

Ohio Board of Building Standards



AMENDMENTS GROUP XCII (92)

PUBLIC HEARING DRAFT

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PART A- Ohio Building Code Changes

PART C- Ohio Plumbing Code Changes

August 19, 2016

**PUBLIC HEARING DRAFT
AMENDMENTS GROUP XCII (92)**

Public Hearing
Friday, August 19, 2016
10:00 AM
6606 Tussing Road
Reynoldsburg, Ohio 43068

Notice is hereby given that the Ohio Board of Building Standards will convene for a public hearing at 10:00 A.M., Friday, August 19, 2016, in Hearing Room #1, at 6606 Tussing Road, Reynoldsburg, Ohio. The purpose of the hearing is to solicit testimony on proposed actions taken on select rules of the Administrative Code, identified as Amendments Group XCII (92), pursuant to Chapters 119., 3781., 3791., and 4104. of the Revised Code.

Synopsis of the proposed rule changes:

PART A – OHIO BUILDING CODE RULES

The Board proposes to amend the Ohio Administrative Code as follows: **4101:1-1-01** to correct the fee schedule for the Division of Industrial Compliance; **4101:1-13-01 (rescind and adopt new)** to add amendments to the ICC IECC and the ASHRAE 90.1 commercial energy conservation standards; **4101:1-35-01** to update the commercial energy conservation standard ASHRAE 90.1 from the 2007 edition to the 2010 edition with amendments and to update the commercial energy conservation standard ICC IECC from the 2009 edition to the 2012 edition with amendments.

PART B – OHIO PLUMBING CODE RULE

The Board proposes to amend the Ohio Administrative Code as follows: **4101:3-3-01** to clarify plumbing system testing requirements.

The full text of this public hearing draft containing the proposed rules can be viewed on the Board's website at <http://www.com.ohio.gov/dico/bbs/default.aspx>. Electronic copies of the public hearing draft on compact disc will be mailed upon written request to the Ohio Board of Building Standards at P.O. Box 4009, 6606 Tussing Rd., Reynoldsburg, Ohio 43068.

The full text of the proposed rules were filed electronically with the Legislative Service Commission, the Joint Committee on Agency Rule Review, and the Secretary of State as required in section 119.03 of the Revised Code. Prior to electronic filing of the rules, stakeholder meetings were held and electronic notification was provided to all stakeholders. The proposed rules and a Business Impact Analysis were posted and submitted to the Common Sense Initiative Office. Additionally, the Clerks of the 88 County Commissioners were notified of the filings as required by statute.

The rule filing can be viewed on the Register of Ohio (<http://www.registerofohio.state.oh.us>).

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PART A – Ohio Building Code Rules			
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4101:1-35-01	Amend	Referenced standards.	A-66
PART B – Ohio Plumbing Code Rules			
Rule number	Action	Tagline	Page numbers
4101:3-3-01	Amend	General regulations.	B-1

On the date and at the time and place of this hearing, any person affected by these rules may appear and be heard in person, by his attorney, or both. Any person may present their positions, arguments and contentions orally, or in writing. Any person may offer and examine witnesses and present evidence.

All new rules are shown underlined.

New wording in an amended rule is indicated by underlining and deleted wording is shown as stricken text as follows: ~~deleted~~.

PART A

4101:1-1-01 Administration.

***Section 101
General***

101.1 Title. *Chapters 4101:1-1 to 4101:1-35 of the Administrative Code shall be designated as the “Ohio Building Code” for which the designation “OBC” may be substituted. The “International Building Code 2009, first printing, Chapters 2 to 35,” as published by the “International Code Council, Inc.” is used as the basis of this document and is incorporated fully except as modified herein. References in these chapters to “this code” or to the “building code” in other sections of the Administrative Code shall mean the “Ohio Building Code.”*

101.2 Scope. *The provisions of the “Ohio Building Code”, the “Ohio Mechanical Code”, and the “Ohio Plumbing Code” shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures. As provided in division (B) of section 3791.04 of the Revised Code, no plans or specifications shall be approved or inspection approval given unless the building represented by those plans or specifications would, if constructed, repaired, erected, or equipped according to those plans or specifications, comply with Chapters 3781. and 3791. of the Revised Code and any rules adopted by the board. An owner may exceed the requirements of the “Ohio Building Code” in compliance with section 102.9.*

Exceptions:

- 1. This code applies to detached one-, two-, and three-family dwellings and structures accessory to those dwellings, only to the extent indicated in section 310 of this code.*
- 2. Buildings owned by and used for a function of the United States government.*
- 3. Buildings or structures which are incident to the use for agricultural purposes of the land on which said buildings or structures are located, provided such buildings or structures are not used in the business of retail trade; for the purposes of this section, a building or structure is not considered used in the business of retail trade if fifty per cent or more of the gross income received from sales of products in the building or structure by the owner or operator is from sales of products produced or raised in a normal crop year on farms owned or operated by the seller (see sections 3781.06 and 3781.061 of the Revised Code).*

4. *Agricultural labor camps.*
5. *Type A or Type B family day-care homes, except for the inspection required for licensure by the “Ohio Department of Jobs and Family Services (ODJFS)”. This required inspection shall be conducted by the certified building department having jurisdiction or the division of industrial compliance and labor in accordance with the inspection checklist found on the board of building standard’s website.*
6. *Buildings or structures which are designed, constructed, and maintained in accordance with federal standards and regulations and are used primarily for federal and state military purposes where the U.S. secretary of defense, pursuant to 10 U.S.C. Sections 18233(A)(1) and 18237, has acquired by purchase, lease, or transfer, and constructs, expands, rehabilitates, or corrects and equips, such buildings or structures as he determines to be necessary to carry out the purposes of Chapter 1803 of the U.S.C.*
7. *Manufactured homes constructed under “24 CFR Part 3280,” “Manufactured Home Construction and Safety Standards” and within the scope of the rules adopted by the Ohio Manufactured Home Commission.*
8. *Sewerage systems, treatment works, and disposal systems (the tanks, piping, and process equipment associated with these systems) regulated by the legislative authority of a municipal corporation or the governing board of a county or special district owning or operating a publicly owned treatment works or sewerage system as stated in division (A) of section 6111.032 of the Revised Code, however, a building that houses such process equipment is within the scope of this code.*
9. *Building sewer piping.*
10. *Amusement rides and portable electric generators and wiring supplying carnival and amusement rides regulated by the Ohio Department of Agriculture pursuant to sections 1711.50 to 1711.57 of the Revised Code.*
11. *Structures directly related to the operation of a generating plant or major utility facilities regulated by the power siting board. As a condition of the power siting board’s approval, the building department may be requested to review and inspect these structures for compliance with the rules of the board of building standards. However, the building department has no enforcement authority.*
12. *Public water systems (the tanks, foundations, piping, and process equipment associated with these systems) regulated by the Ohio Environmental Protection Agency in accordance with division (A) of section 6109.07 of the Revised Code,*

however, a building that houses such process equipment is within the scope of this code.

13. Private water systems (the tanks, foundations, piping, and process equipment associated with these systems) regulated by the Ohio Department of Health in accordance with section 3701.344 of the Revised Code, however, a building that houses such process equipment is within the scope of this code.

14. Fixed or floating docks (including the electrical wiring, lighting, and fire protection systems serving the docks) at marinas or boatyards, unless the docks directly serve as a means of egress from, or an accessible route to, a regulated building located at the marina or boatyard.

15. Portable mobile vehicles which have been issued a Vehicle Identification Number (VIN) by the United States department of transportation. The vehicles have wheels and license plates and are intended for transportation on the public streets and highways. Examples of the exempt vehicles include, but are not limited to, recreational vehicles, book mobiles, blood mobiles, mobile medical imaging units, mobile concession trailers, network television transmission and production trailers used at sporting events, mobile restroom facilities, mobile pet grooming units, etc.

101.2.1 Appendices. *The content of the appendices to the Administrative Code is not adopted material but is approved by the board of building standards (BBS) and provided as a reference for code users.*

101.3 Intent. *The purpose of this code is to establish uniform minimum requirements for the erection, construction, repair, alteration, and maintenance of buildings, including construction of industrialized units. Such requirements shall relate to the conservation of energy, safety, and sanitation of buildings for their intended use and occupancy with consideration for the following:*

1. Performance. *Establish such requirements, in terms of performance objectives for the use intended.*

2. Extent of use. *Permit to the fullest extent feasible, the use of materials and technical methods, devices, and improvements which tend to reduce the cost of construction without affecting minimum requirements for the health, safety, and*

security of the occupants of buildings without preferential treatment of types or classes of materials or products or methods of construction.

3. Standardization. *To encourage, so far as may be practicable, the standardization of construction practices, methods, equipment, material and techniques, including methods employed to produce industrialized units.*

The rules of the board and proceedings shall be liberally construed in order to promote its purpose. When the building official finds that the proposed design is a reasonable interpretation of the provisions of this code, it shall be approved. Materials, equipment and devices approved by the building official pursuant to section 114 shall be constructed and installed in accordance with such approval.

101.4 Referenced codes. *The other codes listed in sections 101.4.1 to 101.4.7 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.*

101.4.1 Mechanical. *Chapters 4101:2-1 to 4101:2-15 of the Administrative Code, designated as the “Ohio Mechanical Code,” shall apply to the installation, alterations, repairs, and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators, and other energy-related systems.*

101.4.2 Plumbing. *Chapters 4101:3-1 to 4101:3-13 of the Administrative Code, designated as the “Ohio Plumbing Code,” shall apply to the installation, alterations, repairs and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewerage system and all aspects of a medical gas system.*

101.4.3 Elevator. *The provisions of the “Ohio Elevator Code” (Chapters 4101:5-1 to 4101:5-3 of the Administrative Code) shall apply to the design, construction, repair, alteration and maintenance of elevators and other lifting devices as listed and defined therein.*

101.4.4 Fire prevention. *The provisions of the “Ohio Fire Code” (Chapters 1301:7-1 to 1301:7-7 of the Administrative Code) shall apply to the preventive measures which provide for fire-safe conduct and operations in buildings and includes the maintenance of fire-detection, fire alarm, and fire extinguishing equipment and systems, exit facilities, opening protectives, safety devices, good housekeeping practices and fire drills.*

101.4.5 Boiler. *The provisions of the “Ohio Boiler and Pressure Vessel Rules” (Chapters 4101:4-1 to 4101:4-10 of the Administrative Code) shall apply to the design, construction, repair, alteration and maintenance of boilers and unfired pressure vessels as listed and defined therein.*

Section 102
Applicability and Jurisdictional Authority

102.1 General. *Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.*

102.2 Other laws. *The provisions of this code shall not be deemed to nullify any provisions of state or federal law. Municipal corporations may make further and additional regulations, not in conflict with Chapters 3781. and 3791. of the Revised Code or with the rules of the board of building standards. However approval by the board of building standards of any fixture, device, material, system, assembly or product of a manufacturing process, or method or manner of construction or installation shall constitute approval for their use anywhere in Ohio.*

102.3 Other rules. *As provided in division (B) of section 3781.11 of the Revised Code, the rules of the board of building standards shall supersede and govern any order, standard, or rule of the divisions of the fire marshal or industrial compliance in the department of commerce, and the department of health and of counties and townships, in all cases where such orders, standards or rules are in conflict with the rules of the board of building standards, except that rules adopted and orders issued by the fire marshal pursuant to Chapter 3743. of the Revised Code prevail in the event of a conflict.*

The rules of the board of building standards adopted pursuant to section 3781.10 of the Revised Code shall govern any rule or standard adopted by the board pursuant to sections 4104.02 and 4105.011 of the Revised Code.

102.4 Application of references. *References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.*

102.5 Referenced codes and standards. *When a reference is made within the building, mechanical, or plumbing codes to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in Chapter 35 of the building code, Chapter 15 of the mechanical code, or Chapter 13 of the plumbing code.*

The codes and standards referenced in the building, mechanical, and plumbing codes shall be considered part of the requirements of these codes as though the text were printed in this code, to the prescribed extent of each such reference. Where differences occur between provisions of these codes and the referenced standards, the provisions of these codes shall apply.

102.6 Partial invalidity. *In the event any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions thereof, and it shall be presumed that this code would have been adopted without such illegal or invalid parts or provisions.*

102.7 Existing structures. *The provisions of Chapter 34 shall control the alteration, repair, addition, maintenance, and change of occupancy of any existing structure.*

The occupancy of any structure currently existing on the date of adoption of this code shall be permitted to continue without change provided there are no orders of the building official pending, no evidence of fraud, or no serious safety or sanitation hazard. When requested, such approvals shall be in the form of a "Certificate of Occupancy for an Existing Building" in accordance with section 111.2.

Buildings constructed in accordance with plans which have been approved prior to the effective date of this code are existing buildings.

102.8 Temporary Structures. *The building official is authorized to issue approvals for temporary structures. Such approvals shall be in the form of a "Certificate of Occupancy for a Temporary Building" in accordance with section 111.1.6. This section does not apply to time-limited occupancies in existing structures. See section 111.1.5 for time-limited occupancies.*

102.8.1 Conformance. *Temporary structures shall conform to the structural strength, fire safety, means of egress, accessibility, light, ventilation and sanitary requirements of this code as necessary to ensure the public health, safety and general welfare. Temporary tents and membrane structures shall also comply with the applicable provisions in section 3103.*

102.8.2 Termination of approval. *The building official is authorized to terminate approval for a temporary structure and to order the temporary structure to be discontinued if conditions of the approval have been violated or the structure or occupancy poses an immediate hazard to the public or occupants of the structure.*

102.9 Non-required work. *Any component, building element, equipment, system or portion thereof not required by this code shall be permitted to be installed as a partial or complete system provided that it is constructed or installed in accordance with this code to the extent of the installation.*

102.10 Work exempt from approval. *Approval shall not be required for the following:*

Building:

1. *One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed one hundred twenty square feet (11.15 m²) and playground structures.*
2. *Fences not over six feet (1829 mm) high.*
3. *Oil derricks.*
4. *Retaining walls which are not over four feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or III-A liquids.*
5. *Water tanks supported directly upon grade if the capacity does not exceed five thousand gallons (18 927 L) and the ratio of height to diameter or width does not exceed two to one.*
6. *Sidewalks and driveways not more than thirty inches (762 mm) above grade and not over any basement or story below and which are not part of an accessible route.*
7. *Finishes not regulated by this code, decorating, or other work defined as maintenance or minor repair.*
8. *Temporary motion picture, television and theater stage sets and scenery.*
9. *Window awnings supported by an exterior wall of Group R-3.*
10. *Tents and membrane structures exempted in section 3102.1.1.*
11. *Above-ground storage tanks as defined in rule 4101:1-2-01 of the Administrative Code and the associated tank foundations.*

Electrical:

1. *Minor repair work, including the replacement of lamps or the connection of approved portable electrical equipment to approved permanently installed receptacles.*
2. *Electrical equipment used for radio and television transmissions except equipment and wiring for power supply, and the installations of towers and antennas.*
3. *The installation of any temporary system required for the testing or servicing of electrical equipment or apparatus.*
4. *Electrical wiring, devices, appliances, apparatus or equipment operating at less than twenty-five volts and not capable of supplying more than fifty watts of energy, unless specifically addressed in this code.*
5. *Process equipment and the associated wiring on the load side of the power disconnect to the equipment.*

Gas:

1. *Portable heating appliances;*
2. *Replacement of any part that does not alter approval of equipment or make such equipment unsafe.*
3. *Gas distribution piping owned and maintained by public or municipal utilities and located upstream of the point of delivery.*
4. *Process equipment, including the associated tanks, foundations, and process piping. For combination building services/process or power piping systems, the power or process piping located downstream of the control valve which separates the process from the building services piping is exempt from approval.*

Mechanical:

1. *Portable heating appliances;*
2. *Portable ventilation equipment;*
3. *Portable cooling units;*
4. *Replacement of any part which does not alter its approval or make it unsafe;*
5. *Portable evaporative cooler;*

6. *Process equipment, including the associated tanks, foundations, and process piping. For combination building services/process or power piping systems, the power or process piping located downstream of the control valve which separates the process from the building services piping is exempt from approval.*
7. *Heating and cooling distribution piping installed and maintained by public or municipal utilities.*

Plumbing:

1. *The repair of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drain-pipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and an approval shall be obtained and inspection made as provided in this code.*
2. *The clearance of stoppages or the repair of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.*
3. *Process equipment, including the associated tanks, foundations, and process piping. For combination building services/process or power piping systems, the power or process piping located downstream of the control valve which separates the process from the building services piping is exempt from approval.*

102.10.1 Emergency repairs. *Where equipment replacements and repairs must be performed in an emergency situation, an application for approval shall be submitted within the next working business day to the building official.*

102.10.2 Minor repairs. *Minor repairs to structures may be made without application or notice to the building official. Such repairs shall not include the cutting away of any wall, partition or portion thereof, the removal or cutting of any structural beam or load bearing support, or the removal or change of any required means of egress, or rearrangement of parts of a structure affecting the egress requirements; nor shall ordinary repairs include addition to, alteration of, replacement or relocation of any standpipe, water supply, sewer, drainage, drain leader, gas, soil, waste, vent or similar piping, electric wiring or mechanical or other work affecting public health or general safety.*

102.11 Building department jurisdictional limitations. *A municipal, township, or county building department that has been certified by the board of building standards, pursuant to section 103.2, shall enforce provisions of the rules of the board and of Chapters 3781.*

and 3791. of the Revised Code, relating to construction, arrangement, and the erection of buildings or parts thereof as defined in the rules of the board in accordance with the certification except as follows:

*1. **Fire.** The state fire marshal or fire chief of municipal corporations or townships, having fire departments, shall enforce all provisions of the rules of the board relating to fire prevention.*

*2. **Health.** The department of health, or the boards of health of city or general health districts, the division of industrial compliance of the department of commerce, or the departments of building inspection of municipal corporations, townships, or counties shall enforce such provisions relating to sanitary construction.*

*3. **Sewerage and drainage system.** In accordance with Section 3781.03 of the Revised Code, the department of the city engineer, in cities having such departments, the boards of health of health districts, or the sewer purveyor, as appropriate, shall have complete supervision and regulation of the entire sewerage and drainage system of the jurisdiction, including the building sewer and all laterals draining into the street sewers. Such department or agency shall have control and supervision of the installation and construction of all drains and sewers that become a part of the sewerage system of the jurisdiction and shall issue all the necessary permits and licenses for the construction and installation of all building sewers and of all other lateral drains that empty into the main sewers. Such department or agency shall keep a permanent record of the installation and location of every drain and sewerage system of the city.*

*4. **Power Generation.** Structures directly related to the operation of a generating plant or major utility facilities regulated by the power siting board. As a condition of the power siting board's approval, the building department may be requested to review and inspect these structures for compliance with the rules of the board of building standards. However, the building department has no enforcement authority.*

*5. **State Projects.** Certification does not confer any jurisdiction to a certified building department to regulate:*

5.1 The construction of buildings by the state of Ohio or on land owned by the state of Ohio including, but is not limited to, its agencies, authorities, boards, commissions, administrative departments, instrumentalities, community or technical college districts, but does not include other political subdivisions.

Exception: *Local school district building projects funded by the Ohio school facilities commission in accordance with Chapter 3318. of the Revised Code where the local certified building department is authorized by the board to regulate construction of school facilities.*

5.2 *Park districts created pursuant to Chapter 1545. of the Revised Code.*

5.3 *The construction of buildings or structures within the scope of the building code on the premises of, and directly related to the operation of, natural gas liquids fractionation or natural gas processing facilities.*

Note: *The lands owned by Miami university in the city of Oxford and Oxford township in Butler County and leased to private individuals or corporations under the land rent provisions of the Act of February 17, 1809, as set forth at 7 Ohio laws 184, are subject to local certified building department jurisdiction and are exempt from these provisions.*

Section 103 **Certified building departments, personnel, and appeals boards**

Refer to division 4101:7 of the Administrative Code for existing relocated building department, building department personnel, and boards of building appeals certification requirements.

Section 104 **Duties and responsibilities**

104.1 General. *Personnel of building departments and local boards of appeals that have been certified by the board of building standards, pursuant to section 103, shall be responsible for performing the duties described in this section.*

104.2 Building department personnel duties and responsibilities. *Municipal, township, or county building departments certified by the board shall have personnel qualified to perform the enforcement duties and responsibilities described in this section.*

104.2.1 Building official. *The building official is responsible for the enforcement of the rules of the board and of Chapters 3781. and 3791. of the Revised Code relating to the construction, arrangement, and the erection of buildings or parts thereof. All building officials shall conduct themselves in a professional, courteous, impartial, responsive, and cooperative manner. The building official shall render interpretations of this code and to adopt policies*

and procedures in order to clarify the application of its provisions. Such interpretations, policies, and procedures shall be in compliance with the intent and purpose of this code. Building officials shall be responsible to assure that a system is in place to track and audit all projects, to assure that all building department personnel perform their duties in accordance with this section, and for the overall administration of a building department as follows:

104.2.1.1 Applications and plan approvals. *The building official shall receive applications, require or cause the submitted construction documents to be examined, ascertain by such examinations whether the construction indicated and described is in accordance with the requirements of this code, and shall issue plan approvals for the construction, erection, alteration, demolition, and moving of buildings and structures.*

104.2.1.1.1 Plan examination by the building official. *When the building department does not have in its full-time employ a certified master plans examiner, the certified building official shall examine construction documents to determine compliance with the rules of the board if the registered design professional elects to submit construction documents that contain a written certification by the registered design professional indicating conformance with the requirements of the rules of the board and Chapters 3781. and 3791. of the Revised Code.*

104.2.1.2 Orders. *The building official shall issue all orders in accordance with section 109 to ensure compliance with this code.*

104.2.1.3 Inspections. *If the plans for the erection, construction, repair, alteration, relocating, or equipment of a building are subject to inspection by the building official, under section 108, the building official shall cause to be made such inspections, investigations, and determinations as are necessary to determine whether or not the work which has been performed and the installations which have been made are in conformity with the approved construction documents.*

Exception: *Special inspections required under section 1704.*

104.2.1.4 Department records. *The building official shall keep official records of applications received, certificates of plan approval issued, notices and orders issued, certificates of occupancy, and other such records required by the rules of the board of building standards. Such information shall be retained in the official permanent record for each project. One set of approved construction documents shall be retained by the building official for a period of not less than one hundred eighty days from date of completion of the permitted work, or as required by document retention regulations.*

104.2.1.5 Department reports. *The building official shall be responsible for the submission of reports and any requested special information to the board of building standards as required in paragraph (F) of rule 4101:7-2-01 of the Administrative Code. Failure to submit these reports as required by rule or by special request or inquiry of the board of building standards may be grounds for board action as described in paragraph (F)(7) of rule 4101:7-3-01 of the Administrative Code.*

104.2.2 Plans Examiners. *A plans examiner is responsible for the examination of construction documents in accordance with section 107, within the limits of their certification, to determine compliance with the rules of the board. All plan examiners shall effectively communicate the results of their plan review as designated by the building official. A plans examiner shall conduct themselves in a professional, courteous, impartial, responsive, and cooperative manner.*

104.2.2.1 Master plans examiner. *A master plans examiner is responsible for the examination of all types of construction documents to determine compliance with the rules of the board, except when the building official examines the construction documents pursuant to section 104.2.1.1.1.*

104.2.2.1.1 Master plans examiner trainee. *A master plans examiner trainee is responsible for the examination of all types of construction documents to determine compliance with the rules of the board under the direct supervision of an individual holding a master plans examiner certification.*

104.2.2.1.2 Electrical plans examiner. *An electrical plans examiner is responsible for the examination of construction documents related to electrical systems to determine compliance with the rules of the board.*

If the department does not have in its employ or under contract persons holding the electrical plans examiner certification, then the examination of the construction documents for compliance with the electrical provisions of the code shall be done by the master plans examiner.

104.2.2.1.3 Plumbing plans examiner. *A plumbing plans examiner is responsible for the examination of construction documents related to plumbing systems to determine compliance with the rules of the board.*

If the department does not have in its employ or under contract persons holding the plumbing plans examiner certification, then the examination of the construction documents for compliance with the plumbing provisions of the code shall be done by the master plans examiner.

104.2.2.1.4 Mechanical plans examiner. *A mechanical plans examiner is responsible for the examination of construction documents related to heating, ventilating, and air conditioning (“HVAC”) systems and the associated refrigeration, fuel gas, and heating piping to determine compliance with the rules of the board.*

If the department does not have in its employ or under contract persons holding the mechanical plans examiner certification, then the examination of the construction documents for compliance with the mechanical provisions of the code shall be done by the master plans examiner.

104.2.3 Inspectors. *An inspector is responsible for performing inspections and determining that work, for which they are certified to make inspections, is performed in compliance with the approved construction documents. All inspectors shall inspect the work to the extent of the approval given when construction documents were approved by the building official and for which the inspection was requested. All inspectors shall effectively communicate the results of their inspections as required by section 108, and shall conduct themselves in a professional, courteous, impartial, responsive, and cooperative manner.*

104.2.3.1 Building inspector. *A building inspector is responsible to determine compliance with the approved construction documents in accordance with section 108.*

A building inspector trainee is designated to determine compliance with approved construction documents, in accordance with section 108, under the direct supervision of an individual holding a building inspector certification.

104.2.3.2 Plumbing inspector. *A plumbing inspector is responsible to determine plumbing system compliance with approved construction documents in accordance with section 108.*

A plumbing inspector trainee is designated to determine plumbing system compliance with approved construction documents, in accordance with section

108, under the direct supervision of an individual holding a plumbing inspector certification.

104.2.3.3 Electrical safety inspector. *An electrical safety inspector is responsible to determine electrical systems compliance with approved construction documents in accordance with section 108.*

An electrical safety inspector trainee is designated to determine electrical systems compliance with approved construction documents, in accordance with section 108, under the direct supervision of an individual holding an electrical safety inspector certification.

104.2.3.4 Elective inspectors. *Building departments may elect to employ inspectors designated as responsible for determining that work, for which they are certified, to make inspections is performed in compliance with approved construction documents.*

104.2.3.4.1 Mechanical inspector. *A mechanical inspector is responsible to determine compliance with the approved construction documents for heating, ventilating and air conditioning (HVAC) systems, and the associated refrigeration, fuel gas, and heating piping systems in accordance with section 108.*

If the department does not have in its employ or under contract persons holding the mechanical inspector certification, then the enforcement of the mechanical provisions shall be done by the building inspector;

A mechanical inspector trainee is designated to determine compliance with the approved construction documents for heating, ventilating and air conditioning (HVAC) systems, and the associated refrigeration, fuel gas, and heating piping systems, in accordance with section 108, under the direct supervision of an individual holding a mechanical inspector certification.

104.2.3.4.2 Fire protection inspector. *A fire protection inspector is responsible to determine compliance with approved construction documents for fire protection systems (automatic sprinkler systems, alternative*

automatic fire-extinguishing systems, standpipe systems, fire alarm and detection systems, and fire pump) in accordance with section 108.

If the department does not have in its employ or under contract persons holding the fire protection inspector certification, then the enforcement of the fire protection provisions shall be done by the building inspector.

104.2.3.4.3 Medical gas piping inspector. *A medical gas piping inspector is responsible to determine compliance with approved construction documents for non-flammable medical gas, medical oxygen, and medical vacuum systems in accordance with section 108.*

If the department does not have in its employ or under contract persons holding a medical gas piping inspector certification, then all enforcement of medical gas piping systems shall be deferred to either of the following: the local health district when that district requests to enforce those piping systems and the district has employed or hired under contract a person holding the medical gas piping inspector certification; or the superintendent of the division of industrial compliance in the department of commerce.

104.2.4 Liability. *Liability of certified building department personnel for any tortious act will be determined by Ohio courts to the applicable provisions of Chapter 2744. of the Revised Code.*

104.3 Certified boards of building appeals duties and responsibilities. *Before performing its duties, a jurisdiction wishing to establish a local board of building appeals shall receive certification by the board of building standards as required in section 103.14.*

104.3.1 Powers, local boards of building appeals. *Certified municipal and county boards of building appeals shall hear and decide the adjudication hearings referred to in section 109.1 within the jurisdiction of and arising from orders of the local building official in the enforcement of Chapters 3781. and 3791. of the Revised Code and rules adopted thereunder. The orders may be reversed or modified by the board if it finds:*

1. *The order contrary to such laws or rules;*
2. *The order contrary to a fair interpretation or application thereof; or*

3. *That a variance from the provisions of such laws or rules, in a specific case, will not be contrary to the public interest where literal enforcement of such provisions will result in unnecessary hardship.*

104.3.2 State board of building appeals. *The Ohio board of building appeals shall conduct the adjudication hearings in political subdivisions without certified boards or without contracts with certified boards.*

104.3.3 Materials. *A certified board of building appeals may not prohibit the use of materials or assemblages authorized for statewide use by the board of building standards pursuant to section 3781.12 of the Revised Code.*

104.4 Violation of duties. *Any person affected by the improper actions of any building department, building official, plans examiner, inspector, fire protection system designer, or local board of building appeals certified by the board of building standards may file a written complaint with the board. Complaints will be processed by the board in accordance with the procedures outlined in the applicable certification rule found in division 4101:7 of the Administrative Code.*

Section 105

Approvals

105.1 Approvals required. *Any owner or authorized agent who intends to construct, enlarge, alter, repair, move, or change the occupancy of a building or structure, or portion thereof, or to erect, install, enlarge, alter, repair, remove, convert or replace any electrical, gas, mechanical, plumbing system, other building service equipment, or piping system the installation of which is regulated by this code, or to cause any such work to be done, shall first make application to the building official and obtain the required approval.*

105.1.1 Nonconformance approval. *When construction documents are submitted which do not conform with the requirements of the rules of the board, such documents may be approved by the building official provided such nonconformance is not considered to result in a serious hazard and the owner or owner's representative subsequently submits revised construction documents showing evidence of compliance with the applicable provisions of the rules of the board. In the event such construction documents are not received within thirty days, the building official shall issue an adjudication order revoking the plan approval.*

105.1.2 Conditional approval. *When construction documents are submitted which cannot be approved under the other provisions of this rule, the building official, may at the request of the owner or owner's representative, issue a conditional plan approval when an objection to any portion of the construction documents results from conflicting interpretations of the code, or compliance requires only minor modifications to the building design or construction. No conditional approval shall be issued where the objection is to the application of specific technical requirements of the code or correction of the objection would cause extensive changes in the building design or construction. A conditional approval is a conditional license to proceed with construction or materials up to the point where construction or materials objected to by the agency are to be incorporated into the building. The conditions objected to shall be in writing from the building official which shall be an adjudication order denying the issuance of a license and may be appealed in accordance with section 3781.19 of the Revised Code. In the absence of fraud or a serious safety or sanitation hazard, all items previously examined shall be conclusively presumed to comply with Chapters 3781. and 3791. of the Revised Code and the rules of the board. Reexamination of the construction documents shall be limited to those items in the adjudication order. A conditional plan approval is not a phased plan approval.*

105.1.3 Previous approvals. *This code shall not require changes in the construction documents, construction or designated occupancy of a structure for which a lawful approval has previously been issued or otherwise lawfully authorized, and the construction of which has been pursued in good faith within one year of the approval of construction documents. One extension shall be granted for an additional year if requested by the owner at least ten days in advance of the expiration of the approval and upon payment of any fee not to exceed one hundred dollars. If, after the start of construction, work is delayed or suspended for more than six months, the approval is invalid. Two extensions shall be granted for six months if requested by the owner at least ten days in advance of the expiration of the approval and upon payment of any fee for each extension not to exceed one hundred dollars.*

105.1.4 Phased approval. *The building official shall issue an approval for the construction of foundations or any other part of a building, structure, or building service equipment before the construction documents for the whole building, structure or building service equipment have been submitted, provided that adequate information and detailed statements have been filed complying with applicable requirements of this code. The holder of such approval for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that an approval for the entire structure will be granted. Such approvals shall be issued for various stages in the sequence of construction provided that all information and data required by the code for that portion of the building or structure has been submitted. The holder of a phased plan approval may proceed only to the point for which approval has been given.*

105.1.5 Annual approval. *In lieu of an individual approval for each alteration to an existing electrical, gas, mechanical, plumbing, or piping installation, the building official may issue an annual approval upon application to any person, firm or corporation regularly employing individuals holding the related board certification in the building, structure or on the premises owned or operated by the applicant for the approval.*

105.1.5.1 Annual approval records. *The person to whom an annual approval is issued shall keep a detailed record of alterations made under such annual approval. The building official shall have access to such records at all times or such records shall be filed with the building official as designated. These records shall include the applicable construction documents in accordance with section 106.1.*

105.2 Validity of approval. *The construction, erection, and alteration of a building, and any addition thereto, and the equipment and maintenance thereof, shall conform to required plans which have been approved by the building official, except for minor deviations which do not involve a violation of the rules of the board. In the absence of fraud or a serious safety or sanitation hazard, any structure built in accordance with approved plans shall be conclusively presumed to comply with Chapters 3781. and 3791. of the Revised Code and the rules of the board.*

Exception: *Industrialized units shall be constructed to conform to the plans approved by the board.*

105.3 Expiration. *The approval of plans or drawings and specifications or data in accordance with this rule is invalid if construction, erection, alteration, or other work upon the building has not commenced within twelve months of the approval of the plans or drawings and specifications.*

One extension shall be granted for an additional twelve-month period if requested by the owner at least ten days in advance of the expiration of the approval and upon payment of a fee not to exceed one hundred dollars.

105.4 Extension. *If, in the course of construction, work is delayed or suspended for more than six months, the approval of plans or drawings and specifications or data is invalid. Two extensions shall be granted for six months each if requested by the owner at least ten days in advance of the expiration of the approval and upon payment of a fee for each extension of not more than one hundred dollars.*

105.5 Certificate of plan approval. *After plans have been approved in accordance with section 107, the building official shall furnish the owner/applicant a certificate of plan approval.*

105.5.1 Content. *The form of the certificate shall be as prescribed by the building official and shall show the serial number of the certificate, the address at which the building or equipment under consideration is or is to be located, the name and address of the owner, the signature of the building official who issued the certificate, and such other information as is necessary to facilitate and ensure the proper enforcement of the rules of the board.*

105.5.2 Duplicate issued upon request. *Upon application by the owner, the building official shall issue a duplicate certificate of plan approval to replace a lost or destroyed original.*

Section 106 **Construction documents**

106.1 Submittal documents. *Construction documents, statement of special inspections required and other data shall be submitted in two or more sets with each application for an approval. Before beginning the construction of any building for which construction documents are required under section 105, the owner or the owner's representative shall submit construction documents to the building official for approval. When construction documents have been found to be in compliance with the rules of the board of building standards in accordance with section 107 by a certified building department, that determination of compliance shall be deemed sufficient to obtain approval for construction pursuant to section 105.2 and the building official shall issue the certificate of plan approval. Construction documents for the installation of industrialized units shall be submitted to the building official for approval in accordance with the provisions of section 106.1.2(1).*

Exception: *No construction documents need be filed with the division of industrial compliance for site installation of industrialized units used exclusively as one-, two-, or three-family dwellings.*

106.1.1 Information on construction documents. *Construction documents shall be dimensioned and drawn upon suitable material. Electronic media documents are permitted to be submitted when approved by the building official. Construction documents shall be coordinated and 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. Construction documents, adequate for the scope of the project, shall include information necessary to determine compliance with the building, mechanical, plumbing, fire, electrical, energy, and fuel gas codes such as:*

1. **Index.** *An index of drawings located on the first sheet which shall also include all occupancy classification(s), type(s) of construction, the area in gross square feet for each level, the maximum design occupant load, the structural design loads, and the seismic design category and site class;*

2. **Site plan.** *A site plan showing a north orientation arrow, the size and location of new construction and all existing structures on the site, all property and interior lot line locations with setback and side yard dimensions and distances from buildings to lot lines, the locations of the nearest streets, the established street grades, the locations, types and sizes of all utility lines, the location of any fences, and the elevations of all proposed finished grades; and it shall be drawn in accordance with an accurate boundary line survey. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot. The building official is authorized to waive or modify the requirement for a site plan when the application for approval is for alteration or repair or when otherwise warranted.*

2.1 Buildings or structures located in flood hazard areas. *Construction documents submitted for buildings or structures located in communities with identified flood hazard areas, pursuant to section 1612, shall include the current FEMA “Flood Hazard Boundary Map” (FHBM), “Flood Insurance Rate Map” (FIRM) or “Flood Boundary Floodway Map” (FBFM) for the project location. The required site plan shall include building elevations using the same datum as the related flood hazard map. The owner shall be responsible for the compliance with local flood damage prevention regulations for additional critical elevation information for the project site.*

2.2 Site Accessibility Plan. *Information in plan view and details shall be submitted indicating compliance with the accessibility provisions of this code for the exterior of the building in addition to accessible features of the interior. When applicable, the plans shall include: the exterior accessible route between all facilities required to be connected; ramp locations and elevations along the exterior accessible route; number of and details for the required accessible van and car parking spaces and passenger loading areas; location and detail of required accessibility signage; grade/topographic elevations before and after proposed grading when site impracticality is intended to be applied.*

3. **Floor plans.** *Building configuration layout drawings with all walls and partitions shown including: plans of full or partial basements and full or partial attics and penthouses, grade elevations at the building perimeter, and references to other details and elevations. Floor plans must show all relevant information such as door swings, stairs and ramps, windows, shafts, all portions of the means of egress, plumbing fixtures, built-in fixtures, special equipment, vertical transportation, etc., and shall be sufficiently dimensioned to describe all relevant space sizes. Spaces shall be identified by appropriate code appellations (an "auditorium" may not be identified as a "meeting room" if its attributes indicate that it is an auditorium). The construction documents shall designate the number of occupants to be accommodated on every floor, and in all rooms and spaces;*

4. **Demolition.** *In the case of demolition, the floor plan shall identify construction to be demolished and the location, arrangement, and dimensions of existing construction that is to remain.*

5. **Roof plan.** *Roof outline, overall dimensions and dimensions of setbacks, slope of roof, drainage, reference to other details, roof materials, penetrations through roof, and roof-mounted equipment;*

6. **Exterior elevations.** *Vertical dimensions, floor-to-floor heights, opening heights, references to other details, floor lines, elevations of major elements, grade lines, foundation lines, material indications and notes, symbols for window schedule, gutters, signs and windows, doors, and all other openings.*

7. **Building sections.** *Vertical dimensions, elevations of the top of structural components and finish floor lines, materials, footings and foundations, reference to other details, ceiling lines, and major mechanical services.*

8. **Exterior building envelope.** *The exterior envelope shall be described in sufficient detail to determine compliance with this code and the referenced standards. Details shall be provided which describe flashing, intersections with dissimilar materials, corners, end details, control joints, intersections at roof, eaves, or parapets, means of drainage, water-resistive membrane details around openings, location and type of vapor retarders, window and door "U"-values, and insulation location and "R"-values. The supporting documentation shall fully describe the exterior wall system, which was tested, where applicable, as well as the test procedure used.*

9. **Wall Sections.** *Face of wall dimensions to other components, vertical dimensions from foundations to parapet relating all elements to top of structural elements, all connection methods, wall, ceiling, floor, foundation, and roof materials and construction details.*

10. **Interior elevations.** *Vertical dimensions to critical elements, references to other details, openings in walls, wall finishes, built-in items, and locations of switches, thermostats, and other wall-mounted equipment.*

11. **Schedules.** *Information or tables that describe the room finishes, doors, windows, and door hardware and controls. Wall and floor materials shall be described by cross-hatching (with explanatory key), by notation, or by other clearly understandable method.*

12. **Structure.** *Complete structural description of the building including size and location of all structural elements and a table of live, wind, snow, and seismic loads used in the design of the building and other data as required to fully describe the structural system.*

13. **Fire suppression system.** *Areas of protection, fire suppression system occupancy hazard classification, and water supply data.*

14. **Fire-resistance Ratings.** *The fire-resistance ratings of all structural elements as required by this code, data substantiating all required fire-resistance ratings including details showing how penetrations will be made for electrical, mechanical, plumbing, and communication conduits, pipes, and systems, and the materials and methods for maintaining the required structural integrity, fire-resistance rating, and firestopping.*

15. **System descriptions.** *Complete description of the plumbing, mechanical and electrical systems, including: materials, insulation "R"-values, general routing and sizes of all piping; location and type of plumbing fixtures and equipment; plumbing schematics and isometrics; materials, insulation "R"-values, general routing and sizes of all ductwork, vents, and louvers; location and type of heating, ventilation, air conditioning, and other mechanical equipment; location and type of all fire alarm, lighting and power equipment; type and size of all electrical conductors.*

*16. **Operations.** Information shall be provided regarding operations, the types, quantities, and arrangement of flammable, combustible, or hazardous materials proposed to be produced, used, dispensed, or stored in the facility; material safety data sheets for hazardous materials produced, used, or stored in the facility, the commodity and arrangement of high piled or rack storage, control areas, etc.*

*17. **Additional information.** Additional graphic or text information as may be reasonably required by the building official to allow the review of special or extraordinary construction methods or equipment.*

***106.1.1.1 Fire protection system drawings.** Construction documents shall be approved prior to the start of system installation. Related product_listing information shall be provided and drawings shall contain all information as required by the installation standards referenced in Chapter 9. In the event that the product listing information is not known at the time of plan examination, conditional plan approval shall be granted subject to subsequent submission of the listing information prior to installation of any part of the fire protection systems*

***106.1.1.2 Special inspections.** Where application is made for construction as described in this section, the owner or the registered design professional in responsible charge acting as the owner's agent shall identify those special inspections needed during construction on the types of work listed under section 1704.*

***106.1.2 Special provisions.** The following are special provisions:*

1. When construction includes the use of industrialized units or alternative materials, designs and methods of construction or equipment approved by the board, documentation shall be provided to the building official describing how they are to be used. Before these items are installed or used, the following shall be submitted:

1.1 A copy of the construction documents approved by the board; and

1.2 Details pertaining to on-site interconnection of modules or assemblies.

***Exception:** When construction includes the use of industrialized units for one-, two-, and three- family dwellings and their accessory structures,*

the documents shall be provided to the residential building official. If no residential department is certified in a jurisdiction, construction documents for one-, two-, or three-family dwellings comprised of industrialized units are not required to be submitted for approval.

2. *Construction documents submitted that include construction of public swimming pools shall include documentation indicating approval of the pool construction documents by the Ohio department of health in accordance with section 3109.1.1 of the "OBC".*

3. *Construction documents submitted that include alterations or construction of, or additions to buildings where sales, display, storage or manufacture of consumer fireworks, 1.4g or display fireworks, 1.3g shall include documentation indicating that the applicant has received preliminary approval for construction issued by the state fire marshal pursuant to sections 3743.04 and 3743.17 of the Revised Code.*

4. *The elevation certification provided by a registered surveyor and dry floodproofing certification, when required in section 1612.5 for buildings or structures located in communities with identified flood hazard areas, shall be submitted to the building official.*

5. *When a certified building department receives an application for plan approval in a jurisdiction in which the local fire official has requested an opportunity to provide input to the certified building department on issues related to fire protection, the building official shall require that the applicant provide a set of relevant construction documents for the local fire official. The building official shall evaluate the local fire official's comments related to fire protection provisions of this code that are received within the timeframe established by the building official and section 3791.04 of the Revised Code prior to issuing the plan approval certification.*

6. *Construction documents submitted that include alterations or construction of, or additions to jails, workhouses, or municipal lockups shall include documentation indicating that the applicant has received preliminary approval for construction issued by the Ohio department of rehabilitation and corrections.*

7. *When, as a part of work subject to this code, construction includes or relates to the storage or use of hazardous, flammable or combustible liquids or gases connected to and utilized for the operation of building service equipment, such construction shall be in accordance with the provisions of this code. Notification of such storage or use shall be provided to the fire official for emergency planning purposes. When construction includes or relates to the storage or use of hazardous, flammable or combustible liquids or gases not*

associated with the operation of building service equipment, the owner shall notify the building official in accordance with Sections 106.1.1(item #16) and 414.1.3 to ensure that the building has been adequately protected to address the hazard. However, approval of the storage and use shall be obtained from the fire official in accordance with the fire code.

106.2 Evidence of responsibility. *Required construction documents, when submitted for review as required under section 107, shall bear the identification of the person primarily responsible for their preparation.*

106.2.1 Seal requirements. *When it is required that documents be prepared by a registered design professional, the building official shall be authorized to require the owner to engage and designate on the approval application a registered design professional who shall act as the registered design professional in responsible charge. The registered design professional in responsible charge shall be responsible for reviewing and coordinating submittal documents prepared by others, including phased and deferred submittal items, for compatibility with the design of the building.*

Where structural observation is required by section 1709, the inspection program shall name the individual or firms who are to perform structural observation and describe the stages of construction at which structural observation is to occur. See also duties specified in section 1704.

Construction documents shall bear the seal of a registered design professional pursuant to section 3791.04 of the Revised Code.

Exception: *The seal of a registered design professional is not required on construction documents for:*

1. *Buildings or structures classified as one-, two-, or three-family dwellings and accessory structures;*
2. *Energy conservation design for buildings or structures classified as one-, two-, or three-family dwellings;*
3. *Fire protection system designs submitted under the signature of an individual certified in accordance with section 107.4.4;*

4. *Installation of replacement devices, equipment or systems that are equivalent in type and design to the replaced devices, equipment or systems; and*

5. *Alterations, construction or repairs to any buildings or structures subject to sections 3781.06 to 3781.18 and 3791.04 of the Revised Code where the building official determines that the proposed work does not involve the technical design analysis of work affecting public health or general safety in the following areas: means of egress, structural, mechanical, electrical, plumbing, or fire protection.*

5.1 For the purpose of this exception, technical design analysis is defined as the development of integrated solutions using analytical methods in accordance with established scientific and engineering principles.

106.3 Amended construction documents. *If substantive changes to the building are contemplated after first document submission, or during construction, those changes must be submitted to the building official for review and approval prior to those changes being executed. The building official may waive this requirement in the instance of an emergency repair, or similar instance.*

106.4 Alternative materials and methods of construction and equipment. *For approval of a device, material or assembly that does not conform to the performance requirements in this code, section 114 shall apply.*

106.5 Alternative engineered design. *The design, documentation, inspection, testing and approval of an alternative engineered system shall comply with sections 106.5.1 to 106.5.3 of this rule.*

106.5.1 Design criteria. *An alternative engineered design shall conform to the intent of the provisions of this code and shall provide an equivalent level of quality, strength, effectiveness, fire resistance, durability and safety. Materials, equipment or components shall be designed and installed in accordance with the manufacturer's installation instructions.*

106.5.2 Submittal. *The registered design professional shall indicate on the application that the system is an alternative engineered design. The approval and permanent approval records shall indicate that an alternative engineered design was*

part of the approved installation. Where special conditions exist, the building official is authorized to require additional construction documents to be prepared by a registered design professional.

106.5.3 Technical data. *The registered design professional shall submit sufficient technical data to substantiate the proposed alternative engineered design and to prove that the performance meets the intent of this code.*

Exception: *Approval of alternative materials, products, assemblies and methods of construction in accordance with Section 114.3.2.*

Section 107 **Plan approval process**

107.1 Plan review required. *Where the rules of the board are applicable under section 101.2, before a building or addition to a building is constructed or erected, and before a building is altered or relocated, or building equipment is installed, or there is a change of occupancy, or a resubmission of construction documents is required or received, construction documents relating to the work and equipment under consideration shall be prepared in conformity with section 106 and be submitted to the building department for examination and approval.*

107.2 Application for plan approval. *To obtain a plan approval, the owner or the owner's representative shall first file an application in writing on a form furnished by the building department for that purpose. Such application shall:*

- 1. Identify and describe the work to be covered for which application is made for approval.*
- 2. Describe the land on which the proposed work is to be done, street address or similar description that will readily identify and locate the proposed building or work.*
- 3. Indicate the use and occupancy(ies) for which the proposed work is intended.*
- 4. Be accompanied by construction documents and other information as required in section 106.1.*
- 5. Be signed by the owner, or the owner's authorized agent.*
- 6. Give such other data and information as required by the building official.*

7. *Identify and clearly indicate whether the project or portion of a project intends to utilize an industrialized unit, as defined in section 113.2.*

8. *Identify and clearly indicate whether the project or portion of a project intends to utilize an assembly of individually listed or labeled products.*

107.2.1 Time limitation of application. *The approval of plans under this section is a “license” and the failure to approve such plans as submitted within thirty days after filing or the disapproval of such plans is an “adjudication order denying the issuance of a license” requiring the opportunity for an “adjudication hearing” as provided by sections 119.07 to 119.13 of the Revised Code and as modified by sections 3781.031 and 3781.19 of the Revised Code. In accordance with section 109, an adjudication order denying the issuance of a license shall specify the reasons for such denial.*

If construction documents have been reviewed for compliance with the rules of the board, an adjudication order has been issued to the owner and the owner’s representative, and the owner has neither exercised the right to appeal pursuant to section 110 nor resubmitted corrected documents, the application is invalid six months from the date of the issuance of the adjudication order.

107.3 Order of plan review. *Construction documents submitted for approval shall be examined for compliance with the rules of the board in the order received, unless otherwise consented to by the building owners affected by deferred examination.*

107.4 Review of plans. *When construction documents have been submitted to the building department for review and approval, the building official shall cause the construction documents to be examined for compliance with the rules of the board by assigning the examination duty to an appropriately certified plans examiner. The plans examiner shall first determine whether the construction documents are adequate as required in section 106. If so, the plans examiner shall examine the construction documents to determine compliance with the rules of the board.*

107.4.1 Inadequate construction documents. *If construction documents are determined to be incomplete or inadequate for examination, the plans examiner shall report the findings to the building official. The plans examiner shall examine the construction documents to the extent possible and identify what information from section 106 is missing and needed to complete the required examination. Upon receipt and review of the report, the building official shall proceed as required in section 107.6.*

107.4.2 Resubmitted documents. *If construction documents are resubmitted in response to an adjudication order, the review for compliance shall be limited to*

determining that the item of non-compliance, and any work affected, has been corrected and shall not be deemed to authorize another review of unmodified construction documents previously determined to comply.

107.4.3 Sealed construction documents. *Construction documents which have been prepared by an Ohio registered design professional who prepared the same as conforming to the requirements of the rules of the board pertaining to design loads, stresses, strength, and stability, or other requirements involving technical analysis, need be examined only to the extent necessary to determine conformity of such construction documents with other requirements of the rules of the board.*

107.4.4 Fire protection system construction documents. *Construction documents for fire protection systems authorized to be submitted by individuals certified pursuant to Chapter 4101:7-5 of the Administrative Code shall:*

1. When submitted under the signature of an individual certified under section 3781.105 of the Revised Code, be processed in the same manner as construction documents submitted under the signature of a registered design professional. Any statistical data, reports, explanations, plan description, or information that would not also be required for a similar submission by a registered design professional need not be submitted by a certified designer.

2. If certified by a registered design professional or individual certified under section 3781.105 of the Revised Code as conforming to requirements of the rules of the board pertaining to design loads, stresses, strength, stability, or other requirements involving technical analysis, be examined by the building department official only to the extent necessary to determine conformity of such construction documents with other requirements adopted by the board under Chapters 3781. and 3791. of the Revised Code.

107.5 Plan review, compliance with rules of the board. *If the construction documents are determined to comply with the rules of the board, the plans examiner shall communicate the findings and recommend the conditions and type of approval to the building official.*

107.5.1 Building official approval. *The building official shall evaluate the plans examiner's recommendations and any communications received from the fire official as described in section 106.1.2. When the construction documents have been determined to conform to the applicable provisions of the rules of the board, the building official shall endorse or stamp such plans as approved and issue the certificate of plan approval in accordance with section 105.5.*

107.5.2 Posting. *The certificate of plan approval shall be posted in a conspicuous location on the site. The owner and the contractor shall preserve and keep the certificate posted until the final inspections have been completed.*

107.6 Plan review, items of noncompliance. *When the construction documents are examined and items of noncompliance with the rules of the board are found by the plans examiner, the building official shall proceed as required in either section 107.6.1 or section 107.6.2.*

107.6.1 Communication process for items of non-compliance.

1. Item(s) of non-compliance shall be communicated to the owner or the owner's representative and offer the following options:

1.1. The owner will revise the drawings and resubmit to the department.

1.2 The items of noncompliance will not be brought into compliance and will be referred to the building official as indicated in item 4 below.

2. The owner or the owner's representative shall indicate which option (item 1 above) will be exercised.

3. Notations of the communication shall be made on a plan review record. The notations shall include the plans examiner's name, the date of the communication with the owner or the owner's representative, the observed items of noncompliance, the code citation related to the item(s) of noncompliance, the action necessary to correct the item(s) of noncompliance, the option chosen by the

owner or the owner's representative, the name of the person communicated with, and the estimated dates of compliance and resubmission, if applicable.

4. If the owner or the owner's representative indicates that the work will not be brought into compliance with the rules of the board or requests an adjudication order, the plans examiner shall report to the building official in accordance with section 107.6.2.

107.6.2 Building official determination of noncompliance. *The building official shall evaluate the plans examiner's report and any reports received from the fire official as described in section 106.1.2 and render a final determination as to whether the items of non-compliance are to be communicated to the owner in the form of an adjudication order complying with section 109. The building official shall also determine whether any approvals are possible, and issue the appropriate approval as described in section 105.*

107.7 Approved construction document sets. *One set of approved construction documents shall be kept by the building official. The other set(s) shall be returned to the applicant, kept at the work site, along with manufacturers' installation instructions and product information, and shall be available for use by the inspector.*

Section 108

Inspection process

108.1 General. *After construction documents have been approved, construction or work may proceed in accordance with the approved documents. Construction or work for which an approval is required shall be subject to inspection. It shall be the duty of the owner or the owner's duly authorized representative to notify the building department when work is ready for inspection. Access to and means for inspection of such work shall be provided for any inspections that are required by this code.*

It shall be the duty of the owner or the owner's authorized representative to cause the work to remain accessible and exposed for inspection purposes. Such construction or work shall remain accessible and exposed for inspection purposes until the work has been inspected to verify compliance with the approved construction documents, but failure of the inspectors to inspect the work within four days, exclusive of Saturdays, Sundays, and legal holidays, after the work is ready for inspection, allows the work to proceed.

Subsequent work is allowed to proceed only to the point of the next required inspection.

108.2 Required inspections. *At the time that the certificate of plan approval is issued, the building official shall provide, to the owner or the owner's representative, a list of all required inspections for each project. The required inspection list shall be created from the applicable inspections set forth in sections 108.2.1 to 108.2.14. The building official, upon notification from the owner or the owner's agent that the work is ready for inspection, shall cause the inspections set forth in the required inspection list to be made by an appropriately certified inspector in accordance with the approved construction documents.*

108.2.1 Lot line markers required. *Before any work is started in the construction of a building or an addition to a building to which the rules of the board are applicable under section 101.2, all boundary lines shall be clearly marked at their intersections with permanent markers or with markers which are offset at a distance which is of record with the owner.*

108.2.2 Footing or foundation inspection. *Footing and foundation inspections shall be made after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. Materials for the foundation shall be on the job, except where concrete is ready mixed in accordance with "ASTM C 94", the concrete need not be on the job.*

108.2.3 Concrete slab and under-floor inspection. *Concrete slab and under-floor inspections shall be made after in-slab and under-floor reinforcing steel and building service equipment, conduit, insulation, vapor retarder, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.*

108.2.4 Lowest floor elevation. *The elevation certification required in section 1612.5 shall be submitted to the building official.*

108.2.5 Frame inspection. *Framing inspections shall be made after the roof deck or sheathing, all framing, fire blocking and bracing are in place and pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, heating wires, pipes and ducts are approved.*

108.2.6 Lath or gypsum board inspection. *Lath and gypsum board inspections shall be made after lathing and gypsum board, interior and exterior, is in place, but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.*

Exception: *Gypsum board that is not part of a fire-resistive assembly or a shear assembly.*

108.2.7 Fire-resistant penetrations. *Protection of joints and penetrations in fire-resistance-rated assemblies shall not be concealed from view until inspected and approved.*

108.2.8 Energy efficiency inspections. *Inspections shall be made to determine compliance with Chapter 13 of the “OBC” and shall include, but not be limited to, inspections for: envelope insulation “R” and “U” values, fenestration “U” value, duct system “R” value, infiltration air barriers, caulking/sealing of openings in envelope and ductwork, and “HVAC” and water heating equipment efficiency.*

108.2.9 Building services equipment inspections. *Inspections shall be made of all building services equipment to ensure that it has been installed in accordance with the approved construction documents, the equipment listings, and the manufacturer’s installation instructions. Inspections shall include, but not be limited to, inspections for the following systems and their associated components: mechanical heating and ventilating systems, mechanical exhaust systems, plumbing systems, fire protection systems, and electrical systems.*

108.2.10 Other inspections. *In addition to the inspections specified above, the building official is authorized to cause to be made or require other inspections of any construction work to be made to ascertain compliance with the provisions of this code.*

Where applications are submitted for projects of unusual magnitude of construction, the building official may require inspections or full-time project representation by a registered design professional or inspection agency. This inspector/project representative shall keep daily records and submit reports as required by the building official.

Exception:

Where the building official requires full-time project inspection, the installation of a fire protection system may be inspected by a person certified under section 3781.105 of the Revised Code. The person shall be certified in the appropriate subfield of fire protection systems being inspected – water-based fire protection systems (formerly automatic sprinkler systems), fire alarm, or special hazards systems design.

108.2.11 Special inspections. *For special inspections, see section 1704.*

108.2.12 Inspections, completion. *When all of the required successive inspections have been satisfactorily completed and the inspectors have verified compliance with the approved construction documents, the inspectors shall communicate their findings to the building official. The building official, after review of the findings, shall issue the certificate of occupancy as described in section 111.*

108.2.13 Industrialized unit inspections. *Approved industrialized units and the on-site construction to complete the installation of the industrialized units shall be inspected. Such inspections shall include:*

- 1. Connection to on-site construction, interconnection of modules, connection to utilities. The inspections and conducting of required tests shall not require the destruction or disassembly of any factory-constructed component authorized by the board.*
- 2. Inspection of the unit for damage resulting from transportation, improper protection of exposed parts from inclement weather or other causes. Damage shall be repaired as required by the building official to comply with the applicable provisions of the rules of the board;*
- 3. Inspection of the unit to determine if it is marked by an insignia furnished by the board; and*
- 4. Inspect the unit to determine if the floor plan, exterior elevations, and exposed details are in conformance with the plans approved by the board.*

108.3 Inspection agencies. *The building official is authorized to accept reports of approved inspection agencies, provided such agencies are approved in accordance with the rules of the board of building standards.*

108.4 Right of entry. *The building official, or the building official's designee, is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that credentials are presented to the occupant and that entry is requested and obtained. Where permission to enter has not been obtained, is denied, or the building official has probable cause to believe that there exists in a structure or upon a premises a condition which is a serious hazard the building official shall proceed as required in section 109 and shall also have recourse to the remedies provided by law to secure entry.*

108.5 Inspections, compliance with construction documents. *When an inspector from the department having jurisdiction finds that completed work is in accordance with the approved construction documents, the inspector shall communicate the findings to the owner's on-site representative, shall make a note of the satisfactory inspection on an on-site inspection record and in the inspector's log, and communicate their findings to the building official. The building official, after review of the findings, shall issue the certificate of occupancy in accordance with section 111.*

108.6 Inspections, observation of violations, unsafe conditions, or serious hazards. *When an inspector from the department having jurisdiction finds that any work in connection with the location, erection, construction, repair, alteration, moving, or equipment of a building is contrary to the approved construction documents for the same, the building inspector shall proceed as required in either section 108.6.1 or 108.7.*

108.6.1 Communication process for work contrary to approved construction documents.

1. Communicate the nature of the differences to the owner or the owner's on-site representative and offer the following options

1.1 The owner will bring the item of noncompliance into compliance,

1.2 The owner will revise the drawings and resubmit to the department,

1.3 The items of noncompliance will not be brought into compliance and will be referred to the building official as indicated in item 4 below.

2. The owner or the owner's on-site representative shall indicate which option (item 1 above) will be exercised

3. Notations on the on-site inspection record and in the inspector's log shall be made. The notations shall include the inspector's name, the date of the inspection, the type of inspection, the observed items of noncompliance, the option chosen by the owner or the owner's on-site representative, the name of

the person communicated with, and the estimated dates of compliance and follow-up inspections, if applicable.

4. If the owner or the owner's on-site representative indicates that the work will not be brought into compliance with the approved construction documents, the inspector shall submit a report to the building official for the final determination of noncompliance in accordance with section 108.7.

108.6.2 Observation of violations not shown on plans. *If an inspector, in the course of performing the assigned or requested inspections, observes a code violation that was either shown incorrectly or not adequately addressed or detailed in the approved construction documents, the inspector shall communicate the finding to the building official so that the building official can make a determination of whether the code violation is of such significance to warrant communicating the finding to the owner or the owner's representative as a recommended change.*

108.6.3 Observation of unsafe conditions or serious hazards. *If an inspector, in the course of performing the assigned or requested inspections, observes an unsafe condition or a serious hazard, the inspector shall communicate that condition to the owner or the owner's on-site representative and shall report the findings immediately to the building official so that the building official can make a final determination of whether the violation constitutes a serious hazard which requires the issuance of an adjudication order as required in section 109.*

108.6.4 Industrialized units, observations of noncompliance. *When an inspector from the department having jurisdiction finds that an industrialized unit has been constructed contrary to the plans approved by the board, the inspector shall report the nonconformance to the building official. The building official shall notify the board of all violations of section 108.2.13. The board or its designee and the building official shall determine the corrective action to be taken before the building is approved to be occupied.*

108.7 Building official determination of noncompliance. *The building official shall evaluate the inspector's report and render a final determination as to whether the items of non-compliance are to be communicated to the owner in the form of an adjudication*

order complying with section 109. The building official shall also determine whether any approvals are possible.

108.8 Acceptance, performance, and operational testing. *Acceptance, performance, and operational testing shall be conducted as required in the applicable code or referenced standard. Advanced notice of the test schedule shall be given to the building official. The building official may require that the tests be conducted in the presence of the building official or certified inspector. Testing and inspection records shall be made available to the building official or inspector, upon request, at all times during the fabrication of the systems and the erection of the building.*

108.8.1 New, altered, extended or repaired systems. *New systems and parts of existing systems, which have been altered, extended, renovated or repaired, shall be tested as prescribed herein to disclose leaks and defects.*

108.8.2 Apparatus, material and labor for tests. *Apparatus, material and labor required for testing a system or part thereof shall be furnished by the owner or the owner's representative. Required tests shall be conducted by and at the expense of the owner or the owner's representative.*

108.8.3 Reinspection and testing. *Where any work or installation does not pass an initial test or inspection, the inspector shall proceed as outlined in section 108.6.*

Section 109 Orders, Violations, and Unsafe Buildings

109.1 Adjudication orders required. *When the building official denies any approval or takes action in response to findings of non-compliance, such action shall be initiated by issuing an adjudication order, prior to seeking any remedy, civil or criminal. Every adjudication order shall:*

1. *Clearly identify the section of law or rules violated;*
 - 1.1 *Clearly identify, in a contrasting and obviously marked manner, all violations related to accessibility.*

2. *Specifically indicate which detail, installation, site preparation, material, appliance, device, addition, alteration to structures, construction documents, assemblages or procedures are necessary to change to comply with the order;*

2.1 When issued to stop work, the order shall also clearly indicate the specific work that is required to cease, when the work must cease and the conditions under which the cited work will be permitted to resume. The order to stop work shall be given to the owner of the property involved, to the owner's agent and the person doing the work.

3. Include notice of the procedure for appeal and right to a hearing if requested within thirty days of the mailing of the order. The order shall also indicate that, at the hearing, the owner may be represented by counsel, present arguments or contentions orally or in writing, and present evidence and examine witnesses appearing for or against the owner;

3.1 Any hearing(s) scheduled for accessibility issues shall cause the building official or the appeals board to notify a local advocate organization for people with disabilities of the scheduled hearing. When a local advocate organization is not available, a state organization representing people with disabilities, such as the "Governor's Council on People with Disabilities" shall be notified;

4. Specify a reasonable period of time in which to bring the item(s) on the order into compliance;

5. Include the signature of the building official;

6. The order shall be sent by certified mail, return receipt requested, to the owner and any individual designated as a representative or agent by the owner in such matters.

109.2 Response to orders. *The person receiving an order shall exercise their right to appeal within 30 days of the mailing of the order, comply with the order, or otherwise be released from the order by the building official.*

109.3 Prosecution and penalties. *When an owner fails to comply with section 109.2, the owner may be prosecuted and is subject to a fine of not more than five hundred dollars as provided for in section 3791.04 of the Revised Code.*

109.3.1 Unlawful continuance. *Failure to cease work after receipt of an order to stop work is hereby declared a public nuisance.*

109.4 Unsafe buildings. *Structures or existing equipment that are unsafe or unsanitary due to inadequate means of egress facilities, inadequate light and ventilation, or which constitute a fire hazard, or are otherwise dangerous to human life, shall be deemed a serious hazard. Where a building is found to be a serious hazard, such hazard shall be eliminated or the building shall be vacated, and where such building, when vacated, remains a serious hazard, it shall be razed.*

109.4.1 Orders, injunction proceedings. *Where the building official finds that a building is a serious hazard and the owner of such building fails, in the time specified in an order from the building official, to eliminate such hazard, or to vacate or raze the building, the building official shall proceed under section 3781.15 of the Revised Code.*

109.4.2 Restoration. *Where the structure or equipment is determined to be unsafe by the building official, it is permitted to be restored to a safe condition. To the extent that repairs, alterations or additions are intended to be made or a change of occupancy occurs during the restoration of the structure, such repairs, alterations, additions or change of occupancy shall comply with Chapter 34 and this chapter.*

Section 110

Appeals

110.1 Hearing and right of appeal, local board of building appeals. *Adjudication hearings shall be in accordance with sections 119.09 to 119.13 of the Revised Code, as required by section 3781.031 of the Revised Code, and the following:*

1. Requests for hearing shall be within thirty days of the mailing date of an adjudication order. The local board shall schedule a hearing and notify the party. If the hearing concerns section 3781.111 of the Revised Code or rules adopted thereunder, reasonable notice of time, date, place, and subject of the hearing shall be given to any local organization composed of or representing persons with disabilities, as defined in section 3781.111 of the Revised Code, or if there is no local organization, then to any statewide organization composed of or representing persons with disabilities.

1.1 For purposes of conducting adjudication hearings, the local board may require attendance of witnesses, production of records and papers, and may take depositions of witnesses in accordance with section 119.09 of the Revised Code.

1.2 Testimony shall be under oath and, as outlined in section 109.1, a stenographic or mechanical record of testimony and other evidence submitted shall be taken at the expense of the local board of building appeals.

1.3 The local board may postpone or continue any adjudication hearing on its own motion or upon the application of any party.

1.4 The board shall keep a full and complete record of all proceedings which shall be open to public inspection.

2. The Board shall render its decision within thirty days after the hearing.

3. Following the hearing, an order shall be entered on its journal, and the local board shall serve by certified mail, return receipt requested, upon the party affected thereby, a certified copy of the order and a statement of the time and method by which an appeal may be perfected. A copy of the order shall be mailed to the attorney or other representatives of record representing the party.

4. Any municipal or county officer, official municipal or county board, or person who was a party to the hearing before the municipal or county board of building appeals, may apply to the state board of building appeals for a de novo hearing, or may appeal to the court of common pleas of the county in which he is a resident or in which the premises affected by such order is located.

5. In addition, when the adjudication hearing concerns section 3781.111 of the Revised Code, or any rule made thereunder, any local organization composed of or representing persons with disabilities, or if no local organization exists, then any statewide organization representing persons with disabilities may file appeals as indicated in paragraph 4. of this section.

6. Application for a de novo hearing before the state board shall be made no later than thirty days after the municipal or county board renders its decision.

Section III
Certificate of occupancy

111.1 Approval required to occupy. *No building or structure, in whole or in part, shall be used or occupied until the building official has issued an approval in the form of a certificate of occupancy. The certificate of occupancy shall indicate the conditions under which the building shall be used. The building owner shall only use the structure in compliance with the certificate of occupancy and any stated conditions. The structure and all approved building service equipment shall be maintained in accordance with the approval.*

When a building or structure is entitled thereto, the building official shall issue a certificate of occupancy provided there are not violations of law or orders of the building official pending or as permitted in this section.

111.1.1 New buildings. *A building or structure erected shall not be used or occupied, in whole or in part, until the certificate of occupancy has been issued by the building official. Occupancy of spaces within a building which are unaffected by the work shall be allowed to continue if the building official determines the existing spaces can be occupied safely until the completion of the alteration.*

111.1.2 Building alterations or additions. *A building or structure enlarged, extended or altered, in whole or in part, shall not be occupied or used until a certificate of occupancy has been issued. Occupancy of spaces within a building which are unaffected by the work of alteration shall be allowed to continue if the building official determines the existing spaces can be occupied safely until the completion of the alteration.*

111.1.3 Change in occupancy. *Changes in occupancy of an existing structure shall not be made except as specified in Chapter 34. A building or structure hereafter changed, in whole or in part, from one occupancy to another shall not be occupied for the new occupancy until the certificate of occupancy has been issued by the building official reflecting such changed portions. Existing occupancy of spaces within the building which are unaffected by the change of occupancy and any related alterations shall be allowed to continue if the building official determines the existing spaces can be occupied safely until the completion of the alterations.*

111.1.4 Partial occupancy. *Upon the request of the owner or owner's representative, a building official shall issue a certificate of occupancy before the completion of the entire work, provided that the building official determines that the space can be safely occupied prior to full completion of the building, structure, or portion without*

endangering life or public welfare. The certificate shall indicate the extent of the areas approved for occupancy and any time limits for completion of the work.

111.1.5 Time-limited occupancy. *A building or structure hereafter changed in part from one occupancy to another for a limited time may receive a certificate of occupancy reflecting that time-limited occupancy provided:*

- 1. There are no violations of law or orders of the building official pending;*
- 2. It is established after inspection and investigation that the proposed use is not deemed to endanger public safety and welfare;*
- 3. The building official has approved the use for an alternative purpose on a temporary basis;*
- 4. The building official has issued a certificate of occupancy indicating any special conditions under which the building or part of the building can be used for the alternative purpose within the time limit specified.*

111.1.6 Temporary structures occupancy. *A building intended to be erected, placed and used for a period of time not to exceed one hundred eighty days that has been determined by the building official to be in compliance with section 102.8 shall be issued a "Certificate of Occupancy for Temporary Structures." The building official is authorized to grant extensions for demonstrated cause.*

111.2 Existing buildings. *Upon written request from the owner of an existing building or structure, the building official shall issue a certificate of occupancy, provided there are not violations of law or orders of the building official pending, and it is established after inspection and investigation that the alleged occupancy of the building or structure has previously existed. This code shall not require the removal, alteration or abandonment of, or prevent the continuance of, the occupancy of a lawfully existing building or structure, unless such use is deemed to endanger public safety and welfare.*

111.3 Certificate issued. *The certificate shall certify compliance with the provisions of this code, Chapters 3781. and 3791. of the Revised Code, and the purpose for which the building or structure may be used in its several parts. The certificate of occupancy shall contain the following:*

- 1. The plan approval application number.*
- 2. The address.*

3. *A description of that portion of the structure for which the certificate is issued.*
4. *The signature of all building officials having jurisdiction. When more than one building official has jurisdiction for a building (when the certification of the building department is limited for such systems as plumbing or piping systems) each shall sign the certificate of occupancy with an indication of the scope of their individual approvals.*
5. *The edition of the code under which the plan approval was issued.*
6. *The use and occupancy, in accordance with the provisions of Chapter 3.*
7. *The type of construction as defined in Chapter 6.*
8. *The design occupant load.*
9. *If an automatic sprinkler systems is provided, whether the sprinkler system is required.*
10. *The hazard classification or storage configuration, including aisle widths, for which the automatic sprinkler system is designed.*
11. *The automatic sprinkler and standpipe system demand at the base of the riser.*
12. *Any special stipulations and conditions of the plan approval including any variances granted to the requirements of this code.*

111.4 Validity of a certificate of occupancy. *The certificate of occupancy represents an approval that is valid only when the building or structure is used as approved and certifies conformance with applicable provisions of the “Ohio Building Code” and Chapters 3781. and 3791. of the Revised Code. The approval is conditioned upon the building systems and equipment being maintained and tested in accordance with the approval, the “Ohio Building Code”, and applicable equipment and systems schedules.*

111.5 Connection of service utilities. *No connections shall be made from a utility, source of energy, fuel or power to any building or system that is regulated by this code for which a plan approval and inspections are required, until approved by the building official.*

111.6 Temporary connection. *The building official shall approve the temporary connection of the building or system to the utility source of energy, fuel or power.*

Section 112
Changes to the code

112.1 Changes, board of building standards. *The board may, on its own motion, in accordance with section 3781.10 of the Revised Code adopt, amend, or rescind rules through the administrative rule process.*

112.2 Changes, applications for. *Any person may apply to the board to adopt, amend, or rescind rules of the board. The application for rule change shall be on forms and in format prescribed by the board. Twelve printed copies of the application shall be filed with the secretary of the board.*

112.3 Processing applications for changes. *When the secretary of the board receives a conforming application for an adoption, amendment, or annulment of a provision of the rules of the board, the secretary shall promptly deliver or mail a copy of the application to each member of the board.*

After receiving an application for the adoption, amendment, or annulment of a provision of the rules of the board, the board shall proceed under sections 3781.101 and 3781.12 of the Revised Code.

Section 113

Industrialized units

113.1 Industrialized units. *Industrialized units shall be approved by the board in accordance with the provisions in this section.*

Exceptions:

- 1. Alternative materials, design and methods of construction and equipment approved by the board in accordance with section 114.2.*
- 2. Construction for which the provisions of section 1704 applies. Where panels or components are constructed to include elements not provided for or accounted for in section 1704, then this section shall apply. (For example, engineered gluelam beams, precast concrete panels or welded steel components that have been constructed offsite with electrical or mechanical components in them so that a detailed inspection of the mechanical or electrical components cannot be done on the site of their intended use would be required to comply with this section.)*

3. *Foam plastic insulation conforming to the provisions of section 2603. (However, a foam plastic insulation panel that is constructed, listed and labeled in accordance with section 2603, is required to comply with this section if structural, electrical or other components not covered by section 2603 are enclosed within the panel).*
4. *Materials, devices and products in directories listed in Table 114.3 used for building service equipment systems in accordance with the listing and this code.*

113.2 Definitions.

Closed construction. *An assembly of materials or products manufactured in such a manner that its structural, plumbing, electrical, environmental control, or fire protection elements or components are concealed and are not readily accessible for inspection at the site of its erection, without disassembly, damage, or destruction. Closed construction includes assemblies where only one of the components is not accessible for inspection. (For example, an equipment enclosure where all the electrical conductors and components are exposed for inspection and its roof and wall panels have exposed structural members but the floor panel structural members are not exposed, would be required to comply with this section.)*

Industrialized units. *Industrialized units are prefabricated components comprised of closed construction manufactured at a location remote from the site of intended use and transported to a building site for its subsequent use. Industrialized units are not restricted to housing for one-, two-, and three-family dwellings, but includes all prefabricated forms of building elements and assembled construction units, intended for both structural and service equipment purposes in all buildings of all groups. Prefabricated shop assemblies may be shipped in structurally complete units ready for installation in the building structure or in knock-down and packaged form for assembly at the site.*

113.2.1 General terms. *Such terms as heart modules or cores, modules, modulars, service cores, prefabs, sectional or sectionalized, panels or panelized construction, and specific terms including "prefabricated-subassembly, -building, -unit, -unit service equipment" shall be considered industrialized units. They may be self-sufficient or interdependent as a unit or group of units and used together or incorporated with standard construction methods to form a completed structural entity.*

113.3 Application. *The application for approval, including revisions and renewals for existing approvals, shall be submitted to the board together with the fee required in section 113.8 of this chapter. The required information shall be provided as prescribed by the board on its website. Construction documents shall be included in conformity with the applicable provisions of section 106, and shall describe all essential elements of the structure or assembly and details of interconnection of: assemblies; service equipment; electrical wiring; plumbing; mechanical; and any other equipment whether installed at the site or in the manufacturing facility. The design and construction of the units shall be in conformance with the provisions of the Ohio building, mechanical and plumbing codes based on the intended use and/or occupancy type. Industrialized units intended to be used exclusively for one-, two-, or three- family dwellings shall comply with the applicable provisions of the “Residential Code of Ohio for One-, Two-, and Three-Family Dwellings” listed in section 3501.2 or shall meet the provisions of the board’s rules applicable to “Group R-3”. Only the person holding an approval may apply to the board for a revision or renewal of the approval.*

113.3.1 Manufacturers with facilities outside Ohio. *Each application for manufacturers with manufacturing facilities outside Ohio shall also identify the individual or agency that will be performing in-plant inspections of the units intended for placement in Ohio. The application shall also include a letter from the designated individual or agency indicating that they have a contractual relationship with the manufacturer to perform the inspections. This letter shall include the name(s) and board certification(s) of the individual(s) who will be assigned to perform the inspections.*

113.3.2 Manufacturers with facilities in Ohio. *Each application for manufacturers with manufacturing facilities in Ohio shall include the same information required in section 113.3.1 or, as an alternative, the manufacturer shall indicate their intention to have the inspections conducted by inspectors designated by the board.*

113.4 Evaluation. *After receipt of the application, the board or such agency designated by the board shall proceed with review of the industrialized unit construction documents and cause such inspections of the manufacturer's quality control processes used to ensure compliance with the rules of the board.*

113.4.1 Tests. *The board shall have the authority to require tests as evidence of compliance. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the board shall approve the testing procedures. Tests shall be performed by an approved*

agency. Reports of such tests shall be retained by the board for the period required for retention of public records.

113.4.2 Plant evaluations. *An initial plant evaluation inspection shall be required at each plant of manufacture to observe and ensure that the manufacturer's facilities and quality control program maintains acceptable control of materials and processes used in the manufacture of industrialized units to ensure conformance with the approved construction documents. The plant evaluation inspection shall include all subassembly plants supplying the manufacturer, as the board may deem necessary.*

113.5 Approval. *The board, upon determination of compliance, shall issue an approval to the applicant. Industrialized units approved by the board may be used anywhere in Ohio subject to the conditions for their use and application as indicated in the approval.*

113.5.1 Revisions. *Any changes to board approved construction documents affecting the conditions listed in the approval shall require a revision of the approval.*

113.5.2 Code changes. *When any changes to the rules of the board are adopted which affect the use, safety or sanitation of any approved industrialized unit, the holder of the approval shall apply to the board for a revision of the approval. Failure to apply for revision of approvals within the time specified by the board, shall constitute failure to comply with the conditions of the approval.*

113.5.3 Revocation of approval. *Upon failure of the holder of an approval to comply with the conditions of the approval and this chapter, the board, on its own motion, shall order a hearing in accordance with section 119.03 of the Revised Code to revoke an existing approval.*

113.6 Inspections, board insignias, and shipping reports. *Each industrialized unit shall be inspected during each phase of the manufacturing process by inspectors certified by the board of such persons designated by the board until inspections demonstrate that the manufacturer's quality control program is capable of assuring that the industrialized units produced are built in accordance with the construction documents approved by the board. When it has been determined that the manufacturer's quality control program is capable of assuring compliance with the board approved construction documents, then at*

least one overall inspection of “open” construction shall be performed for each unit by an inspector certified or designated by the board.

Exception: *When a manufacturer with manufacturing facilities in Ohio has chosen to have inspections conducted by designees of the board, the inspection frequency shall be based upon the reliability or effectiveness of the manufacturer in maintaining sufficient control of the materials and processes to ensure that the units are constructed in accordance with the approved construction documents.*

An insignia shall be obtained from the board for each industrialized unit module to be used within the state of Ohio. The insignia shall be affixed to each unit after a determination is made by the inspector that the unit is constructed in accordance with the construction documents approved by the Board, which shall constitute final approval of the unit.

After an insignia has been affixed, the manufacturer shall record its use in shipping records, to be submitted monthly to the board, which shall record:

- 1. The shipping insignia number;*
- 2. Ohio board of building standards industrialized unit group assigned project file number appearing on the board-approved construction documents;*
- 3. The date the insignia was affixed to the individual unit;*
- 4. Name and address of the construction inspector and inspection agency.*
- 5. Manufacturer’s unit serial number;*
- 6. Manufacturer’s model number;*
- 7. Dealer name and address and;*
- 8. Site installation destination address and owner name.*

113.6.1 Increased inspection. *When an inspection determines that the quality control program does not sufficiently ensure compliance with the construction documents approved by the board, the certified inspector or person designated by the board shall, by written notification, inform the manufacturer that the inspection frequency will be increased so that each assembly or component affected by the nonconforming item will be inspected. These inspections shall continue until an inspection determines that the manufacturer’s control of the materials and processes used is sufficient to ensure that the units are constructed in accordance with the approved construction documents.*

113.7 Manufacturer responsibility. *The manufacturer shall maintain responsibility over all work completed in the factory until the unit is approved for first occupancy and shall rectify any deviations from the approved construction documents, which are found either in the field or at the place of manufacture. The manufacturer shall submit to the board such periodic reports, notifications and information as required by board procedures.*

113.7.1 Document submission to building departments. *The manufacturer shall ensure that the construction documents approved by the board are presented to the building official in accordance with section 106.1.2(1) before placing the industrialized unit on site.*

Exception: *Industrialized units construction documents previously approved by the board and site related construction documents are not required to be submitted to the division of industrial compliance where industrialized units are used exclusively as one-, two, or three family dwellings.*

113.7.2 Change in personnel. *Whenever there are changes in company name, ownership, subsidiary status, address or change in the manufacturer's management personnel who are responsible for making policy concerning quality control, the manufacturer shall immediately notify the board, in writing, and the manufacturing plant(s) affected by the change will be subject to a plant evaluation inspection.*

113.8 Fees. *All costs associated with industrialized unit approval applications, processing, construction document review, inspections and insignias shall be in accordance with sections 113.8.1 to 113.8.5.*

113.8.1 Applications. *Each initial application or revision submittal to the board shall be accompanied by nonrefundable fees, designated by the board to include: application processing fee; one-hour minimum plan review fee; and other costs, when incurred, such as mailing and check processing.*

113.8.2 Evaluation of construction documents. *All costs of application processing, evaluation of construction documents or other documentation submitted to the board shall be paid by the applicant.*

113.8.3 Plant evaluation and inspection costs. *All costs of plant evaluations and inspections shall be paid by the manufacturer of the unit including travel, food, lodging, and administrative costs.*

113.8.4 Insignias. *The fee for insignia for all assembled modular units manufactured for use in the state of Ohio shall be fifty dollars per unit (any preassembled combination of walls to floor, ceilings, roof, and other such components).*

The fee for insignia for all panelized units manufactured for use in the state of Ohio shall be one dollar for each twenty square feet of surface area of preassembled individual components (wall, floor, ceiling or roof sections, and other such components) intended to be shipped to the site and attached to other components at the site of intended use.

113.8.5 Tests. *Tests required by the board to be performed to determine compliance pursuant to section 113.4.1, shall be conducted at no expense to the board. Costs associated with any required testing or research necessary to provide evidence of compliance shall be the responsibility of the applicant.*

Section 114

Products and materials

114.1 General. *Any material, product, assembly or method of construction used in a building or structure shall be approved by the building official. The provisions of this section describe the product approval process intended by the board of building standards in accordance with Section 3781.10 (C) of the Revised Code.*

114.2 Definitions. *The following words and terms shall, for the purposes of this section, have the meanings shown herein:*

Accreditation. *The formal recognition of a conformity assessment body's adherence and operation under a documented quality system whereby a third party (Accreditation Body) attests to technical competence and the specific scope of accreditation of the conformity assessment body .*

Accreditation body. *An authoritative body that is an established, independent, internationally recognized, third-party organization that performs accreditation to ascribe initial recognition and monitors, on an cyclical basis, the competency, integrity, and performance of conformity assessment bodies in accordance with established standards.*

Assembly. *A preassembled grouping of materials, products and/or components designed to act as a whole. This does not include industrialized units regulated by section 113.*

Calibration laboratory. *An established, independent, nationally recognized and accredited, third-party organization that regularly provides calibration services such as, but not limited to, tolerance testing to ensure the accuracy of measuring equipment used in construction.*

Conformity assessment body. *A body that performs conformity assessment services and can be an object of accreditation, such as a testing laboratory, inspection body, product certification body.*

Evaluation service. *An established, independent, nationally recognized and accredited, third-party conformity assessment body that is accredited as a product certification body and performs technical evaluations of building materials, products, and methods of construction where code requirements are not clear or the innovative products do not have national consensus standards. The evaluation of the product results in the issuance of a research report establishing the code compliance and conditions of its use based upon multiple sources of information including test reports, test data, performance data, or acceptance criteria, and can be approved for installation by the building official in accordance with the rules of the board.*

Fabricator inspection agency. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in fabrication of construction materials and methods of construction.*

Field evaluation body. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in furnishing field inspection, observation, testing, or reporting services for construction materials, products, and methods of construction.*

Industry trade association certification program. *A certification program operated by an established and nationally recognized organization, founded and funded by businesses that operate in a specific industry, where the main focus is to monitor quality assurance among associated members.*

Insignia. *A mark or label prescribed in accordance with board procedures.*

Inspection body. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in furnishing inspection, observation, testing, or reporting services for construction materials, products, and methods of construction. Such services include, but are not limited to geotechnical inspections, environmental inspections, mechanical and metallurgical analysis, non-destructive testing and evaluation, chemical analysis, and structural and product testing.*

Listing agency. *An established, independent, nationally recognized and accredited, third-party conformity assessment body that is accredited as a product certification body and conducts tests on materials, products, or methods of construction to certify products that meet the criteria for compliance with nationally recognized codes and standards. The product certification body allows its insignia of conformity to be placed on a material or product by the manufacturer, identifying that the material or product has been certified by the product certification body. The product certification body maintains a list or directory of all of the materials and products that they have certified and the conditions of their use.*

Material. *A manufactured form or substance designed to act as a whole.*

Method of construction. *A procedure or system intended to result in a finished building, structure or portion thereof.*

Product. *A material or device designed and manufactured to perform a predetermined function. Appliances, assemblies and equipment are also considered products.*

Product certification body. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in conducting evaluation services, inspections and tests on materials and products to certify compliance with nationally recognized codes and*

standards. Product Certification Bodies are sub-classified as either Evaluation Services or Listing Agencies.

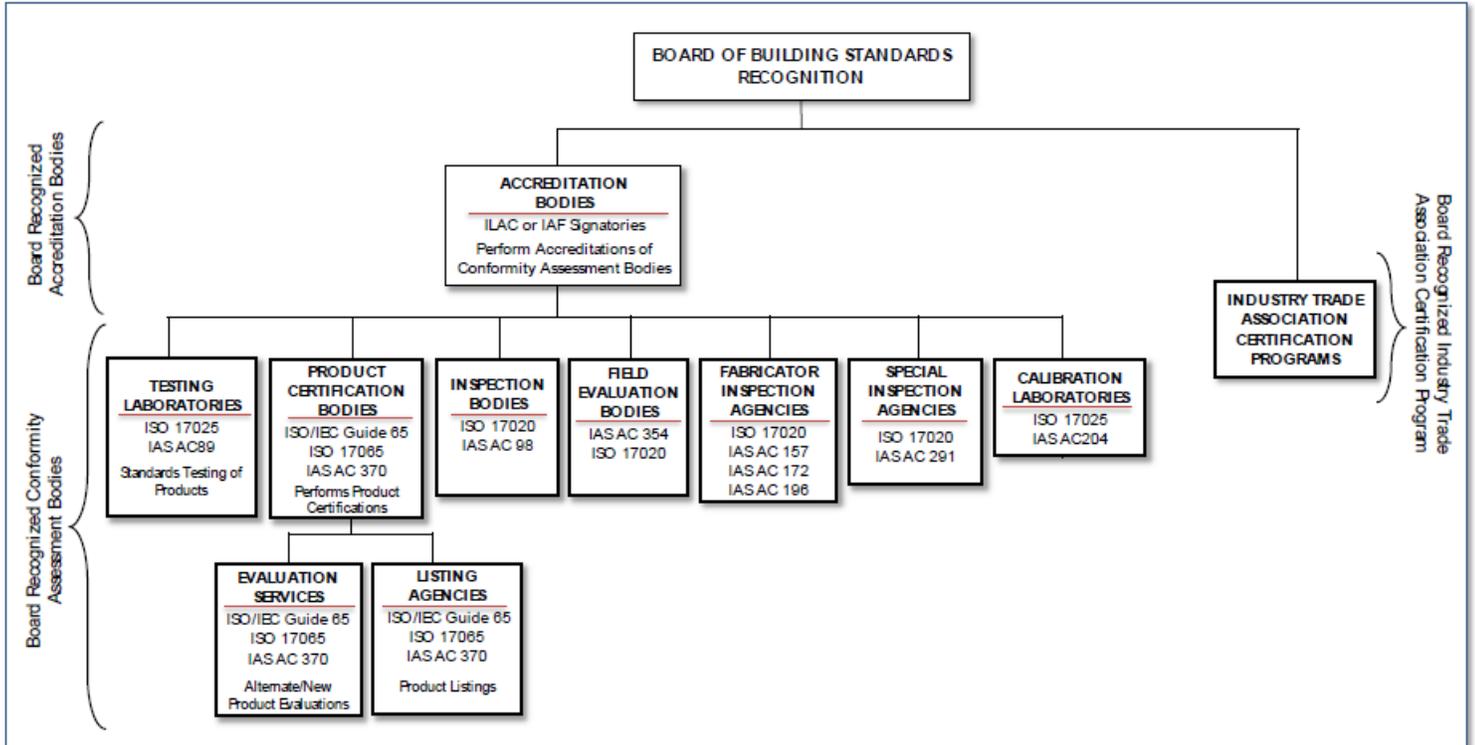
Recognition. *An acceptance by the board of building standards of an accreditation body, a conformity assessment body, or an industry trade association certification program in accordance with the rules of the board of building standards.*

Special inspection agency. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in performing special inspections as required by Chapter 17.*

Testing laboratory. *An established, independent, nationally recognized and accredited, third-party conformity assessment body regularly engaged in conducting tests of materials, products, or methods of construction to determine compliance with a specification or testing standard. The testing laboratory issues a report documenting the test results.*

Figure 114.2

ORGANIZATION OF BOARD RECOGNIZED BODIES AND CERTIFICATION PROGRAMS



ILAC – International Laboratory Accreditation Cooperation
 IAF – International Accreditation Forum
 ISO – International Organization for Standardization
 IAS – International Accreditation Service
 IEC – International Electrotechnical Commission

114.3 Building official approval process. The building official shall approve the use of products in accordance with Sections 114.3.1 through 114.3.3.

114.3.1 Materials, products, assemblies and methods of construction prescribed in the code.

114.3.1.1 Testing laboratories. When test reports are required to be submitted or when the rules of the Board require materials, products, assemblies and methods of construction to conform to specific referenced

standards, the building official shall verify that the proposed material, product, assembly, and method of construction has been tested by a testing laboratory recognized by the board and published on the list titled “Recognized Conformity Assessment Bodies” found on the board’s website at <http://www.com.ohio.gov/dico/bbs>.

The building official shall verify that the testing laboratory is accredited to perform the specific tests prescribed in the code by verifying the testing laboratory’s “scope of accreditation” found on the testing laboratory’s website.

Exceptions:

- 1. Acceptance, performance, and operational testing reports submitted in accordance with Section 108.8 are permitted to be prepared and submitted by the individual performing the acceptance, performance, and operational tests. Board recognition is not required for persons conducting acceptance, performance, or operational tests.*
- 2. Special inspection reports submitted in accordance with Section 1704.1.2 are permitted to be prepared and submitted by the special inspector defined in Section 1702.1 and qualified in accordance with Section 1704.1. Board recognition is not required for all special inspectors.*

114.3.1.2 Listing agencies. *When the rules of the Board require materials, products, assemblies and methods of construction to be marked or listed and labeled in accordance with a specific referenced standard, the building official shall verify that the proposed material, product, assembly, and method of construction has been listed and labeled by a listing agency recognized by the board and published on the list titled “Recognized Conformity Assessment Bodies” found on the board’s website at <http://www.com.ohio.gov/dico/bbs>.*

Building officials are authorized to approve listed and labeled materials, products, assemblies and methods of construction after verifying all of the following additional information:

1. The product is listed on the product certification body's website directory.

2. The listing is current.

3. The product is proposed to be installed/used in accordance with the listing.

4. When used as an assembly, the assembly is proposed to be installed/used in compliance with this code.

5. The extent of the listing does not include in its scope, elements of design, construction or installation otherwise in conflict with the provisions of this code such as fire-resistance and structural design.

114.3.2 Alternative materials, products, assemblies and methods of construction not prescribed in the code. *The provisions of this code are not intended to prevent the installation of any material or to prohibit any material, product, assembly or method of construction not specifically prescribed by this code, provided that any such alternative shall have a valid research report or listing from an evaluation service recognized by the board and published on a list titled "Recognized Conformity Assessment Bodies" found on the board's website at <http://www.com.ohio.gov/dico/bbs>.*

The alternative material, product, assembly, or method of construction shall be deemed to be approved provided it complies with the conditions listed in the research report or listing found on the evaluation service's website.

Exceptions:

1. Alternative materials, products, assemblies, or methods of construction submitted pursuant to section 106.5.

2. *Industrialized units shall be approved and constructed in accordance with section 113.1 of this chapter.*

114.3.3 Used materials and products. *The use of used materials and products which meet the requirements of this code for new materials and products is permitted. Used products and materials shall not be reused unless approved by the building official.*

114.4 Process for board-recognition of “Accreditation Bodies,” “Conformity Assessment Bodies,” and “Industry Trade Association Certification Programs.” *All accreditation bodies, conformity assessment bodies, and industry trade association certification programs shall be recognized by the board in accordance with division 4101:7 of the Administrative Code.*

Section 115

Construction documents examination and inspection fees

115.1 Certified building department fees. *Fees for construction documents submitted to and inspections made by certified building departments shall be in accordance with the locally adopted fee schedule.*

115.2 Division of industrial compliance schedule of fees. *The fees for examination and processing of construction documents when required to be submitted to the division of industrial compliance, except medical gas piping systems and temporary structures, shall be in accordance with Table 115.2. The filing process for an application for plan approval specified in section 107.2 will not be considered complete until the applicable fees have been paid in accordance with table 115.2.*

Exception: *Fees for alteration or change of occupancy as determined by the building official shall be based on the actual area affected by the alteration or change of occupancy which may extend beyond the limits of construction.*

115.2.1 Additional inspections. *The division of industrial compliance may establish a written policy for the maximum number of inspections required by sections 108.2 and 105.1.5 that may be included in the fees set forth in Table 115.2. Inspections in excess of the maximum number established by the division of industrial compliance shall be subject to fee of one hundred fifty dollars per inspection.*

115.2.2 Resubmissions. *The fees set forth in Table 115.2 shall include one initial plan review and up to two resubmission plan reviews to resolve issues resulting from correction letters. The fee for plan review after the second resubmission shall be of one hundred dollars for each additional resubmission.*

115.2.3 Re-stamping. *The processing fee for re-stamping additional sets of construction documents after initial plan approval shall be one hundred dollars.*

115.2.4 Amended construction documents. *The processing fee for amended construction documents submitted to the division of industrial compliance in accordance with section 106.3 shall be two hundred fifty dollars. The fee for plans examination of amended construction documents submitted to the division of industrial compliance in accordance with section 106.3 shall be one hundred dollars per hour for each submission.*

115.2.5 Phased plan approval. *The fees for plan examination and processing of a phased plan approval request per section 105.1.4 shall be in accordance with Table 115.2 and section 115.2.1 for the initial phase submission of each scope of work. The processing fee for plan examination of each subsequent phase of submission shall be two hundred fifty dollars.*

Table 115.2

<i>Scope of Work</i>	<i>Processing Fee</i>	<i>Fee for Plans Examination and a minimum of Five Inspections</i>
<i>(1) Structural</i>	<i>\$275.00</i>	<i>\$10.50/100 sq. ft. gross area of each floor level</i>
<i>(2) Mechanical</i>	<i>\$275.00</i>	<i>\$6.50/100 sq. ft. gross area of each floor level</i>
<i>(3) Electrical</i>	<i>\$275.00</i>	<i>\$6.50/100 sq. ft. gross area of each floor level</i>
<i>(4) Fire alarm systems</i>	<i>\$275.00</i>	<i>\$6.50 per device</i>
<i>(5) Automatic sprinkler and other fire suppression systems (all suppressed areas)</i>	<i>\$275.00</i>	<i>\$6.50/100 sq. ft. gross area of each floor level</i>
<i>(6) Industrial unit</i>	<i>\$200.00</i>	<i>\$1.75/100 sq. ft. gross area of each floor level</i>

115.3 Medical gas piping systems. *The fees for examination and processing of construction documents for medical gas piping systems when required to be submitted to the division of industrial compliance shall be in accordance with Table 115.3.*

115.3.1 Additional inspections. *The division of industrial compliance may establish a written policy for the maximum number of inspections required by sections 104.4*

and 105.1 that may be included in the fees set forth in Table 115.3 for medical gas piping systems. Inspections in excess of the maximum number established by the division of industrial compliance shall be subject to a fee of one hundred fifty dollars per inspection.

Table 115.3

Medical Gas Piping System Processing, Plans Examination, and Inspections	Fee (includes a minimum of two inspections)
<i>Processing</i>	\$250.00
<i>Plans Examination</i>	\$250.00
<i>Per room (with outlets) and equipment rooms</i>	\$10.00
<i>Per zone valve assembly</i>	\$25.00
<i>Per system</i>	\$25.00
<i>Per “tie-in”</i>	\$25.00

115.4 Temporary structure fee. The fee for the review and inspection of temporary structures as referenced in section 102.8 shall be one hundred fifty dollars per each scope of work. This fee allocates one inspection for each scope of work. The fee for inspections after normal business hours shall be one hundred thirty dollars per hour.

115.5 Preliminary review. The fee for preliminary construction document examination for the purpose of determining compliance with the provisions of the rules of the board by the division of industrial compliance shall be one hundred thirty dollars per hour.

115.6 Inspection fees. The fee for each inspection during normal business hours, other than those required by section 108.2 and 105.1.5, shall be one hundred fifty dollars per inspection. The fee for inspections conducted after normal business hours shall be one hundred thirty dollars per hour. Requests for all inspections shall be in writing to the division of industrial compliance and the fee shall be paid prior to the inspection.

Fees for an application pursuant to section 105.1.5 shall include a processing fee of one hundred fifty dollars. The fee for periodic inspections conducted by the division of industrial compliance shall include the hourly inspection rate and expenses such as food, lodging, and administrative costs. All such fees shall be paid by the holder of an annual approval.

115.7 Reinspection fee. The fee for each reinspection shall be one hundred fifty dollars. A reinspection shall be required when the inspector must return to inspect work that was not ready or had failed a previous inspection.

115.8 Related fees. In addition to the fees required by sections 115.2, 115.3, 115.4 and 115.5, the superintendent of the division of industrial compliance shall collect a fee, on behalf of the board of building standards, of three dollars and twenty-five cents for each

application for acceptance and approval of construction documents and for making inspections.

The fee shall be deposited by the division of industrial compliance, pursuant to section 121.084 of the Revised Code, to the credit of the board. The superintendent of the division shall report on the amount of the fees collected and deposited to the credit of the board not later than forty-five days following the end of the first full month's collection and then monthly afterward.

115.9 Late fee. Any person who fails to pay an inspection fee required for any inspection conducted by the department of commerce pursuant to Chapters 3781. and 3791. of the Revised Code, except for fees charged for the examination and processing of construction documents, within forty-five days after the inspection is conducted shall pay a late payment fee equal to twenty-five per cent of the inspection fee.

115.10 Certificate of occupancy. The fee for each certificate of occupancy issued in accordance with section 111 shall be sixty-five dollars.

Exception: There shall be no fee for each certificate of occupancy issued in accordance with section 111.2 for existing buildings.

~~***115.10***~~ ***115.11 Annual approval for alterations.*** The fee for each annual approval for an individual applicant issued in accordance with section 105.1.5 shall be six hundred fifty dollars.

~~***115.11***~~ ***115.12 Welding and brazing procedure specification review.*** The fee for the review of each piping welding and brazing specification submitted in accordance with section 313.5 of the mechanical code and section 315.5 of the plumbing code shall be sixty dollars.

~~***115.12***~~ ***115.13 Welding and brazing procedure qualification record review.*** The fee for the review of each procedure qualification record submitted in accordance with section 313.5 of the mechanical code and section 315.5 of the plumbing code shall be fifteen dollars.

~~***115.13***~~ ***115.14 Welding and brazing performance qualification review.*** The fee for the review of each performance qualification submitted in accordance with section 313.5 of the mechanical code and section 315.5 of the plumbing code shall be fifteen dollars.

Section 116

Board Organization

116.1 Meetings.

1. **Meeting schedule.** No later than December thirty-first of each year, the board shall establish a schedule of the dates, times, and locations of all regular board meetings and meetings of board committees for the following calendar year. Such schedule shall be posted on the board's website: <http://www.com.ohio.gov/dico/bbs>.

2. **Meeting location.** All meetings of the board shall be held in offices of the Ohio department of commerce, training room #1, 6606 Tussing Rd., Reynoldsburg, Ohio, 43068, unless otherwise designated.

116.2 Notices. Prior to all regular or special meetings of the board, the executive secretary shall distribute the agenda, including meeting date, time, and location, by electronic mail to any person who has requested such information.

116.3 Rules. All rules of the board shall be adopted in accordance with Chapter 119. of the Revised Code.

116.4 Board committees and duties. The board shall have three standing committees.

1. **Code committee.** The code committee provides general oversight of the board's rule promulgation and code development activities. The committee reviews proposed rule changes and petitions for code changes and shall make recommendations to the board for action.

2. **Education committee.** The education committee provides general oversight to the board's continuing education program. The committee reviews continuing education course applications submitted for approval pursuant to paragraph (G) of rule 4101:7-3-01 of the Administrative Code and shall make recommendations to the board for action on the applications.

3. **Certification committee.** The certification committee provides general oversight to the board's personnel and building department certification program. The committee reviews personnel and building department certification applications submitted for approval pursuant to paragraph (G) of rule 4101:7-3-01 of the Administrative Code and shall make recommendations to the board for action on the applications.

TO BE RESCINDED

4101:1-13-01 Energy efficiency.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

**SECTION 1301
GENERAL**

1301.1 Scope. This chapter governs the design and construction of buildings for energy efficiency.

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the *applicable provisions of the “International Energy Conservation Code” or the requirements of “ASHRAE 90.1” listed in Chapter 35 of this.*

1301.2 Modification to International Energy Conservation Code. *The following changes shall be made to the International Energy Conservation Code:*

- 1. Table 402.4.2-**
 - a. In the first row, second column, delete the last item titled “Air-permeable insulation is inside of an air barrier”.*
 - b. Delete the last row.*
- 2. Section 402.4.3 shall read “**Fireplaces.** New wood-burning fireplaces shall have doors or tight-fitting flue dampers and outdoor combustion air. If using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace.”**
- 3. Section 403.9 – Delete section and all subsections.**

4101:1-13-01 Energy efficiency.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

SECTION 1301
GENERAL

1301.1 Scope. This chapter governs the design and construction of buildings for energy efficiency.

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the *applicable provisions of the “International Energy Conservation Code” or the requirements of “ASHRAE 90.1” listed in Chapter 35 of this code except as modified in Sections 1301.2 and 1301.3.*

EXCEPTION: *Either the “International Energy Conservation Code” referenced in Chapter 44 of the “Residential Code of Ohio for One-, Two-, and Three-Family Dwellings” (RCO) or Sections 1101.2.2 through 1104 in Chapter 11 of the RCO are permitted to be used in place of the energy conservation requirements of this code for R-3 occupancies in buildings three stories or less, comprised exclusively of dwelling units, where each unit has independent means of egress.*

1301.2 Modifications to the International Energy Conservation Code. *The following changes shall be made to the International Energy Conservation Code:*

Residential

- 1.** *Section R402.4.1.1 - Delete the last sentence.*
- 2.** *Section R402.4.1.2, the first sentence shall be modified to read as follows: “The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding 4 air changes per hour at 50 Pascals.”*
- 3.** *Section R402.4.2 shall read “**Fireplaces.** New wood-burning fireplaces shall have doors or tight-fitting flue dampers and outdoor combustion air. If using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace.”*

4. Section R403.2.3 shall read “**Building cavities (Mandatory).** Building framing cavities shall not be used as supply ducts.”

5. Section R403.9 – Delete section and all subsections.

Commercial

1. Section C101.4.3

- a. Exception 5 shall read “Roof recover or roof repair.”
- b. Exception 6 shall read “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.”
- c. Renumber exceptions 6, 7, and 8 as 7, 8, and 9.

2. Section C202 add the following definitions

REROOFING. The process of recovering or replacing an existing roof covering. See “Roof recover” and “Roof replacement.”

ROOF RECOVER. The process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering.

ROOF REPAIR. Reconstruction or renewal of any part of an existing roof for the purpose of its maintenance.

ROOF REPLACEMENT. The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering.

3. Section C402.2.1.1: Delete existing section and Table C402.2.1.1 and replace with new section which reads “**C402.2.1.1 Roof replacement.** For roof replacements, where the existing roof assembly is part of the building thermal envelope and contains insulation entirely above deck, roof replacement shall include compliance with the requirements of Table C402.1.2 or Table C402.2.”

1301.3 Modifications to ASHRAE 90.1. The following changes shall be made to the ASHRAE 90.1:

1. Addenda ap, cj, and de included in the ASHRAE “Standard 90.1-2010 Addenda 2013 Supplement Package” as found on the ASHRAE website <https://www.ashrae.org/standards-research--technology/standards-addenda> are also adopted and intended to be applicable to computer rooms and data centers.
2. Addenda dd included in the ASHRAE “Standard 90.1-2010 Addenda 2013 Supplement Package” as found on the ASHRAE website <https://www.ashrae.org/standards-research--technology/standards-addenda> is also adopted and intended to be applicable to roofing projects.

- 3. Section 7.4.4.4 Circulating Pump Controls: Delete section.
- 4. Section 8.4.2 Automatic Receptacle Control: Delete section.

4101:1-35-01 Referenced standards.

3501.1 General. *This chapter lists the standards that are referenced in various sections of the building code. The standards are listed herein by the promulgating agency of the standard, the standard identification, the effective date and title. The application of the referenced standards shall be as specified in Section 102.5.*

3501.2 Referenced codes. *When indicated in this code, the following codes refer to provisions in the listed chapters of the administrative code:*

<i>Referenced Code</i>	<i>Ohio Administrative Code Chapters</i>
<i>Building Code</i>	<i>4101:1-1 to 4101:1-35</i>
<i>Energy Code</i>	<i>4101:1-13</i>
<i>Fire Code</i>	<i>1301:7-1 to 1301:7-7</i>
<i>Mechanical Code</i>	<i>4101:2-1 to 4101:2-15</i>
<i>Ohio Boiler and Pressure Vessel Rules</i>	<i>4101:4-1 to 4101:4-10</i>
<i>Ohio Elevator Code</i>	<i>4101:5-1 to 4101:5-3</i>
<i>Residential Code of Ohio for One, Two and Three Family Dwellings</i>	<i>4101:8-1 to 4101:8-44</i>
<i>Plumbing Code</i>	<i>4101:3-1 to 4101:3-13</i>

3501.3 Building Code Referenced Standards.

Aluminum Association
 1525 Wilson Boulevard, Suite 600
 Arlington, VA 22209

AA	
Standard	
reference	
number	Title

ADM1—10 Aluminum Design Manual: Part 1-A Specification for Aluminum Structures, Allowable Stress Design; and Part 1-B—Aluminum Structures, Load and Resistance Factor Design

ASM 35—00 Aluminum Sheet Metal Work in Building Construction (Fourth Edition)

American Architectural Manufacturers Association
1827 Waldon Office
Square, Suite 550
Schaumburg, IL 60173

**AAMA
Standard
reference
number**

1402—09

Title

Standard Specifications for Aluminum Siding,
Soffit and Fascia

AAMA/WDMA/CSA
101/I.S.2/A440—08

North American Fenestration
Standard/Specifications for Windows, Doors and
Skylights

American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331

**ACI
Standard
reference
number**

216.1—07

Title

Standard Method for Determining Fire Resistance of
Concrete and Masonry Construction Assemblies

318—08

Building Code Requirements for Structural Concrete

530—08

Building Code Requirements for Masonry Structures

530.1—08

Specifications for Masonry Structures

American Forest & Paper Association
1111 19th St, NW Suite 800
Washington, DC 20036

**AF&PA
Standard
reference
number**

WCD No. 4—03

NDS—05

AF&PA—93

ANSI/AF&PA PWF—07

ANSI/AF&PA SDPWS—08

Title

Wood Construction Data—Plank and Beam Framing for Residential

National Design Specification (NDS) for Wood Construction with 2005 Supplement Span Tables for Joists and Rafters

Permanent Wood Foundation Design Specification

Special Design Provisions for Wind and Seismic

American Institute of Steel Construction
One East Wacker Drive, Suite 3100
Chicago, IL 60601-2001

**AISC
Standard
reference
number**

341—05

360—05

Title

Seismic Provisions for Structural Steel Buildings, including Supplement No. 1 dated 2005

Specification for Structural Steel Buildings

American Iron and Steel Institute
1140 Connecticut Avenue
Suite 705
Washington, DC 20036

**AISI
Standard
reference
number**

S100—07

S200—08

S210—08

Title

North American Specification for the Design of Cold-formed Steel Structural Members

North American Standard for Cold-formed Steel Framing—General

North American Standard for Cold-formed Steel Framing—Floor and Roof System Design

S211—08	North American Standard for Cold-formed Steel Framing—Wall Stud
S212—08	North American Standard for Cold-formed Steel Framing—Header Design
S213—08	North American Standard for Cold-formed Steel Framing—Lateral Design
S214—08	North American Standard for Cold-formed Steel Framing—Truss Design, with Supplement 2, dated 2008

American Institute of Timber Construction
Suite 140
7012 S. Revere Parkway
Englewood, CO 80112

**AITC
Standard
reference
number**

Title

AITC Technical Note 7—96	Calculation of Fire Resistance of Glued Laminated Timbers
AITC 104—03	Typical Construction Details
AITC 110—01	Standard Appearance Grades for Structural Glued Laminated
AITC 113—01	Standard for Dimensions of Structural Glued Laminated Timber
AITC 117—04	Standard Specifications for Structural Glued Laminated Timber of Softwood Species
AITC 119—96	Standard Specifications for Structural Glued Laminated Timber of Hardwood
AITC200—09	Manufacturing Quality Control Systems Manual for Structural Glued Laminated Timber
ANSI/AITCA 190.1—07	Structural Glued Laminated Timber

Automotive Lift Institute
P.O. Box 85
Courtland, NY 13045

**ALI
Standard
reference**

number	Title
ALI ALCTV—2007	Standard for Automobile Lifts—Safety Requirements for Construction, Testing and Validation (ANSI)

American National Standards Institute
25 West 43rd Street, Fourth Floor
New York, NY 10036

**ANSI
Standard
reference**

number	Title
A13.1—07	Scheme for the Identification of Piping Systems
A108.1A—09	Installation of Ceramic Tile in the Wet-set Method, with Portland Cement
A108.1B—09	Installation of Ceramic Tile, quarry Tile on a Cured Portland Cement Mortar Setting Bed with Dry-set or Latex-Installation of Ceramic Tile with Organic Adhesives or Water-cleanable Tile-setting Epoxy Adhesive
A108.4—09	Installation of Ceramic Tile with Dry-set Portland Cement Mortar or Latex-portland Cement Mortar
A108.5—09	Installation of Ceramic Tile with Chemical-resistant, Water Cleanable Tile-setting and -grouting Epoxy
A108.6—09	Installation of Ceramic Tile with Chemical-resistant Furan Resin Mortar and Grout
A108.8—09	Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout
A108.9—09	Installation of Grout in Tilework
A108.10—09	American National Standard Specifications for Dry-set Portland Cement
A118.1—10.1	American National Standard Specifications for Chemical-resistant, Water-cleanable Tile-setting and -grouting Epoxy and Water Cleanable Tile-setting Epoxy
A118.3—10.1	American National Standard Specifications for Latex-portland Cement
A118.4—10.1	American National Standard Specifications for Chemical Resistant Furan Mortar and Grouts for Tile
A118.5—10.1	American National Standard Specifications for Modified Epoxy Emulsion Mortar/Grout
A118.8—10.1	American National Standard Specifications for Modified Epoxy Emulsion Mortar/Grout

A136.1—10.1	American National Standard Specifications for Organic Adhesives for Installation of Ceramic
137.1—08	American National Standard Specifications for Ceramic Tile
A208.1—09	Particleboard
Z 97.1—09	Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test

APA - Engineered Wood Association
7011 South 19th
Tacoma, WA 98466

**APA
Standard
reference
number**

Title

APA PDS—08	Panel Design Specification
APA PDS Supplement 1—90	Design and Fabrication of Plywood Curved Panels (revised 1995)
APA PDS Supplement 2—92	Design and Fabrication of Plywood-lumber Beams (revised 1998)
APA PDS Supplement 3—96	Design and Fabrication of Plywood Stressed-skin Panels (revised 1996)
APA PDS Supplement 4—93	Design and Fabrication of Plywood Sandwich Panels (revised 1993)
APA PDS Supplement 5—95	Design and Fabrication of All-plywood Beams (revised 1995)
EWS R540—07	Builders Tips: Proper Storage and Handling of Glulam Beams
EWS S475—07	Glued Laminated Beam Design Tables
EWS S560—10	Field Notching and Drilling of Glued Laminated Timber Beams
EWS T300—07	Glulam Connection
EWS X440—08	Product Guide— Glulam
EWS X450—01	Glulam in Residential Construction—Western Edition

The Association of Pool & Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314

**APSP
Standard
reference
number**

Title

ANSI/APSP 7—06 Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs and Catch Basins

American Society of Agricultural and Biological Engineers
2950 Niles Road
St. Joseph, MI 49085

**ASABE
Standard
reference
number**

Title

EP 484.2 -98 Diaphragm Design of Metal-clad, Post-frame Rectangular Buildings
EP 486.1 -99 Shallow-post Foundation Design
EP 559 -03 Design Requirements and Bending Properties for Mechanically Laminated Columns

American Society of Civil Engineers
Structural Engineering Institute
1801 Alexander Bell Drive
Reston, VA 20191-4400

**ASCE/SEI
Standard
reference
number**

Title

3—91 Structural Design of Composite Slabs
5—08 Building Code Requirements for Masonry
6—08 Specification for Masonry Structures
7—05 Minimum Design Loads for Buildings and Other Structures including Supplements No. 1 and 2, excluding Chapter 14 and Appendix 11A

8—02	Standard Specification for the Design of Cold-formed Stainless Steel Structural Members
19—10	Structural Applications of Steel Cables for Buildings
24—05	Flood Resistant Design and Construction
29—05	Standard Calculation Methods for Structural Fire Protection
32—01	Design and Construction of Frost Protected Shallow Foundations

*American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329-2305*

**ASHRAE
Standard
Reference**

Number	Title
<i>ASHRAE 90.1-20072010</i>	<i>Energy Standard for Buildings Except Low-Rise Residential Buildings (<u>as modified in chapter 13 of this code including Addenda ap, cj, and de applicable to computer rooms and data centers and Addenda dd</u>)</i>

American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

**ASME
Standard
reference
number**

number	Title
A17.1/CSA B44—2010	Safety Code for Elevators and Escalators
A18.1—2008	Safety Standard for Platform Lifts and Stairway Chairlifts
A90.1—2009	Safety Standard for Belt Manlifts
B16.18—2001 (Reaffirmed 2005)	Cast Copper Alloy Solder Joint Pressure Fittings
B16.22—2001 (Reaffirmed 2005)	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
B20.1—2009	Safety Standard for Conveyors and Related Equipment

B31.3—2008 Process Piping

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

**ASTM
Standard
reference
number**

Title

A 36/A 36M—08	Specification for Carbon Structural Steel
A 153/A 153M—09	Specification for Zinc Coating (Hot-dip) on Iron and Steel Hardware
A 240/A 240M—10a	Standard Specification for Chromium and Chromium-nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications
A 252—10	Specification for Welded and Seamless Steel Pipe Piles
A 283/A 283M—03(2007)	Specification for Low and Intermediate Tensile Strength Carbon Steel Plates
A 307—07b	Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
A 416/A 416M—10	Specification for Steel Strand, Uncoated Seven-wire for Prestressed Concrete
A 463/A 463M—09a	Standard Specification for Steel Sheet, Aluminum-coated, by the Hot-dip Process
A 572/A 572M—07	Specification for High-strength Low-alloy Columbium-vanadium Structural Steel
A 588/A 588M—10	Specification for High-strength Low-alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 inches (100 mm) Thick
A 615/A 615M—09b	Specification for Deformed and Plain Billet-steel Bars for Concrete Reinforcement
A 653/A 653M—09a	Specification for Steel Sheet, Zinc-coated Galvanized or Zinc-iron Alloy-coated Galvannealed by the Hot-dip Process
A 690/A 690M—07	Standard Specification for High-strength Low-alloy Nickel, Copper, Phosphorus Steel H-piles and Sheet Piling with Atmospheric Corrosion Resistance for Use in Marine Environments

A 706/A 706M—09b	Specification for Low-alloy Steel Deformed and Plain Bars for Concrete Reinforcement
A 722/A 722M—07	Specification for Uncoated High-strength Steel Bar for Prestressing
A 755/A 755M—03(2008)	Specification for Steel Sheet, Metallic-coated by the Hot-dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products
A 792/A 792M—09a	Specification for Steel Sheet, 55% Aluminum-zinc Alloy-coated by the Hot-dip Process
A 875/A 875M—09a	Standard Specification for Steel Sheet Zinc-5 percent, Aluminum Alloy-coated by the Hot-dip Process
A 913/A 913M—07	Specification for High-strength Low-alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-tempering Process (QST)
A 924/A 924M—10	Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process
A 992/A 992M—06a	Standard Specification for Structural Shapes
B 42—10	Specification for Seamless Copper Pipe, Standard
B 43—09	Specification for Seamless Red Brass Pipe, Standard Sizes
B 68—02	Specification for Seamless Copper Tube, Bright Annealed (Metric)
B 88—09	Specification for Seamless Copper Water Tube
B 101—07	Specification for Lead-coated Copper Sheet and Strip for Building Construction
B 209—07	Specification for Aluminum and Aluminum Alloy Steel and Plate
B 251—10	Specification for General Requirements for Wrought Seamless Copper and Copper-alloy Tube
B 280—08	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
B 370—09	Specification for Cold-rolled Copper Sheet and Strip for Building Construction
B 695—04(2009)	Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
C 5—10	Specification for Quicklime for Structural
C 22/C 22M—00 (2005)e01	Specification for Gypsum

C 27—98 (2008)	Specification for Standard Classification of Fireclay and High-alumina Refractory Brick
C 28/C 28M—10	Specification for Gypsum
C 31/C 31M—10	Practice for Making and Curing Concrete Test Specimens in the Field
C 33—08	Specification for Concrete Aggregates
C 34—10	Specification for Structural Clay Load-bearing Wall Tile
C 35—01(2009)	Specification for Inorganic Aggregates for Use in Gypsum Plaster
C 36/C 36M—03	Specification for Gypsum Wallboard
C 37/C 37M—01	Specification for Gypsum Lath
C 55—09	Specification for Concrete Building Brick
C 56—10	Specification for Structural Clay Nonload Bearing Tile
C 59/C 59M—00 (2006)	Specification for Gypsum Casting and Molding Plaster
C 61/C 61M—00 (2006)	Specification for Gypsum Keene's
C 62—10	Specification for Building Brick (Solid Masonry Units Made from Clay or Shale)
C 67—09	Test Methods of Sampling and Testing Brick and Structural Clay
C 73—05	Specification for Calcium Silicate Face Brick (Sand-lime Brick)
C 79—04a	Specification for Treated Core and Nontreated Core Gypsum Sheathing Board
C 90—09	Specification for Loadbearing Concrete Masonry Units
C 91—05	Specification for Masonry Cement
C 94/C 94M—10	Specification for Ready-mixed
C 126—10	Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units
C 140—10	Test Method Sampling and Testing Concrete Masonry Units and Related Units
C 150—09	Specification for Portland Cement
C 172—10	Practice for Sampling Freshly Mixed
C 199—84 (2005)	Test Method for Pier Test for Refractory Mortars
C 206—03 (2009)	Specification for Finishing Hydrated Lime
C 208—08a	Specification for Cellulosic Fiber Insulating Board
C 212—10	Specification for Structural Clay Facing Tile

C 216—10	Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)
C 270—10	Specification for Mortar for Unit Masonry
C 315—07	Specification for Clay Flue Liners and Chimney Pots
C 317/C 317M—00 (2005)	Specification for Gypsum Concrete
C 330—09	Specification for Lightweight Aggregates for Structural Concrete
C 331—05	Specification for Lightweight Aggregates for Concrete Masonry Units
C 406—10	Specification for Roofing Slate
C 442/C 442M—04	Specification for Gypsum Backing Board and Coreboard and Gypsum Shaftliner Board
C 472—99 (2009)	Specification for Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete
C 473—10	Test Method for Physical Testing of Gypsum Panel Products
C 474—05	Test Methods for Joint Treatment Materials for Gypsum Board Construction
C 475—02 (2007)	Specification for Joint Compound and Joint Tape for Finishing Gypsum Wallboard
C 503—10	Specification for Marble Dimension Stone (Exterior)
C 514—04 (2009)e1	Specification for Nails for the Application of Gypsum
C 516—08	Specifications for Vermiculite Loose Fill Thermal
C 547—07e1	Specification for Mineral Fiber Pipe Insulation
C 549—06	Specification for Perlite Loose Fill
C 552—07	Standard Specification for Cellular Glass Thermal Insulation
C 557—03(2009)e01	Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing
C 568—10	Specification for Limestone Dimension Stone
C 578—10	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
C 587—04 (2009)	Specification for Gypsum Veneer Plaster
C 588/C 588M—01	Specification for Gypsum Base for Veneer Plasters
C 595—10	Specification for Blended Hydraulic Cements
C 615—10	Specification for Granite Dimension
C 616—10	Specification for Quartz Dimension Stone
C 629—10	Specification for Slate Dimension

C 630/C 630M—03	Specification for Water-resistant Gypsum Backing Board
C 631—09	Specification for Bonding Compounds for Interior Gypsum Plastering
C 635/C 635M-07	Specification for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel
C 636/C 636M—08	Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
C 645—09a	Specification for Nonstructural Steel Framing Members
C 652—10	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale
C 728—05 (2010)	Standard Specification for Perlite Thermal Insulation Board
C 744—10	Specification for Prefaced Concrete and Calcium Silicate Masonry
C 754—09a	Specification for Installation of Steel Framing Members to Receive Screw-attached Gypsum Panel Products
C 836/C 836M-10	Specification for High-solids Content, Cold Liquid-applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
C 840—08	Specification for Application and Finishing of Gypsum Board
C 841—03 (2008)e1	Specification for Installation of Interior Lathing and Furring
C 842—05	Specification for Application of Interior Gypsum Plaster
C 843—99 (2006)	Specification for Application of Gypsum Veneer Plaster
C 844—10	Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster
C 847—10a	Specification for Metal Lath
C 887—05 (2010)	Specification for Packaged, Dry Combined Materials for Surface Bonding Mortar
C 897—05 (2009)	Specification for Aggregate for Job-mixed Portland Cement-based Plaster
C 920—10	Standard for Specification for Elastomeric Joint Sealants

C 926—06	Specification for Application of Portland Cement-based Plaster
C 931/C 931M—04	Specification for Exterior Gypsum Soffit Board
C 932—06	Specification for Surface-applied Bonding Compounds Agents for Exterior Plastering
C 933—09	Specification for Welded Wire Lath
C 946—10	Specification for Practice for Construction of Dry-stacked, Surface-bonded Walls
C 954—10	Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inch (0.84 mm) to 0.112 inch (2.84 mm) in Thickness
C 955—09a	Standard Specification for Load-bearing Transverse and Axial Steel Studs, Runners Tracks, and Bracing or Bridging, for Screw Application of Gypsum Panel Products and Metal Plaster Bases
C 956—04 (2010)	Specification for Installation of Cast-in-place Reinforced Gypsum
C 957—10	Specification for High-solids Content, Cold Liquid-applied Elastomeric Waterproofing Membrane with Integral Wearing Surface
C 960—04	Specification for Predecorated Gypsum Board
C 1002—07	Specification for Steel Self-piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
C 1007—08a	Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories
C 1019—09	Test Method of Sampling and Testing Grout
C 1029—10	Specification for Spray-applied Rigid Cellular Polyurethane Thermal Insulation
C 1032—06	Specification for Woven Wire Plaster Base
C 1047—10a	Specification for Accessories for Gypsum Wallboard and Gypsum Veneer
C 1063—08	Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-based Plaster
C 1088—10	Specification for Thin Veneer Brick Units Made from Clay or Shale
C 1167—03 (2009)	Specification for Clay Roof Tiles

C 1177/C 1177M—08	Specification for Glass Mat Gypsum Substrate for Use as Sheathing
C 1178/C 1178M—08	Specification for Coated Glass Mat Water-resistant Gypsum Backing Panel
C 1186—08	Specification for Flat-Fiber Cement Sheets
C 1261—10	Specification for Firebox Brick for Residential Fireplaces
C 1278/C 1278M—07a	Specification for Fiber-reinforced Gypsum Panels
C 1280—09	Specification for Application of Gypsum Sheathing
C 1283—07a	Practice for Installing Clay Flue Lining.
C 1288—99 (2010)	Standard Specification for Discrete Nonasbestos Fiber-cement Interior Substrate Sheets
C 1289—10	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
C 1314—10	Test Method for Compressive Strength of Masonry Prisms
C 1325—08b	Standard Specification for Nonasbestos Fiber-mat Reinforced Cement Interior Substrate Sheets
C 1328—05	Specification for Plastic (Stucco Cement)
C 1386—07	Specification for Precast Autoclaved Aerated Concrete (AAC) Wall Construction
C 1395/C 1395M—06a	Specification for Gypsum Ceiling Board
C 1396M—09a	Specification for Gypsum Board
C 1405—10	Standard Specification for Glazed Brick (Single Fired, Solid Brick Units)
C 1492—03 (2009)	Standard Specification for Concrete Roof
C 1629/C 1629M—06	Standard Classification for Abuse-resistant Nondecorated Interior Gypsum Panel Products and Fiber-reinforced Cement Panels
C 1658/C 1658M—06	Standard Specification for Glass Mat Gypsum Panels
D 25—99 (2005)	Specification for Round Timber Piles
D 41—05 (2010)	Specification for Asphalt Primer Used in Roofing, Dampproofing and Waterproofing
D 43—00 (2006)	Specification for Coal Tar Primer Used in Roofing, Dampproofing and Waterproofing
D 56—05	Test Method for Flash Point By Tag Closed Tester
D 86—10a	Test Method for Distillation of Petroleum Products at Atmospheric Pressure
D 93—10	Test Method for Flash Point By Pensky-Martens Closed Cup Tester

D 225—07	Specification for Asphalt Shingles (Organic Felt) Surfaced with Mineral Granules
D 226/D 226M-09	Specification for Asphalt-saturated Organic Felt Used in Roofing and Waterproofing
D 227—03	Specification for Coal-tar-saturated Organic Felt Used in Roofing and Waterproofing
D 312—00 (2006)	Specification for Asphalt Used in
D 422—63 (2007)	Test Method for Particle-size Analysis of Soils
D 448—08	Standard Classification for Sizes of Aggregate for Road and Bridge
D 450—07	Specification for Coal-tar Pitch Used in Roofing, Dampproofing and Waterproofing
D 635—10	Test Method for Rate of Burning and/or Extent and Time of Burning of Self-supporting Plastics in a Horizontal Position
D 1143/D 1143M—07e1	Test Method for Piles Under Static Axial Compressive Load
D 1227—95 (2007)	Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
D 1557—09	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft ³ (2,700 KN m/m ³)]
D 1586—08a	Specification for Penetration Test and Split-barrel Sampling of Soils
D 1761—06	Test Method for Mechanical Fasteners in Wood
D 1863—05	Specification for Mineral Aggregate Used on Built-up Roofs
D 1929—96 (2001)e01	Test Method for Determining Ignition Properties of Plastics
D 1970—09	Specification for Self-adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roof Underlayment for Ice Dam Protection
D 2166—06	Test Method for Unconfined Compressive Strength of Cohesive Soil
D 2178—04	Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
D 2216—10	Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
D 2487—10	Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)

D 2626—04	Specification for Asphalt Saturated and Coated Organic Felt Base Sheet Used in Roofing
D 2822—05	Specification for Asphalt Roof Cement
D 2823—05	Specification for Asphalt Roof Coatings
D 2843—10	Test for Density of Smoke from the Burning or Decomposition of Plastics
D 2850—03a (2007)	Test Method for Unconsolidated, Undrained Triaxial Compression Test on Cohesive Soils
D 2898—10	Test Methods for Accelerated Weathering of Fire-retardant-treated Wood for Fire Testing
D 3019—08	Specification for Lap Cement Used with Asphalt Roll Roofing, Nonfibered, Asbestos Fibered and NonasbestosFibered
D 3161—09	Test Method for a Wind Resistance of Asphalt Shingles (Fan Induced Method)
D 3200—74 (2005)	Standard Specification and Test Method for Establishing Recommended Design Stresses for Round Timber Construction Poles
D 3201—08ae1	Test Method for Hygroscopic Properties of Fire-retardant-treated Wood and Wood-based Products
D 3278—96(2004)e01	Test Methods for Flash Point of Liquids by Small Scale Closed-cup Apparatus
D 3462/ D3462M-10a	Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules
D 3468—99 (2006)e1	Specification for Liquid-applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing
D 3679—09a	Specification for Rigid Poly [Vinyl Chloride (PVC) Siding]
D 3689—07	Method for Testing Individual Piles Under Static Axial Tensile Load
D 3737—09	Practice for Establishing Allowable Properties for Structural Glued Laminated Timber (Glulam)
D 3746—85 (2008)	Test Method for Impact Resistance of Bituminous Roofing Systems
D 3747—79 (2007)	Specification for Emulsified Asphalt Adhesive for Adhering Roof Insulation
D 3909—97b (2004)e01	Specification for Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules
D 3957—09	Standard Practices for Establishing Stress Grades for Structural Members Used in Log Buildings

D 4022—07	Specification for Coal Tar Roof Cement, Asbestos Containing
D 4272—09	Test Method for Total Energy Impact of Plastic Films by Dart Drop
D 4318—10	Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
D 4434/D 4434M-09	Specification for Poly (Vinyl Chloride) Sheet Roofing
D 4479—07	Specification for Asphalt Roof Coatings—Asbestos-free
D 4586—07	Specification for Asphalt Roof Cement—Asbestos-free
D 4601—04	Specification for Asphalt-coated Glass Fiber Base Sheet Used in Roofing
D 4637/D 4637M-10	Specification for EPDM Sheet Used in Single-ply Roof Membrane
D 4829—08a	Test Method for Expansion Index of Soils
D 4869—05e01	Specification for Asphalt-saturated (Organic Felt) Underlayment Used in Steep Slope Roofing
D 4897/D 4897M-01(2009)	Specification for Asphalt-coated Glass Fiber Venting Base Sheet Used in Roofing
D 4945—08	Test Method for High-strain Dynamic Testing of Piles
D 4990—97a (2005)e1	Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing.
D 5019—07a	Specification for Reinforced Nonvulcanized Polymeric Sheet Used in Roofing Membrane
D 5055—10	Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-joists
D 5456—10	Specification for Evaluation of Structural Composite Lumber Products
D 5516—09	Test Method of Evaluating the Flexural Properties of Fire-retardant-treated Softwood Plywood Exposed to the Elevated Temperatures
D 5643—06	Specification for Coal Tar Roof Cement, Asbestos-free
D 5664—10	Test Methods for Evaluating the Effects of Fire-retardant Treatment and Elevated Temperatures on Strength Properties of Fire-retardant-treated Lumber
D 5665—99a (2006)	Specification for Thermoplastic Fabrics Used in Cold-applied Roofing and Waterproofing

D 5726—98 (2005)	Specification for Thermoplastic Fabrics Used in Hot-applied Roofing and Waterproofing .
D 6083—05e01	Specification for Liquid Applied Acrylic Coating Used in Roofing
D 6162—00a (2008)	Specification for Styrene-butadiene-styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements
D 6163—00 (2008)	Specification for Styrene-butadiene-styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements
D 6164—05 e1	Specification for Styrene-butadiene-styrene (SBS) Modified Bituminous Sheet Metal Materials Using Polyester Reinforcements
D 6222—08	Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using Polyester Reinforcements
D 6223/D6223M-02(2009)e1	Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements
D 6298—05e1	Specification for Fiberglass Reinforced Styrene-butadiene-styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface
D 6305—08	Practice for Calculating Bending Strength Design Adjustment Factors for Fire-retardant-treated Plywood Roof Sheathing
D 6380—03 (2009)	Standard Specification for Asphalt Roll Roofing (Organic) Felt
D 6509/D6509M-09	Standard Specification for Atactic Polypropylene (APP) Modified Bituminous base Sheet Materials Using Glass Fiber Reinforcements
D 6694—08	Standard Specification for Liquid-applied Silicone Coating Used in Spray Polyurethane Foam Roofing
D 6754/D6754M-10	Standard Specification for Ketone Ethylene Ester Based Sheet Roofing
D 6757—07	Standard Specification for Inorganic Underlayment for Use with Steep Slope Roofing Products
D 6841—08	Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-retardant-treated Lumber

D 6878—08e1	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
D 6947—07	Standard Specification for Liquid Applied Moisture Cured Polyurethane Coating Used in Spray Polyurethane Foam Roofing System
D 7158—08d	Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)
E 84—10b	Test Methods for Surface Burning Characteristics of Building Materials
E 90—09	Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
E 96/E 96M—05	Test Method for Water Vapor Transmission of Materials
E 108—10a	Test Methods for Fire Tests of Roof Coverings
E 119—10b	Test Methods for Fire Tests of Building Construction and Materials
E 136—09b	Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C
E 330—02 (2010)	Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference
E 331—00 (2009)	Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Uniform Static Air Pressure Difference
E 492—09	Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-ceiling Assemblies Using the Tapping Machine
E 605—93 (2006)	Test Method for Thickness and Density of Sprayed Fire-resistive Material (SFRM) Applied to Structural Members.
E 681—09	Test Methods for Concentration Limits of Flammability of Chemical Vapors and Gases
E 736—00 (2006)	Test Method for Cohesion/Adhesion of Sprayed Fire-resistive Materials Applied to Structural Members
E 814—10	Test Method of Fire Tests of Through-penetration Firestops

E 970—10	Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source
E 1300—09a	Practice for Determining Load Resistance of Glass in Buildings.
E 1354—10a	Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
E 1592—05	Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
E 1602—03 (2010)e1	Guide for Construction of Solid Fuel-burning Masonry Heaters
E 1886—05	Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Storm Shutters Impacted by Missiles and Exposed to Cyclic Pressure Differentials
E 1966—07	Test Method for Fire-resistant Joint Systems.
E 1996—09	Specification for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
E 2072—10	Standard Specification for Photoluminescent (Phosphorescent) Safety Markings
E 2273—03	Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies
E 2307—10	Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate-scale, Multistory Test Apparatus
E 2404—10	Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Vinyl Wall or Ceiling Coverings to Assess Surface Burning Characteristics
E 2568—09e1	Standard Specification for PB Exterior Insulation and Finish Systems (EIFS)
E 2570—07	Standard Test Method for Evaluating Water-resistant Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) for EIFS with Drainage

E 2573—07a	Standard Practice for Specimen Preparation and Mounting of Site-fabricated Stretch Systems to Assess Surface Burning Characteristics
F 547—06	Terminology of Nails for Use with Wood and Wood-based Materials
F 1346—91 (2003)	Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs
F 1667—10	Specification for Driven Fasteners: Nails, Spikes and Staples
F 2006—10	Standard/Safety Specification for Window Fall Prevention Devices for Nonemergency/Escapes (Egress) and Rescue (Ingress) Windows
F 2090—10	Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms
F 2200—05	Standard Specification for Automated Vehicular Gate Construction
G 152—06	Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
G 154—06	Practice for Operating Fluorescent Light Apparatus for UV Exposure of Nonmetallic Materials
G 155—05a	Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials

The Association of the Wall and Ceiling Industries International
513 West Broad Street, Suite 210
Falls Church, VA 22046

**AWCI
Standard
reference
number**

Title

12-B—05 Technical Manual 12-B Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire-resistive Materials; an Annotated Guide, *Second* Edition

American Wood Protection Association
P.O. Box 361784
Birmingham, AL 35236-1784

**AWPA
Standard
reference
number**

	Title
C1—03	All Timber Products—Preservative Treatment by Pressure Processes
M4—06	Standard for the Care of Preservative-treated Wood Products
U1—10	USE CATEGORY SYSTEM: User Specification for Treated Wood Except Section 6, Commodity Specification H

American Welding Society
550 N.W. LeJeune Road
Miami, FL 33126

**AWS
Standard
reference
number**

	Title
D1.1—10	Structural Welding Code—Steel
D1.3—08	Structural Welding Code—Sheet Steel
D1.4—05	Structural Welding Code—Reinforcing Steel

Builders Hardware Manufacturers' Association
355 Lexington Avenue, 17th Floor
New York, NY 10017-6603

**BHMA
Standard
reference
number**

	Title
A 156.10—05	Power Operated Pedestrian Doors
A 156.19—07	Standard for Power Assist and Low Energy Operated Doors

Canadian General Standards Board
Place du Portage 111, 6B1
11 Laurier Street
Gatineau, Quebec, Canada KIA 1G6

**CGSB
Standard**

Reference

Number	Title
37-GP-52M (1984)	Roofing and Waterproofing Membrane, Sheet Applied, Elastomeric
37-GP-56M (1985)	Membrane, Modified, Bituminous, Prefabricated and Reinforced for Roofing—with December 1985 Amendment
CAN/CGSB 37.54—95	Polyvinyl Chloride Roofing and Waterproofing Membrane

Composite Panel Association
19465 Deerfield Avenue, Suite 306
Leesburg, VA 20176

**CPA
Standard
reference
number**

number	Title
ANSI A135.4—2004	Basic Hardboard
ANSI A135.5—2004	Prefinished Hardboard Paneling
ANSI A135.6—2006	Hardboard Siding

Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814-4408

**CPSC
Standard
reference
number**

number	Title
16 CFR Part 1201(1977)	Safety Standard for Architectural Glazing Material
16 CFR Part 1209 (1979)	Interim Safety Standard for Cellulose Insulation
<i>16 CFR Part 1301(1977)</i>	<i>Ban of Unstable Refuse Bins</i>
16 CFR Part 1404 (1979)	Cellulose Insulation
16 CFR Part 1500 (1991)	Hazardous Substances and Articles; Administration and Enforcement Regulations
16 CFR Part 1500.44 (2001)	Method for Determining Extremely Flammable and Flammable Solids

115—05 Structural Performance Under Uniform Static Air
 Pressure Difference
 Standard Method for Testing Sectional Garage
 Doors and Rolling Doors: Determination of
 Structural Performance Under Missile Impact and
 Cyclic Wind Pressure

U.S. Department of Commerce
National Institute of Standards and Technology
1401 Constitution Avenue, NW
Washington, DC 20230

DOC
Standard
reference
number

Title
Structural Plywood
Performance Standard for Wood-based Structural-use Panels
American Softwood Lumber Standard

PS-1—07
PS-2—04
PS 20—05

U.S. Department of Labor
c/o Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402-9325

DOL
Standard
reference
number

Title
Air Contaminants

29 CFR Part 1910.1000
(1974)

U.S. Department of Transportation
c/o Superintendent of Documents
1200 New Jersey Avenue, SE
Washington, DC 20402-9325

DOTn

**Standard
reference**

number

49CFR Parts 100-185-2005
49 CFR Parts 173.137
(2005)

Title

Hazardous Materials Regulations

Shippers—General Requirements for Shipments
and Packaging—Class 8—Assignment of Packing
Group

49 CFR—1998

Specification of Transportation of Explosive and
Other Dangerous Articles,
UN 0335, UN 0336 Shipping Containers

European Committee for Standardization (EN)
Central Secretariat
Rue de Stassart 36
B-10 50 Brussels

EN

**Standard
reference**

number

EN 1081-98
Resistance

Title

Resilient Floor Coverings—Determination of the Electrical

Federal Emergency Management Agency
Federal Center Plaza
500 C Street S.W.
Washington, DC 20472

FEMA

**Standard
reference**

number

FIA-TB11—01

Title

Crawlspace Construction for Buildings Located in
Special Flood Hazard Areas

Factory Mutual Global Research
Standards Laboratories Department
1301 Atwood Avenue, P.O. Box 7500
Johnson, RI 02919

FM
Standard
reference
number

	Title
4450 (1989)	Approval Standard for Class 1 Insulated Steel Deck Roofs—with Supplements through July 1992
4470 (2010)	Approval Standard for Class 1 Roof Covers
4474 (04)	Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures
4880 (2010)	American National Standard for Evaluating Insulated Wall or Wall and Roof/ Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior and Exterior Finish Systems

Gypsum Association
810 First Street N.E. #510
Washington, DC 20002-4268

GA
Standard
reference
number

	Title
GA 216—10	Application and Finishing of Gypsum Panel Products
GA 600—09	Fire-resistance Design Manual, 18th Edition

Hardwood Plywood Veneer Association
1825 Michael Faraday Drive
Reston, VA 20190-5350

HPVA
Standard
reference
number

	Title
HP-1—2009	Standard for Hardwood and Decorative Plywood

U.S. Department of Housing and Urban Development
451 7th Street, SW,
Washington, DC 20410

HUD

**Standard
reference
number**

HUD 24 CFR Part 3280 (1994)
Safety Standards

Title

Manufactured Home Construction and

International Code Council, Inc.
500 New Jersey Ave, NW 6th Floor
Washington, DC 20001

ICC

**Standard
reference
number**

ICC/ANSI A117.1—09
ICC 300—07

Title

Accessible and Usable Buildings and Facilities
ICC Standard on Bleachers, Folding and Telescopic
Seating and

ICC 400—07

Standard on Design and Construction of Log
Structures

ICC 500—08

ICC/NSSA Standard on the Design and
Construction of Storm

ICC 600—08

Standard for Residential Construction in High Wind
Regions

IEBC – 09

International Existing Buildings Code

IECC—09 12

International Energy Conservation Code (*adoption
includes chapters 2 through 5 of both the
commercial provisions and the residential
provisions, but only section 101 of chapters 1 and
~~chapters 2 through 6~~ and as further modified in
chapter 13 of this code*)

IFGC—09

International Fuel Gas Code (*including ICC
Emergency Amendment changing IFGC Sections
406.7*)

SBCCI SSTD 11—99

Test Standard for Determining Wind Resistance of
Concrete or Clay Roof Tiles

International Organization for Standardization
ISO Central Secretariat,
1 ch, de la Voie-Creuse,
Case Postale 56

CH-1211 Geneva 20, Switzerland

**ISO
Standard
reference
number**

Title

ISO 8115—86 Cotton Bales—Dimensions and Density

National Association of Architectural Metal Manufacturers,
800 Roosevelt Road,
Bldg. C, Suite 312
Glen Ellyn, IL 60137

**NAAMM
Standard
reference
number**

Title

FP 1001—07 Guide Specifications for Design of Metal Flag Poles

National Concrete Masonry Association,
13750 Sunrise Valley,
Herndon, VA 22071-4662

**NCMA
Standard
reference
number**

Title

TEK5-08 Details for Concrete Masonry Fire Walls

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02269-9101

**NFPA
Standard
reference
number**

Title

10—10 Portable Fire Extinguishers
11—10 Low Expansion Foam
12—08 Carbon Dioxide Extinguishing Systems
12A—04 Halon 1301 Fire Extinguishing Systems

13—10	Installation of Sprinkler Systems (<i>including TIA 10-2</i>)
13D—10	Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes (<i>including TIA 10-2</i>)
13R—10	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height (<i>including TIA 10-2</i>)
14—10	Installation of Standpipe and Hose System
16—07	Installation of Foam-water Sprinkler and Foam-water Spray Systems
17—09	Dry Chemical Extinguishing Systems
17A—09	Wet Chemical Extinguishing
20—10	Installation of Stationary Pumps for Fire Protection
30—15	Flammable and Combustible Liquids Code
31—11	Installation of Oil-burning Equipment
32—07	Dry Cleaning Plants
37-10	<i>Installation and Use of Stationary Combustion Engines and Gas Turbines</i>
40—11	Storage and Handling of Cellulose Nitrate Film
58—11	Liquefied Petroleum Gas Code
61—08	Prevention of Fires and Dust Explosions in Agricultural and Food Product Facilities
70—14	National Electrical Code
72—10	National Fire Alarm <i>and Signaling</i> Code (<i>including TIA 10-4 and TIA 10-5</i>)
80—10	Fire Doors and Other Opening Protectives
85—07	Boiler and Combustion System Hazards Code (Note: NFPA 8503 has been incorporated into NFPA 85)
92B—09	Smoke Management Systems in Malls, Atria and Large Spaces
99—05	Standard for Health Care Facilities
105—10	Standard for the Installation of Smoke Door Assemblies
110—10	Emergency and Standby Power Systems
111—10	Stored Electrical Energy Emergency and Standby Power Systems
120—10	Coal Preparation Plants
170—09	Standard for Fire Safety and Emergency Symbols

211—10	Chimneys, Fireplaces, Vents and Solid Fuel-burning
221-09	<i>Standard for High challenge Fire Walls, Fire Walls, and Fire Barrier Walls</i>
252—08	Standard Methods of Fire Tests of Door Assemblies
253—06	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
257—07	Standard for Fire Test for Window and Glass Block Assemblies
259—08	Test Method for Potential Heat of Building Materials
265—07	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls
268—07	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source
285—06	Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components
286—06	Standard Method of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
288—07	Standard Method of Fire Tests of Floor Fire Door Assemblies Installed Horizontally in Fire-resistance-rated Floor Systems
409—11	Aircraft Hangars
418—06	Standard for Heliports
484—09	Combustible Metals
654—06	Prevention of Fire & Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids
655—07	Prevention of Sulfur Fires and Explosions
664—07	Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities
701—10	Standard Methods of Fire Tests for Flame-propagation of Textiles and Films
704—07	Standard System for the Identification of the Hazards of Materials for Emergency Response

1124—06 Manufacture, Transportation and Storage of
Fireworks and Pyrotechnic Articles
2001—08 Clean Agent Fire Extinguishing Systems

Precast Prestressed Concrete Institute
175 W. Jackson Boulevard, Suite 500
Chicago, IL 60604-6938

PCI
Standard
reference
number

	Title
MNL 124—89	Design for Fire Resistance of Precast Prestressed Concrete
MNL 128—01	Recommended Practice for Glass Fiber Reinforced Concrete Panels

Post-Tensioning Institute
8601 North Black Canyon Highway, Suite 103
Phoenix, AZ 85021

PTI
Standard
reference
number

	Title
PTI—2008	Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils, Third Edition
PTI—2008	Standard Requirements for Design of Shallow Post-tensioned Concrete Foundation on Expansive Soils, Second Edition

Rack Manufacturers Institute
8720 Red Oak Boulevard, Suite 201
Charlotte, NC 28217

RMI
Standard
reference
number

	Title
ANSI/MH16.1—08	Specification for Design, Testing and Utilization of Industrial Steel Storage Racks

Steel Deck Institute,
P. O. Box 25
Fox River Grove, IL 60021

SDI

**Standard
reference**

number

ANSI/NC1.0—06
ANSI/RD1.0—06

Title

Standard for Noncomposite Steel Floor Deck
Standard for Steel Roof Deck

Steel Joist Institute,
1173B London Links Drive
Forest, VA 24551

SJI

**Standard
reference**

number

CJ-1.0—06

JG-1.1—05

K-1.1—05

LH/DLH-1.1—05

Title

Standard Specification for Composite Steel Joists,
CJ-series

Standard Specification for Joist Girders

Standard Specification for Open Web Steel Joists,
K-series

Standard Specification for Longspan Steel Joists,
LH-series and Deep Longspan Steel Joists, DLH-
series

Single-Ply Roofing Institute,
411 Waverly Oaks Road, Suite 331B,
Waltham, MA 02452

SPRI

**Standard
reference**

number

SPRI/ANSI/ES-1—03

RP-4—02

Title

Wind Design Standard for Edge Systems Used with
Low Slope Roofing Systems

Wind Design Guide for Ballasted Single-ply
Roofing Systems

Telecommunications Industry Association
2500 Wilson Boulevard
Arlington, VA 22201-3834

**TIA
Standard
reference**

number	Title
TIA-222-G—09	Structural Standards for Steel Antenna Towers and Antenna Supporting Structures including-Addendum 1, 222-G-1, Dated 2007

The Masonry Society,
3970 Broadway, Unit 201-D,
Boulder, CO 80304-1135

**TMS
Standard
reference**

number	Title
0216—07	Standard Method for Determining Fire Resistance of Concrete and Masonry Construction Assemblies
0302—07	Standard Method for Determining the Sound Transmission Class Rating for Masonry Walls
402—08	Building Code Requirements for Masonry Structures
602—08	Specification for Masonry Structures

Truss Plate Institute,
218 N. Lee Street, Suite 312
Alexandria, VA 22314

**TPI
Standard
reference**

number	Title
TPI 1—2007	National Design Standards for Metal-plate-connected Wood Truss Construction

Underwriters Laboratories, Inc.
333 Pfingsten Road

Northbrook, IL 60062-2096

UL Standard reference number	Title
9—09	Fire Tests of Window Assemblies
10A—09	Tin Clad Fire Doors
10B—08	Fire Tests of Door Assemblies
10C—09	Positive Pressure Fire Tests of Door Assemblies
14B—08	Sliding Hardware for Standard Horizontally-mounted Tin Clad Fire Doors
14C—06	Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs
103—10	Factory-built Chimneys, for Residential Type and Building Heating Appliances
127—08	Factory-built Fireplaces
199E—04	Outline of Investigation for Fire Testing of Sprinklers and Water Spray Nozzles for Protection of Deep Fat Fryers.
217—06	Single and Multiple Station Smoke Alarms
263—03	Standard for Fire Test of Building Construction and Materials
268—09	Smoke Detectors for Fire Protective Signaling Systems
300—05	Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas
300A-06	<i>Extinguishing system units for residential range top cooking surfaces</i>
305—97	Panic Hardware
325—02	Door, Drapery, Gate, Louver and Window Operations and Systems—with Revisions through February 2006
555—2006	Fire Dampers
555C—2006	Ceiling Dampers
555S—99	Smoke Dampers—with Revisions through July 2006
580—2006	Test for Uplift Resistance of Roof Assemblies
641—95	Type L Low-temperature Venting Systems
710B—04	Recirculating Systems—with Revisions through April 2006
723—08	Standard for Test for Surface Burning Characteristics of Building Materials
790—04	Standard Test Methods for Fire Tests of Roof Coverings
793—08	Standards for Automatically Operated Roof Vents for Smoke and Heat

864—03	Standards for Control Units and Accessories for Fire Alarm Systems—with Revisions through March 2006
924—06	Standard for Safety Emergency Lighting and Power Equipment
1040—96	Fire Test of Insulated Wall Construction—with Revisions through June 2001
1256—02	Fire Test of Roof Deck Construction—with Revisions through January 2007
1479—03	Fire Tests of Through-penetration Firestops—with Revisions through April 2007
1482—10	Solid-fuel-type Room Heater
1715—97	Fire Test of Interior Finish Material—with Revisions through March 2004
1777—07	Chimney Liners
1784—01	Air Leakage Tests of Door Assemblies—with Revisions through December 2004
1897—04	Uplift Tests for Roof Covering Systems
1975—06	Fire Test of Foamed Plastics Used for Decorative Purposes
1994—04	Standard for Luminous Egress Path Marking Systems—with Revisions through February 2005
2017—08	Standards for General-purpose Signaling Devices and Systems
2079—04	Tests for Fire Resistance of Building Joint Systems—with Revisions through March 2006
2200—12	Stationary Engine Generator Assemblies

Underwriters Laboratories of Canada,
7 Underwriters Road,
Toronto, Ontario, Canada M1R3B4

ULC
Standard
reference
number

CAN/ULC S102.2—2010

Title

Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies—with 2000 Revisions

United States Code,
c/o Superintendent of Documents

U.S. Government Printing Office,
Washington, DC 20402-9325

USC

**Standard
reference
number**

Title

10 U.S.C. Sections 18233(A)(1) and 18237-1994

18 USC Part 1, Ch.40 Importation, Manufacture, Distribution and Storage
of Explosive Materials

Window and Door Manufacturers Association
1400 East Touhy Avenue #470
Des Plaines, IL 60018

WDMA

**Standard
reference
number**

Title

AAMA/WDMA/CSA

101/I.S.2/A440—08 Specifications for Windows, Doors and Unit
Skylights

Wire Reinforcement Institute, Inc.
942 Main Street, Suite 300
Hartford, CT 06103

WRI

**Standard
reference
number**

Title

WRI/CRSI—81 Design of Slab-on-ground Foundations—with 1996 Update

PART B

4101:3-3-01 General regulations.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:3-13-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

**SECTION 301
GENERAL**

301.1 Scope. The provisions of this chapter shall govern the general regulations regarding the *design and* installation of plumbing not specific to other chapters.

301.2 System installation. Plumbing shall be installed with due regard to preservation of the strength of structural members and prevention of damage to walls and other surfaces through fixture usage.

301.3 Connections to the sanitary drainage system. All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code *and the requirements of the department of the city engineer, in cities having such departments, the boards of health of health districts, or the sewer purveyor, as appropriate (see division (D) of section 3781.03 of the Revised Code)*. This section shall not be construed to prevent the indirect waste systems required by Chapter 8.

Exceptions:

1. *Bathtubs, showers, lavatories, clothes washers and laundry sinks shall not be required to discharge to the sanitary drainage system where such fixtures discharge to a gray water recycling system approved by the "Ohio Environmental Protection Agency" in accordance with Chapter 3745-42 of the Administrative Code.*
2. *Wastes from dental or cuspidor fountains, drinking fountains, bar sinks, soda fountains, floor drains or shower drains may be indirectly connected by means of an air break to the sanitary drainage system. Each indirectly connected item listed above shall individually discharge to a directly connected floor drain, waste receptor or standpipe.*

301.4 Connections to water supply. Every plumbing fixture, device or appliance requiring or using water for its proper operation shall be directly or indirectly connected to the water supply system in accordance with the provisions of this code.

301.5 Pipe, tube and fitting sizes. Unless otherwise specified, the pipe, tube and fitting sizes specified in this code are expressed in nominal or standard sizes as designated in the referenced material standards.

301.6 Prohibited locations. Plumbing systems shall not be located in an elevator shaft or in an elevator equipment room.

Exception: Floor drains, sumps and sump pumps shall be permitted at the base of the shaft, provided that they are indirectly connected to the plumbing system.

301.7 Conflicts. In instances where conflicts occur between this code and the manufacturer's installation instructions, the more restrictive provisions shall apply.

SECTION 302

EXCLUSION OF MATERIALS DETRIMENTAL TO THE SEWER SYSTEM

302.1 Detrimental or dangerous materials. Ashes, cinders or rags; flammable, poisonous or explosive liquids or gases; oil, grease or any other insoluble material capable of obstructing, damaging or overloading the building drainage or sewer system, or capable of interfering with the normal operation of the sewage treatment processes, shall not be deposited, by any means, into such systems.

302.2 Industrial wastes. Waste products from manufacturing or industrial operations shall not be introduced into the public sewer until it has been determined by the *building* official or other authority having jurisdiction that the introduction thereof will not damage the public sewer system or interfere with the functioning of the sewage treatment plant.

SECTION 303

MATERIALS

303.1 Identification. Each length of pipe and each pipe fitting, trap, fixture, material and device utilized in a plumbing system shall bear the identification of the manufacturer *and any markings required by the applicable referenced standards.*

303.2 Installation of materials. All materials used shall be installed in strict accordance with the standards under which the materials are accepted and approved. In the absence of such installation procedures, the manufacturer's installation instructions shall be followed. Where the requirements of referenced standards or manufacturer's installation instructions do not conform to minimum provisions of this code, the provisions of this code shall apply.

303.3 Plastic pipe, fittings and components. All plastic pipe, fittings and components shall be *listed* as conforming to NSF 14.

303.4 Approved agency testing and certification. All plumbing products and materials shall be *listed by an approved agency as complying with the applicable referenced standards. Products and materials shall be identified in accordance with Section 303.1.*

SECTION 304

RODENTPROOFING

304.1 General. Plumbing systems shall be designed and installed in accordance with Sections 304.2 through 304.4 to prevent rodents from entering structures.

304.2 Strainer plates. All strainer plates on drain inlets shall be designed and installed so that all openings are not greater than 1/2 inch (12.7 mm) in least dimension.

304.3 Meter boxes. Meter boxes shall be constructed in such a manner that rodents are prevented from entering a structure by way of the water service pipes connecting the meter box and the structure.

304.4 Openings for pipes. In or on structures where openings have been made in walls, floors or ceilings for the passage of pipes, such openings shall be closed and protected by the installation of approved metal collars that are securely fastened to the adjoining structure.

SECTION 305 PROTECTION OF PIPES AND PLUMBING SYSTEM COMPONENTS

305.1 Corrosion. Pipes passing through concrete or cinder walls and floors or other corrosive material shall be protected against external corrosion by a protective sheathing or wrapping or other means that will withstand any reaction from the lime and acid of concrete, cinder or other corrosive material. Sheathing or wrapping shall allow for movement including expansion and contraction of piping. Minimum wall thickness of material shall be 0.025 inch (0.64 mm).

305.2 Breakage. Pipes passing through or under walls shall be protected from breakage.

305.3 Stress and strain. Piping in a plumbing system shall be installed so as to prevent strains and stresses that exceed the structural strength of the pipe. Where necessary, provisions shall be made to protect piping from damage resulting from expansion, contraction and structural settlement.

305.4 Sleeves. Annular spaces between sleeves and pipes shall be filled or tightly caulked in an approved manner. Annular spaces between sleeves and pipes in fire-resistance-rated assemblies shall be filled or tightly caulked in accordance with the *building code*.

305.5 Pipes through or under footings or foundation walls.

Any pipe that passes under a footing or through a foundation wall shall be provided with a relieving arch, or a pipe sleeve pipe shall be built into the foundation wall. The sleeve shall be two pipe sizes greater than the pipe passing through the wall.

305.6 Freezing. Water, soil and waste pipes shall not be installed outside of a building, in attics or crawl spaces, concealed in outside walls, or in any other place subjected to freezing temperatures unless adequate provision is made to protect such pipes from freezing by insulation or heat or both. Exterior water supply system piping shall be installed not less than 6 inches (152 mm) below the frost line and not less than 12 inches (305 mm) below grade.

305.6.1 Sewer depth. *Deleted.*

305.7 Waterproofing of openings. Joints at the roof and around vent pipes, shall be made

water-tight by the use of lead, copper, galvanized steel, aluminum, plastic or other approved flashings or flashing material. Exterior wall openings shall be made water-tight.

305.8 Protection against physical damage. In concealed locations where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1 ½ inches (38 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage). Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend a minimum of 2 inches (51 mm) above sole plates and below top plates.

305.9 Protection of components of plumbing system. Components of a plumbing system installed along alleyways, driveways, parking garages or other locations exposed to damage shall be recessed into the wall or otherwise protected in an approved manner.

SECTION 306 TRENCHING, EXCAVATION AND BACKFILL

306.1 Support of piping. Buried piping shall be supported throughout its entire length.

306.2 Trenching and bedding. Where trenches are excavated such that the bottom of the trench forms the bed for the pipe, solid and continuous load-bearing support shall be provided between joints. Bell holes, hub holes and coupling holes shall be provided at points where the pipe is joined. Such pipe shall not be supported on blocks to grade. In instances where the materials manufacturer's installation instructions are more restrictive than those prescribed by the code, the material shall be installed in accordance with the more restrictive requirement.

306.2.1 Overexcavation. Where trenches are excavated below the installation level of the pipe such that the bottom of the trench does not form the bed for the pipe, the trench shall be backfilled to the installation level of the bottom of the pipe with sand or fine gravel placed in layers of 6 inches (152 mm) maximum depth and such backfill shall be compacted after each placement.

306.2.2 Rock removal. Where rock is encountered in trenching, the rock shall be removed to a minimum of 3 inches (76 mm) below the installation level of the bottom of the pipe, and the trench shall be backfilled to the installation level of the bottom of the pipe with sand tamped in place so as to provide uniform load-bearing support for the pipe between joints. The pipe, including the joints, shall not rest on rock at any point.

306.2.3 Soft load-bearing materials. If soft materials of poor load-bearing quality are found at the bottom of the trench, stabilization shall be achieved by overexcavating a minimum of two pipe diameters and backfilling to the installation level of the bottom of the pipe with fine gravel, crushed stone or a concrete foundation. The concrete foundation shall be bedded with sand tamped into place so as to provide uniform load-bearing support for the pipe between joints.

306.3 Backfilling. Backfill shall be free from discarded construction material and debris. Loose earth free from rocks, broken concrete and frozen chunks shall be placed in the trench in 6-inch (152 mm) layers and tamped in place until the crown of the pipe is covered by 12 inches (305 mm) of tamped earth. The backfill under and beside the pipe shall be compacted for pipe support. Backfill shall be brought up evenly on both sides of the pipe so that the pipe remains aligned. In instances where the manufacturer's installation

instructions for materials are more restrictive than those prescribed by the code, the material shall be installed in accordance with the more restrictive requirement.

306.4 Tunneling. Where pipe is to be installed by tunneling, jacking or a combination of both, the pipe shall be protected from damage during installation and from subsequent uneven loading. Where earth tunnels are used, adequate supporting structures shall be provided to prevent future settling or caving.

SECTION 307 STRUCTURAL SAFETY

307.1 General. In the process of installing or repairing any part of a plumbing and drainage installation, the finished floors, walls, ceilings, tile work or any other part of the building or premises that must be changed or replaced shall be left in a safe structural condition in accordance with the requirements of the *building code*.

307.2 Cutting, notching or bored holes. A framing member shall not be cut, notched or bored in excess of limitations specified in the *building code*.

307.3 Penetrations of floor/ceiling assemblies and fire-resistance-rated assemblies. Penetrations of floor/ceiling assemblies and assemblies required to have a fire-resistance rating shall be protected in accordance with the *building code*.

307.4 Alterations to trusses. Truss members and components shall not be cut, drilled, notched, spliced or otherwise altered in any way without written concurrence and approval of a registered design professional. Alterations resulting in the addition of loads to any member (e.g., HVAC equipment, water heater) shall not be permitted without verification that the truss is capable of supporting such additional loading.

307.5 Trench location. Trenches installed parallel to footings shall not extend below the 45-degree (0.79 rad) bearing plane of the footing or wall.

307.6 Piping materials exposed within plenums. All piping materials exposed within plenums shall comply with the provisions of the *mechanical code*.

307.7 Enforcement. *Enforcement of the provisions of this section is the responsibility of the certified building official of the certified municipal, county, or township building department having jurisdiction or the superintendent of the division of industrial compliance.*

SECTION 308 PIPING SUPPORT

308.1 General. All plumbing piping shall be supported in accordance with this section.

308.2 Piping seismic supports. Where earthquake loads are applicable in accordance with the building code, plumbing piping supports shall be designed and installed for the seismic forces in accordance with the *building code*.

308.3 Materials. Hangers, anchors and supports shall support the piping and the contents of the piping. Hangers and strapping material shall be of approved material that will not promote galvanic action.

308.4 Structural attachment. Hangers and anchors shall be attached to the building construction in an approved manner.

308.5 Interval of support. Pipe shall be supported in accordance with Table 308.5.

Exception: The interval of support for piping systems designed to provide for expansion/contraction shall conform to the engineered design in accordance with Section 106.5 of the building code.

308.6 Sway bracing. Rigid support sway bracing shall be provided at changes in direction greater than 45 degrees (0.79 rad) for pipe sizes 4 inches (102 mm) and larger.

308.7 Anchorage. Anchorage shall be provided to restrain drainage piping from axial movement.

308.7.1 Location. For pipe sizes greater than 4 inches (102 mm), restraints shall be provided for drain pipes at all changes in direction and at all changes in diameter greater than two pipe sizes. Braces, blocks, rodding and other suitable methods as specified by the coupling manufacturer shall be utilized.

308.8 Expansion joint fittings. Expansion joint fittings shall be used only where necessary to provide for expansion and contraction of the pipes. Expansion joint fittings shall be of the typical material suitable for use with the type of piping in which such fittings are installed.

308.9 Parallel water distribution systems. Piping bundles for manifold systems shall be supported in accordance with Table 308.5. Support at changes in direction shall be in accordance with the manufacturer’s installation instructions. *Where hot water piping is bundled, each hot water pipe shall be insulated.*

**TABLE 308.5
 HANGER SPACING**

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
ABS pipe	4	10 ^b
Aluminum tubing	10	15
Brass pipe	10	10
Cast-iron pipe	5 ^a	15
Copper or copper-alloy pipe	12	10
Copper or copper-alloy tubing, 1 ¼ -inch diameter and smaller	6	10
Copper or copper-alloy tubing, 1 ½ -inch diameter and larger	10	10

Cross-linked polyethylene (PEX) pipe	2.67 (32 inches)	10 ^b
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	2.67 (32 inches)	4
CPVC pipe or tubing, 1 inch and smaller	3	10 ^b
CPVC pipe or tubing, 1 ¼ inches and larger	4	10 ^b
Steel pipe	12	15
Lead pipe	Continuous	4
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	2.67 (32 inches)	4
Polypropylene (PP) pipe or tubing 1 inch and smaller	2.67 (32 inches)	10 ^b
Polypropylene (PP) pipe or tubing, 1 ¼ inches and larger	4	10 ^b
PVC pipe	4	10 ^b
Stainless steel drainage systems	10	10 ^b

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

- a. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.
- b. Midstory guide for sizes 2 inches and smaller.

**SECTION 309
 FLOOD HAZARD RESISTANCE**

309.1 General. *All buildings and structures which have been determined to require flood resistant construction by the local flood plain administrator, as a participant in the "National Flood Insurance Program", shall be constructed as required by the provisions of section 1612 of the building code for approval under the "Regulations for Floodplain Management and Flood Hazard Identification" of the "National Flood Insurance Program" pursuant to 44 "CFR parts 59-77" and the authority's "Flood Damage Prevention Ordinance."*

309.2 Flood hazard. *Deleted.*

309.3 Flood hazard areas subject to high-velocity wave action. *Deleted.*

SECTION 310 WASHROOM AND TOILET ROOM REQUIREMENTS

310.1 Light and ventilation. Washrooms and toilet rooms shall be illuminated and ventilated in accordance with the *building code* and *mechanical code*.

310.2 Location of fixtures and piping. Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other means of egress openings.

310.3 Interior finish. Interior finish surfaces of toilet rooms shall comply with the *building code*.

310.4 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet rooms located in day care and child-care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

310.5 Urinal partitions. *Deleted.*

310.6 Enforcement. *Enforcement of the provisions of this section is the responsibility of the certified building official of the certified municipal, county, or township building department having jurisdiction or the superintendent of the division of industrial compliance.*

SECTION 311 TOILET FACILITIES FOR WORKERS

311.1 General. *Deleted.*

SECTION 312 TESTS AND INSPECTIONS

312.1 Required tests. ~~The owner or owner's representative shall cause the applicable tests prescribed in Sections 312.2 through 312.11 to be made to determine compliance~~

~~with the provisions of this code. Reasonable advance notice shall be given to the building official when the plumbing work is ready for tests. The owner or owner's representative shall keep records of the tests and shall submit such records to the building official upon request.~~

~~312.1.1 Test gauges.~~ Gauges used for testing shall be as follows:

- ~~1. Tests requiring a pressure of 10 pounds per square inch (psi) (69 kPa) or less shall utilize a testing gauge having increments of 0.10 psi (0.69 kPa) or less.~~
- ~~2. Tests requiring a pressure of greater than 10 psi (69 kPa) but less than or equal to 100 psi (689 kPa) shall utilize a testing gauge having increments of 1 psi (6.9 kPa) or less.~~
- ~~3. Tests requiring a pressure of greater than 100 psi (689 kPa) shall utilize a testing gauge having increments of 2 psi (14 kPa) or less.~~

~~312.1.2 Test media.~~ All plumbing system piping shall be tested with water.

~~*Exception: Plumbing system piping is permitted to be tested with air or another compressed gas only when specifically allowed by the manufacturer of the proposed piping and when tested in accordance with the pressure limitations and conditions prescribed by that manufacturer.*~~

~~312.2 Drainage and vent water test.~~ A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10 foot (3048 mm) head of water. In testing successive sections, at least the upper 10 feet (3048 mm) of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 10 feet (3048 mm) of the system, shall have been submitted to a test of less than a 10 foot (3048 mm) head of water. This pressure shall be held for at least 15 minutes. The system shall then be tight at all points.

~~312.3 Drainage and vent air test.~~ An air test shall be made by forcing air into the system until there is a uniform gauge pressure of 5 psi (34.5 kPa) or sufficient to balance a 10 inch (254 mm) column of mercury. This pressure shall be held for a test period of at least 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period.

~~312.4 Drainage and vent final test.~~ The final test of the completed drainage and vent systems shall be ~~made by air test after the fixtures are connected, with or without smoke or peppermint as follows:~~

- ~~1. Close all stack openings;~~
- ~~2. Apply air pressure to the entire drainage and vent system or to sections thereof equivalent to at least 1 in. water column (248.8 Pa);~~
- ~~3. Maintain this pressure starting fifteen (15) minutes before beginning inspection;~~
- ~~4. Indicate the system to be air tight at all points.~~

~~**312.5 Water supply system test.** Upon completion of a section of or the entire water supply system, the system, or portion completed, shall be tested and proved tight under a water pressure not less than 10 percent in excess of the working pressure under which the system is to be used; or by an air test of not less than 50 psi (344 kPa). This pressure shall be held for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply. The required tests shall be performed in accordance with this section and Section 108.8 of the building code.~~

~~**312.6 Gravity sewer test.** Deleted.~~

~~**312.7 Forced sewer test.** Deleted.~~

~~**312.8 Storm drainage system test.** Storm drain systems within a building shall be tested by water or air in accordance with Section 312.2 or 312.3.~~

~~**312.9 Shower liner test.** Where shower floors and receptors are made water tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches (51 mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches (51 mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.~~

~~***Exception:** The shower liner test is not required for one , two , or three family dwellings unless required by the shower liner manufacturer's installation instructions.*~~

~~**312.10 Inspection and testing of isolation backflow prevention devices required by this code.** Inspection and testing shall comply with Sections 312.10.1 and 312.10.2. *Inspection and testing requirements for containment backflow prevention devices required by the water supplier shall be in accordance with rule 3745-95-06 of the Administrative Code and enforced by the water supplier.*~~

~~**312.10.1 Inspections.** Annual inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable.~~

~~**312.10.2 Testing.** Reduced pressure principle backflow preventer assemblies, double check valve assemblies, pressure vacuum breaker assemblies, reduced pressure detector fire protection backflow prevention assemblies, double check detector fire protection backflow prevention assemblies, hose connection backflow preventers, and spillproof vacuum breakers shall be tested at the time of installation, immediately after repairs or~~

relocation and at least annually. The testing procedure shall be performed in accordance with one of the following standards:

ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CSA B64.10 or CSA B64.10.1.

~~**312.11 Operational testing of low pressure cut-off device, low suction throttling valves, and variable speed suction limiting controls.** Although enforcement of this section is outside the scope of the plumbing code, it is important for owners to note that rule 3745-95-07 of the Administrative Code requires that the owner certify to the supplier of water that their low pressure cut-off devices, low suction throttling valves, and variable speed suction limiting controls are maintained in proper working order. Enforcement of this requirement and the referenced rule is the responsibility of the water supplier. See Section 606.5.5 of this code for additional information.~~

~~**312.12 Inspections.** No part of any plumbing or drainage system shall be covered until it has been inspected, tested, and approved, except as provided in this section.~~

~~Failure of the inspector to inspect the work within four days, exclusive of Saturdays, Sundays, and legal holidays, after the work is ready for inspection, allows the work to proceed.~~

312.1 Required tests. The owner or owner's representative shall cause the applicable tests and inspections prescribed in Sections 312.2 through 312.11 to be performed to determine that the work will withstand the prescribed test without leakage and to demonstrate the integrity of the device or assembly. In accordance with OBC Section 108.8, reasonable advanced notice shall be given to the building official when the plumbing work is ready for tests. The building official may require that the tests be conducted in the presence of the building official or certified plumbing inspector. The owner or owner's representative shall keep records of the tests and inspections and shall submit such records to the building official upon request.

312.1.1 New, altered, extended or repaired systems. New plumbing systems and parts of existing systems that have been altered, extended, or repaired shall be tested as prescribed herein to disclose leaks and defects, except that testing is not required in the following cases:

1. In any case that does not include addition to, replacement, alteration or relocation of any water supply, drainage or vent piping.

2. In any case where plumbing equipment is set up temporarily for exhibition purposes.

312.1.2 Equipment, material, power and labor for tests. Equipment, material, power and labor necessary for testing a plumbing system or part thereof shall be furnished by the owner or the owner's representative. Required tests shall be conducted by and at the expense of the owner or the owner's representative.

312.1.3 Test gauges. Gauges used for testing shall be as follows:

1. Tests requiring a pressure of 10 pounds per square inch (psi) (69 kPa) or less shall utilize a testing gauge having increments of 0.10 psi (0.69 kPa) or less.
2. Tests requiring a pressure of greater than 10 psi (69 kPa) but less than or equal to 100 psi (689 kPa) shall utilize a testing gauge having increments of 1 psi (6.9 kPa) or less.
3. Tests requiring a pressure of greater than 100 psi (689 kPa) shall utilize a testing gauge having increments of 2 psi (14 kPa) or less.

312.1.4 Test media. All plumbing system piping, fittings, and shower liners shall be tested with water.

Exception: Plumbing system piping and fittings are permitted to be tested as prescribed in Sections 312.2 to 312.8 with air, another compressed gas, vacuum, or other media or method only when the manufacturer of the proposed piping, fittings and solvent cement (if applicable) allows the alternative method of testing. Where this code does not address or prescribe an alternative test method, an alternative test method prescribed by the manufacturer of the piping, fittings, or solvent cement in the published manufacturer's installation instructions will be acceptable as meeting the requirements of this code.

312.1.5 Reinspection and testing. Where any work or installation does not pass any initial test or inspection, the necessary corrections shall be made to comply with this code.

312.2 Drainage and vent rough-in test. *Drainage and vent piping and fittings shall be tested prior to the installation of the plumbing fixtures and prior to the installation of wall and ceiling coverings to verify the integrity of the system in accordance with one of the following methods prescribed in Section 312.2.1, 312.2.2, or 312.2.3:*

312.2.1 Drainage and vent rough-in water test. *A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to the point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10-foot (3048 mm) head of water. In testing successive sections, at least the upper 10 feet (3048 mm) of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 10 feet (3048 mm) of the system, shall have been submitted to a test of less than a 10-foot (3048 mm) head of water. This pressure shall be held for at least 15 minutes. The system shall then be tight at all points.*

312.2.2 Drainage and vent rough-in air test. *When permitted by the manufacturer of the piping, fittings, and solvent cement (if part of the plumbing system), an air test shall be made by forcing air into the system until there is a uniform gauge pressure of 5 psi (34.5 kPa) or sufficient to balance a 10-inch (254 mm) column of mercury. This pressure shall be held for a test period of at least 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period. Testing shall be done with a dual pressure relief valve rated for 7.5 psig.*

312.2.3 Alternative drainage and vent rough-in test. *When permitted by the manufacturer of the piping, fittings, and solvent cement (if part of the plumbing system), an alternative method of testing the drainage and vent system, such as compressed gas or vacuum, may be permitted to meet the drainage and vent rough-in test requirements of this code as long as the test is conducted strictly in accordance with the requirements published in the manufacturer's installation instructions.*

312.3 Not used.

312.4 Drainage and vent final test. *After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be subjected to one of the following final tests as prescribed by the building official:*

312.4.1 Visual and operational final test. *All plumbing fixtures shall be operated and a visual inspection of accessible piping and joints shall be performed to determine that there are no visible leaks.*

312.4.2 Drainage and vent final test. *The final test of the completed drainage and vent systems shall be made, after the fixtures are connected, as follows:*

1. Close all stack openings;

2. A manometer tube shall be placed through a trap seal to the system side and water shall be added to a fixture until an equivalent of at least 1 in. water column (248.8 Pa) is read on the manometer gauge or water-can. Water may be added to a water closet bowl or trap tailpiece extension until the water level is at least one inch higher than the original trap seal;

3. Maintain the initial water column for fifteen (15) minutes;

4. The system shall then be separated at a trap seal, AAV, or other means as directed by the plumbing inspector for verification that the entire system is interconnected.

312.4.3 Alternative drainage and vent final test. *Any other testing method equal to the 1 in. water column. Except as provided for in Section 312.4.2, compressed or stored air may not be used unless otherwise permitted by the manufacturer of piping, fittings, and solvent cement (if part of the plumbing system).*

312.5 Water supply system test. *Upon completion of a section of or the entire water*

supply system, the system, or portion completed, shall be tested to verify the integrity of the system in accordance with one of the following methods prescribed in Sections 312.5.1 or 312.5.2:

312.5.1 Water supply working pressure test. A water pressure test at not less than the working pressure under which the system is to be used shall be performed to prove the system watertight. This pressure shall be held for at least 15 minutes. The water utilized for tests shall be obtained from a potable source of supply.

312.5.2 Water supply air test. When permitted by the manufacturer of the piping, fittings, and solvent cement (if part of the plumbing system), an air test of not less than 50 psi (344 kPa) shall be performed to prove the system air-tight. This pressure shall be held for at least 15 minutes.

312.6 Gravity sewer test. *Deleted.*

312.7 Forced sewer test. *Deleted.*

312.8 Storm drainage system test. Storm drain systems within a building shall be tested in accordance with Section 312.2.

312.9 Shower liner test. Where shower floors and receptors are made water-tight by the application of materials required by Section 417.5.2, the completed liner installation shall be tested. The pipe from the shower drain shall be plugged water tight for the test. The floor and receptor area shall be filled with potable water to a depth of not less than 2 inches (51 mm) measured at the threshold. Where a threshold of at least 2 inches (51 mm) high does not exist, a temporary threshold shall be constructed to retain the test water in the lined floor or receptor area to a level not less than 2 inches (51 mm) deep measured at the threshold. The water shall be retained for a test period of not less than 15 minutes, and there shall not be evidence of leakage.

Exception: The shower liner test is not required for one-, two-, or three-family dwellings unless required by the shower liner manufacturer's installation instructions.

312.10 Inspection and testing of isolation backflow prevention devices required by this code. *Inspection and testing of isolation backflow prevention devices shall comply with Sections 312.10.1 and 312.10.2. Inspection and testing requirements for containment backflow prevention devices required by the water supplier shall be in accordance with rule 3745-95-06 of the Administrative Code and enforced by the water supplier.*

312.10.1 Inspections. *The owner shall maintain all backflow prevention assemblies and air gaps in good working condition. Annual inspections shall be made of all backflow prevention assemblies and air gaps to determine whether they are operable.*

312.10.2 Testing. *Reduced pressure principle, double check, pressure vacuum breaker, reduced pressure detector fire protection, double check detector fire protection, and spill-resistant vacuum breaker backflow prevention assemblies and hose connection backflow preventers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. The testing procedure shall be performed in accordance with one of the following standards:*

ASSE 5013 for reduced pressure principle and reduced pressure principle fire protection backflow prevention assemblies, ASSE 5015 for double check and double check fire protection backflow prevention assemblies, ASSE 5020 for pressure vacuum breaker assemblies, ASSE 5047 for reduced pressure detector fire protection backflow prevention assemblies, ASSE 5048 for double check detector fire protection backflow prevention assemblies, ASSE 5052 for hose connection backflow preventers, ASSE 5056 for spill resistant vacuum breaker assemblies, CSA B64.10 or CSA B64.10.1.

312.11 Operational testing of low pressure cut-off device, low suction throttling valves, and variable speed suction limiting controls. *Although enforcement of this section is outside the scope of the plumbing code, it is important for owners to note that rule 3745-95-07 of the Administrative Code requires that the owner certify to the supplier of water that their low pressure cut-off devices, low suction throttling valves, and variable speed suction limiting controls are maintained in proper working order. Enforcement of this requirement and the referenced rule is the responsibility of the water supplier. See Section 606.5.5 of this code for additional information.*

312.12 Inspections. *No part of any plumbing or drainage system shall be covered until it has been inspected, tested, and approved, except as provided in this section.*

Failure of the inspector to inspect the work within four days, exclusive of Saturdays, Sundays, and legal holidays, after the work is ready for inspection, allows the work to proceed.

SECTION 313 EQUIPMENT EFFICIENCIES

313.1 General. Equipment efficiencies shall be in accordance with the *the applicable standard referenced in Chapter 13 of the building code or Chapter 11 of the “Residential Code of Ohio”*.

SECTION 314 CONDENSATE DISPOSAL

314.1 Fuel-burning appliances. Liquid combustion by-products of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer’s installation instructions. Condensate piping shall be of approved corrosion-resistant material and shall not be smaller than the drain connection on the appliance. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope).

314.2 Evaporators and cooling coils. Condensate drain systems shall be provided for equipment and appliances containing evaporators or cooling coils. Condensate drain systems shall be designed, constructed and installed in accordance with Sections 314.2.1 through 314.2.4.

314.2.1 Condensate disposal. Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Condensate shall not discharge into a street, alley or other areas so as to cause a nuisance.

314.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be cast iron, galvanized steel, copper, cross-linked polyethylene, polybutylene, polyethylene, ABS, CPVC or PVC pipe or tubing. All components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 relative to the material type. Condensate waste and drain line size shall

be not less than $\frac{3}{4}$ -inch (19 mm) internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 314.2.2.

314.2.3 Auxiliary and secondary drain systems. In addition to the requirements of Section 314.2.1, where damage to any building components could occur as a result of overflow from the equipment primary condensate removal system, one of the following auxiliary protection methods shall be provided for each cooling coil or fuel-fired appliance that produces condensate:

1. An auxiliary drain pan with a separate drain shall be provided under the coils on which condensation will occur. The auxiliary pan drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The pan shall have a minimum depth of 1 ½ inches (38 mm), shall not be less than 3 inches (76 mm) larger than the unit or the coil dimensions in width and length and shall be constructed of corrosion-resistant material. Galvanized sheet metal pans shall have a minimum thickness of not less than 0.0236-inch (0.6010 mm) (No. 24 gage) galvanized sheet metal. Nonmetallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm).
2. A separate overflow drain line shall be connected to the drain pan provided with the equipment. Such overflow drain shall discharge to a conspicuous point of disposal to alert occupants in the event of a stoppage of the primary drain. The overflow drain line shall connect to the drain pan at a higher level than the primary drain connection.
3. An auxiliary drain pan without a separate drain line shall be provided under the coils on which condensate will occur. Such pan shall be equipped with a water-level detection device conforming to UL 508 that will shut off the equipment served prior to overflow of the pan. The auxiliary drain pan shall be constructed in accordance with Item 1 of this section.
4. A water-level detection device conforming to UL 508 shall be provided that will shut off the equipment served in the event that the primary drain is blocked. The device shall be installed in the primary drain line, the overflow drain line, or in the equipment-supplied drain pan, located at a point higher than the primary drain line connection and below the overflow rim of such pan.

Exception: Fuel-fired appliances that automatically shut down operation in the event of a stoppage in the condensate drainage system.

**TABLE 314.2.2
 CONDENSATE DRAIN SIZING**

EQUIPMENT CAPACITY	MINIMUM CONDENSATE PIPE DIAMETER
Up to 20 tons of refrigeration	$\frac{3}{4}$ inch
Over 20 tons to 40 tons of refrigeration	1 inch
Over 40 tons to 90 tons of refrigeration	1 $\frac{1}{4}$ inch
Over 90 tons to 125 tons of refrigeration	1 $\frac{1}{2}$ inch

Over 125 tons to 250 tons of refrigeration	2 inch
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For SI: 1 inch = 25.4 mm, 1 ton of capacity = 3.517 kW.

314.2.3.1 Water-level monitoring devices. On down-flow units and all other coils that do not have a secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

314.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill such portions of the appliances, equipment and insulation shall be installed above the flood level rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved.

314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

314.3 Enforcement. *Enforcement of the provisions of this section is the responsibility of the certified building official of the certified municipal, county, or township building department having jurisdiction or the superintendent of the division of industrial compliance.*

SECTION 315

WELDING AND BRAZING

315.1 Scope. *This section, consistent with section 4104.44 of the Revised Code, governs the requirements for welding and brazing of metallic building services (including medical gas) piping systems referenced by this code.*

315.2 Procedure specification. *Each manufacturer or contractor of metallic building services piping systems is responsible for the welding and brazing done by his company or organization and shall specify and certify, in writing, a welding or brazing procedure that provides specific direction to the welder or brazer and complies with section IX of the ASME Boiler and Pressure Vessel Code.*

315.3 Procedure qualification records. *Each manufacturer or contractor is responsible for getting each procedure described in section 315.2 qualified by an independent testing laboratory that has, on staff, a welding inspector certified by the “American Welding Society (AWS).” Qualification testing determines that the specified joint construction is capable of providing the required properties for its intended application. The procedure qualification record (PQR) documents what occurred during the welding or brazing of the test coupon, identifies all essential variables, and documents the test results. The manufacturer or contractor shall certify on the record that the tests were conducted in accordance with section IX of the ASME Boiler and Pressure Vessel Code.*

315.4 Performance qualification testing. *Each welder and brazer that performs a welding or brazing procedure as described in section 315.2 shall be tested and qualified on that procedure as required in section IX of the ASME Boiler and Pressure Vessel Code. The manufacturer or contractor, shall certify on the performance qualification record that the welder or brazer prepared and welded or brazed the test coupons in accordance with section IX and that the test coupons were tested by an independent testing laboratory that has, on staff, a welding inspector certified by the “American Welding Society (AWS).”*

315.5 Submission of welding and brazing forms to the division of industrial compliance (DIC). *Each manufacturer or contractor of metallic building services piping systems referenced by this code who causes welding or brazing to be performed shall file with the superintendent of the division of industrial compliance in the department of commerce, or the superintendent’s designee, certified copies of the welding and brazing procedure specifications, the procedure qualification records, and the welder and brazer performance qualifications of the welders and brazers used in the proposed construction of a new or altered piping system. The required documentation shall be submitted in accordance with rules adopted by the superintendent.*