the interior side of **the wall assembly when no air permeable insulation is installed in the below grade wall assemblies.** either of the following:

- a. ~~Frame basement walls.~~
- ~~b. The below grade portion of any frame wall.~~
- 3. Construction where moisture or its freezing will not damage the materials.

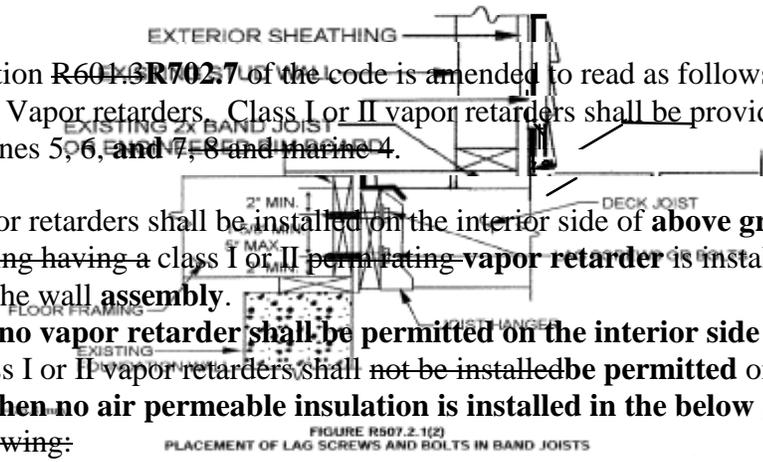


FIGURE R507.2.1(2)
PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS

R 408.30523 Placement of lag screws or bolts in deck ledgers and band joists.

Rule 523. Figure R507.2.1(1) of the code is amended to read as follows:

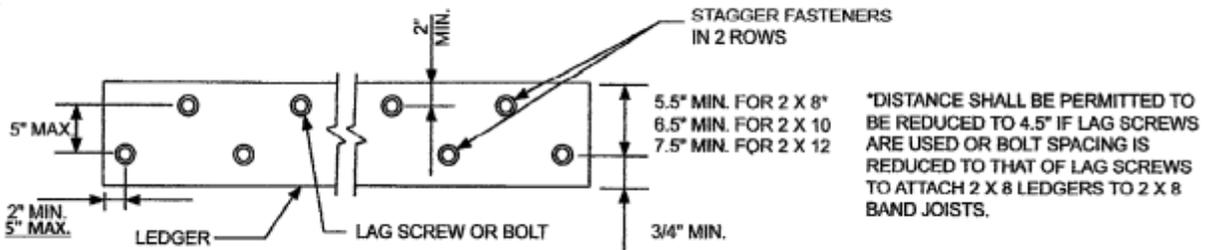


FIGURE R507.2.1(1)
PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS

R408.30523a Flashing.

Rule 523a. Section R507.2.4 is added and figure R507.2.1(2) is amended to read as follows:

R507.2.4. Flashing. An approved corrosion resistant flashing as required by Section R703.8 shall be installed above the attached ledger as shown in figure R507.2.1(2) or as approved.

WATER-RESISTIVE BARRIER

CORROSION RESISTANT FLASHING

R 408.30525a Simplified wall bracing.

Rule 525a. Section R 602.10.9 is amended to read as follows:

R602.10.9. Braced wall panel support. Braced wall panel support shall be provided as follows:

- 1. Cantilevered floor joists complying with section R502.3.3 shall be permitted to support braced wall panels.**
- 2. Raised floor system post or pier foundations supporting braced wall panels shall be designed in accordance with accepted engineering practice.**
- 3. Masonry stem walls with a length of 48 inches (1 219 mm) or less supporting braced wall panels shall be reinforced in accordance with figure R602.10.9. Masonry stem walls with a length greater than 48 inches (1 219 mm) supporting braced wall panels shall be constructed in accordance with section R403.1. Methods ABW and PFH shall not be permitted to attach to masonry stem walls.**
- 4. Concrete stem walls with a length of 48 inches (1 219 mm) or less, greater than 12 inches (305 mm) tall shall have reinforcement sized and located in accordance with figure R602.10.9.**

R 408.30526 Sizing~~Rescinded.~~

~~Rule 526. Section M1401.3 of the code is amended to read as follows:~~

~~M1401.3. Sizing. Heating and cooling equipment shall be sized in accordance with ACCA manual S 3-2004, as listed in chapter 43, based on building loads calculated in accordance with the provisions of ACCA Manual J-2002 listed in chapter 43 or other approved heating and cooling calculation methodologies. Ductwork shall be sized in accordance with the provisions of ACCA Manual D-1995, as listed in chapter 43.~~

R 408.30527 Standards.

Rule 527. Section M2001.1.1 of the code is amended to read as follows:

M2001.1.1. Standards. (1) Oil-fired boilers and their control systems shall be listed and labeled in accordance with UL726 listed in chapter 44.

~~–(2) Gas-fired boilers and their control systems shall be listed and labeled in accordance with ANSI Z21.13 or UL795 listed in chapter 44.~~

~~–(3) Gas-fired boilers shall conform to the requirements listed in chapter 24 of the code.~~

~~–(4) Electric boilers and their control systems shall be listed and labeled in accordance with UL834 listed in chapter 44~~

Oil-fired boilers and their control systems shall be listed and labeled in accordance with UL 726. Electric boilers and their control systems shall be listed in accordance with UL 834. Solid-fuel-fired boilers shall be listed and labeled in accordance with UL 2523. Boilers shall be designed, constructed, installed and maintained in accordance with the requirements of ASME CSD-1 and ASME boiler and pressure vessel code, Sections I and IV, except part CE-110(a) of the CSD-1. Gas-fired boilers shall conform to the requirements listed in chapter 24. It shall be the homeowners responsibility to maintain and operate the boiler in accordance with ASME CSD-1.

R 408.30528a CSST.

Rule 528a. Section G2411.1.1 (310.1.1) of the code is amended to read as follows:

G2411.1.1. ~~CSST. Corrugated stainless steel tubing (CSST) gas piping systems shall be bonded in accordance with section E3609.~~ **Corrugated stainless steel tubing (CSST) gas piping systems shall be bonded to the electrical service grounding electrode system or where provided, lightning protection electrode system. The bonding jumper shall connect to a metallic pipe, pipe fitting, or CSST fitting between the point of delivery and the CSST utilizing a device listed for the application. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent, not longer than 75 feet and accessible. Gas piping systems that are bonded in accordance with this section shall be considered effectively bonded regardless of the amount of CSST in the system. Any additional grounding electrodes used shall be bonded to the electrical service grounding electrode system, or where provided, the lightning protection grounding electrode system.**

Exception: CSST piping systems tested and listed by the manufacturer for installation without additional bonding when installed in accordance with the listing.

R 408.30529 Lining required.

Rule 529. Section P2709.2 of the code is amended **to read** as follows:

~~P2709.2. Lining required. The adjoining walls and floor framing enclosing on-site built-up shower receptors shall be lined with sheet lead, copper, or a plastic liner material that complies with ASTM D 4068 or ASTM D 4551 listed in chapter 43. The lining material shall extend not less than 3 inches (76 mm) beyond or around the rough jambs and not less than 3 inches (76 mm) above the finished thresholds.~~ **1 of the following:**

- 1. Sheet lead.**
- 2. Sheet copper.**
- 3. Plastic liner material that complies with ASTM D 4068 or ASTM D 4551.**
- 4. Sheet-applied load-bearing, bonded waterproof membranes that comply with ANSI A118.10.**

The lining material shall extend not less than 3 inches (76 mm) beyond or around the rough jambs and not less than 3 inches (76 mm) above finished thresholds. Sheet-applied load bearing, bonded waterproof membranes shall be applied in accordance with the manufacturer’s instructions.

R 408.30531 ~~Duct construction~~ **Rescinded.**

~~Rule 531. Table M1601.1.1(2) of the code is amended to read as follows:~~

~~Table M1601.1.1(2)~~

~~Gauges of Metal Ducts and Plenums Used for Heating or Cooling~~

Type of Duct	Size (inches)	Minimum thickness (inch)	Equivalent Galvanized Sheet Gauge	Approximate Aluminum B&S Gauge
Round ducts and enclosed rectangular ducts	14 or less	0.13	30	26
	over 14	0.016	28	24
Exposed rectangular ducts	14 or less	0.016	28	24
	over 14	0.019	26	22

~~For SI: 1 inch = 25.4 mm~~

R 408.30533a Rough plumbing.

Rule 533a. Section P2503.5.1 of the code is amended to read as follows:

P2503.5.1. Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or air with no evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough piping has been installed, as follows:

1. **Water test.** Each section shall be filled with water to a point not less than 10 feet (3 048 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection.
2. **Air test.** The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches (254 mm) of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes.

R 408.30533b Sewer depth.

Rule 533b. Section P2603.5.1 of the code is amended to read as follows:

P2603.5.1. Sewer depth. A building sewer that connects to a private disposal system shall be a minimum of 8 inches (203 mm) to the top of the pipe below finished grade at the point of septic tank connection. Building sewers shall be installed a minimum of 42 inches (1 067 mm) below grade.

Exception: When permitted by the code official.

R 408.30536 Electrical; general; electrical conductors; and connections and electrical grounding.

Rule 536. Sections E3401.1, E3401.2, E3401.3, ~~E3406.7~~, **E3705.4.1**, E3908.8.1, and E3908.8.2, and ~~Table E3602.2~~ of the code are amended and **E3401.5, E3401.6, E3401.6.1, E3401.6.2, E3401.6.3, E3401.7, and E3401.8** are added to read as follows:

E3401.1. Applicability. The provisions of chapters 34 to 43 of the code shall establish the general scope of the electrical system and equipment requirements of the code. Chapters 34 to 43 of the code cover those wiring methods and materials most commonly encountered in the construction of 1- and 2-family dwellings and structures regulated by the code. Other wiring methods, materials, and subject matter covered in the Michigan electrical code, R 408.30801 to R 408.30880 are also allowed by the code.

E3401.2. Scope. Chapters 34 to 43 of the code shall cover the installation of electrical systems, equipment, and components indoors and outdoors that are within the scope of the code, including services, power distribution systems, fixtures, appliances, devices, and appurtenances. Services within the scope of the code shall be limited to 120/240 volt, 0- to 400- ampere, single-phase systems. These chapters specifically cover the equipment, fixtures, appliances, wiring methods, and materials that are most commonly used in the construction or alteration of 1- and 2-family dwellings and accessory structures regulated by the code. The omission from these chapters of any material or method of construction provided by the Michigan electrical code, R 408.30801 to R 408.30880, shall not be construed as prohibiting the use of such material or method of construction. Electrical systems, equipment, or components not specifically covered in these chapters shall comply with the applicable provisions of the Michigan electrical code, R 408.30801 to R 408.30880.

E3401.3. Not covered. Chapters 34 to 43 do not cover the following:

- (1) Installations under the exclusive control of communications utilities and electric utilities.
- (2) Services over 400 amperes.

E3401.5. General. This section provides for the design, construction, installation, alteration, and repair of photovoltaic equipment and systems. [690.1]

E3401.6. Requirements. The installation, inspection, maintenance, repair, and replacement of photovoltaic systems and all system components shall comply with the manufacturer's instructions, Sections E3401.6.1 through E3401.6.3 and NFPA 70. [690.3]

E3401.6.1. Roof-mounted panels and modules. Where photovoltaic panels and modules are installed on roofs, the roof shall be constructed to support the loads imposed by such modules. Roof-mounted photovoltaic panels and modules that serve as roof covering shall conform to the requirements for roof coverings in chapter 9. Where mounted on or above the roof coverings, the photovoltaic panels and modules and supporting structure shall be constructed of noncombustible materials or fire-retardant treated wood equivalent to that required for the roof construction.

E3401.6.2. Roof and wall penetrations. Roof and wall penetrations shall be flashed and sealed in accordance with chapter 9 to prevent entry of water, rodents, and insects.

E3401.6.3. Ground-mounted panels and modules. Ground-mounted panels and modules shall be installed in accordance with the manufacturer's instructions. [110.3(B)]

E3401.7. Photovoltaic panels and modules. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703. [690.4(B)]

E3401.8. Inverters. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction. [690.4(B)]

E3705.4.1. Conductors rated 60°C. Except where the equipment is marked otherwise, termination provisions of equipment for circuits rated 100 amperes or less, or marked for 14 AWG through 1 AWG conductors, shall be used only for 1 of the following:

1. Conductors rated 60°C (140°F).
2. Conductors with higher temperature ratings, provided that the ampacity of such conductors is determined based on the 60°C (140°F) ampacity of the conductor size used; or
3. Conductors with higher temperature ratings where the equipment is listed and identified for use with such conductors. [110.14(C)(1)(a)]

E3908.8.1. Grounding of flexible metal conduit. Flexible metal conduit shall not be permitted as an equipment grounding conductor. [Michigan Electrical Code Rules Part 8 250.118 amended]

E3908.8.2. Grounding of liquid-tight flexible metal conduit. Liquid-tight flexible metal conduit shall not be permitted as an equipment grounding conductor. [Michigan Electrical Code Rules Part 8 250.118 amended]

R 408.30536a General requirements.

Rule 536a. Sections E3402.2, ~~E3403.3, E3404.13, E3405.2 E3405.4, and E3407.5 and Figure E3405.1~~ are amended to read as follows:

E3402.2. Penetrations of fire-resistance-rated assemblies. Electrical installations in hollow spaces, vertical shafts, and ventilation or air-handling ducts shall be made so that the possible spread of fire or products of combustion will not be substantially increased. Electrical penetrations through fire-resistance-rated walls, partitions, floors, or ceilings shall be protected by approved methods to maintain the fire-resistance-rating of the element penetrated. Penetrations of fire-resistance-rated walls shall be limited as specified in Section R302.4.

~~E3403.3. Listing and labeling. Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.~~

E3405.2. Working clearances for energized equipment and panelboards. Except as otherwise specified in chapters 34 through 43, the dimension of the working space in the direction of access to panelboards and live parts likely to require examination, adjustment, servicing, or maintenance while energized shall be not less than 36 inches (914 mm) in depth. Distances shall be measured from the energized parts where such parts are exposed or from the enclosure front or opening

where such parts are enclosed. In addition to the 36-inch dimension (914 mm), the work space shall not be less than 30 inches (762 mm) wide in front of the electrical equipment and not less than the width of such equipment. The work space shall be clear and shall extend from the floor or platform to a height of 6.5 feet (1 981 mm) or the height of the equipment, whichever is greater. In all cases, the work space shall allow at least a 90-degree (1.57 rad) opening of equipment doors or hinged panels. Equipment associated with the electrical installation located above or below the electrical equipment shall be permitted to extend not more than 6 inches (152 mm) beyond the front of the electrical equipment. [110.26(A)]

Exception:

1. In existing dwelling units, service equipment, and panelboards that are not rated in excess of 200 amperes may be in spaces where the height of the working space is less than 6.5 feet (1 981 mm), but greater than 5 feet (1 524 mm). [110.26(A)(3) Exception 1 amended]

2. Meters that are installed in meter sockets may extend beyond the other equipment. Meter sockets shall not be exempt from the requirements of this section. [110.26(A)(3) Exception 2]

E3407.5. Polarity of connections. No grounded conductor shall be attached to any terminal or lead so as to reverse the designated polarity.

R 408.30537 Separate outdoor electric space conditioning equipment.

Rule 537. Section E3601.6.3, ~~and E3601.6.4, and E3608.1.2.1~~ are added to the code and Sections **E3604.2.1, E3609.7, and E3609.7.1, and E3609.7.2** are amended to read as follows:

E3601.6.3. Separate outdoor electric space conditioning equipment. A service disconnect for separately metered outdoor electric space conditioning equipment ~~may~~**shall be located grouped with the service disconnecting means for the structure or** immediately adjacent to the outdoor meter cabinet. A permanent plaque or directory shall be installed at each service disconnect location denoting the other services, feeders, and branch circuits supplying a building or structure and area served by each service, feeder, and branch circuit. **Grounding shall be in accordance with Sections E3607 and E3608.**

E3601.6.4. Electric vehicle charging system service disconnect. A ~~separate~~**service disconnect** for electric vehicle charging systems shall be ~~permitted~~**grouped with the service disconnecting means for the structure or**. ~~The disconnect shall be located~~ immediately adjacent to the outdoor meter cabinet. A permanent plaque or directory shall be installed at each service disconnect location identifying the other services, feeders, and branch circuits supplying a building or structure and area served by each service, feeder, and branch circuit. ~~The disconnect shall not be required to be grouped with the service disconnects for the structure.~~ **Grounding shall be in accordance with Section E3607 and E3608.**

E3604.2.1. Above roofs. Conductors shall have a vertical clearance of not less than 8 feet (2438 mm) above the roof surface. The vertical clearance above the roof level shall be maintained for a distance of not less than 3 feet (914 mm) in all directions from the edge of the roof. See figure E3604.2.1. [230.24(A)]

Exceptions:

1. Conductors above a roof surface subject to pedestrian traffic shall have a vertical clearance from the roof surface in accordance with Section E3604.2.2. [230.24(A) Exception 1]

2. Where the roof has a slope of 4 inches (102 mm) in 12 inches (305 mm) or greater and is not accessible from an operable window, the minimum clearance shall be 3 feet (914 mm). [230.24(A) Exception 2 amended]

3. The minimum clearance above only the overhanging portion of the roof shall not be less than 18 inches (457 mm) where not more than 6 feet (1 829 mm) of conductor length passes over 4 feet (1 219 mm) or less of roof surface measured horizontally and such conductors are terminated at a through-the-roof raceway or approved support. [230.24(A) Exception 3]

4. The requirement for maintaining the vertical clearance for a distance of 3 feet (914 mm) from the edge of the roof shall not apply to the final conductor span where the service drop is attached to the side of a building. [230.24(A) Exception 4]

5. Where the voltage between conductors does not exceed 300 and the roof area is guarded or isolated, a reduction in clearance to 3 feet (914 mm) shall be permitted. [230.24(A) Exception 5]

E3608.1.2.1. Verification of the installation of the concrete encased electrode specified for in E3608.1.2. The inspection of a concrete incased electrode meeting the requirements of E3608.1.2 except for the connection of the grounding electrode conductor to the electrode shall be completed by 1 of the following:

1. The electrical inspector for the enforcing agency.

2. The building inspector for the enforcing agency if all of the following conditions are met:

a. Both the electrical and building inspectors for the enforcing agency(s) shall sign a written agreement which shall remain on file with the enforcing agency that designates authority to the building inspector for that agency to inspect a concrete encased electrode.

b. Upon inspection and verification by the building inspector of a concrete encased electrode, the building inspector shall provide written documentation to the electrical inspector that the installation of the concrete encased electrode meets the requirements set forth in E3608.1.2. Electrode shall be ½” diameter (13mm) reinforcing bar or larger, a minimum of 20 feet (6 096 mm) long including usual tie wire connections, and encased in 2 inches (51 mm) of concrete except for the end of the electrode which shall be in an accessible location and not subject to deteriorating conditions (i.e. backfill).

c. Verification of approval of the concrete encased electrode shall be made at the construction site by signature of the field copy of the building permit noting that the concrete encased electrode was approved along with the footing inspection or by a readily available inspection tag attached to the accessible grounding electrode reinforcing bar.

d. The grounding electrode conductor connection to the concrete encased electrode shall be inspected by the electrical inspector for the enforcing agency.

~~E3609.7. Bonding other metal piping. Where installed in or attached to a building or structure, a metal piping system, including gas piping, capable of becoming energized shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the 1 or more grounding electrodes used.~~

~~E3609.7.1 Other than corrugated stainless steel tubing (CSST).~~

~~The bonding jumper shall be sized in accordance with table 3908.12 using the rating of the circuit capable of energizing the piping. The equipment grounding conductor for the circuit that is capable if energizing the piping may serve as the bonding means.~~

E3609.7.21. Corrugated stainless steel tubing (CSST). Corrugated stainless steel tubing gas piping systems shall be bonded to the electrical service grounding electrode system or where provided, lightning protection electrode system. The bonding jumper shall connect to a metallic pipe, pipe fitting, or CSST fitting between the point of delivery and the CSST utilizing a device listed for the application. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent, not longer than 75 feet and accessible. Gas piping systems that are bonded in accordance with this section shall be considered effectively bonded regardless of the amount of CSST in the system. Any additional grounding electrodes used shall be bonded to the electrical service grounding electrode system, or where provided, the lighting protection grounding electrode system.

Exception: CSST piping systems tested and listed by the manufacturer for installation without additional bonding when installed in accordance with the listing.

R 408.30537a Wiring methods.

Rule 537a. ~~Sections E3803.6 and E3803.9 and Tables E3801.2, tables E3801.4, and E3802.1~~ are amended to read as follows:

E3803.6. Raceway seals. Conduits or raceways shall be sealed or plugged at either or both ends where moisture will enter and contact live parts. Sealants shall be identified for use with the cable insulation, shield, or other components.

~~E3803.9 Earth movement. Where direct buried conductors, raceways, or cables are subject to movement by settlement or frost, direct buried conductors, raceways, or cables shall be arranged to prevent damage to the enclosed conductors or to equipment connected to the raceways.~~

Table E3801.2
ALLOWABLE WIRING METHODS

ALLOWABLE WIRING METHOD	DESIGNATED ABBREVIATION
Armored cable	AC
Electrical metallic tubing	EMT
Electrical nonmetallic tubing	ENT
Flexible metal conduit	FMC
Intermediate metal conduit	IMC
Liquidtight flexible conduit	LFC
Metal-clad cable	MC
Nonmetallic sheathed cable	NM
Rigid polyvinyl chloride conduit	PVC
Rigid metallic conduit	RMC
Service-entrance cable	SE
Surface raceways	SR
Underground feeder cable	UF
Underground service cable	USE

Table E3801.4
ALLOWABLE APPLICATIONS FOR WIRING METHODS^{a, b, c, d, e, f, g, h, i, j, k, l}

ALLOWABLE APPLICATIONS (application allowed where marked with an “A”)	AC	EMT	ENT	FMC	IMC RMC PVC	LFC ^a	MC	NM	SR	SE	UF	USE ^l
Services	–	A	A ^h	A ⁱ	A	A ⁱ	A	–	–	A	–	A
Feeders	A	A	A	A	A	A	A	A	–	A ^b	A	A ^b
Branch circuits	A	A	A	A	A	A	A	A	A	A ^c	A	–
Inside a building	A	A	A	A	A	A	A	A	A	A	A	–
Wet locations exposed to sunlight	–	A	A ^h	–	A	A	A	–	–	A	A ^c	A ^c
Damp locations	–	A	A	A ^d	A	A	A	–	–	A	A	A
Embedded in noncinder concrete in dry location	–	A	A	–	A	A ^j	–	–	–	–	–	–
In noncinder concrete in contact with grade	–	A ^f	A	–	A ^f	A ^j	–	–	–	–	–	–
Embedded in plaster not exposed to dampness	A	A	A	A	A	A	A	–	–	A	A	–
Embedded in masonry	–	A	A	–	A ^f	A	A	–	–	–	–	–
In masonry voids and cells exposed to dampness or below grade line	–	A ^f	A	A ^d	A ^f	A	A	–	–	A	A	–
Fished in masonry voids	A	–	–	A	–	A	A	A	–	A	A	–
In masonry voids and cells not exposed to dampness	A	A	A	A	A	A	A	A	–	A	A	–
Run exposed	A	A	A	A	A	A	A	A	A	A	A	–
Run exposed and subject to physical damage	–	–	–	–	A ^g	–	–	–	–	–	–	–
For direct burial	–	A ^f	–	–	A ^f	A	A ^f	–	–	–	A	A

For SI: 1 foot = 304.8 mm.

- a. Liquid-tight flexible nonmetallic conduit without integral reinforcement within the conduit wall shall not exceed 6 feet in length.
- b. ~~The grounded conductors shall be insulated except where used to supply other buildings on the same premises.~~ Type USE cable shall not be used inside buildings.
- c. The grounded conductor shall be insulated.
- d. Conductors shall be a type approved for wet locations and the installation shall prevent water from entering other raceways.
- e. Shall be listed as “sunlight resistant.”
- f. Metal raceways shall be protected from corrosion and approved for the application. Aluminum RMC requires approved supplementary corrosion protection.
- g. **RNC** shall be Schedule 80.
- h. Shall be listed as “sunlight resistant” where exposed to the direct rays of the sun.
- i. Conduit shall not exceed 6 feet in length.
- j. Liquid-tight flexible nonmetallic conduit ~~is permitted to~~ may be encased in concrete where listed for direct burial and only straight connectors listed for use with LFNC are used.
- k. In wet locations under any of the following conditions
 - (i) The metallic covering is impervious to moisture.
 - (ii) A lead sheath or moisture-impervious jacket is provided under the metal covering.
 - (iii) The insulated conductors under the metallic covering are listed for use in wet locations and a corrosion-resistant jackets is provided over the metallic sheath.

l. Type USE cable not permitted above ground except to terminate at the exterior of a building in an approved enclosure and protected in accordance with Section E3803.3.

TABLE E3802.1
GENERAL INSTALLATION AND SUPPORT REQUIREMENTS FOR WIRING METHODS^{a, b, c, d, e, f, g, h, i, j, k}

INSTALLATION REQUIREMENTS		EMT										
---------------------------	--	-----	--	--	--	--	--	--	--	--	--	--

(Requirement applicable only to wiring methods marked "A")	AC MC	IMC RMC	ENT	FMC LFC	NM UF	PVC	SE	SR ^a	USE
Where run parallel with the framing member or furring strip, the wiring shall be not less than 1 ¼ inches from the edge of a furring strip or a framing member such as a joist, rafter, or stud or shall be physically protected.	A	–	A	A	A	–	A	–	=
Bored holes in framing members for wiring shall be located not less than 1 ¼ inches from the edge of the framing member or shall be protected with a minimum 0.0625-inch steel plate or sleeve, a listed steel plate, or other physical protection.	A ^k	–	A ^k	A ^k	A ^k	–	A ^k	–	=
Where installed in grooves, to be covered by wallboard, siding, paneling, carpeting, or similar finish, wiring methods shall be protected by 0.0625-inch-thick steel plate, sleeve, or equivalent, a listed steel plate or by not less than 1 ¼-inch free space for the full length of the groove in which the cable or raceway is installed.	A	–	A	A	A	–	A	A	A
Securely fastened bushings or grommets shall be provided to protect wiring run through openings in metal framing members.	–	–	A ^j	–	A ^j	–	A ^j	–	=
The maximum number of 90-degree bends shall not exceed 4 between junction boxes.	–	A	A	A	–	A	–	–	=
Bushings shall be provided where entering a box, fitting, or enclosure unless the box or fitting is designed to afford equivalent protection.	A	A	A	A	–	A	–	A	=
Ends of raceways shall be reamed to remove rough edges.	–	A	A	A	–	A	–	A	=
Maximum allowable on center support spacing for the wiring method in feet.	4.5 ^{b,c}	10 ^l	3 ^b	4.5 ^b	4.5 ⁱ	3 ^{d,1}	2.5 ^e	–	2.5 ^e
Maximum support distance in inches from box or other terminations.	12 ^{b,f}	36	36	12 ^{b,g}	12 ^{h,i}	36	12	–	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad.

- a. Installed in accordance with listing requirements.
- b. Supports not required in accessible ceiling spaces between light fixtures where lengths do not exceed 6 feet.
- c. Six feet for MC cable.
- d. Five feet for trade sizes greater than 1 inch.
- e. Two and one-half feet where used for service or outdoor feeder and 4.5 feet where used for branch circuit or indoor feeder.
- f. ~~Twenty four inches (610 mm) where flexibility is necessary.~~ **Twenty-four inches for Type AC cable and 36 inches for interlocking Type MC cable where flexibility is necessary.**
- g. ~~Thirty six inches (914 mm) where flexibility is necessary.~~ **Where flexibility after installation is necessary, lengths of flexible metal conduit and liquidtight flexible metal conduit measured from the last point where the raceway is securely fastened shall not exceed: 36 inches for trade sizes ½ through 1 ¼, 48 inches for trade sizes 1 ½ through 2 and 5 feet for trade sizes 2 ½ and larger.**
- h. Within 8 inches (203 mm) of boxes without cable clamps.
- i. Flat cables shall not be stapled on edge.
- j. Bushings and grommets shall remain in place and shall be listed for the purpose of cable protection.
- k. See Section R502.8 and R802.7 for additional limitations on the location of bored holes in horizontal framing members.

1. Raceways ~~shall be permitted to~~ may be unsupported where the raceway is not more than 900 millimeters (36 inches) long and remains in unbroken lengths (without coupling). Such raceways shall terminate in an outlet box, junction box, device box, cabinet, or other termination at each end of the raceway.

R 408.30537b Power and lighting distribution.

Rule 537b. Sections ~~E 3902.11~~, **E3901.11**, E3905.3.2, E3908.9, and E3908.10, are amended and **E3908.9.1, E3908.9.1.1 and E3908.9.1.2 are added** to read as follows:

~~E3902.11 Arc fault protection of bedroom outlets. All branch circuits that supply 120-volt, single-phase, 15- and 20-ampere outlets installed in bedrooms shall be protected by a combination type or branch-feeder type arc fault circuit interrupter installed to provide protection of the entire branch circuit. Exception: The location of the arc fault circuit interrupter shall be permitted to be at other than the origination of the branch circuit provided that:~~

~~1. The arc fault circuit interrupter is installed within 6 feet (1.8 m) of the branch circuit overcurrent device as measured along the branch circuit conductors and~~

~~2. The circuit conductors between the branch circuit overcurrent device and the arc fault circuit interrupter are installed in a metal raceway or a cable with a metallic sheath.~~

E3901.11. Foyers. Foyers that are not part of a hallway in accordance with Section E3901.10 and that have an area that is greater than 100 feet² (9.2903 m²) shall have a receptacle(s) located in each wall space that is 3 feet (914 mm) or more in width. Doorways, door-side windows that extend to the floor and similar openings shall not be considered as wall space. [210.52(I) amended]

E3905.3.2. Securing to box. All permitted wiring methods shall be secured to the boxes.

Exception: Where nonmetallic-sheathed cable is used with boxes not larger than a nominal size of 2 ¼ inches by 4 inches (57 mm by 102 mm) mounted in walls or ceilings, and where the cable is fastened within 8 inches (203.2 mm) of the box measured along the sheath, and where the sheath extends through a cable knockout not less than ¼ inch (6.4 mm), securing the cable to the box shall not be required. Multiple cable entries shall be permitted in a single cable knockout opening. [314.17(c) Exception amended]

E3908.9. Equipment fastened in place or connected by permanent wiring methods. Noncurrent-carrying metal parts of equipment, raceways, and other enclosures, where required to be grounded, shall be grounded by 1 of the following methods: [250.134]

(a) By any of the equipment grounding conductors permitted by Sections E3908.8 and E3908.8.3. [250.134(A)]

(b) By an equipment grounding conductor contained within the same raceway, cable, or cord, or otherwise run with the circuit conductors. Equipment grounding conductors shall be identified in accordance with Section E3407.2. [250.134(B) Exception]

E3908.9.1. Cord-and-plug-connected equipment. Non-current-carrying metal parts of the cord-and-plug-connected equipment, if grounded, shall be connected to an equipment grounding conductor by 1 of the methods in E3908.9.1.1 and E3908.9.1.2. [250.138]

E3908.9.1.1. By means of an equipment grounding conductor. By means of an equipment grounding conductor run with the power supply conductors in a cable assembly or flexible cord properly terminated in a grounding-type attachment plug with 1 fixed grounding contact. [250.138(A)]

Exception: The grounding contacting pole of grounding-type plug-in ground-fault circuit interrupters may be of the movable, self-restoring type on circuits operating at not over 150 volts between any 2 conductors or over 150 volts between any conductor and ground. [250.138(A) Exception]

E3908.9.1.2. By means of a separate flexible wire or strap. By means of a separate flexible wire or strap, insulated or bare, connected to an equipment grounding conductor, and protected as well as practicable against physical damage, where part of the equipment. [250.138(B)]

E3908.10. Methods of equipment grounding. Fixtures and equipment shall be considered grounded where mechanically connected to an equipment grounding conductor as specified in Sections E3908.8 and E3908.8.43. Wire type equipment grounding conductors shall be sized in accordance with Section E3908.12.

R 408.30537c Devices and luminaires.

Rule 537c. Sections - E4002.2, **and E4002.4516**, and ~~Table E4002.2~~ are amended to read as follows:

E4002.2. Grounding type. Receptacles installed on 15- and 20-ampere-rated branch circuits shall be of the grounding type and connected to an equipment grounding conductor.

Exception: Replacement receptacles as permitted by Section E4002.4516.

E4002.4516. Replacements. Replacement of receptacles shall comply with the following as applicable. [406.4(D) amended]

(1) Grounding-type receptacles. Where a grounding means exists in the receptacle enclosure or an equipment grounding conductor **is installed grounding type receptacles** shall be used and shall be connected to the equipment grounding conductor. [406.4(D)(1) amended]

~~(2) Ground fault circuit interrupters. Ground fault circuit interrupter protected receptacles shall be provided where replacements are made at receptacle outlets that are required to be so protected elsewhere in this code.~~ **Non-grounding-type receptacles. Where attachment to an equipment grounding conductor does not exist in the receptacle enclosure, the installation shall comply with 1 of the following:** [406.4(D)(2) amended]

(a) **A non-grounding-type receptacle may be replaced with another non-grounding-type receptacle.** [406.4(D)(2)(a)]

(b) **A non-grounding-type receptacle may be replaced with a ground-fault circuit interrupter-type of receptacle. These receptacles shall be marked “no equipment ground.” An equipment grounding conductor shall not be connected from the ground-fault circuit-interrupter-type receptacle to any outlet supplied from the ground-fault circuit-interrupter receptacle.** [406.4(D)(2)(b)]

(c) **A non-grounding type receptacle may be replaced with a grounding-type receptacle where supplied through a ground-fault circuit interrupter. Grounding-type receptacles supplied through the ground-fault circuit interrupter shall be marked “GFCI protected” and “no equipment ground.” An equipment grounding conductor shall not be connected between the grounding-type receptacles.** [406.4(D)(2)(c)]

~~(3) Non-grounding type receptacles. Where attachment to an equipment grounding conductor does not exist in the receptacle enclosure, the installation shall comply with 1 of the following:~~ **Ground-fault circuit interrupters. Ground-fault circuit-interrupter protected receptacles shall be provided where replacements are made at receptacle outlets that are required to be so protected elsewhere in this code.** [406.4(D)(3)]

Exception: Where replacement of the receptacle type is impracticable, such as where the outlet box size will not permit the installation of the GFCI receptacle, the receptacle may be replaced with a new receptacle of the existing type, where GFCI protection is provided and the receptacle is marked “GFCI protected” and “no equipment ground” in accordance with E4002.16 (2)(a), (b), or (c). [406.4(D)(3) Exception]

~~(a) A non-grounding-type receptacle shall be permitted to be replaced with another non-grounding-type receptacle.~~

~~(b) A non-grounding-type receptacle may be permitted to be replaced with a ground-fault circuit interrupter type of receptacle. These receptacles shall be marked “no equipment ground”. An~~

~~equipment grounding conductor shall not be connected from the ground-fault circuit interrupter-type receptacle to any outlet supplied from the ground-fault circuit interrupter receptacle.~~

~~–(e) A non-grounding type receptacle may be permitted to be replaced with a grounding type receptacle where supplied through a ground-fault circuit interrupter. Grounding type receptacles supplied through the ground-fault circuit interrupter shall be marked “GFCI protected” and “no equipment ground.” An equipment grounding conductor shall not be connected between the grounding type receptacles.~~

R 408.30537d Frames of ranges and clothes dryers.

Rule 537d. Section E4101.8 of the code is added to read as follows:

E4101.8. Frames of ranges and clothes dryers. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be connected to the equipment grounding conductor in the manner specified in E3908.9. [250.140 amended]

Exception: For existing branch-circuit installations only where an equipment grounding conductor is not present in the outlet or junction box, the frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances may be connected to the grounded circuit conductor if all of the following conditions are met. [250.140 Exception]

- 1. The supply circuit is 120/240-volt single-phase, 3-wire connected system. [250.140 Exception (1)]**
- 2. The grounded conductor is not smaller than 10 AWG copper or 8 AWG aluminum. [250.140 Exception (2)]**
- 3. The grounded conductor is insulated, or the grounded conductor is uninsulated and part of a type SE service-entrance cable and the branch circuit originates at the service equipment. [250.140 Exception (3)]**
- 4. Grounding contacts of the receptacles furnished as part of the equipment are bonded to the equipment. [250.140 Exception (4)]**

R 408.30541 Solid fuel burning equipment.

Rule 541. Section M1905 is added to the code to read as follows:

M1905. General. Solid fuel burning equipment shall be listed and labeled in accordance with Section M1302.1, installed in accordance with the manufacturer’s installation instructions, and NFPA 211-20062010 requirements.

R 408.30541a Duct Installation.

Rule 541a. Section M1502.4.2 of the code is amended to read as follows:

M1502.4.2. Duct Installation. Dryer exhaust ducts shall be supported at 4 foot (1 219 mm) intervals and secured in place. The insert end of the duct shall extend into the adjoining duct or fitting in the direction of airflow. Ducts shall not be joined with screws or similar fasteners that protrude into the inside of the duct.

R 408.30542 ~~Duct insulation/floor~~Floor register location.

Rule 542. Section ~~M1601.4.5 of the code is amended and section~~ M1601.4.10 is added to the code to read as follows:

~~M1601.4.5. Duct insulation. Duct insulation shall be installed in accordance with the following requirements:~~

~~(1) A vapor retarder having a maximum permeance of 0.05 perm [(2.87 ng/(s⁻¹ m² Pa))] in accordance with ASTM E 96, as listed in chapter 44, or aluminum foil with a minimum thickness of 2 mils (0.051 mm), shall be installed on the exterior of insulation on cooling supply ducts that pass through nonconditioned spaces conducive to condensation.~~

~~(2) Exterior duct systems shall be protected against the elements.~~

~~(3) Duct coverings shall not penetrate a fire blocked wall or floor.~~

~~(4) All portions of the air distribution system shall be installed in accordance with section M1601 and be insulated to an installed R-6 when system components are located within the building but outside the conditioned space, and R-8 when located outside to the building. When located within a building envelope assembly, at least R-8 shall be applied between the duct and that portion of the assembly farthest from conditioned space.~~

~~Exception: Exhaust air ducts and portions of the air distribution system within appliances or equipment.~~

M1601.4.10. Floor register location. Floor registers located in room or spaces containing water closets shall be located a minimum of 3 feet (914 mm) from the water closet.

R 408.30543 Boiler low water cutoff **Rescinded**.

Rule 543. ~~Section M2002.5 of the code is amended to read as follows:~~

~~M2002.5. Boiler low water cutoff. All steam and hot water boilers shall be protected with a low water cutoff control. The low water control shall automatically stop the combustion operation of the appliance when the water level drops below the lowest safe water level as established by the manufacturer. The low water cut off on all low pressure boilers shall be installed in accordance with the Michigan boiler rules, R 408.4001 to R 408.5507.~~

~~A low water cutoff shall be of the float or probe type or paddle type non-reversing flow switch.~~

R 408.30544 Light, ventilation, and heating.

Rule 544. Section ~~R303.4.2~~ **R303.5.2** of the code is amended to read as follows:

~~R303.4.2~~ **R303.5.2.** Exhaust openings. Outside exhaust openings shall be located as not to create a nuisance. Exhaust openings shall not be directed onto walkways. Exhaust openings shall not terminate within 3 feet of a ventilated section in a soffit.

R 408.30544b Exterior walls.

Rule 544b. Section R302.5.1 of the code is amended and table R302.1(1) is added to read as follows:

R302.5.1. Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 1 3/8 inches (35 mm) thick, or 20-minute fire-rated doors.

TABLE R302.1(1) EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed ^a	NA	< 2 feet
	Fire-resistance rated	1 hour on the underside	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Opening in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm

N/A = Not applicable

^a except as allowed as per Section R302.1 exceptions 3 and 4

R 408.30544c Polyethylene plastic.

Rule 544c. Sections P2906.3.1, P2906.10.1, P3003.11.1 and P3003.12.1 of the code are amended to read as follows:

P2906.3.1. Heat-fusion joints. Joint surfaces shall be clean and free from moisture. Joint surfaces shall be heated to melting temperature and joined. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F 2620 and the manufacturer’s instructions.

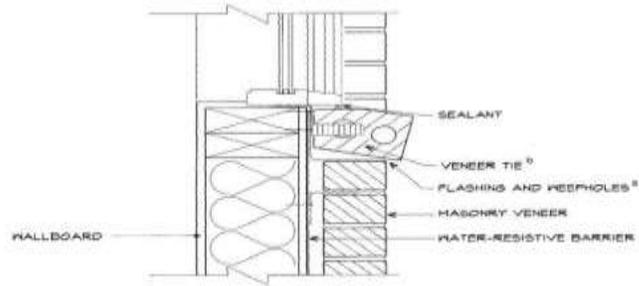
P2906.10.1. Heat-fusion joints. Heat fusion joints for polypropylene pipe and tubing joints shall be installed with socket-type heat-fused polypropylene fittings, butt-fusion polypropylene fittings, or electrofusion polypropylene fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM D 2657 and the manufacturer’s instructions.

P3003.11.1. Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM D 2657, ASTM F 1290, or CSA B181.3, and the manufacturer’s instructions.

P3003.12.1. Heat-fusion joints. Joint surfaces shall be clean and free from moisture. All joint surfaces shall be cut, heated to melting temperature, and joined using tools specifically designed for the operation. Joints shall be undisturbed until cool. Joints shall be made in accordance with ASTM F 2620 and the manufacturer’s instructions.

R 408.30545 Masonry veneer wall covering.

Rule 545. figures ~~R703.7, R703.7.2.1, and R703.7.2.2~~**R703.8, R703.8.2.1, and R703.8.2.2**, of the code are amended to read as follows:



FOR SI: 1 INCH = 25.4 mm

FIGURE 8 703.8
MASONRY VENEER WALL DETAILS
(CONTINUED)

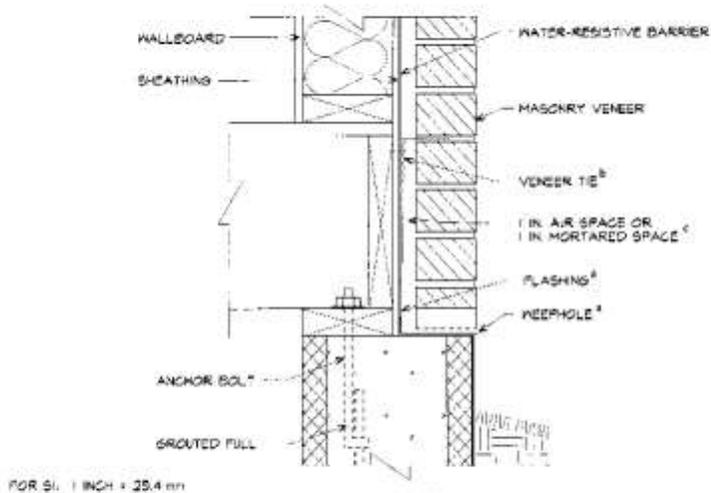


FIGURE R 703.8
MASONRY VENEER WALL DETAILS
(CONTINUED)

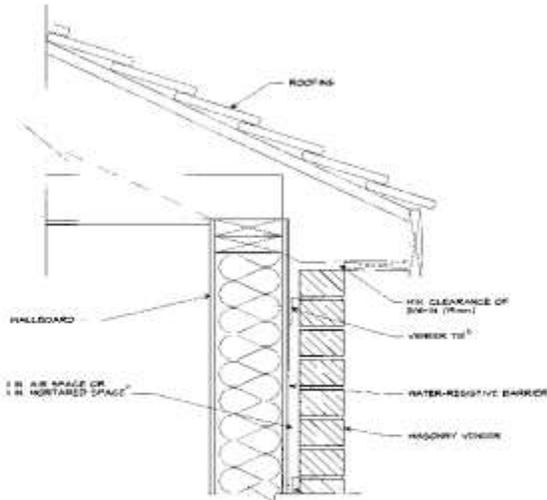


FIGURE R 703.8 - continued
MASONRY VENEER WALL DETAILS

- FOR SI: 1 EACH x 25.4 mm
- 1 SEE SECTIONS R103.7.5, R103.7.6 AND R103.9
 - 2 SEE SECTIONS R103.2 AND R103.14
 - 3 SEE SECTIONS R103.14.2 AND R103.14.3
 - 4 SEE SECTION R103.13

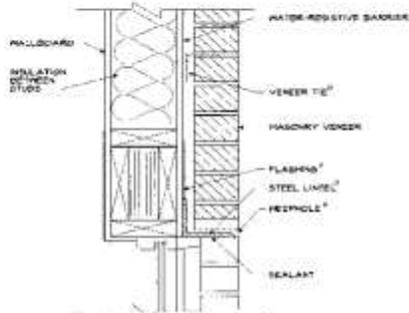
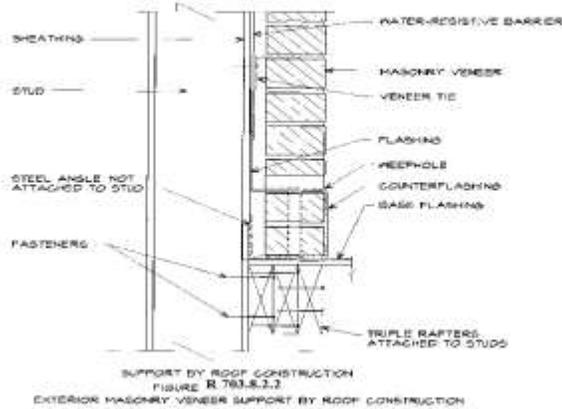
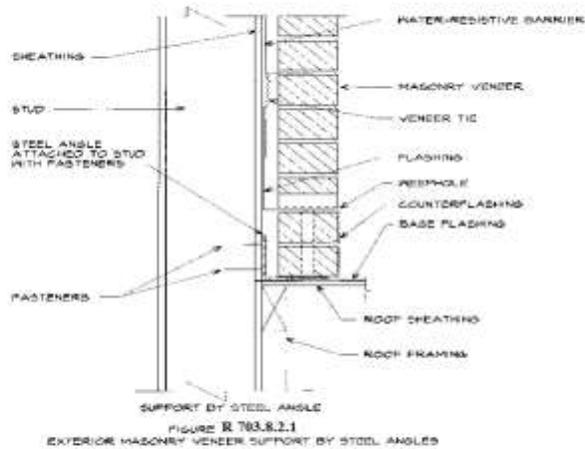


FIGURE R 703.8 - continued
MASONRY VENEER WALL DETAILS

- FOR SI: 1 EACH x 25.4 mm
- 1 SEE SECTIONS R103.7.5, R103.7.6 AND R103.9
 - 2 SEE SECTIONS R103.2 AND R103.14
 - 3 SEE SECTIONS R103.14.2 AND R103.14.3
 - 4 SEE SECTION R103.13



R 408.30545a Masonry heater clearance.

Rule 545a. Section R1002.5 of the code is amended to read as follows:

R1002.5. Masonry heater clearance. ~~Combustible materials shall not be placed within 36 inches (914 mm) of the outside surface of a masonry heater in accordance with NFPA 211-2006 chapter 12 § 12.6 (clearances for solid-fuel-burning appliances), and the required space between the heater and combustible material shall be fully vented to permit the free flow of air around all heater surfaces.~~ **Combustible materials shall not be placed within 36 inches (914 mm) of the outside surface of a masonry heater unless installed in accordance with NFPA 211, and the required space**

between the heater and combustible material shall be fully vented to permit the free flow of air around all heater surfaces.

Exceptions:

1. When the masonry heater wall is at least 8 inches (203 mm) thick of solid masonry and the wall of the heat exchange channels is at least 5 inches (127 mm) thick of solid masonry, combustible materials shall not be placed within 4 inches (102 mm) of the outside surface of a masonry heater. A clearance of at least 8 inches (203 mm) shall be provided between the gas-tight capping slab of the heater and a combustible ceiling.
2. Masonry heaters listed and labeled in accordance with UL 1482 may be installed in accordance with the listing specifications and the manufacturer's written instructions.

R 408.30546 Smoke alarm locations for existing buildings.

Rule 546. Sections ~~R314.5 and R314.6~~ **R314.2.2, R314.3, R314.3.2, and R314.3.3, R314.4, are amended** are added to the code to read as follows: **R314.2.2. Alterations, repairs, and additions. When alterations, repairs, or additions requiring a permit occur, or when 1 or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.**

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition or replacement of windows or doors, or the addition of a porch or deck, are exempt from the requirements of this section.
2. Installations, alteration, or repairs of electrical, plumbing, or mechanical systems are exempt from the requirements of this section.

R314.3. Location. Smoke alarms shall be installed in the following locations:

1. In each sleeping room or in the immediate vicinity of the sleeping room.
 2. On each additional story of the dwelling, including basements and habitable attics and not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than ~~one~~ 1 full story below the upper level.
- ~~R314.5~~ **R314.3.2. Smoke alarm locations in existing buildings constructed before November 6, 1974, not undergoing an alteration, addition, or change in occupancy requiring a building permit, shall be installed in the following locations in each dwelling unit or sleeping unit: Within each dwelling unit or sleeping unit, a single station smoke alarm shall be installed in the following locations:**

- (1) In each sleeping room or **immediate vicinity of the sleeping room.** ~~each area directly outside the sleeping room.~~
- (2) On each floor level including the basement level.

For sleeping units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than 1 full story below the upper level.

~~R314.6~~ **R314.3.3. Equipment requirements. The required equipment for smoke alarms required by R314.3.2 shall consist of the following:**

- (1) Installation. Smoke alarm devices shall be listed and installed in accordance with the manufacturer's installation requirements, the provisions of the code and the provisions of NFPA 72 as listed in chapter 44.
- (2) Power Source. The equipment shall be operable by power from 1 of the following primary sources:

(a) The building wiring provided that such wiring is served from a commercial source and **the smoke alarm** is equipped with a battery backup. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

(b) A **battery operated smoke alarm**, ~~non-rechargeable battery that is capable of operating the smoke alarm in the normal condition for a life of 5 years.~~

(c) A rechargeable battery **operated smoke alarm**, ~~with proper charging, able to power the alarm for a life of 5 years and~~ shall be automatically recharged by an AC circuit of the commercial light and power source.

(d) A household use alarm system with battery backup listed and approved in accordance with the household fire warning equipment provisions of NFPA 72, as referenced in Section ~~R314.4~~**R314.1** of the code.

(3) Audible alarm notification. The activation of the alarm signal shall produce a sound that is audible in all occupiable dwelling areas.

(4) Testing and maintenance. The owner of a dwelling unit, in which required or optional fire detection or fire protection systems equipment is installed, shall be responsible for the proper operation, testing, and maintenance of the equipment in accordance with the manufacturer's instructions included with the equipment. The occupant of rental dwelling units shall be responsible for the periodic operational testing and periodic cleaning of the installed equipment within the rental unit in accordance with the testing instructions provided in the manufacturer's instructions for the equipment. If the system fails, breaks, or is out of service, it shall be repaired and functional within 30 days.

Exception: Smoke alarms and devices installed in buildings constructed before November 6, 1974, where an installation was approved by the appropriate enforcing agency under regulations in effect at the time of the installation shall be considered to comply with the provisions of the code.

~~R314.~~R314.4. Interconnection. Where more than 1 smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R314.3, the alarm devices shall be interconnected in such a manner that the actuation of 1 alarm will activate all of the alarms in the individual unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of 1 alarm.

Exception: Interconnection of smoke alarms in existing areas shall not be required.

R 408.30547. ~~Barrier requirements~~**Rescinded.**

~~Rule 547. Section AG105.5 of the code is amended to read as follows.——~~

~~Section AG105.5. Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in section AG107 of the code, shall be exempt from the provisions of sections AG105.2, AG105.3, and AG105.4 of the code.~~

R 408.30547a Radon Control Methods.

Rule 547a. Figure AF101 and table AF101 are amended to read as follows:

Figure AF101. EPA map of radon zones.

map. More detailed information can be obtained from state-specific booklets (EPA-402-R-93-021 through 070) available through state radon offices or from EPA regional offices.

**Figure AF101
EPA Map of Radon Zones**

**Table AF101
High Radon-Potential (Zone 1) Counties^a
Michigan Counties**

**Branch
Calhoun
Cass
Hillsdale
Jackson
Kalamazoo
Lenawee
St. Joseph
Washtenaw**

a. The EPA recommends that this county listing be supplemented with other available state and local data to further understand the radon potential of a zone 1 area.

R 408.30547b Chimneys.

R547b. Sections R1003.9.1, R1005.4, Figure R1001.1, are amended and Figures R1003.9.1(1) and R1003.9.1(2) are added to read as follows:

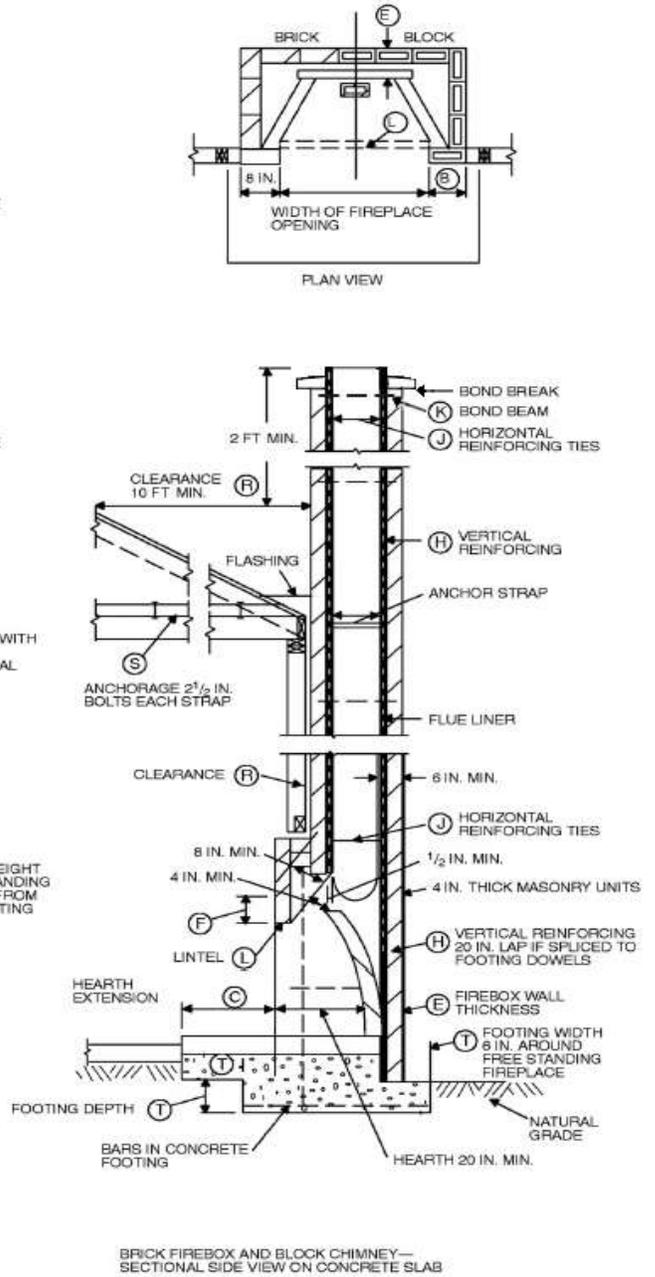
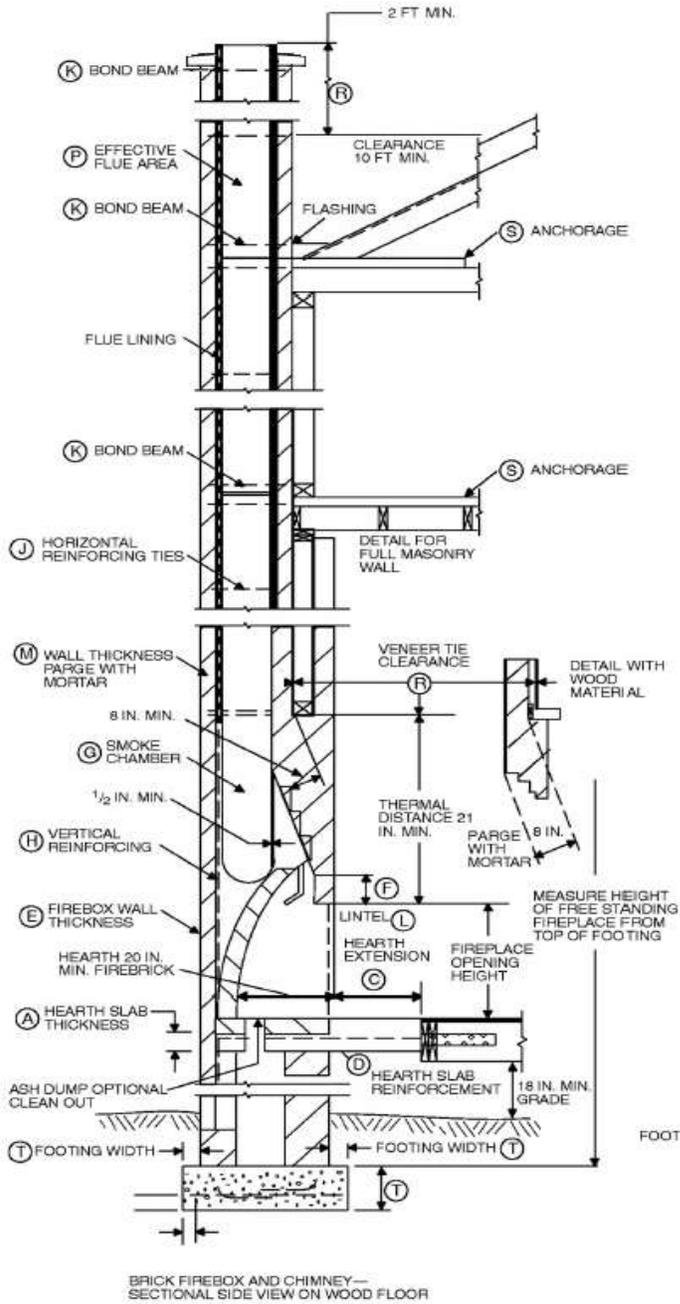
R1003.9.1. Chimney caps. Masonry chimneys shall have a concrete, metal, or stone cap sloped a minimum of 10 degrees to shed water, a drip edge or slot and shall be flashed in accordance with figure R1003.9.1(1). The joint space between the flue liner and the cap shall be filled with compressible filler and caulked with a suitable sealant to allow for expansion and contraction of the materials. All vertical joints in a chimney cap shall be caulked with a suitable sealant.

The cap shall be a minimum of 2" (51 mm) thick at the outer edge and overhang the outer wall of the chimney by a minimum of 2" (51 mm). The drip slot shall be located not less than 1-1/2" (38 mm) from the outer surface of the chimney. A bond break shall be installed between the concrete cap and the chimney masonry.

Metal caps shall lap down the chimney wall a minimum of 4" (102 mm) and be sealed with a suitable sealant.

Joint sealants shall meet ASTM C 920, type S or M, grade NS, class 25 and be installed in accordance with the manufacturer's installation instructions.

R1005.4. Factory-built chimneys. Chimneys for use with factory-built fireplaces shall comply with the requirements of UL 127. The metal chase cover shall be sloped a minimum of 10° to shed water. Metal chase cover shall lap down the chimney wall a minimum of 4" (102 mm) and be sealed with a suitable sealant. Exterior wall claddings shall be applied and flashed in accordance with Section R703 and manufacturer's installation instructions.



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Figure R1001.1

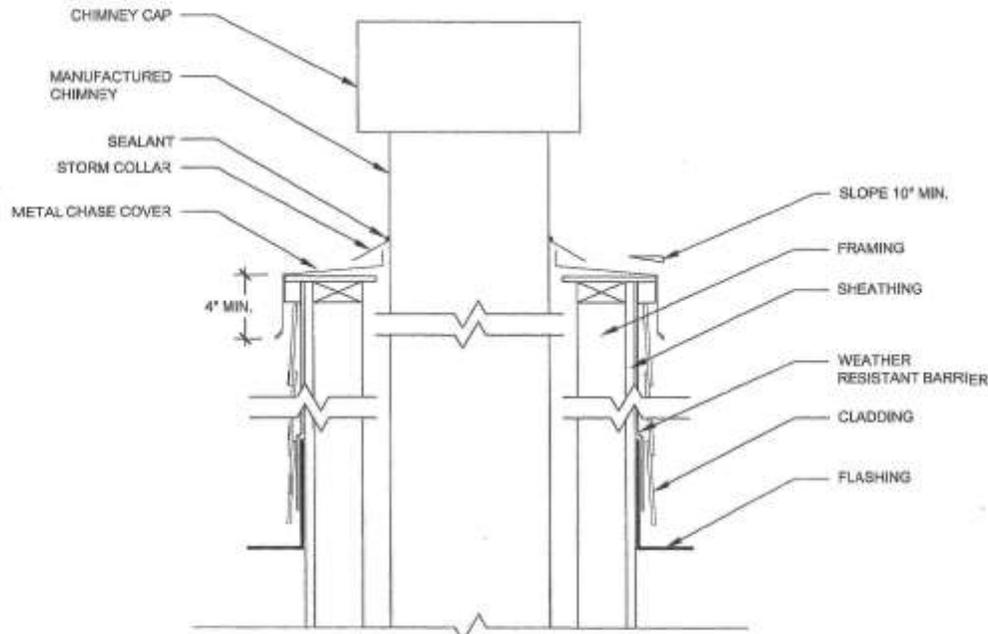


FIGURE R1003.9.1 (2)

R408.30547c General.

Rule 547c. Sections N1101.3.1, N1101.7, N1101.10, N1101.12.3, N1101.16, tables N1101.10, and N1101.10.2(2) are amended and figure N1101.10a of the code is added to read as follows:

N1101.3.1 (R101.4.3). Additions, alterations, renovations, or repairs. Additions, alterations, renovations, or repairs to an existing building, building system, or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations, or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Exception: The following are exempt provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Existing ceiling, wall, or floor cavities exposed during construction provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall, or floor cavity is not exposed.
5. Reroofing where the roof is part of the thermal envelope, and where neither the roof sheathing nor the roof insulation is exposed.
6. Reroofing where the roof is not part of the thermal envelope.

7. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a conditioned space from the exterior shall not be removed.

8. Alterations that replace less than 50% of the luminaries in a space, provided that such alterations do not increase the installed interior lighting power.

9. Alterations that replace only the bulb and ballast within the existing luminaries in a space provided that the alteration does not increase the installed interior lighting power.

N1101.7 (R102.1.1). Above code programs. The state construction code commission may evaluate and approve a national, state, or local energy efficiency program to exceed the energy efficiency required by this code. Buildings approved in writing by such an energy efficiency program, such as ICC 700-2012 “silver” or energy star version 3 (rev. 07), shall be considered in compliance with this code. The requirements identified as “mandatory” in chapter 4 shall be met.

N1101.10 (R301.1). Climate zones. Climate zones from figures 301.1, 301.1a or table 301.1 shall be used in determining the applicable requirements of this code.

N1101.12.3. Fenestration product rating. U-factors of fenestration products (windows, doors, and skylights) shall be determined in accordance with NFRC 100 by an accredited, independent laboratory, and labeled and certified by the manufacturer. Products lacking such a labeled U-factor shall be assigned a default U-factor from table N1101.12.3(1) or N1101.12.3(2).

Exception: Computer simulations by independent NFRC certified laboratories or approval under section 21 of 1972 PA 230, MCL 125.1521 is considered in compliance with this section.

N1101.16 (R401.3). Certificate (mandatory). A permanent certificate shall be posted on or in the electrical distribution panel, and shall meet all of the following:

(a) Be affixed or attached so it does not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels.

(b) Be completed by the builder or registered design professional.

(c) List the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and/or floor) and ducts outside conditioned spaces and U-factors for fenestration. If there is more than 1 value for each component, then the certificate shall list the value covering the largest area.

(d) List the types and efficiencies of heating, cooling, and service water heating equipment.

(e) If a gas-fired unvented room heater, electric furnace, or baseboard electric heater is installed in the residence, then the certificate shall list “gas-fired unvented room heater,” as appropriate. An efficiency shall not be listed for gas-fired unvented room heaters, electric furnaces, or electric baseboard heaters.

**Table N1101.10
Climate Zones by County**

<i>Zones</i>		
5A	6A	7
Allegan	Alcona	Baraga
Barry	Alger	Chippewa
Bay	Alpena	Gogebic
Berrien	Antrim	Houghton
Branch	Arenac	Iron
Calhoun	Benzie	Keweenaw

Cass	Charlevoix	Luce
Clinton	Cheboygan	Mackinac
Eaton	Clare	Ontonagon
Genesee	Crawford	Schoolcraft
Gratiot	Delta	
Hillsdale	Dickinson	
Ingham	Emmet	
Ionia	Gladwin	
Jackson	Grand Traverse	
Kalamazoo	Huron	
Kent	Iosco	
Lapeer	Isabella	
Lenawee	Kalkaska	
Livingston	Lake	
Macomb	Leelanau	
Midland	Manistee	
Monroe	Marquette	
Montcalm	Mason	
Muskegon	Mecosta	
Oakland	Menominee	
Ottawa	Missaukee	
Saginaw	Montmorency	
Shiawassee	Newaygo	
St. Clair	Oceana	
St. Joseph	Ogemaw	
Tuscola	Osceola	
Van Buren	Oscoda	
Washtenaw	Otsego	
Wayne	Presque Isle	
	Roscommon	
	Sanilac	
	Wexford	

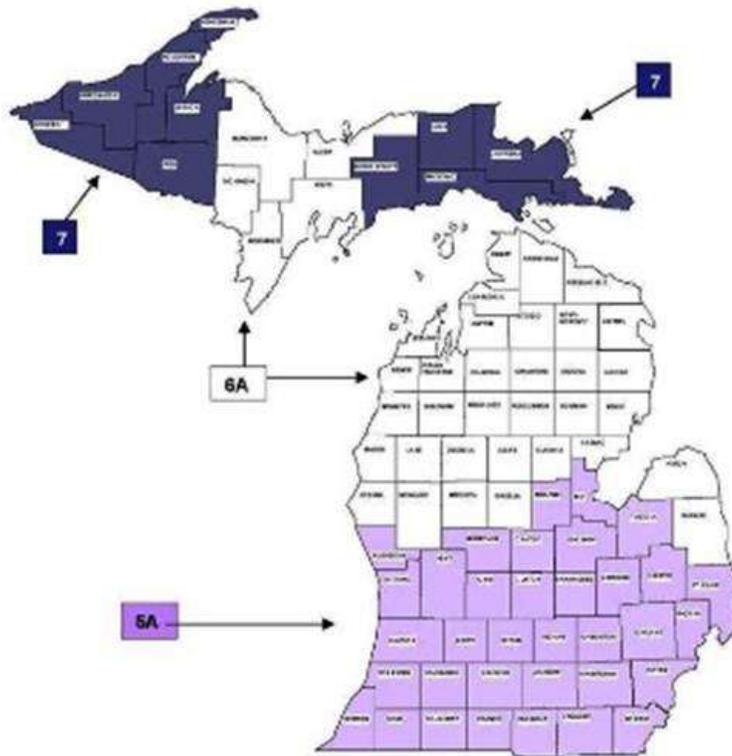
Key: A – Moist. Absence of moisture designation indicates moisture regime is irrelevant.

**Table N1101.10.2(2)
Climate Zone Definitions**

Zone Number	Thermal Criteria	
	IP Units	SI Units
5A	5400 < HDD65°F ≤ 7200	3000 < HDD18°F ≤ 4000
6A	7200 < HDD65°F ≤ 9000	4000 < HDD18°F ≤ 5000
7	9000 < HDD65°F ≤ 12600	5000 < HDD18°F ≤ 7000

For SI: °C = [(°F)-32]/1.8

**FIGURE N1101.10a
CLIMATE ZONES**



R408.30547d Building thermal envelope.

Rule 547d. Sections N1102.2.6, N1102.2.12, N1102.3.3, N1102.3.6, N1102.4, N1102.4.1.1, N1102.4.1.2, N1102.4.2, N1102.4.3, N1102.4.4, tables N1102.1.1, N1102.1.3, and N1102.4.1.1 of the code are amended to read as follows:

N1102.2.6 (R402.2.6). Steel-frame ceilings, walls, and floors. Steel-frame ceilings, walls, and floors shall meet the insulation requirements of table N1102.2.6 or shall meet the U-factor requirements in table N1102.1.3. The calculation of the U-factor for a steel-frame envelope assembly shall use a series-parallel path calculation method.

N1102.2.12 Thermally isolated sunroom insulation. The minimum ceiling insulation R-values shall be R-24 in zones 5 to 7. The minimum wall R-value shall be R-13 in all zones. New wall or walls separating a sunroom from conditioned space shall meet the building thermal envelope requirements.

N1102.3.3 (R402.3.3). Glazed fenestration exemption. Up to 15 square feet (1.4m²) of glazed fenestration per dwelling unit may be exempt from U-factor requirements in section N1102.1.1. This exemption shall not apply to the U-factor alternative approach in section N1102.1.1 and the total UA alternative in section N1102.1.4.

N1102.3.6 (R402.3.6). Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor in table N1102.1.3. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor in table N1102.1.1.

N1102.4 (R402.4). Air leakage. The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of sections N1102.4.1 through N1102.4.4.

N1102.4.1 (R402.4.1). Building thermal envelope. The building thermal envelope shall comply with sections N1102.4.1.1 and N1102.4.1.2.

N1102.4.1.1 (R402.4.1.1). Installation (mandatory). The components of the building thermal envelope as listed in table N1102.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in table N1102.4.1.1, as applicable to the method of construction. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

N1102.4.1.2 (R402.4.1.2). Testing (prescriptive). The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 4 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2" w.g. (50 pascals). Where required by the code official, testing shall be conducted by a certified independent third party. Certification programs shall be approved by the state construction code commission. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

during testing all of the following apply:

1. Exterior windows and doors, fireplace, and stove doors shall be closed, but not sealed, beyond the intended weather stripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft, and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

N1102.4.2 (R402.4.2). Fireplaces (mandatory). New wood-burning masonry fireplaces shall have tight-fitting flue dampers and outdoor combustion air.

N1102.4.3 (R402.4.3). Fenestration air leakage (mandatory). Windows, skylights, and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m²), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m²), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights, and doors.

N1102.4.4 (R402.4.4). Recessed lighting (mandatory). Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

TABLE N1102.1.1 (R402.1.1)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a

Climate Zone	Fenestration U-Factor ^b	Skylight ^b U-Factor	Ceiling R-Value	Wood Frame Wall R-Value	Mass Wall R-Value ^g	Floor R-Value	Basement ^c Wall R-Value	Slab ^d R-Value & Depth	Crawl Space ^c Wall R-Value
5A	0.32	0.55	38	20 or 13 + 5 ^f	13/17	30 ^e	10/13	10, 2 ft	15/19
6A	0.32	0.55	49	20 or 13 + 5 ^f	15/20	30 ^e	15/19	10, 4 ft	15/19
7	0.32	0.55	49	20 or 13 + 5 ^f	19/21	38 ^e	15/19	10, 4 ft	15/19

- a. R-values are minimums. U-factors are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-values specified in the table.
- b. The fenestration U-factor column excludes skylights.
- c. “15/19” means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. “15/19” may be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. “10/13” means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.
- d. R-5 shall be added to the required slab edge R-values for heated slabs.
- e. Or insulation sufficient to fill the framing cavity, R-19 minimum.
- f. First value is cavity insulation, second is continuous insulation or insulated siding, so “13 + 5” means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. If structural sheathing covers 40% or less of the exterior, continuous insulation R-value may be reduced by no more than R-3 in the locations where structural sheathing is used – to maintain a consistent total sheathing thickness.
- g. The second R-value applies when more than 1/2 the insulation is on the interior of the mass wall.

TABLE N1102.1.3 (R402.1.3)
EQUIVALENT U-FACTORS^a

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass Wall U-Factor ^b	Floor U-Factor	Basement Wall U-Factor	Crawl Space Wall U-Factor
5A	0.32	0.55	0.030	0.057	0.082	0.033	0.059	0.055
6A	0.32	0.55	0.026	0.057	0.060	0.033	0.050	0.055
7	0.32	0.55	0.026	0.057	0.057	0.028	0.050	0.055

- a. Nonfenestration U-factors shall be obtained from measurement, calculation, or an approved source.
- b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.065 in zone 5 and marine 4, and 0.057 in zones 6 and 7.

**TABLE N1102.4.1.1 (R402.4.1.1)
AIR BARRIER AND INSULATION INSTALLATION**

COMPONENT	CRITERIA^a
Air barrier and thermal barrier	A continuous air barrier shall be installed in the building envelope. Exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed. Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed. Access openings, drop down stair, or knee wall doors to unconditioned attic spaces shall be sealed.
Walls	Corners and headers shall be insulated and the junction of the foundation and sill plate shall be sealed. The junction of the top plate and top of exterior walls shall be sealed. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier. Knee walls shall be sealed.
Windows, skylights, and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.
Rim joists	Rim joists shall be insulated and include the air barrier.
Floors (including above-garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.
Crawl space walls	Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls. Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.
Narrow cavities	Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be

	air tight, IC rated, and sealed to the drywall.
Plumbing and wiring	Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.
Shower/tub on exterior wall	Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate the building thermal envelope shall be sealed to the subfloor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls.

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

R408.30547e Simulated performance alternative.

Rule 547e. Table N1105.5.2(1) [R405.5.2(1)] of the code is amended to read as follows:

**TABLE N1105.5.2(1) [R405.5.2(1)]
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS**

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Above-grade walls	Type: mass wall if proposed wall is mass; otherwise wood frame. Gross area: same as proposed U-factor: from Table N1102.1.3 Solar absorptance = 0.75 Remittance = 0.90	As proposed As proposed As proposed As proposed As proposed
Basement and crawl space walls	Type: same as proposed Gross area: same as proposed U-factor: from Table N1102.1.3, with insulation layer on interior side of walls.	As proposed As proposed As proposed
Above-grade floors	Type: wood frame Gross area: same as proposed U-factor: from Table N1102.1.4	As proposed As proposed As proposed
Ceilings	Type: wood frame Gross area: same as proposed U-factor: from Table N1102.1.4	As proposed As proposed As proposed

Roofs	Type: composition shingle on wood sheathing Gross area: same as proposed Solar absorptance = 0.75 Emittance = 0.90	As proposed As proposed As proposed As proposed
Attics	Type: vented with aperture = 1 ft ² per 300 ft ² ceiling area	As proposed
Foundations	Type: same as proposed foundation wall area above and below grade and soil. Characteristics: same as proposed	As proposed As proposed
Doors	Area: 40 ft ² Orientation: North U-factor: same as fenestration from Table N1102.1.3.	As proposed As proposed As proposed
Glazing	Total ^b = (a) The proposed glazing area: where proposed glazing area is less than 15% of the conditioned floor area. (b) 15% of the conditioned floor area; where the proposed glazing area is 15% or more of the conditioned floor area. Orientation: equally distributed to four cardinal compass orientations (N, E, S & W). U-factor: from Table N1102.1.4 SHGC: From Table N1102.1.2 except that for climates with no requirement (NR) SHGC = 0.40 shall be used. Interior shade fraction: 0.92-(0.21 x SHGC for the standard reference design) External shading: none	As proposed As proposed As proposed 0.92-(0.21 x SHGC as proposed) As proposed
Skylights	None	As proposed
Thermally isolated sunrooms	None	As proposed
Air exchange rate	Air leakage rate of 4 air changes per hour at a pressure of 0.2 inches w.g. (50 Pa). The mechanical ventilation rate shall be in addition to the air leakage rate and the same as in the proposed design, but no greater than $0.01 \times \text{CFA} + 7.5 \times \text{N}_{\text{br}} + 1$ where: CFA = conditioned floor area N _{br} = number of bedrooms	The measured air exchange rate ^c . The mechanical ventilation rate ^d shall be in addition to the air leakage rate and shall be as proposed.

	Energy recovery shall not be assumed for mechanical ventilation.	
Internal gains	IGain = 17,900 + 23.8 x CFA + 4104 x N_{br} (Btu/day per dwelling unit)	Same as standard reference design.
Internal mass	An internal mass for furniture and contents of 8 pounds per square foot of floor area.	Same as standard reference design, plus any additional mass specifically designed as a thermal storage element^c but not integral to the building envelope or structure.
Structural mass	For masonry floor slabs, 80% of floor area covered by R-2 carpet and pad, and 20% of floor directly exposed to room air. For Masonry basement walls, as proposed, but with insulation required by Table R402.1.4 located on the interior side of the walls. For other walls, for ceilings, floors, and interior walls, wood frame construction.	As proposed As proposed As proposed
Heating systems^{f,g}	As proposed for other than electric heating without a heat pump. Where the proposed design utilizes electric heating without a heat pump the standard reference design shall be an air source heat pump meeting the requirements of the Michigan energy code-commercial provisions. Capacity: sized in accordance with Section N1103.7.	As proposed
Cooling systems^{f,h}	As proposed Capacity: sized in accordance with Section N1103.7.	As proposed
Service water heating^{f,g,h,i}	As proposed Use: same as proposed design	As proposed
Thermal distribution systems	Untested distribution systems: DSE = 0.88 Tested ducts: Leakage rate to outside conditioned space as specified Section N1103.3.2 Tested duct location: Unconditioned attic Tested duct insulation: in accordance with Section N1103.3.1	Untested distribution systems: DSE from Table N1105.5.2(2) Tested ducts: Tested leakage rate to outside conditioned space Duct location: As proposed Duct insulation: As proposed
Thermostat	Type: Manual, cooling temperature setpoint = 75°F;	

	Heating temperature setpoint = 72°F	Same as standard reference
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For SI: 1 square foot = 0.93 m², 1 British thermal unit = 1055 J, 1 pound per square foot = 4.88 kg/m², 1 gallon (U.S.) = 3.785 L, °C = (°F-32)/1.8, 1 degree = 0.79 rad, 1 inch water gauge = 1250 Pa.

a. Glazing shall be defined as sunlight-transmitting fenestration, including the area of sash, curbing, or other framing elements, that enclose conditioned space. Glazing includes the area of sunlight-transmitting fenestration assemblies in walls bounding conditioned basements. For doors where the sunlight-transmitting opening is less than 50% of the door area, the glazing area is the sunlight transmitting opening area. For all other doors, the glazing area is the rough frame opening area for the door including the door and the frame.

b. For residences with conditioned basements, R-2 and R-4 residences and townhouses, the following formula shall be used to determine glazing area:

$$AF = A_s \times FA \times F$$

where:

AF = Total glazing area.

A_s = Standard reference design total glazing area.

FA = (Above-grade thermal boundary gross wall area)/(above-grade boundary wall area + 0.5 x below-grade boundary wall area).

F = (Above-grade thermal boundary wall area)/(above-grade thermal boundary wall area + common wall area) or 0.56, whichever is greater.

and where:

Thermal boundary wall is any wall that separates conditioned space from unconditioned space from unconditioned space or ambient conditions.

Above-grade thermal boundary wall is any thermal boundary wall component not in contact with soil.

Below-grade boundary wall is any thermal boundary wall in soil contact.

Common wall area is the area of walls shared with an adjoining dwelling unit.

L and CFA are in the same units.

c. Where required by the code official, testing shall be conducted by a certified independent third party. Hourly calculations as specified in the ASHRAE handbook of fundamentals, or the equivalent shall be used to determine the energy loads resulting from infiltration.

d. The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with equation 43 of 2001 ASHRAE handbook of fundamentals, page 26.24 and the “whole-house ventilation” provisions of 2001 ASHRAE handbook of fundamentals, page 26.19 for intermittent mechanical ventilation.

e. Thermal storage element shall mean a component not part of the floors, walls, or ceilings that is part of a passive solar system, and that provides thermal storage such as enclosed water columns, rock beds, or phase-change containers. A thermal storage element must be in the same room as fenestration that faces within 15 degrees (0.26 rad) of true south, or must be connected to such a room with pipes or ducts that allow the element to be actively charged.

- f. For a proposed design with multiple heating, cooling, or water heating systems using different fuel types, the applicable standard reference design system capacities and fuel types shall be weighted in accordance with their respective loads as calculated by accepted engineering practice for each equipment and fuel type present.**
- g. For a proposed design without a proposed heating system, a heating system with the prevailing federal minimum efficiency shall be assumed for both the standard reference and proposed design.**
- h. For a proposed design home without a proposed cooling system, an electric air conditioner with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and the proposed design.**
- i. For a proposed design with a non-storage-type water heater, a 40-gallon storage-type water heater with the prevailing federal minimum energy factor for the same fuel as the predominant heating fuel type shall be assumed. For the case of a proposed design without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency for the same fuel as the predominant heating fuel type shall be assumed for both the proposed design and standard reference design.**

R408.30547f Systems.

Rule 547e. Sections N1103.2.1, N1103.2.2, and N1103.4.2 of the code are amended to read as follows:

N1103.2.1. Insulation (prescriptive). All portions of the air distribution system shall be installed in accordance with Section M1601 and be insulated to an installed R-6 when system components are located within the building but outside the conditioned space, and R-8 when located outside to the building thermal envelope. When located within a building envelope assembly, at least R-8 shall be applied between the duct and that portion of the assembly farthest from conditioned space.

Exception: Portions of the air distribution system within appliances or equipment.

N1103.2.2. Sealing (mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the international mechanical code or international residential code, as applicable.

Exceptions:

1. Air-impermeable spray foam products may be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, 3 screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches (51 mm) of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct tightness shall be verified by either of the following:

1. **Postconstruction test:** Total leakage to the outside of a conditioned space or total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches (2.54 mm) w. g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

2. **Rough-in test:** Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches (2.54 mm) w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.

N1103.4.2. Hot water pipe insulation (prescriptive). Insulation for hot water pipe with a minimum thermal resistance (R-value) of R-3 shall be applied to the following:

1. Piping larger than 3/4 inch nominal diameter.
2. Piping serving more than 1 dwelling unit.
3. Piping located outside the conditioned space.
4. Piping from the water heater to a distribution manifold.
5. Piping located under a floor slab.
6. Buried piping.
7. Supply and return piping in recirculation systems other than demand recirculation systems.

R408.30547g Energy rating index compliance alternative.

Rule 547f. Sections N1106.1, N1106.2, N1106.3, N1106.3.1, N1106.4, N1106.5, N1106.6, N1106.6.1, N1106.6.2, N1106.6.3, N1106.7, N1106.7.1, N1106.7.2, N1106.7.3, and table N1106.4 of the code are added to read as follows:

N1106.1 (R406.1). Scope. This section establishes criteria for compliance using an energy rating index (ERI) analysis.

N1106.2 (R406.2). Mandatory requirements. Compliance with this section requires that the mandatory provisions identified in sections N1101.2 and N1103.4.2 be met. The building thermal envelope shall be greater than or equal to levels of efficiency and solar heat gain coefficient in table 402.1.2 or 402.1.4 of the 2009 international energy conservation code.

Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

N1106.3 (R406.3). Energy rating index. The energy rating index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the ERI reference design has an index value of 100 and a residential building that uses no net purchased energy has an index value of 0. Each integer value on the scale shall represent a 1% change in the total energy use of the rated design relative to the total energy use of the ERI reference design. The ERI shall consider all energy used in the residential building.

N1106.3.1 (R406.3.1). ERI reference design. The ERI reference design shall be configured such that it meets the minimum requirements of the 2006 international energy conservation code prescriptive requirements.

The proposed residential building shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the ERI reference design.

N1106.4 (R406.4). ERI-based compliance. Compliance based on an ERI analysis requires that the rated design be shown to have an ERI less than or equal to the appropriate value listed in table N1106.4 when compared to the ERI reference design.

N1106.5 (R406.5). Verification by approved agency. Verification of compliance with section N1106 shall be completed by an approved third party.

N1106.6 (R406.6). Documentation. Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with sections N1106.6.1 through N1106.6.3.

N1106.6.1 (R406.6.1). Compliance software tools. Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the code official.

N1106.6.2 (R406.6.2). Compliance report. Compliance software tools shall generate a report that documents that the ERI of the rated design complies with sections N1106.3 and N1106.4. The compliance documentation shall include all of the following information:

1. Address or other identification of the residential building.
2. An inspection checklist documenting the building component characteristics of the rated design. The inspection checklist shall show results for both the ERI reference design and the rated design, and shall document all inputs entered by the user necessary to reproduce the results.
3. Name of individual completing the compliance report.
4. Name and version of the compliance software tool.

Exception: Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the 4 (north, east, south and west) cardinal orientations.

N1106.6.3 (R406.6.3). Additional documentation. The code official may require the following documents:

1. Documentation of the building component characteristics of the ERI reference design.

2. A certification signed by the builder providing the building component characteristics of the rated design.

3. Documentation of the actual values used in the software calculations for the rated design.

N1106.7 (R406.7). Calculation software tools. Calculation software, where used, shall be in accordance with sections N1106.7.1 through N1106.7.3.

N1106.7.1 (R406.7.1). Minimum capabilities. Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in section N1106.3, and shall include the following capabilities:

1. Computer generation of the ERI reference design using only the input for the rated design.

The calculation procedure shall not allow the user to directly modify the building component characteristics of the ERI reference design.

2. Calculation of whole-building, as single zone, sizing for the heating and cooling equipment in the ERI reference design residence in accordance with section N1103.7.

3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating, and air-conditioning equipment based on climate and equipment sizing.

4. Printed code official inspection checklist listing each of the rated design component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.

N1106.7.2 (R406.7.2). Specific approval. Performance analysis tools meeting the applicable sections of section N1106 shall be approved. Tools are permitted to be approved based on meeting a specified threshold for a jurisdiction. The code official shall approve tools for a specified application or limited scope.

N1106.7 (R406.7.3). Input values. When calculations require input values not specified by sections N1102, N1103, N1104, and N1105, those input values shall be taken from an approved source.

**Table N1106.4 (R406.4)
Maximum Energy Rating Index**

Climate Zone	Energy Rating Index
1	52
2	52
3	51
4	54
5	55
6	54
7	53
8	53

NOTICE OF PUBLIC HEARING

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
BUREAU OF CONSTRUCTION CODES
NOTICE OF PUBLIC HEARING

Part. 5. Michigan Residential Code (ORR# 2013-022 LR)
Part 10. Michigan Energy Code (Residential) (ORR# 2013-095 LR)

The Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, will hold a public hearing on Thursday, May 28, 2015, at 9:00 a.m. in Conference Room 3, 2501 Woodlake Circle, Okemos, MI 48864. The Part 5. Michigan Residential Code and the Part 10. Michigan Energy Code (Residential) are proposed to be effective 120 days after filing with the Secretary of State.

The public hearing is being held to receive public comments on the proposed amendments to the administrative rules noted above. Testimony will be taken for each rule set in the order the rules are listed above. Individuals who are not present during testimony for a particular rule set will be provided an opportunity to testify after final testimony on the Part 10. Michigan Energy Code (Residential).

The proposed residential rules will adopt the 2015 International Residential Code and Chapter 11 of the 2015 Code is being amended to incorporate the Chapter 11 language already recommended by the Residential Code Review Committee, with amendments, deletions, and additions deemed necessary for use in Michigan. The hearing is being conducted by the Department under the authority of section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1, 2008-4, 2011-4, MCL 445.2011, 445.2025 and 445.2030.

The proposed Part 10. Energy (Residential) rules will adopt the 2015 International Energy Conservation Code with amendments, deletions, and additions deemed necessary for use in Michigan. The hearing is being conducted by the Department under the authority of section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1 and 2008-4, 2011-4, MCL 445.2011 and MCL 445.2025.

The proposed rules will be published in the May 15, 2015, *Michigan Register*. Copies of the proposed Michigan amendments to the Michigan Residential Code and the Part 10 Energy (Residential) Code may be obtained for a fee of \$5.00 for each rule set by submitting a check or money order made payable to the State of Michigan at the address below. You may download a free copy of the proposed amendments by visiting the Bureau's website at www.michigan.gov/bcc. The amendments are located under "What's New" on the front page of the website.

Oral or written comments may be presented in person at the hearing on May 28, 2015 or submitted in writing by mail, email, or facsimile no later than 5:00 p.m., May 28, 2015, to the Bureau's contact information below. If your presentation at the public hearing is in written form, please provide a copy to the Rules Analyst at the conclusion of your testimony at the hearing.

Department of Licensing and Regulatory Affairs
Bureau of Construction Codes
Office of Administrative Services
P.O. Box 30254
Lansing, MI 48909
Telephone (517) 241-6312
Facsimile (517) 241-9570
matsumotos@michigan.gov

The meeting site and parking are accessible. Individuals attending the meeting are requested to refrain from using heavily scented personal care products, in order to enhance accessibility for everyone. People with disabilities requiring additional services (such as materials in alternative format) in order to participate in the meeting should call Jessica Lightner at (517) 335-2972 (voice) at least 14 days prior to the hearing. LARA is an equal opportunity employer/program.

ADMINISTRATIVE RULES

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

CONSTRUCTION CODE

Proposed Draft April 24, 2015

Filed with the Secretary of State

These rules take effect 120 days after filed with the Secretary of State

(By authority conferred on the director of the department of ~~energy, labor, and economic growth~~ **licensing and regulatory affairs** by section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1 and 2008-~~204~~, **2011-4**, MCL 445.2011 and MCL 445.2025)

R 408.31059, R 408.31060, R 408.31063, R 408.31063a, R 408.31065, R 408.31066, R 408.31069, and R 408.31070 of the Michigan Administrative Code are amended, and R 408.31071 and R 408.31071a are added to the Code as follows:

PART 10

MICHIGAN ~~UNIFORM~~ ENERGY CODE

R 408.31059 Applicable code.

Rule 1059. The **residential** provisions of the international energy conservation code, ~~2009~~**2015** edition, except for sections ~~102.1.1~~, R107.2 to R107.5, R301.2, R301.3, R402.3.2, R501.1, ~~to R506.6.2~~ and ~~Tables~~**Table** R303.1.3(3), R502.1.2, R502.2(1), R502.2(2), R502.3, R502.4.4, R503.2.3(1), R503.2.3(2), R503.2.3(3), R503.2.3(4), R503.2.3(5), R503.2.3(6), R503.2.3(7), R503.2.8, R503.2.10.1(1), R503.2.10.1(2), R503.3.1(1), R503.3.1(2), R504.2, R505.5.2, R505.6.2(1), R505.6.2, R505.6.2(2), R506.5.1(1), R506.5.1(2), R506.5.1(3), R506.5.1(4), ~~and R506.6.1(5)~~ govern the energy efficiency for the design and construction of residential buildings and, with exceptions noted, the international energy conservation code is adopted by reference in these rules. All references to the international building code, international residential code, international energy conservation code, international electrical code, international existing building code, international mechanical code, and international plumbing code mean the Michigan building code, Michigan residential code, Michigan ~~uniform~~ energy code, Michigan electrical code, Michigan rehabilitation code for existing buildings, Michigan mechanical code, and Michigan plumbing code respectively. The Michigan ~~uniform~~ energy code is available for inspection or purchase at the Okemos office of the Michigan Department of ~~Energy, Labor and Economic Growth~~**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 ~~\$38.00~~ **\$46.00** or may be purchased from the International Code Council, 500 New Jersey Avenue, N.W., 6th Floor, Washington, D.C. 20001.

R 408.31060 Scope; requirements.

Rule 1060. Sections R101.1, ~~R401.2, R101.3, R101.4.3, and R101.4.4,~~ and **R102.1.1** of the code are amended to read as follows:

R101.1. Title. This code shall be known and cited as the “Michigan ~~Uniform~~ Energy Code.” It is referred to herein as “this code.”

R101.4.3. Additions, alterations, renovations, or repairs. ~~Additions, alterations, renovations, or repairs to an existing building, building system, or portion thereof, shall meet both of the following requirements:~~

~~–(1) Conform to the provisions of this code as they relate to new construction without requiring the unaltered portion or portions of the existing building or building system to comply with this code.~~

~~–(2) Not create an unsafe or hazardous condition or overload existing building systems.~~

~~An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.~~ **Additions,**

alterations, renovations, or repairs to an existing building, building system, or portion thereof, shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion or portions of the existing building or building system to comply with this code. Additions, alterations, renovations, or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Exception: The following need not comply provided the energy use of the building is not increased:

1. Storm windows installed over existing fenestration.
2. Glass only replacements in an existing sash and frame.
3. Existing ceiling, wall, or floor cavities exposed during construction provided that these cavities are filled with insulation.
4. Construction where the existing roof, wall, or floor cavity is not exposed.
5. Reroofing ~~for roofs where the roof is part of the thermal envelope and where neither the roof sheathing nor the roof insulation is exposed. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.~~

6. Reroofing where the roof is not part of the thermal envelope.

~~67.~~ Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule or revolving door, provided, however, that an existing vestibule that separates a conditioned space from the exterior shall not be removed.

~~78.~~ Alterations that replace less than 50% of the luminaires in a space, provided that such alterations do not increase the installed interior lighting power.

~~89.~~ Alterations that replace only the bulb and ballast within the existing luminaires in a space provided that the alteration does not increase the installed interior lighting power.

~~9. An existing detached 1 and 2 family dwelling, other than replacement fenestration as provided by section R402.3.6.~~

~~–10. A detached 1 and 2 family dwelling that is moved into or within a jurisdiction. A home manufactured pursuant to the Michigan premanufactured unit rules that is shipped for initial installation or initial assembly and installation on a building site shall not be considered a moved building.~~

~~101.4.4. Change in occupancy or use. Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code.~~

R102.1.1 Above code programs. The state construction code commission may evaluate and approve a national, state, or local energy efficiency program to exceed the energy efficiency required by this code. Buildings approved in writing by such an energy efficiency program, such as ICC 700-2012 “silver” or energy star version 3 (rev. 07), shall be considered in compliance with this code. The requirements identified as “mandatory” in chapter 4 shall be met.

R 408.31063 Insulation and fenestration criteria.

Rule 1063. Insulation and fenestration criteria. Table R402.1.1 of the code is amended to read as follows:

TABLE R 402.1.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT ^b U-FACTOR	CEILING R-Value	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ^g	FLOOR R-VALUE	BASEMENT ^c WALL R-VALUE	SLAB ^d R-VALUE AND DEPTH	CRAWL SPACE ^c WALL R-VALUE
5A	0.35 0.32	0.60 0.55	38	20 or 13 + 5 ^{ef}	13/17	30 ^{de}	10/13	10, 2ft	10/13 15/19
6A	0.35 0.32	0.60 0.55	49	20 or 13 + 5 ^{ef}	15/19 15/20	30 ^{de}	15/19	10, 4ft	10/13 15/19
7	0.35 0.32	0.60 0.55	49	20 20 or 13 + 5^f	19/21	38 ^{de}	15/19	10, 4ft	10/13 15/19

~~a. The fenestration U factor column excludes skylights.~~

~~b. The first R value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.~~

~~c. R-5 shall be added to the required slab edge R values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less, in zones 1-3 for heated slabs.~~

~~d. Or insulation sufficient to fill the framing cavity, R-19 minimum.~~

~~e. “13+5” means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.~~

~~f. The second R-value applies when more than half the insulation is on the interior.~~

a. R-values are minimums. U-factors are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-values specified in the table.

b. The fenestration U-factor column excludes skylights.

c. “15/19” means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. “15/19” may be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. “10/13” means R-10 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement wall.

d. R-5 shall be added to the required slab edge R-values for heated slabs.

e. Or insulation sufficient to fill the framing cavity, R-19 minimum.

f. First value is cavity insulation, second is continuous insulation or insulated siding, so “13 + 5” means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. If structural sheathing covers 40 % or less

of the exterior, continuous insulation R-value may be reduced by no more than R-3 in the locations where structural sheathing is used – to maintain a consistent total sheathing thickness.
 g. The second R-value applies when more than half the insulation is on the interior of the mass wall.

R 408.31063a Specific insulation requirements (prescriptive).

Rule 1063a Sections ~~R402.2.1~~ and **Section R402.2.11R402.2.12** of the code are amended to read as follows.

~~R402.2.1 Ceilings with attic spaces. When section R402.1.1 would require R-49 in the ceiling, R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves. This reduction shall not apply to the U-factor alternative approach in section R402.1.3 and the total UA alternative in section R402.1.4.~~

R402.2.11R402.2.12. Thermally isolated sunroom insulation. The minimum ceiling insulation R-values shall be R-24 in zones 5 to 7. The minimum wall R-value shall be R-13 in all zones. New wall or walls separating a sunroom from conditioned space shall meet the building thermal envelope requirements.

R 408.31065 Equivalent U-Factors.

Rule 1065. Section R402.1.4 and table R402.1.3 of the code are amended to read as follows:

Table R402.1.3
 Equivalent U-Factors^a

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass wall U-Factor ^b	Floor U-Factor	Basement Wall U-Factor ^d	Crawl Space Wall U-Factor ^e
5A	0.35 0.32	0.60 0.55	0.030	0.057	0.082	0.033	0.059	0.065 0.055
6A	0.35 0.32	0.60 0.55	0.026	0.057	0.060	0.033	0.050	0.065 0.055
7	0.35 0.32	0.60 0.55	0.026	0.057	0.057	0.026 0.028	0.050	0.065 0.055

a. Nonfenestration U-factors shall be obtained from measurement, calculation, or an approved source.

b. When more than half the insulation is on the interior, the mass wall U-factors shall be a maximum of 0.065 in zone 5 and marine 4, and 0.057 in zones 6 and 7.

~~b. When more than half the insulation is on the interior, the mass wall U factors shall be the same as the frame wall U-factor in Zones 5 to 7.~~

~~c. Basement wall U factor requirements shown in Table R402.1.3 include wall construction and interior air films, but exclude soil conductivity and exterior air films.~~

~~d. Foundation U-factor requirements shown in Table R402.1.3 include wall construction and interior air films, but exclude soil conductivity and exterior air films. U factors for determining code compliance in accordance with section R402.1.4 (total UA alternative) of section R405 (simulated performance alternative) shall be modified to include soil conductivity and exterior air films.~~

R402.1.4 Total UA alternative. If the total building thermal envelope UA (sum of U-factor times assembly area) is less than or equal to the total UA resulting from using the U-factors in Table R402.1.3 (multiplied by the same assembly area as in the proposed building), the building shall be considered in compliance with Table R402.1.1. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials.

R 408.31066 Systems

Rule 1066. Sections **R403.2.1**, **R403.2.2**, ~~R403.3~~, and ~~R403.4~~, and **R403.4.2** of the code are amended to read as follows:

R403.2.1. Insulation (prescriptive). All portions of the air distribution system shall be installed in accordance with section M1601 and be insulated to an installed R-6 when system components are located within the building but outside the conditioned space, and R-8 when located outside to the building. When located within a building envelope assembly, at least R-8 shall be applied between the duct and that portion of the assembly farthest from conditioned space.

Exception: Portions of the air distribution system within appliances or equipment.

~~R403.2.2. Sealing (mandatory). All ducts, air handlers, filter boxes, and building cavities used as ducts shall be sealed. Joints and seams shall comply with section M1601.4.1 of the Michigan residential code.~~

~~403.3. Mechanical system piping insulation (mandatory). Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.~~

~~Exceptions:~~

~~1. Factory installed piping within HVAC equipment tested and rated in accordance with a test procedure referenced by this code.~~

~~2. Runout piping not exceeding 4 feet (1219 mm) in length and 1 inch (25 mm) in diameter between the control valve and HVAC coil. Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the international mechanical code or international residential code, as applicable.~~

Exceptions:

1. Air-impermeable spray foam products may be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, 3 screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct tightness shall be verified by either of the following:

1. **Post construction test:** Total leakage to the outside of a conditioned space or total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w. g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

2. **Rough-in test:** Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m²) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm (85 L/min) per 100 square feet (9.29 m²) of conditioned floor area.

Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.

~~R403.4~~**R403.4.1.** Circulating hot water systems (mandatory). All circulating service hot water piping shall be insulated to at least R-2. Circulating hot water systems shall include an automatic

or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use.

Exceptions:

1. Factory-installed piping within HVAC equipment tested and rated in accordance with a test procedure referenced by this code.
2. Runout piping not exceeding 4 feet (1 219 mm) in length and 1 inch (25 mm) in diameter between the control valve and HVAC coil.

R403.4.2. Hot water pipe insulation (prescriptive). Insulation for hot water pipe with a minimum thermal resistance (R-value) of R-3 shall be applied to the following:

1. Piping larger than 3/4 inch (19.05 mm) nominal diameter.
2. Piping serving more than 1 dwelling unit.
3. Piping located outside the conditioned space.
4. Piping from the water heater to a distribution manifold.
5. Piping located under a floor slab.
6. Buried piping.
7. Supply and return piping in recirculation systems other than demand recirculation systems.

R 408.31069 ~~Recessed lighting~~ **Air leakage.**

Rule 1069. ~~Section~~ **Sections R402.4, R402.4.1, R402.4.1.1, R402.4.1.2, R402.4.2, R402.4.3, R402.4.4, R402.4.5, and Table R402.4.1.1** of the code ~~is~~ **are** amended to read as follows:

R402.4 Air leakage. The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.4.

R402.4.1. Building thermal envelope. The building thermal envelope shall comply with Sections R402.4.1.1 and R402.4.1.2.

R402.4.1.1. Installation (mandatory). The components of the building thermal envelope as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

R402.4.1.2. Testing (prescriptive). The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 4 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches (5.08 mm) w.g. (50 pascals). Where required by the code official, testing shall be conducted by a certified independent third party. Certification programs shall be approved by the state construction code commission. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

All of the following apply during testing:

1. Exterior windows, doors, and fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft, and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.

6. Supply and return registers, if installed at the time of the test, shall be fully open.

R402.4.2. Fireplaces (mandatory). New wood-burning masonry fireplaces shall have tight-fitting flue dampers and outdoor combustion air.

R402.4.3. Fenestration air leakage (mandatory). Windows, skylights, and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m²), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m²), when tested according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.

Exception: Site-built windows, skylights, and doors.

R402.4.4. Recessed lighting (mandatory). Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be IC-rated and labeled as having an air leakage rate not more than 2.0 cfm (0.944 L/s) when tested in accordance with ASTM E 283 at a 1.57 psf (75 Pa) pressure differential. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

R402.4.5 Recessed lighting. When installed in the building thermal envelope, recessed lighting fixtures shall meet 1 of the following requirements:

- ~~–(a) Type IC rated, manufactured with no penetrations between the inside of the recessed fixture and ceiling cavity and sealed or gasketed to prevent air leakage into the unconditioned space.~~
- ~~–(b) Type IC or non IC rated, installed inside a sealed box constructed from a minimum 0.5-inch-thick (12.7 mm) gypsum wallboard or constructed from a preformed polymeric vapor barrier, or other air-tight assembly manufactured for this purpose, while maintaining required clearances of not less than 0.5 inch (12.7 mm) from combustible material and not less than 3 inches (76 mm) from insulation material.~~
- ~~–I Type IC rated and admitting not more than 2.0 cubic feet per minute (cfm) (0.944 L/s) of air movement from the conditioned space to the ceiling cavity when tested in accordance with ASTM E 283. The lighting fixture shall be tested at 1.57 psi (75 Pa) pressure difference and shall be labeled.~~

**TABLE R402.4.1.1
AIR BARRIER AND INSULATION INSTALLATION**

COMPONENT	CRITERIA^a
Air barrier and thermal barrier	<p>A continuous air barrier shall be installed in the building envelope.</p> <p>Exterior thermal envelope contains a continuous air barrier.</p> <p>Breaks or joints in the air barrier shall be sealed.</p> <p>Air-permeable insulation shall not be used as a sealing material.</p>
Ceiling/attic	<p>The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier sealed.</p> <p>Access openings, drop down stair, or knee wall doors to unconditioned attic spaces shall be sealed.</p>
Walls	<p>Corners and headers shall be insulated and</p>

	<p>the junction of the foundation and sill plate shall be sealed.</p> <p>The junction of the top plate and top of exterior walls shall be sealed.</p> <p>Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.</p> <p>Knee walls shall be sealed.</p>
Windows, skylights and doors	<p>The space between window/door jambs and framing and skylights and framing shall be sealed.</p>
Rim joists	<p>Rim joists shall be insulated and include the air barrier.</p>
Floors (including above-garage, and cantilevered floors)	<p>Insulation shall be installed to maintain permanent contact with underside of subfloor decking.</p> <p>The air barrier shall be installed at any exposed edge of insulation.</p>
Crawl space walls	<p>Where provided in lieu of floor insulation, insulation shall be permanently attached to the crawlspace walls.</p> <p>Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.</p>
Shafts, penetrations	<p>Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.</p>
Narrow cavities	<p>Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity space.</p>
Garage separation	<p>Air sealing shall be provided between the garage and conditioned spaces.</p>
Recessed lighting	<p>Recessed light fixtures installed in the building thermal envelope shall be air tight, IC rated, and sealed to the drywall.</p>
Plumbing and wiring	<p>Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.</p>
Shower/tub on exterior wall	<p>Exterior walls adjacent to showers and tubs shall be insulated and the air barrier installed separating them from the showers and tubs.</p>

Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the subfloor or drywall.
Fireplace	An air barrier shall be installed on fireplace walls.

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

R 408.31070 Steel-frame ceilings, walls, and floors.

Rule 1070. Section R402.2.5R402.2.6 of the code are amended to read as follows:

R402.2.5R402.2.6. Steel-frame ceilings, walls, and floors. Steel-frame ceilings, walls, and floors shall meet the insulation requirements of table R402.2.5R402.2.6 or shall meet the U-factor requirements in table R402.1.3. The calculation of the U-factor for a steel-frame envelope assembly shall use a series-parallel path calculation method.

R408.31071 Simulated performance alternative.

Rule 1071. Table R405.5.2(1) of the code is amended to read as follows:

**TABLE R405.5.2(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS**

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Above-grade walls	Type: mass wall if proposed wall is mass; otherwise wood frame. Gross area: same as proposed U-factor: from Table 402.1.3 Solar absorptance = 0.75 Remittance = 0.90	As proposed As proposed As proposed As proposed
Basement and crawl space walls	Type: same as proposed Gross area: same as proposed U-factor: from Table R402.1.3, with insulation layer on interior side of walls.	As proposed As proposed As proposed
Above-grade floors	Type: wood frame Gross area: same as proposed U-factor: from Table R402.1.3	As proposed As proposed As proposed
Ceilings	Type: wood frame Gross area: same as proposed U-factor: from Table R402.1.3	As proposed As proposed As proposed
Roofs	Type: composition shingle on wood sheathing Gross area: same as proposed	As proposed As proposed

	Solar absorptance = 0.75 Emittance = 0.90	As proposed As proposed
Attics	Type: vented with aperture = 1 ft² per 300 ft² ceiling area	As proposed
Foundations	Type: same as proposed foundation wall area above and below grade and soil Characteristics: same as proposed.	As proposed As proposed
Doors	Area: 40 ft² Orientation: North U-factor: same as fenestration from Table R402.1.3.	As proposed As proposed As proposed
Glazing^a	Total area^b = (a) The proposed glazing area: where proposed glazing area is less than 15% of the conditioned floor area. (b) 15% of the conditioned floor area: where the proposed glazing area is 15% or more of the conditioned floor area. Orientation: equally distributed to 4 cardinal compass orientations (N, E, S & W). U-factor: from Table R402.1.3 SHGC: From Table R402.1.1 except that for climates with no requirement (NR) SHGC = 0.40 shall be used. Interior shade fraction: 0.92-(0.21 x SHGC for the standard reference design) External shading: none	As proposed As proposed As proposed As proposed As proposed As proposed
Skylights	None	As proposed
Thermally isolated sunrooms	None	As proposed
Air exchange rate	Air leakage rate of 4 air changes per hour at a pressure of 0.2 inches w.g. (50 Pa). The mechanical ventilation rate shall be in addition to the air leakage rate and the same as in	The measured air exchange rate^c. The mechanical ventilation rate^d shall be in addition to the air leakage rate and shall be as proposed.

	<p>the proposed design, but no greater than $0.01 \times \text{CFA} + 7.5 \times N_{\text{br}} = 1$) where: CFA = conditioned floor area N_{br} = number of bedrooms Energy recovery shall not be assumed for mechanical ventilation.</p>	
Mechanical ventilation	<p>None, except where mechanical ventilation is specified by the proposed design, in which case: $\text{kWh/yr} = 0.03942 \times \text{CFA} + 29.565 \times (N_{\text{br}} + 1)$ where: CFA = conditioned floor area N_{br} + number of bedrooms</p>	As proposed
Internal gains	<p>$\text{IGain} = 17,900 + 23.8 \times \text{CFA} + 4104 \times N_{\text{br}}$ (Btu/day per dwelling unit)</p>	Same as standard reference design.
Internal Mass	<p>An internal mass for furniture and contents of 8 pounds per square foot of floor area.</p>	Same as standard reference design, plus any additional mass specifically designed as a thermal storage element^e but not integral to the building envelope or structure.
Structural mass	<p>For masonry floor slabs, 80% of floor area covered by R-2 carpet and pad, and 20% of floor directly exposed to room air. For Masonry basement walls, as proposed, but with insulation required by Table R402.1.3 located on the interior side of the walls. For other walls, ceilings, floors, and interior walls, wood frame construction.</p>	<p>As proposed</p> <p>As proposed</p> <p>As proposed</p>
Heating systems^{f,g}	<p>As proposed for other than electric heating without a heat pump. Where the proposed design utilizes electric heating without a heat pump, the standard reference design shall be an air source heat pump</p>	As proposed

	meeting the requirements of the Michigan energy code-commercial provisions. Capacity: sized in accordance with section R403.6.	
Cooling systems ^{f,h}	As proposed Capacity: sized in accordance with section R403.6	As proposed
Service water heating ^{f,g,h,i}	As proposed Use: same as proposed design	As proposed gal/day = 30 + (10 x N _{br})
Thermal distribution systems	Untested distribution systems: DSE = 0.88 Tested ducts: Leakage rate to outside conditioned space as specified section R403.2.2 Tested duct location: Unconditioned attic Tested duct insulation: in accordance with section R403.2.1	Untested distribution systems: DSE from Table R405.5.2(2) Tested ducts: Tested leakage rate to outside conditioned space Duct location: As proposed Duct insulation: As proposed
Thermostat	Type: Manual, cooling temperature setpoint = 75°F; Heating temperature setpoint = 72°F	Same as standard reference

For SI: 1 square foot = 0.93 m², 1 British thermal unit = 1055 J, 1 pound per square foot = 4.88 kg/m², 1 gallon (U.S.) = 3.785 L, °C = (°F-3)/1.8, 1 degree = 0.79 rad, 1 inch water gauge = 1250 Pa.

- a. Glazing shall be defined as sunlight-transmitting fenestration, including the area of sash, curbing, or other framing elements, that enclose conditioned space. Glazing includes the area of sunlight-transmitting fenestration assemblies in walls bounding conditioned basements. For doors where the sunlight-transmitting opening is less than 50 % of the door area, the glazing area is the sunlight transmitting opening area. For all other doors, the glazing area is the rough frame opening area for the door including the door and the frame.
- b. For residences with conditioned basements, R-2 and R-4 residences and townhouses, the following formula shall be used to determine glazing area:

$$AF = A_s \times FA \times F$$

where:

AF = Total glazing area.

A_s = Standard reference design total glazing area.

FA = (Above-grade thermal boundary gross wall area)/(above-grade boundary wall area + 0.5 x below-grade boundary wall area).

F = (Above-grade thermal boundary wall area)/(above-grade thermal boundary wall area + common wall area) or 0.56, whichever is greater.

and where:

Thermal boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions.

Above-grade thermal boundary wall is any thermal boundary wall component not in contact with soil.

Below-grade boundary wall is any thermal boundary wall in soil contact.

Common wall area is the area of walls shared with an adjoining dwelling unit.

L and CFA are in the same units.

c. Where required by the code official, testing shall be conducted by a certified independent third party. Hourly calculations as specified in the ASHRAE handbook of fundamentals, or the equivalent, shall be used to determine the energy loads resulting from infiltration.

d. The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with Equation 43 of 2001 ASHRAE handbook of fundamentals, page 26.24 and the “whole-house ventilation” provisions of 2001 ASHRAE handbook of fundamentals, page 26.19 for intermittent mechanical ventilation.

e. Thermal storage element shall mean a component not part of the floors, walls, or ceilings that is part of a passive solar system, and that provides thermal storage, such as enclosed water columns, rock beds, or phase-change containers. A thermal storage element must be in the same room as fenestration that faces within 15 degrees (0.26 rad) of true south, or must be connected to such a room with pipes or ducts that allow the element to be actively charged.

f. For a proposed design with multiple heating, cooling, or water heating systems using different fuel types, the applicable standard reference design system capacities and fuel types shall be weighted in accordance with their respective loads as calculated by accepted engineering practice for each equipment and fuel type present.

g. For a proposed design without a proposed heating system, a heating system with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and proposed design.

h. For a proposed design home without a proposed cooling system, an electric air conditioner with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and the proposed design.

i. For a proposed design with a non-storage-type water heater, a 40-gallon storage-type water heater with the prevailing federal minimum energy factor for the same fuel as the predominant heating fuel type shall be assumed. For the case of a proposed design without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency for the same fuel as the predominant heating fuel type shall be assumed for both the proposed design and standard reference design.

R 408.31071a. Energy rating index compliance alternative.

Rule 1071a. Sections R406.1, R406.2, R406.3, R406.3.1, R406.4, R406.5, R406.6, R406.6.1, R406.6.2, R406.6.3, R406.7, R406.7.1, R406.7.2, R406.7.3, and table R406.4 of the code are added to read as follows:

R406.1. Scope. This section establishes criteria for compliance using an energy rating index (ERI) analysis.

R406.2. Mandatory requirements. Compliance with this section requires that the mandatory provisions identified in sections R401.2 and R403.4.2 be met. The building thermal envelope shall be greater than or equal to levels of efficiency and solar heat gain coefficient in table R402.1.2 or R402.1.4 of the 2009 international energy conservation code.

Exception: Supply and return ducts not completely inside the building thermal envelope shall be insulated to a minimum of R-6.

R406.3. Energy rating index. The energy rating index (ERI) shall be a numerical integer value that is based on a linear scale constructed such that the ERI reference design has an index value of 100 and a residential building that uses no net purchased energy has an index value of 0. Each integer value on the scale shall represent a 1 percent change in the total energy use of the rated design relative to the total energy use of the ERI reference design. The ERI shall consider all energy used in the residential building.

R406.3.1. ERI reference design. The ERI reference design shall be configured such that it meets the minimum requirements of the 2006 international energy conservation code prescriptive requirements.

The proposed residential building shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the ERI reference design.

R406.4. ERI-based compliance. Compliance based on an ERI analysis requires that the rated design be shown to have an ERI less than or equal to the appropriate value listed in table R406.4 when compared to the ERI reference design.

R406.5. Verification by approved agency. Verification of compliance with section R406 shall be completed by an approved third party.

R406.6. Documentation. Documentation of the software used to determine the ERI and the parameters for the residential building shall be in accordance with sections R406.6.1 through R406.6.3.

R406.6.1. Compliance software tools. Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the code official.

R406.6.2. Compliance report. Compliance software tools shall generate a report that documents that the ERI of the rated design complies with sections R406.3 and R406.4. The compliance documentation shall include the following information:

1. Address or other identification of the residential building.
2. An inspection checklist documenting the building component characteristics of the rated design. The inspection checklist shall show results for both the ERI reference design and the rated design, and shall document all inputs entered by the user necessary to reproduce the results.
3. Name of individual completing the compliance report.
4. Name and version of the compliance software tool.

Exception: Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the 4 (north, east, south and west) cardinal orientations.

R406.6.3. Additional documentation. The code official may require the following documents:

1. Documentation of the building component characteristics of the ERI reference design.

2. A certification signed by the builder providing the building component characteristics of the rated design.

3. Documentation of the actual values used in the software calculations for the rated design.

R406.7. Calculation software tools. Calculation software, where used, shall be in accordance with sections R406.7.1 through R406.7.3.

R406.7.1. Minimum capabilities. Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in section R406.3, and shall include the following capabilities:

1. Computer generation of the ERI reference design using only the input for the rated design.

The calculation procedure shall not allow the user to directly modify the building component characteristics of the ERI reference design.

2. Calculation of whole-building, as single zone, sizing for the heating and cooling equipment in the ERI reference design residence in accordance with section R403.7.

3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating, and air-conditioning equipment based on climate and equipment sizing.

4. Printed code official inspection checklist listing each of the rated design component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.

R406.7.2. Specific approval. Performance analysis tools meeting the applicable sections of section R406 shall be approved. Tools may be approved based on meeting a specified threshold for a jurisdiction. The code official shall approve tools for a specified application or limited scope.

R406.7.3. Input values. When calculations require input values not specified by sections R402, R403, R404, and R405, those input values shall be taken from an approved source.

Table R406.4
Maximum Energy Rating Index

Climate Zone	Energy Rating Index
1	52
2	52
3	51
4	54
5	55
6	54
7	53
8	53

NOTICE OF PUBLIC HEARING

DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
BUREAU OF CONSTRUCTION CODES
NOTICE OF PUBLIC HEARING

Part. 5. Michigan Residential Code (ORR# 2013-022 LR)
Part 10. Michigan Energy Code (Residential) (ORR# 2013-095 LR)

The Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, will hold a public hearing on Thursday, May 28, 2015, at 9:00 a.m. in Conference Room 3, 2501 Woodlake Circle, Okemos, MI 48864. The Part 5. Michigan Residential Code and the Part 10. Michigan Energy Code (Residential) are proposed to be effective 120 days after filing with the Secretary of State.

The public hearing is being held to receive public comments on the proposed amendments to the administrative rules noted above. Testimony will be taken for each rule set in the order the rules are listed above. Individuals who are not present during testimony for a particular rule set will be provided an opportunity to testify after final testimony on the Part 10. Michigan Energy Code (Residential).

The proposed residential rules will adopt the 2015 International Residential Code and Chapter 11 of the 2015 Code is being amended to incorporate the Chapter 11 language already recommended by the Residential Code Review Committee, with amendments, deletions, and additions deemed necessary for use in Michigan. The hearing is being conducted by the Department under the authority of section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1, 2008-4, 2011-4, MCL 445.2011, 445.2025 and 445.2030.

The proposed Part 10. Energy (Residential) rules will adopt the 2015 International Energy Conservation Code with amendments, deletions, and additions deemed necessary for use in Michigan. The hearing is being conducted by the Department under the authority of section 4 of 1972 PA 230, MCL 125.1504, and Executive Reorganization Order Nos. 2003-1 and 2008-4, 2011-4, MCL 445.2011 and MCL 445.2025.

The proposed rules will be published in the May 15, 2015, *Michigan Register*. Copies of the proposed Michigan amendments to the Michigan Residential Code and the Part 10 Energy (Residential) Code may be obtained for a fee of \$5.00 for each rule set by submitting a check or money order made payable to the State of Michigan at the address below. You may download a free copy of the proposed amendments by visiting the Bureau's website at www.michigan.gov/bcc. The amendments are located under "What's New" on the front page of the website.

Oral or written comments may be presented in person at the hearing on May 28, 2015 or submitted in writing by mail, email, or facsimile no later than 5:00 p.m., May 28, 2015, to the Bureau's contact information below. If your presentation at the public hearing is in written form, please provide a copy to the Rules Analyst at the conclusion of your testimony at the hearing.

Department of Licensing and Regulatory Affairs
Bureau of Construction Codes
Office of Administrative Services
P.O. Box 30254
Lansing, MI 48909
Telephone (517) 241-6312
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The meeting site and parking are accessible. Individuals attending the meeting are requested to refrain from using heavily scented personal care products, in order to enhance accessibility for everyone. People with disabilities requiring additional services (such as materials in alternative format) in order to participate in the meeting should call Jessica Lightner at (517) 335-2972 (voice) at least 14 days prior to the hearing. LARA is an equal opportunity employer/program.

(2015 SESSION)

MCL 24.208 states in part:

“Sec. 8. (1) The Office of Regulatory Reform shall publish the Michigan register at least once each month. The Michigan register shall contain all of the following:

** * **

(i) Other official information considered necessary or appropriate by the Office of Regulatory Reform.”

The following table cites administrative rules promulgated during the year 2000, and indicates the effect of these rules on the Michigan Administrative Code (1979 ed.).

**MICHIGAN ADMINISTRATIVE CODE TABLE
(2015 RULE FILINGS)**

R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
30.58	*	9	38.1672	R	1	205.2009	A	9
38.22	R	1	38.1673	R	1	205.2010	A	9
38.23	R	1	38.1674	R	1	205.2011	A	9
38.24	R	1	38.1675	R	1	225.1	R	1
38.25	R	1	38.1676	R	1	225.2	R	1
38.28	R	1	38.1677	R	1	225.3	R	1
38.71	R	1	38.1678	R	1	225.4	R	1
38.72	R	1	38.1679	R	1	225.5	R	1
38.73	R	1	38.1680	R	1	225.6	R	1
38.74	R	1	38.1681	R	1	225.7	R	1
38.75	R	1	38.1682	R	1	225.8	R	1
38.76	R	1	38.1683	R	1	225.9	R	1
38.77	R	1	38.1684	R	1	225.10	R	1
38.78	R	1	38.1685	R	1	247.351	R	1
38.79	R	1	38.1686	R	1	247.403	R	1
38.80	R	1	38.2171	R	1	247.404	R	1
38.81	R	1	38.2172	R	1	247.405	R	1
38.82	R	1	38.2173	R	1	247.406	R	1
38.83	R	1	38.2174	R	1	247.741	R	1
38.84	R	1	38.2175	R	1	247.742	R	1
38.85	R	1	38.2176	R	1	247.748	R	1
38.86	R	1	38.2177	R	1	281.811	*	5
38.1371	R	1	38.2178	R	1	285.900.1	R	3
38.1372	R	1	38.2179	R	1	299.4101	*	5
38.1373	R	1	38.2180	R	1	299.4102	*	5
38.1374	R	1	38.2181	R	1	299.4103	*	5
38.1375	R	1	38.2182	R	1	299.4104	*	5
38.1376	R	1	38.2183	R	1	299.4105	*	5
38.1377	R	1	38.2184	R	1	299.4106a	*	5
38.1378	R	1	38.2185	R	1	299.4110	*	5
38.1379	R	1	38.2186	R	1	299.4111	*	5
38.1380	R	1	205.2001	A	9	299.4117	*	5
38.1381	R	1	205.2002	A	9	299.4121	*	5
38.1382	R	1	205.2003	A	9	299.4128	*	5
38.1383	R	1	205.2004	A	9	299.4201	*	5
38.1384	R	1	205.2005	A	9	299.4203	*	5
38.1385	R	1	205.2006	A	9	299.4302	*	5
38.1386	R	1	205.2007	A	9	299.4307	*	5
38.1671	R	1	205.2008	A	9	299.4318	*	5

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
299.4420	*	5	324.59c	R	1	324.613	*	5
299.4428	*	5	324.59d	R	1	324.705	*	5
299.4430	*	5	324.59e	R	1	324.801	*	5
299.4440	*	5	324.61	R	1	324.1015	*	5
299.4701	*	5	324.62	R	1	324.1103	*	5
299.4702	*	5	324.63	R	1	324.1202	*	5
299.4703	*	5	324.64	R	1	324.1204	*	5
299.4706	*	5	324.65	R	1	324.1206	*	5
299.4707	*	5	324.71	R	1	324.1401	A	5
299.4708	*	5	324.72	R	1	324.1402	A	5
299.4709	*	5	324.75	R	1	324.1403	A	5
299.4710	*	5	324.102	*	5	324.1404	A	5
299.4711	*	5	324.130	*	5	324.1405	A	5
299.4712	*	5	324.201	*	5	324.1406	A	5
299.4806	*	5	324.202	*	5	325.9087	R	9
299.4118a	A	5	324.203	*	5	325.9081	*	9
324.1	R	1	324.206	*	5	325.9082	*	9
324.2	R	1	324.210	*	5	325.9083	*	9
324.3	R	1	324.301	*	5	325.9084	*	9
324.21	R	1	324.302	*	5	350.9085	*	9
324.23	R	1	324.303	*	5	325.9086	*	9
324.24	R	1	324.407	*	5	325.9571	R	1
324.31	R	1	324.411	*	5	325.9572	R	1
324.32	R	1	324.102	*	5	325.9573	R	1
324.33	R	1	324.130	*	5	325.9574	R	1
324.41	R	1	324.201	*	5	325.9575	R	1
324.42	R	1	324.202	*	5	325.9576	R	1
324.43	R	1	324.203	*	5	325.9577	R	1
324.51	R	1	324.206	*	5	325.9578	R	1
324.52	R	1	324.210	*	5	325.9579	R	1
324.53	R	1	324.301	*	5	325.9580	R	1
324.54	R	1	324.302	*	5	325.9581	R	1
324.55	R	1	324.303	*	5	325.9582	R	1
324.56	R	1	324.407	*	5	325.22346	R	1
324.57	R	1	324.411	*	5	325.22347	R	1
324.58	R	1	324.413	*	5	325.22348	R	1
324.59	R	1	324.418	*	5	325.22349	R	1
324.59a	R	1	324.503	*	5	325.22350	R	1
324.59b	R	1	324.511	*	5	325.22351	R	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
325.22352	R	1	325.50061	*	7	325.51158	*	4
325.22353	R	1	325.50062	*	7	325.51162	*	4
325.22354	R	1	325.50063	*	7	325.51163	*	4
325.22355	R	1	325.50064	*	7	325.51164	*	4
325.22356	R	1	325.50065	*	7	325.51166	*	4
325.22357	R	1	325.50066	*	7	325.51167	*	4
325.22358	R	1	325.50067	*	7	325.51169	*	4
325.22359	R	1	325.50068	*	7	325.51172	*	4
325.22360	R	1	325.50069	*	7	325.51173	*	4
325.22361	R	1	325.50070	*	7	325.51174	*	4
325.22362	R	1	325.50071	*	7	325.51175	*	4
325.47401	A	4	325.50072	*	7	325.51151a	A	4
325.47403	A	4	325.50051a	A	7	325.51156a	A	4
325.47405	A	4	325.50053a	A	7	325.51168a	A	4
325.47407	A	4	325.50056a	A	7	325.51177	R	4
325.47408	A	4	325.50056b	A	7	325.51501	*	4
325.47409	A	4	325.50056c	A	7	325.51502	*	4
325.47410	A	4	325.50056d	A	7	325.51505	*	4
325.47411	A	4	325.50056e	A	7	325.51507	*	4
325.47414	A	4	325.50059a	A	7	325.51508	*	4
325.47415	A	4	325.50059b	A	7	325.51509	*	4
325.47416	A	4	325.50060a	A	7	325.51510	*	4
325.47417	A	4	325.50060b	A	7	325.51511	*	4
325.47418	A	4	325.50061a	A	7	325.51513	*	4
325.47419	A	4	325.50061b	A	7	325.51516	*	4
325.47420	A	4	325.50061c	A	7	325.51517	*	4
325.47424	A	4	325.50062a	A	7	325.51519	*	4
325.47425	A	4	325.50062b	A	7	325.51520	*	4
OHR 4201	R	4	325.50063a	A	7	325.51521	*	4
OHR 4202	R	4	325.50063b	A	7	325.51522	*	4
325.50051	*	7	325.50064a	A	7	325.51523	*	4
325.50052	*	7	325.50064b	A	7	325.51524	*	4
325.50054	*	7	325.50067a	A	7	325.51525	*	4
325.50055	*	7	325.50067b	A	7	325.51526	*	4
325.50056	*	7	325.50067c	A	7	325.51501a	A	4
325.50057	*	7	325.50069a	A	7	325.51519a	A	4
325.50058	*	7	325.50070a	A	7	325.51504	R	4
325.50059	*	7	325.51152	*	4	325.51527	R	4
325.50060	*	7	325.51156	*	4	325.51902	*	4

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
325.51903	*	4	325.51945	*	4	338.1616	R	1
325.51904	*	4	325.51946	*	4	338.1617	R	1
325.51905	*	4	325.51947	*	4	338.1618	R	1
325.51906	*	4	325.51948	*	4	338.1619	R	1
325.51907	*	4	325.51949	*	4	338.1620	R	1
325.51908	*	4	325.51950	*	4	338.1621	R	1
325.51909	*	4	325.51950a	*	4	338.1622	R	1
325.51910	*	4	325.51950b	*	4	338.1623	R	1
325.51912	*	4	325.51951	*	4	338.1624	R	1
325.51913	*	4	325.51952	*	4	338.1625	R	1
325.51914	*	4	325.51953	*	4	338.1626	R	1
325.51915	*	4	325.51955	*	4	338.1627	R	1
325.51916a	*	4	325.51956	*	4	338.1628	R	1
325.51916b	*	4	325.51957	*	4	338.1629	R	1
325.51917	*	4	325.51902a	A	4	338.1633	R	1
325.51918	*	4	325.51924a	A	4	338.1634	R	1
325.51922	*	4	325.51921	R	4	338.1635	R	1
325.51923	*	4	325.51958	R	4	338.1636	R	1
325.51924	*	4	333.101	*	1	338.1637	R	1
325.51925	*	4	333.103	*	1	338.3001	R	5
325.51926	*	4	333.105	*	1	338.3002	R	5
325.51928	*	4	333.109	*	1	338.3003	R	5
325.51929	*	4	333.111	*	1	338.3004	R	5
325.51930	*	4	333.113	*	1	338.3005	R	5
325.51931	*	4	333.117	*	1	338.3006	R	5
325.51931a	*	4	333.119	*	1	338.3007	R	5
325.51932	*	4	333.123	*	1	338.3801	R	6
325.51933	*	4	333.125	*	1	338.11109	R	6
325.51934	*	4	333.131	*	1	338.11115	R	6
325.51935	*	4	333.133	*	1	338.30310	R	5
325.51936	*	4	333.126	A	1	339.1701	R	1
325.51937	*	4	333.107	R	1	339.1705	R	1
325.51938	*	4	333.121	R	1	339.1709	R	1
325.51938a	*	4	333.127	R	1	339.1713	R	1
325.51939	*	4	338.1601	R	1	339.1721	R	1
325.51940	*	4	338.1602	R	1	339.1741	R	1
325.51941	*	4	338.1610	R	1	339.1743	R	1
325.51943	*	4	338.1611	R	1	339.1745	R	1
325.51944	*	4	338.1614	R	1	339.1747	R	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
339.1751	R	1	400.901	R	1	400.3178	*	6
339.1755	R	1	400.902	R	1	400.3179	*	6
339.1757	R	1	400.903	R	1	400.3167	R	6
339.1759	R	1	400.905	R	1	400.3401	R	1
339.1761	R	1	400.906	R	1	400.3403	R	1
339.1763	R	1	400.907	R	1	400.3409	R	1
339.1765	R	1	400.908	R	1	400.3410	R	1
339.1767	R	1	400.909	R	1	400.3411	R	1
339.1771	R	1	400.910	R	1	400.3412	R	1
339.23102	*	5	400.911	R	1	400.3413	R	1
339.23403	*	5	400.912	R	1	400.3414	R	1
340.1883	R	1	400.913	R	1	400.3415	R	1
340.1884	R	1	400.914	R	1	400.3416	R	1
340.1885	R	1	400.915	R	1	400.3417	R	1
380.126	R	1	400.916	R	1	400.3418	R	1
380.127	R	1	400.917	R	1	400.3419	R	1
380.128	R	1	400.918	R	1	400.3420	R	1
380.129	R	1	400.919	R	1	400.3421	R	1
380.132	R	1	400.920	R	1	400.3422	R	1
380.133	R	1	400.921	R	1	400.3423	R	1
380.134	R	1	400.922	R	1	400.4101	*	9
390.1202	R	1	400.941	R	1	400.4104	*	9
390.1206	R	1	400.3151	*	6	400.4105	*	9
390.1207	R	1	400.3155	*	6	400.4106	*	9
390.1209	R	1	400.3156	*	6	400.4108	*	9
390.1210	R	1	400.3157	*	6	400.4109	*	9
390.1212	R	1	400.3158	*	6	400.4111	*	9
390.1213	R	1	400.3159	*	6	400.4112	*	9
390.1214	R	1	400.3160	*	6	400.4113	*	9
390.1251	R	1	400.3161	*	6	400.4114	*	9
400.10	A	9	400.3162	*	6	400.4116	*	9
400.11	A	9	400.3163	*	6	400.4117	*	9
400.12	A	9	400.3164	*	6	400.4118	*	9
400.13	A	9	400.3165	*	6	400.4119	*	9
400.14	A	9	400.3168	*	6	400.4120	*	9
400.15	A	9	400.3169	*	6	400.4121	*	9
400.16	A	9	400.3170	*	6	400.4126	*	9
400.17	A	9	400.3171	*	6	400.4127	*	9
400.18	A	9	400.3173	*	6	400.4128	*	9

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
400.4131	*	9	400.4554	*	9	400.4155	A	9
400.4132	*	9	400.4555	*	9	400.4156	A	9
400.4134	*	9	400.4559	*	9	400.4157	A	9
400.4137	*	9	400.4560	*	9	400.4158	A	9
400.4138	*	9	400.4562	*	9	400.4159	A	9
400.4141	*	9	400.4563	*	9	400.4162	A	9
400.4142	*	9	400.4566	*	9	400.4164	A	9
400.4143	*	9	400.4568	*	9	400.4165	A	9
400.4144	*	9	400.4601	*	9	400.4166	A	9
400.4145	*	9	400.4602	*	9	400.4505	A	9
400.4146	*	9	400.4612	*	9	400.4604	A	9
400.4147	*	9	400.4618	*	9	400.4605	A	9
400.4148	*	9	400.4620	*	9	400.4621	A	9
400.4150	*	9	400.4623	*	9	400.4168	R	9
400.4152	*	9	400.4632	*	9	400.4169	R	9
400.4160	*	9	400.4635	*	9	400.4170	R	9
400.4161	*	9	400.4638	*	9	400.4172	R	9
400.4163	*	9	400.4640	*	9	400.4173	R	9
400.4167	*	9	400.4652	*	9	400.4175	R	9
400.4501	*	9	400.4657	*	9	400.4176	R	9
400.4502	*	9	400.4666	*	9	400.4177	R	9
400.4504	*	9	400.4102	A	9	400.4178	R	9
400.4510	*	9	400.4103	A	9	400.4181	R	9
400.4512	*	9	400.4107	A	9	400.4182	R	9
400.4515	*	9	400.4110	A	9	400.4183	R	9
400.4517	*	9	400.4115	A	9	400.4201	R	9
400.4520	*	9	400.4122	A	9	400.4231	R	9
400.4522	*	9	400.4123	A	9	400.4232	R	9
400.4523	*	9	400.4124	A	9	400.4234	R	9
400.4524	*	9	400.4125	A	9	400.4237	R	9
400.4527	*	9	400.4129	A	9	400.4238	R	9
400.4532	*	9	400.4135	A	9	400.4302	R	9
400.4535	*	9	400.4136	A	9	400.4331	R	9
400.4538	*	9	400.4139	A	9	400.4332	R	9
400.4540	*	9	400.4140	A	9	400.4334	R	9
400.4545	*	9	400.4149	A	9	400.4335	R	9
400.4546	*	9	400.4151	A	9	400.4336	R	9
400.4548	*	9	400.4153	A	9	400.4337	R	9
400.4552	*	9	400.4154	A	9	400.4338	R	9

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
400.4513	R	9	408.10601	*	8	408.14001	*	7
400.7025	R	9	408.10603	*	8	408.14002	*	7
400.7028	R	9	408.10604	*	8	408.14004	*	7
400.7001	*	9	408.10605	*	8	408.14005	*	7
400.7002	*	9	408.10606	*	8	408.14008	*	7
400.7003	*	9	408.10611	*	8	408.14009	*	7
400.7004	*	9	408.10612	*	8	408.14001a	A	7
400.7006	*	9	408.10613	*	8	408.14001b	A	7
400.7007	*	9	408.10621	*	8	408.15001	*	8
400.7008	*	9	408.10623	*	8	408.15002	*	8
400.7009	*	9	408.10624	*	8	408.15003	*	8
400.7010	*	9	408.10631	*	8	408.15004	A	8
400.7011	*	9	408.10632	*	8	408.15501	*	8
400.7012	*	9	408.10633	*	8	408.15601	*	8
400.7013	*	9	408.10634	*	8	408.15915	*	7
400.7014	*	9	408.10636	*	8	408.15922	*	7
400.7015	*	9	408.10639	*	8	408.15923	*	7
400.7016	*	9	408.10641	*	8	408.15903	A	7
400.7017	*	9	408.10643	*	8	408.15911	R	7
400.7018	*	9	408.10644	*	8	408.16204	*	7
400.7019	*	9	408.10645	*	8	408.16223	*	7
400.7020	*	9	408.10647	*	8	408.16227	*	7
400.7021	*	9	408.10661	*	8	408.16234	*	7
400.7022	*	9	408.10664	*	8	408.16237	*	7
400.7024	*	9	408.10671	*	8	408.16251	*	7
400.7026	*	9	408.10673	*	8	408.16202	A	7
400.7027	*	9	408.10675	*	8	408.17801	*	8
400.7029	*	9	408.10677	*	8	408.18602	*	9
400.7030	*	9	408.10685	*	8	408.18605	A	9
400.7031	*	9	408.10686	*	8	408.22951	R	1
400.7032	*	9	408.10695	*	8	408.22952	R	1
400.7033	*	9	408.10696	*	8	408.22953	R	1
400.7034	*	9	408.10627	A	8	408.22954	R	1
408.6203	R	5	408.10680	A	8	408.22955	R	1
408.6204	R	5	408.10637	R	8	408.22956	R	1
408.6206	R	5	408.10638	R	8	408.22957	R	1
408.6208	R	5	408.13901	*	9	408.22958	R	1
408.6209	R	5	408.13902	*	9	408.22959	R	1
408.6301	R	5	408.13905	A	9	408.22960	R	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

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R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
408.22961	R	1	408.40762	*	4	408.42710	R	7
408.22962	R	1	408.41802	*	7	408.42724	R	7
408.22963	R	1	408.41836	*	7	408.42725	R	7
408.22964	R	1	408.41837	*	7	408.42726	R	7
408.22965	R	1	408.41838	*	7	408.42727	R	7
408.22966	R	1	408.41841	*	7	408.42728	R	7
408.22967	R	1	408.41851	*	7	408.42731	R	7
408.22968	R	1	408.41852	*	7	408.42732	R	7
408.22969	R	1	408.41853	*	7	408.42733	R	7
408.22970	R	1	408.41854	*	7	408.42734	R	7
408.22971	R	1	408.41855	*	7	408.42735	R	7
408.40115	*	4	408.41861	*	7	408.42737	R	7
408.40120	*	4	408.41862	*	7	408.42741	R	7
408.40121	*	4	408.41863	*	7	408.42742	R	7
408.40122	*	4	408.41864	*	7	408.42743	R	7
408.40123	*	4	408.41865	*	7	408.42744	R	7
408.40128	*	4	408.41866	*	7	408.42751	R	7
408.40130	*	4	408.41867	*	7	408.42752	R	7
408.40131	*	4	408.41868	*	7	408.42753	R	7
408.40132	*	4	408.41869	*	7	408.42754	R	7
408.40133	*	4	408.41874	*	7	408.42755	R	7
408.40105	A	4	408.41875	*	7	408.42757	R	7
408.40601	*	6	408.41877	*	7	408.42758	R	7
408.40603	*	6	408.41884	*	7	408.42759	R	7
408.40617a	*	6	408.41861a	A	7	408.42761	R	7
408.40623	*	6	408.41861b	A	7	408.42762	R	7
408.40625	*	6	408.41861c	A	7	408.42763	R	7
408.40631	*	6	408.41861d	A	7	408.42799	R	7
408.40650	A	6	408.41877a	A	7	408.44501	*	7
408.40655	A	6	408.41871	R	7	408.44502	*	7
408.40660	A	6	408.41872	R	7	418.1	R	1
408.40709	*	4	408.41876	R	7	418.2	R	1
408.40713	*	4	408.41878	R	7	418.3	R	1
408.40721	*	4	408.41879	R	7	418.4	R	1
408.40722	*	4	408.41881	R	7	418.5	R	1
408.40723	*	4	408.41882	R	7	418.6	R	1
408.40731	*	4	408.41883	R	7	418.7	R	1
408.40751	*	4	408.42701	*	7	418.8	R	1
408.40761	*	4	408.42705	A	7	418.51	R	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
418.52	R	1	421.1310	R	1	460.17339	R	1
418.53	R	1	421.1311	R	1	460.17341	R	1
418.54	R	1	421.1313	R	1	460.17401	R	1
418.55	R	1	421.1314	R	1	460.17403	R	1
418.56	R	1	421.1315	R	1	460.17405	R	1
418.57	R	1	421.1316	R	1	460.17501	R	1
418.58	R	1	421.1317	R	1	460.17503	R	1
421.1101	R	1	460.17101	R	1	460.17505	R	1
421.1102	R	1	460.17103	R	1	460.17507	R	1
421.1103	R	1	460.17105	R	1	460.17509	R	1
421.1104	R	1	460.17107	R	1	460.17511	R	1
421.1105	R	1	460.17109	R	1	460.17513	R	1
421.1106	R	1	460.17111	R	1	460.17515	R	1
421.1107	R	1	460.17113	R	1	460.17601	R	1
421.1108	R	1	460.17115	R	1	460.17701	R	1
421.1109	R	1	460.17201	R	1	500.2101	R	1
421.1110	R	1	460.17203	R	1	500.2105	R	1
421.1201	R	1	460.17205	R	1	500.2106	R	1
421.1202	R	1	460.17207	R	1	500.2107	R	1
421.1203	R	1	460.17209	R	1	500.2109	R	1
421.1204	R	1	460.17301	R	1	500.2110	R	1
421.1205	R	1	460.17303	R	1	500.2111	R	1
421.1206	R	1	460.17305	R	1	500.2112	R	1
421.1207	R	1	460.17307	R	1	500.2113	R	1
421.1208	R	1	460.17309	R	1	500.2114	R	1
421.1209	R	1	460.17311	R	1	500.2115	R	1
421.1210	R	1	460.17313	R	1	500.2116	R	1
421.1211	R	1	460.17315	R	1	500.2117	R	1
421.1212	R	1	460.17317	R	1	500.2118	R	1
421.1213	R	1	460.17319	R	1	500.2119	R	1
421.1214	R	1	460.17321	R	1	500.2120	R	1
421.1301	R	1	460.17323	R	1	500.2121	R	1
421.1302	R	1	460.17325	R	1	500.2122	R	1
421.1304	R	1	460.17327	R	1	500.2123	R	1
421.1305	R	1	460.17329	R	1	500.2124	R	1
421.1306	R	1	460.17331	R	1	500.2125	R	1
421.1307	R	1	460.17333	R	1	500.2126	R	1
421.1308	R	1	460.17335	R	1	500.2127	R	1
421.1309	R	1	460.17337	R	1	500.2128	R	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

2015 MR 8 – May 15, 2015

R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
500.2129	R	1	554.68	R	5	792.10133	A	1
500.2130	R	1	554.69	R	5	792.10134	A	1
500.2131	R	1	554.70	R	5	792.10135	A	1
500.2134	R	1	554.71	R	5	792.10136	A	1
500.2136	R	1	791.3301	R	1	792.10137	A	1
500.2137	R	1	791.3305	R	1	792.10201	*	1
500.2138	R	1	791.3310	R	1	792.10203	*	1
554.1	R	5	791.3315	R	1	792.10205	*	1
554.2	R	5	792.10101	A	1	792.10207	*	1
554.3	R	5	792.10102	A	1	792.10209	*	1
554.4	R	5	792.10103	A	1	792.10211	*	1
554.5	R	5	792.10104	A	1	792.10213	*	1
554.6	R	5	792.10105	A	1	792.10215	*	1
554.21	R	5	792.10106	A	1	792.10219	*	1
554.22	R	5	792.10107	A	1	792.10221	*	1
554.23	R	5	792.10108	A	1	792.10223	*	1
554.24	R	5	792.10109	A	1	792.10225	*	1
554.25	R	5	792.10110	A	1	792.10227	*	1
554.26	R	5	792.10111	A	1	792.10229	*	1
554.27	R	5	792.10112	A	1	792.10231	*	1
554.28	R	5	792.10113	A	1	792.10233	*	1
554.29	R	5	792.10114	A	1	792.10237	*	1
554.31	R	5	792.10115	A	1	792.10239	*	1
554.32	R	5	792.10116	A	1	792.10241	*	1
554.33	R	5	792.10117	A	1	792.10243	*	1
554.34	R	5	792.10118	A	1	792.10247	*	1
554.35	R	5	792.10119	A	1	792.10251	*	1
554.41	R	5	792.10120	A	1	792.10253	*	1
554.42	R	5	792.10121	A	1	792.10255	*	1
554.51	R	5	792.10122	A	1	792.10257	*	1
554.52	R	5	792.10123	A	1	792.10259	*	1
554.53	R	5	792.10124	A	1	792.10261	*	1
554.61	R	5	792.10125	A	1	792.10263	*	1
554.62	R	5	792.10126	A	1	792.10265	*	1
554.63	R	5	792.10128	A	1	792.10269	*	1
554.64	R	5	792.10129	A	1	792.10271	*	1
554.65	R	5	792.10130	A	1	792.10273	*	1
554.66	R	5	792.10131	A	1	792.10275	*	1
554.67	R	5	792.10132	A	1	792.10277	*	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

2015 MR 8 – May 15, 2015

R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
792.10279	*	1	792.10430	A	1	792.10609	A	1
792.10283	*	1	792.10431	A	1	792.10701	A	1
792.10287	*	1	792.10432	A	1	792.10702	A	1
792.10289	*	1	792.10433	A	1	792.10703	A	1
792.10301	A	1	792.10434	A	1	792.10704	A	1
792.10302	A	1	792.10435	A	1	792.10705	A	1
792.10303	A	1	792.10436	A	1	792.10706	A	1
792.10304	A	1	792.10437	A	1	792.10707	A	1
792.10305	A	1	792.10438	A	1	792.10708	A	1
792.10306	A	1	792.10439	A	1	792.10709	A	1
792.10401	A	1	792.10440	A	1	792.10710	A	1
792.10402	A	1	792.10441	A	1	792.10711	A	1
792.10403	A	1	792.10442	A	1	792.10712	A	1
792.10404	A	1	792.10443	A	1	792.10713	A	1
792.10405	A	1	792.10444	A	1	792.10714	A	1
792.10406	A	1	792.10445	A	1	792.10715	A	1
792.10407	A	1	792.10446	A	1	792.10801	A	1
792.10408	A	1	792.10447	A	1	792.10802	A	1
792.10409	A	1	792.10448	A	1	792.10803	A	1
792.10410	A	1	792.10501	A	1	792.10804	A	1
792.10411	A	1	792.10502	A	1	792.10805	A	1
792.10412	A	1	792.10503	A	1	792.10806	A	1
792.10413	A	1	792.10504	A	1	792.10807	A	1
792.10414	A	1	792.10505	A	1	792.10808	A	1
792.10415	A	1	792.10506	A	1	792.10809	A	1
792.10416	A	1	792.10507	A	1	792.10901	A	1
792.10417	A	1	792.10508	A	1	792.10902	A	1
792.10418	A	1	792.10509	A	1	792.10903	A	1
792.10419	A	1	792.10510	A	1	792.10904	A	1
792.10420	A	1	792.10511	A	1	792.10905	A	1
792.10421	A	1	792.10512	A	1	792.10906	A	1
792.10422	A	1	792.10601	A	1	792.10907	A	1
792.10423	A	1	792.10602	A	1	792.10908	A	1
792.10424	A	1	792.10603	A	1	792.10909	A	1
792.10425	A	1	792.10604	A	1	792.10910	A	1
792.10426	A	1	792.10605	A	1	792.10911	A	1
792.10427	A	1	792.10606	A	1	792.10912	A	1
792.10428	A	1	792.10607	A	1	792.11001	A	1
792.10429	A	1	792.10608	A	1	792.11002	A	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

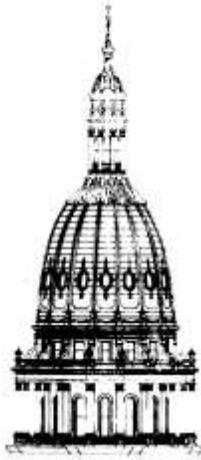
2015 MR 8 – May 15, 2015

R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue	R Number	Action	2015 MR Issue
792.11003	A	1	792.11115	A	1	792.11408	A	1
792.11004	A	1	792.11116	A	1	792.11409	A	1
792.11005	A	1	792.11117	A	1	792.11410	A	1
792.11006	A	1	792.11118	A	1	792.11411	A	1
792.11007	A	1	792.11201	A	1	792.11412	A	1
792.11008	A	1	792.11202	A	1	792.11413	A	1
792.11009	A	1	792.11203	A	1	792.11414	A	1
792.11010	A	1	792.11204	A	1	792.11415	A	1
792.11011	A	1	792.11205	A	1	792.11416	A	1
792.11012	A	1	792.11206	A	1	792.11417	A	1
792.11013	A	1	792.11207	A	1	792.11418	A	1
792.11014	A	1	792.11208	A	1	792.11419	A	1
792.11015	A	1	792.11301	A	1	792.11420	A	1
792.11016	A	1	792.11302	A	1	792.11421	A	1
792.11017	A	1	792.11303	A	1	792.11422	A	1
792.11018	A	1	792.11304	A	1	792.11423	A	1
792.11019	A	1	792.11305	A	1	792.11424	A	1
792.11020	A	1	792.11306	A	1	792.11425	A	1
792.11021	A	1	792.11307	A	1	792.11426	A	1
792.11022	A	1	792.11309	A	1	792.11427	A	1
792.11023	A	1	792.11310	A	1	792.11428	A	1
792.11024	A	1	792.11311	A	1	792.11429	A	1
792.11025	A	1	792.11312	A	1	792.11430	A	1
792.11026	A	1	792.11313	A	1	792.11431	A	1
792.11027	A	1	792.11314	A	1	792.11432	A	1
792.11101	A	1	792.11315	A	1	792.11433	A	1
792.11102	A	1	792.11316	A	1	792.11501	A	1
792.11103	A	1	792.11317	A	1	792.11502	A	1
792.11104	A	1	792.11318	A	1	792.11503	A	1
792.11105	A	1	792.11319	A	1	792.11504	A	1
792.11106	A	1	792.11320	A	1	792.11505	A	1
792.11107	A	1	792.11321	A	1	792.11506	A	1
792.11108	A	1	792.11401	A	1	792.11507	A	1
792.11109	A	1	792.11402	A	1	792.11508	A	1
792.11110	A	1	792.11403	A	1	792.11509	A	1
792.11111	A	1	792.11404	A	1	792.11510	A	1
792.11112	A	1	792.11405	A	1	792.11511	A	1
792.11113	A	1	792.11406	A	1	792.11512	A	1
792.11114	A	1	792.11407	A	1	792.11513	A	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)

R Number	Action	2015 MR Issue
792.11514	A	1
792.11515	A	1
792.11516	A	1
792.11517	A	1
792.11601	A	1
792.11602	A	1
792.11603	A	1
792.11604	A	1
792.11605	A	1
792.11606	A	1
792.11607	A	1
792.11608	A	1
792.11609	A	1
792.11610	A	1
792.11611	A	1
792.11701	A	1
792.11702	A	1
792.11703	A	1
792.11704	A	1
792.11705	A	1
792.11706	A	1
792.11707	A	1
792.11708	A	1
792.11709	A	1
792.11801	A	1
792.11802	A	1
792.11803	A	1
792.11901	A	1
792.11902	A	1
792.11903	A	1

(* Amendment to Rule, **A** Added Rule, **N** New Rule, **R** Rescinded Rule)



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**ADMINISTRATIVE RULES
ENROLLED SENATE AND HOUSE BILLS
SIGNED INTO LAW OR VETOED
(2014 SESSION)**

Mich. Const. Art. IV, §33 provides: “Every bill passed by the legislature shall be presented to the governor before it becomes law, and the governor shall have 14 days measured in hours and minutes from the time of presentation in which to consider it. If he approves, he shall within that time sign and file it with the secretary of state and it shall become law . . . If he does not approve, and the legislature has within that time finally adjourned the session at which the bill was passed, it shall not become law. If he disapproves . . . he shall return it within such 14-day period with his objections, to the house in which it originated.”

Mich. Const. Art. IV, §27, further provides: “No act shall take effect until the expiration of 90 days from the end of the session at which it was passed, but the legislature may give immediate effect to acts by a two-thirds vote of the members elected to and serving in each house.”

MCL 24.208 states in part:

“Sec. 8. (1) The Office of Regulatory Reform shall publish the Michigan register at least once each month. The Michigan register shall contain all of the following:

* * *

(b) On a cumulative basis, the numbers and subject matter of the enrolled senate and house bills signed into law by the governor during the calendar year and the corresponding public act numbers.

(c) On a cumulative basis, the numbers and subject matter of the enrolled senate and house bills vetoed by the governor during the calendar year.”

2015 Michigan Public Acts Table

Legislative Service Bureau
Legal Division, Statutory Compiling and Law Publications Unit
124 W. Allegan, Lansing, MI 48909

April 21, 2015
Through PA 16 of 2015

PA No.	ENROLLED		I.E.* Yes/No	Governor Approved	Filed Date	Effective Date	SUBJECT
	HB	SB					
1		0044	Yes	2/19	2/20	5/21/15 #	Elections; primary ; presidential primary election date; revise. (Sen. D. Robertson)
2		0045	Yes	2/19	2/20	5/21/15 #	Elections; primary ; presidential primary election date; revise. (Sen. D. Robertson)
3		0034	Yes	3/4	3/4	3/4/15	Weapons; licensing ; concealed pistol licensing boards; eliminate, and transfer duties to the department of state police and county clerks. (Sen. M. Green)
4		0035	Yes	3/4	3/4	10/1/15 #	Criminal procedure ; sentencing guidelines; reference in sentencing guidelines; update. (Sen. M. Green)
5	4110		Yes	3/10	3/10	3/10/15	Appropriations; supplemental ; omnibus school aid supplemental adjusting certain appropriations and fund sources; provide for. (Rep. A. Pscholka)
6	4112		Yes	3/10	3/10	3/10/15	Appropriations; zero budget ; supplemental appropriations; provide for fiscal year 2014-2015. (Rep. A. Pscholka)
7	4078		Yes	3/17	3/17	3/17/15	Appropriations; capital outlay ; Michigan natural resources trust fund; provide appropriations. (Rep. J. Bumstead)

- * - I.E. means Legislature voted to give the Act immediate effect.
- ** - Act takes effect on the 91st day after sine die adjournment of the Legislature.
- *** - See Act for applicable effective date.
- + - Line item veto.
- ++ - Pocket veto.
- # - Tie bar.

PA No.	ENROLLED		I.E.* Yes/No	Governor Approved	Filed Date	Effective Date	SUBJECT
	HB	SB					
8		0137	Yes	4/1	4/1	4/1/15	Insurance; health insurers; amount of autism coverage fund revenues to be expended for university autism programs and autism family assistance services; increase. (Sen. D. Hildenbrand)
9		0138	Yes	4/1	4/1	6/30/15	Crime victims; rights; distribution of crime victim's rights funds; modify. (Sen. D. Hildenbrand)
10	4051		Yes	4/9	4/9	4/9/15	Taxation; administration; disclosure of certain tax-exempt property; provide for. (Rep. J. Farrington)
11		0042	Yes	4/9	4/9	4/9/15	Vehicles; driver training; certain requirements applicable to commercial learner's permit; amend to comply with federal regulations. (Sen. T. Casperson)
12		0054	Yes	4/14	4/14	7/13/15	Natural resources; hunting; use of unmanned vehicles or devices to interfere with or harass another individual who is hunting or fishing; prohibit. (Sen. T. Casperson)
13		0055	Yes	4/14	4/14	7/13/15 #	Natural resources; hunting; use of unmanned vehicles or device for taking game or fish; prohibit. (Sen. P. Pavlov)
14	4119		Yes	4/14	4/14	4/14/15 #	Civil procedure; garnishment; garnishment of periodic payments; revise procedure. (Rep. D. Garcia)
15	4120		Yes	4/14	4/14	9/30/15 #	Labor; fair employment practices; deductions from wages without written consent of employee; include certain reimbursements related to garnishment. (Rep. M. McCready)
16		0053	Yes	4/14	4/14	7/13/15	Weapons; firearms; exemption for retired federal law enforcement officers to carry a concealed pistol in pistol-free zones; provide for. (Sen. R. Jones)

* - I.E. means Legislature voted to give the Act immediate effect.
** - Act takes effect on the 91st day after sine die adjournment of the Legislature.
*** - See Act for applicable effective date.
+ - Line item veto.
++ - Pocket veto.
- Tie bar.