

Introduced by: City Manager Debra M. Irvin

**AN ORDINANCE ADOPTING AND ENACTING THE MECHANICAL (ELEVATORS AND CONVEYOR SYSTEMS ONLY) CODE OF SAINT LOUIS COUNTY AS AMENDED AS THE MECHANICAL (ELEVATORS AND CONVEYOR SYSTEMS ONLY) CODE OF THE CITY OF BERKELEY, MISSOURI**

**WHEREAS**, the City of Berkeley, Missouri is desirous of adopting minimum requirements and standards for Mechanical (Elevators and Conveyor Systems only) activities to protect the health, safety and welfare of the citizens of the City of Berkeley, Missouri.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF BERKELEY, MISSOURI**, as follows:

**Section 1.** The Saint Louis County Mechanical (Elevators and Conveyor Systems only) Code as amended by the County of Saint Louis, Missouri through date of last amendatory ordinances:

- a) Mechanical Code (Elevators and Conveyor Systems only), Chapter 1108, SLCRO 27,619 (Approved 12/05/19, Adopted 04/01/20), as amended

is hereby adopted as the Mechanical (Elevators and Conveyor Systems only) Code of the City of Berkeley, Missouri, a copy of which is attached hereto, as if fully set out herein.

**Section 2.** All ordinances, parts of ordinances or provisions of the Municipal Code of the City of Berkeley, Missouri in conflict with any provisions of this ordinance are hereby repealed.

**Section 3.** This Ordinance, and the code adopted hereby, shall be in full force and effect from and after its passage and approval.

1st Reading this 01<sup>st</sup> day of November 2021

2nd Reading this \_\_\_\_\_ day of \_\_\_\_\_ 2021

3rd Reading, PASSED and APPROVED, this \_\_\_\_\_ **day of** \_\_\_\_\_ **2021**

\_\_\_\_\_  
Babatunde Deinbo, Mayor

ATTEST:

\_\_\_\_\_  
Deanna L. Jones, City Clerk

\_\_\_\_\_  
Approved as to Form:  
Donnell Smith, City Attorney

Final Roll Call:

Councilwoman Mitchell	Aye ___	Nay ___	Absent ___	Abstain ___
Councilwoman Williams	Aye ___	Nay ___	Absent ___	Abstain ___
Councilwoman Hoskins	Aye ___	Nay ___	Absent ___	Abstain ___
Councilwoman Anthony	Aye ___	Nay ___	Absent ___	Abstain ___
Councilman Hindeleh	Aye ___	Nay ___	Absent ___	Abstain ___
Councilwoman-at-Large Greene	Aye ___	Nay ___	Absent ___	Abstain ___
Mayor Deinbo	Aye ___	Nay ___	Absent ___	Abstain ___

## **MECHANICAL CODE**

**This is an unofficial user-friendly copy of the St. Louis County Ordinance 27,619 for the adoption of the 2015 International Mechanical Code, with modifications. This approved ordinance was signed by the County Executive on December 5, 2019.**

### **TITLE XI SLCRO 1974 AS AMENDED PUBLIC WORKS AND BUILDING REGULATIONS**

#### **CHAPTER 1108**

#### **MECHANICAL CODE**

**1108.010 Short Title.** --This Chapter shall be known and may be cited as the "Mechanical Code" of St. Louis County, Missouri.

**1108.020 Mechanical Code Adopted.** --Certain documents, three copies of which are filed in the Office of the Administrative Director of the County Council and in the Office of the Director of Transportation and Public Works, said copies being marked and designated as the International Mechanical Code, 2015 Edition, as published by the International Code Council, Inc., including Appendix A are hereby adopted as the Mechanical Code of St. Louis County, Missouri for the regulation of mechanical equipment as herein provided; and each and all of the regulations, provisions, penalties, conditions and terms of said code are hereby referred to, adopted and made a part hereof, as if fully set out herein with the additions, deletions and changes as prescribed in this Chapter.

**1108.030 General Administrative Definitions.** --Throughout the International Mechanical Code, 2015 Edition, wherever the terms "Name of Jurisdiction" or "Local Jurisdiction" appear it shall be deemed to mean "St. Louis County, Missouri." Likewise, wherever the term "Department of Mechanical Inspection" or "Mechanical Inspection Department" appears it shall be deemed to mean "St. Louis County Department of Transportation and Public Works", whenever the terms "Code Official" or "Building Official" appear it shall mean the Director of St. Louis County Department of Transportation and Public Works or the Director's duly authorized representative and wherever the terms "code", "this code" or "Mechanical Code" appears it shall mean the International Mechanical Code, 2015 Edition with the additions, deletions and changes prescribed in this Chapter.

**1108.040 References to Other St. Louis County Adopted Codes. --**

Throughout the International Mechanical Code 2015 Edition, wherever a reference appears to the "International Plumbing Code" or "plumbing code" it shall mean "The Plumbing Code" as adopted by Chapter 1103, SLCRO 1974 as amended with the additions, deletions and changes prescribed by that chapter. Wherever a reference appears to the "International Electrical Code" or "electrical code" it shall mean "The Electrical Code" as adopted in Chapter 1102, SLCRO 1974 as amended with the additions, deletions and changes prescribed by that chapter. Wherever a reference appears to the "International Building Code" or "building code" it shall mean "The Building Code" as adopted in Chapter 1115, SLCRO 1974 as amended with the additions, deletions and changes prescribed by that chapter.

**1108.050 Contracting with Municipalities and Fire Protection Districts for Code Enforcement Services.**

1. The Code Official, with the approval of the County Executive, is hereby authorized to execute on behalf of St. Louis County contracts with municipalities and fire protection districts within St. Louis County, to provide appropriate enforcement of this code and further to collect fees for applicable permits and inspections issued or made pursuant to such contracts. Contracts shall be approved by the Code Official and the County Executive, and shall be approved as to legal form by the County Counselor. No contract shall be entered into until the municipality or fire protection district desiring to contract with St. Louis County for the enforcement of this code shall first have duly adopted appropriate legislation authorizing said contract (a certified copy to be attached to and made a part of the contract) and duly adopted code identical in substance to this code.

2. The Code Official is authorized to execute on behalf of St. Louis County contracts with fire protection districts in St. Louis County to provide code enforcement services with respect to building construction and application of commercial and multi-family fire codes adopted by the fire protection districts, including administration, application processing, plan review, permit issuance, and inspections and for County to either charge the fire protection districts fees or collect fees for applicable permits and inspections issued or made pursuant to such contracts as set out in Chapter 1100 SLCRO, as amended, to cover the costs of providing such code enforcement services. When the contract is for only certain of the services described

in this section, the Code Official is authorized to pro-rate the fees set out in Chapter 1100 to cover the costs of performing the service or services. The contract may further provide for the fire protection district, at its option, to refer for prosecution in St. Louis County Municipal Court, violations of such fire protection district's codes as are enforced within the fire protection district by the County; for the County to retain the proceeds of fines and costs assessed in such prosecutions; and for such other terms and conditions as are approved by the County Counselor.

3. The Code Official on behalf of St. Louis County is authorized to execute contracts with municipalities in St. Louis County to provide temporary code enforcement services with respect to building construction and application of the mechanical codes adopted by the County or municipality, including administration, application processing, plan review, permit issuance, and inspections and for County to either charge the municipality fees or collect fees for applicable permits and inspections issued or made pursuant to such contracts as set out in Chapter 1100 SLCRO, as amended, to cover the costs of providing such temporary code enforcement services. When the contract is for only certain of the services described in this section, the Code Official is authorized to pro-rate the fees set out in Chapter 1100 to cover the costs of performing the service or services. The term of the temporary contract shall not exceed twelve (12) months except that the contract may be extended by the code official when: a) the services are related to a specific project or projects that are still in progress, or b) the municipality commits in writing to transitioning to a long term contract with the County as set out in Section 1108.050(1).

**1108.100 Amendments to International Mechanical Code Chapter 1-Administration.** --Chapter 1 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted, or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

101.1 *Title:* These regulations shall be known as the Mechanical Code of St. Louis County, Missouri hereinafter referred to as "this code."

101.2 *Scope.* This code shall regulate the design, installation, maintenance, *alteration* and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, *equipment* and appliances specifically addressed herein. The installation of fuel gas distribution piping and *equipment*, fuel gas-fired appliances and fuel gas-fired *appliance* venting systems shall be regulated by the *International Fuel Gas Code*.

*Exception:* For requirements other than those specified in Chapter 1 of this code, detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means of egress and their accessory structures shall comply with the *International Residential Code*.

101.5 *Committee of Mechanical Code Review.* There is hereby created and established a Committee of Mechanical Code Review. The committee shall consist of the Code Official and five (5) members appointed by the County Executive. The Code Official shall act as executive secretary and shall keep full and complete minutes of the acts and proceedings of said committee. The appointed members shall be residents of St. Louis County and have the following qualifications: an architect registered in the State of Missouri; a mechanical engineer registered in the State of Missouri; a mechanical contractor engaged in HVAC contracting; an industrial mechanical contractor and a member of the fire service. Three (3) members shall be appointed for terms of three (3) years and two (2) members shall be appointed for an initial term of two (2) years after which all terms shall be for three (3) years, or until their successors shall be qualified and appointed by the County Executive. At no time shall there be two (2) members of the committee who work for or are members of the same company, entity or international union organization or affiliate, thereof. The Committee shall meet at least annually in order to consider any proposed changes to this code, and make recommendations to the Building Commission. The committee members shall elect one of their members to serve as chairman and one to serve as vice chairman.

101.5.1 *Compensation.* The members of the Mechanical Code Review Committee with the exception of the Code Official shall be compensated in accordance with Chapter 201, SLCRO 1974 as amended.

101.6 *Application of References.* Unless otherwise specifically provided for in this code, all 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.

**SECTION 101A**  
**LICENSING OF PERSONS OR ENTITIES PERFORMING WORK**  
**UNDER THIS SECTION**

101A.1 *License Required.* Except as otherwise provided in this Section 101A, hereinafter referred to as "this Section", no individual or business entity shall engage in or perform HVAC Residential Service-Installer Work, HVAC Servicer-Installer Work, Process Piping System Work, HVAC Duct System Work, or Fire Suppression System Work, unless licensed under this Section to perform such work. In addition, no person shall hold herself/himself out as being available to perform any work that requires a license under this Section unless she/he shall be licensed as aforesaid, and no partnership, corporation or other legal entity, or person conducting business under a fictitious name shall hold out such entity as being available to perform any work that requires a license under this Section in any advertising medium or publication unless a principal or employee of such entity shall be licensed as aforesaid. No person having obtained any license under this Section shall allow his/her name or license to be used by another person either for the purpose of obtaining permits, doing business or performing work that requires a license under this Section.

101A.1.1 *Definitions.*

1. The Board is the Board of Examiners for Mechanical Licensing of St. Louis County, Missouri.

2. A Contractor is an individual or Entity who is licensed under this Section to perform work on any or all of the following: Process Piping Systems, HVAC Duct Systems, Fire Suppression Systems, HVAC Piping Systems or HVAC systems.

A) A Mechanical Contractor is an individual or Entity licensed to perform work under this Section who employs at least one Pipefitter Journeyman.

B) A Sheet Metal Contractor is an individual or Entity licensed to perform work under this Section who employs at least one Sheet Metal Journeyman.

C) A Sprinkler Fitter Contractor is an individual or Entity licensed to perform work under this Section who employs at least one Sprinkler fitter Journeyman.

D) An HVAC Servicer-Installer Contractor is an individual or Entity licensed to perform work under this Section who employs at least one HVAC Servicer-Installer Journeyman.

A Contractor licensed under this Section who performs work under any of the foregoing categories may take out permits for and perform work that falls under one of the other categories provided such Contractor uses a Journeyman (or an Apprentice under the required supervision and inspection of such Journeyman) who is licensed to perform the specific work involved pursuant to the applicable provisions of this Section.

3. An Entity is any company, corporation, partnership, joint venture or other business establishment, which performs work that requires a license under this Section.

4. A Journeyman is anyone who is licensed under this Section to perform work under one of the following categories. For the Journeyman referred to in Section 101A.3.3, Sections 1.(A), 1.(B) and 1.(C) as well as Section 101A.3.5 this definition will include an individual who has provided an application with accompanying proof as specified in 101A.3.2, but the training and/or experience may have occurred outside of St. Louis County.

(A) A Pipefitter Journeyman is anyone who has been licensed under subsection 101A.3.2 below to perform Process Piping System Work.

(B) A Sheet Metal Journeyman is anyone who has been licensed under subsection 101A.3.2 below to perform HVAC Duct System Work.

(C) A Sprinkler Fitter Journeyman is anyone who has been licensed under subsection 101A.3.2 below to perform Fire Suppression System Work.

(D) An HVAC Servicer-Installer Journeyman is anyone who has been licensed under subsection 101A.3.2 below to perform HVAC Servicer-Installer Work.

(E) An HVAC Residential Servicer-Installer Journeyman is anyone who has been licensed under subsection 101A.3.2 below to perform HVAC Residential Servicer-Installer Work.

5. An Apprentice is anyone who has been licensed under subsection 101A.3.1 below to perform work that requires a license under this Section under the supervision and inspection of a Journeyman in the employ of a Contractor in one of the following categories:

(A) A Pipefitter Apprentice is anyone who has been licensed under subsection 101A.3.1 below to perform Process Piping System Work under the supervision and inspection of a Pipefitter Journeyman.

(B) A Sheet Metal Apprentice is anyone who has been licensed under subsection 101A.3.1 below to perform HVAC Duct System Work under the supervision and inspection of a Sheet Metal Journeyman.

(C) A Sprinkler Fitter Apprentice is anyone who has been licensed under subsection 101A.3.1 below to perform Fire Suppression System Work under the supervision and inspection of a Sprinkler fitter Journeyman.

(D) An HVAC Servicer-Installer Apprentice is anyone who has been licensed under subsection 101A.3.1 below to perform HVAC Servicer-Installer Work under the supervision and inspection of an HVAC Servicer-Installer Journeyman, Pipefitter Journeyman or Sheet Metal Journeyman; or who has been formerly licensed as a Service Apprentice under this code.

6. A Fire Suppression System is all or any part of a system, which utilizes water, gasses or chemicals for the control, or suppression of fires.

Fire Suppression System Work is all work related to the installation, alteration, reconstruction, repair, replacement and other servicing of fire suppression systems.

7. An HVAC Duct System is all or any part of the duct system for a heating, ventilation, or air conditioning system regardless of the materials used and includes ducts, duct fittings, risers, stacks, dampers, casings, recess boxes, radiator enclosures, exhausts, ventilators, frames, grilles, louvers, registers, cabinets, plenums, air filters, fans, motors and accessory air handling equipment and appliances.

HVAC Duct System Work is all work related to the installation, alteration, reconstruction, repair, replacement and other servicing of an HVAC Duct System as well as HVAC Servicer-Installer work as defined herein.

8. An HVAC Piping System is all or any part of the piping system for a heating, ventilation, or air conditioning system and includes pipes, valves, pipe fittings, pumps, and distribution lines and accessory equipment, including boilers and compressor assemblies.

HVAC Piping System Work is all work related to the installation, alteration, reconstruction, repair, replacement and other servicing of HVAC Piping Systems as well as HVAC Servicer-Installer work as defined herein.

9. An HVAC System is a heating, ventilation, or air conditioning system or any part thereof, including an HVAC Piping System and/or HVAC Duct System, specifically addressed and regulated in this code.

*Note:* If an HVAC System consists of multiple individual units or split systems, each such individual unit or split system shall be considered a separate system for purposes of this Section.

10. A Process Piping System is all or any part of a piping system (excluding Fire Suppression Systems), which falls within one of the following categories:

- (A) A medical gas system
- (B) An HVAC Piping System

- (C) A pneumatic system
- (D) A pressurized or vacuum piping system
- (E) A fuel gas system
- (F) An oxygen system
- (G) A gasoline system not for public sale

Process Piping System Work is all work related to the installation, alteration, reconstruction, repair, replacement and other servicing of Process Piping systems as well as HVAC Servicer-Installer work as defined herein.

NOTE: A St. Louis County licensed installer shall install fuel gas systems. A licensed installer is defined as a licensed HVAC Servicer Installer, a licensed Sheetmetal worker, or licensed Pipefitter working for a contractor licensed under this Code. The licensed installer shall install fuel gas systems, including Liquid Petroleum Gas, from the tank regulator to and throughout the building under the limitations of Section 101A.1.1 paragraphs 11 and 13. A licensed installer or a St. Louis County licensed plumber shall install fuel gas systems, including Liquid Petroleum Gas, from the tank regulator to and throughout dwellings regulated by the Residential Code of St. Louis County.

11. HVAC Servicer-Installer Work is all work related to:

The installation, alteration, reconstruction, repair, replacement and servicing of HVAC Systems

- (1) that provide no more than 25 tons of air conditioning or no more than 1,000,000 (One Million) BTU's of heating and
- (2) do not contain chillers, fire-tube type boilers, or boilers that operate at a pressure of more than 15 psi of steam;

Note: In those cases where an HVAC System is composed of individual units or split systems that are no more than 25 tons of air conditioning or 1 M BTU's of heat which are connected by a common fuel line, that is more than 2 inches in diameter, or which is under more than 2 psi pressure, the fuel line shall be

installed by a licensed Journeyman Pipefitter and/or licensed Apprentice Pipefitter under the supervision and inspection of a licensed Journeyman Pipefitter. The individual units may be installed by licensed HVAC Servicer-Installers.

*Exceptions:*

1. HVAC Servicer-Installer Work does not include replacement of an HVAC System that provides 25 tons or less of air conditioning or 1 M BTU's or less of heating with a system that is over 25 tons of air conditioning or 1 M BTU's of heating, or contains chillers, fire-tube type boilers or heating boilers that operate at a pressure of more than 15 psi of steam. This work must be performed by applicable Pipefitter and Sheet Metal Journeyman and Apprentices under the supervision and inspection of appropriately licensed Journeymen.
2. HVAC Servicer-Installer Work does not include the total replacement or reconstruction of an HVAC System that provides more than 25 tons of air conditioning or 1 M BTU's of heating, or contains chillers, fire-tube type boilers or boilers that operate at a pressure of more than 15 psi of steam. This work must be performed by applicable Pipefitter and Sheet Metal Journeyman and Apprentices under the supervision and inspection of appropriately licensed Journeymen.
3. HVAC Servicer-Installer Work does not include replacement of gas fuel lines that are more than 2 inches in diameter, or which are under pressure of more than 2 psi. These lines must be replaced by a licensed Journeyman Pipefitter and/or licensed Apprentice Pipefitter under the supervision and inspection of a licensed Journeyman Pipefitter.
12. HVAC System Service Work is the reconstruction, repair or replacement of any part of an existing HVAC System, which does not alter the capacity, or capability of the original system.
13. HVAC Residential Service Installer Work is work related to single family residences, duplexes, and condominiums and apartments that do not exceed 3 stories in the front with a walk-out basement in the back, and containing no more than 14 dwelling units including townhouses, garden apartments and

multiple family dwelling units, (but excluding boarding houses and dormitories), and where heating and cooling units do not exceed six tons of cooling capacity or 150,000 BTU's of heating capacity.

101A.1.2 *Board of Examiners for Mechanical Licensing.*

1. There is hereby created and established a Board of Examiners for Mechanical Licensing. The Board shall consist of the Code Official and four (4) members appointed by the County Executive, within the categories and with the qualifications set forth in paragraph 2 of this subsection below.

2. The appointed members of the Board shall be residents of St. Louis County. The respective appointed members shall be comprised as follows and shall have the following qualifications:

(A) one (1) registered professional engineer with at least a bachelor's degree in mechanical engineering actively engaged in the design of mechanical systems;

(B) one (1) representative from owners actively engaged in the purchase of mechanical systems or services for the design, construction, installation or repair of mechanical systems;

(C) one (1) licensed contractor who employs at least one Journeyman;

(D) one (1) licensed Journeyman, as defined herein.

Four (4) members shall be appointed as follows two (2) for a term of three (3) years, one (1) member shall be appointed for an initial term of two (2) years and one (1) member shall be appointed for an initial term of one (1) year after which all terms shall be for three (3) years or until their successors shall be qualified and appointed by the County Executive. At no time shall there be two members of the Board who work for or are members of the same company, Entity or international union organization or an affiliate thereof. With respect to the Contractor and Journeyman representatives, if the Contractor representative employs primarily pipefitting or sprinkler fitter employees, then the Journeyman representative shall be a Sheet Metal Journeyman or HVAC Servicer-Installer Journeyman. If the

Contractor representative employs primarily Sheet Metal or HVAC System Servicer-Installer Journeymen, then the Journeyman representative shall be either a Pipefitter Journeyman or a Sprinkler Fitter Journeyman. The Board shall elect one of their members to serve as chairman and one to serve as vice chairman.

3. The Code Official shall be the fifth voting board member, shall act as Secretary, shall keep full and complete minutes of all acts and proceedings of said Board, and shall provide all applicants for a license under this Section with proper application forms. The Secretary shall maintain and secure all examinations, examination documents and materials as directed by the Board, review all applications for licenses to determine their completeness within fifteen (15) days of their filing, keep a file of the name and address of every person or firm licensed by the Board and the name and address of every person or firm whose application for a license has been denied, give all applicants approved for examination a written notice of the date and place of examination and an informational letter on examination procedures with an outline of suggested study for the examination applied for, and return all incomplete applications to applicants within fifteen (15) days of determination of incompleteness, specifying the respects in which the application is incomplete. The Secretary shall file with the County Clerk a copy of all rules and regulations adopted by the Board and make such rules and regulations available to all license holders and current applicants.

4. The Board shall meet at least once every month and more often if the Board deems it necessary for the performance of its duties. Except for the Code Official, Board members shall receive compensation as provided in Chapter 201, SLCRO 1974 as amended. A majority of the members of the Board shall constitute a quorum.

5. The Board shall, pursuant to the regulations and standards herein set forth, determine the qualification of and provide for the examining and licensing of applicants who meet the qualifications and successfully pass the appropriate examination, if required, under this Section.

6. The Board shall select an independent testing firm to design and administer any examinations provided for under this Section.

7. At every Board meeting, the Board shall consider and take action to grant or reject all open and properly completed license applications that have been filed at least fifteen (15) days prior to the Board meeting. For any application that is rejected, the Code Official shall notify the applicant in writing of the reasons for rejection, within five (5) days after the Board's action. Notice of the date, time and place of each Board meeting, together with an agenda of the meeting, shall be made publicly available at least seven (7) days prior to the Board meeting.

8. The Board shall have the power to suspend and revoke any license issued pursuant to this Section for cause as set forth in subsection 101A.4.1 below. The Chairman or acting Chairman, with the approval of the Board, shall have power to administer oaths, subpoena witnesses and compel the production of books, papers and tangible things and the inspection of premises pertinent to any investigation or hearing authorized by this Section.

9. The Board shall have the authority, after providing reasonable opportunity for public participation and comment, to adopt reasonable rules and regulations to interpret and implement the provisions of this Section with respect to licensing, continuing education, and any other matters within the general authority of the Board. A copy of any rules or regulations proposed for adoption by the Board shall be made available for public inspection at least forty-five (45) days prior to the Board meeting at which the adoption is to be considered and notice of such availability shall be included in the notice for at least two Board meetings before the Board may take action on the proposed rule or regulations. During any Board meeting at which a rule or regulation is considered for adoption, the Board shall allow reasonable opportunity for public comment. Such rules and regulations shall become effective upon the majority vote of the Board, and shall be on file in the office of the Code Official and the office of the County Clerk, and shall be open to public inspection and copying. Notification of all changes in the Ordinance or in the Rules or Regulations promulgated by the License Board shall be posted on the St. Louis County website.

10. The Board shall consider and approve any apprentice training program provided that any such apprentice training program requires a minimum of 7,500 hours of combined on-the-job

and classroom training, if it provides an equivalent training program to those certified by the Bureau of Apprenticeship and Training of the U.S. Department of Labor "BAT" (now known as the Office of Apprenticeship Training, Employer and Labor Services ("ATELS") or to those approved, accredited or certified, as applicable, by any of the other organizations listed in subsection 101A.3.1.1 below. In addition, the Board shall consider and approve any educational or training program or class covering any work that requires a license under this Section, if such program or class is equivalent to one that is offered by a school or organization that is approved, accredited or certified, as applicable, by one of the organizations listed in subsection 101A.3.1 below.

11. Unlicensed Work: The Board of Examiners for Mechanical Licensing shall have the power to assess a fine, not to exceed \$1,000.00, against any person, firm, corporation, limited liability company or other business entity who performs mechanical work without possessing a valid license issued under this code, after a hearing is convened by the Board. A fine imposed by the Board shall be paid within thirty (30) days. Failure to pay an assessed fine shall result in referral to the St. Louis County Counselor's Office for further legal action.

101A.2 *License Exemptions.*

101A.2.1 The following work shall not require a license under this Section:

1. Work performed on an owner's own facility by personnel directly in the employment of the owner of the facility, or a business affiliate of such owner. For purposes of this exemption, a "business affiliate" shall mean any parent, subsidiary or sister corporation of the owner and any other corporation, partnership, limited liability company or joint venture in which the owner or its parent, subsidiary or sister company has an ownership interest.

2. Installation, repair and replacement of portable heating, cooling and refrigeration equipment. Portable equipment is not permanently installed into or onto a structure or premises, it is not directly wired or piped, it is not connected to duct work, and it does not require the venting of combustion products.

3. Installation, repair and replacement of domestic stoves, ranges, dryers and other domestic appliances.
4. Installation, repair and replacement of fireplaces and fireplace lighters.
5. Work for a public utility regulated by the Missouri Public Service Commission.
6. Installation, testing or repair of backflow devices, if the person performing such work is licensed pursuant to the Plumbing Code of St. Louis County, Chapter 1103 SLCRO 1974 as amended, to perform such work.
7. Work related to an addition or repair, replacement, modification or reconstruction of an existing mechanical system or component thereof, on the premises of a detached single-family dwelling, including accessory structures, performed by the owner or a member of the owner's immediate family residing with the owner under the following conditions:
  - (A) The dwelling shall be designed and used solely for living purposes.
  - (B) The dwelling shall be occupied by or vacant and intended for immediate occupancy by the owner and the owner's family and no other persons.
  - (C) A permit shall be obtained for work not exempted by Section 101A.2.1.11 below and the permittee shall personally perform all required work. Prior to issuance of a permit under this Section, the Code Official may require an affidavit or other reasonable proof that the request for permit complies with the foregoing provisions and that the applicant has the necessary knowledge and ability to perform the proposed work. This Section does not authorize a waiver or modification of any provision of this code relating to the materials, design, installation, or practice of mechanical work or the preparation and approval of construction documents or fees for permits or inspections.
8. System installation, start-up, warranty service or warranty repair work that is performed by a technician trained and

certified by the manufacturer of that system to perform such work.

9. Work historically and traditionally performed by boiler makers, except for repair and alteration of boilers, steam generators and pressure vessels with respect to which the provisions of Section 101A.3.3.1 below shall apply.

10. Installation, repair and replacement of elevators, escalators, dumbwaiters, moving walks, hoists, automotive lifts, conveyors, freight lifts, and manlifts.

11. Work which does not require a permit under the provisions of Section 106 of this code, including, but not limited to, ordinary repairs for the purpose of maintenance and service items such as the repair or replacement of any minor part of a piece of equipment that does not alter the approval of the equipment, the replacement of piping within heating or cooling equipment, replacement of leaking or defective valves, fittings or connections of system components, changing of belts, parts, filters and lubrication of equipment, testing and balancing of equipment and similar service work.

12. The reconstruction, repair or replacement of mechanical equipment and/or any part of a mechanical system when performed on a facility by personnel in the direct employment of the lessee of the facility, or in the direct employment of a property manager, provided that such property manager has filed with the Department of Public Works evidence of an agreement with the owner or lessee to provide property management services for the facility or to provide regular service work on the mechanical equipment and systems of the facility.

13. Receiving, unloading, moving, storing, hoisting, setting, aligning and leveling of machinery and related equipment.

14. Fabrication and installation of process ducts and process sheet metal blow pipe systems.

15. Any refrigeration work involving less than 7 1/2 tons of refrigeration including but not limited to such work on reach-in coolers, walk-in coolers, water coolers, beverage and beer dispensing machines and related equipment, beverage coolers, soda carbonated systems, reach-in freezers and walk-in freezers. In those cases where any refrigeration system is composed of

several individual but connected units or split systems, each such individual unit or split system shall be considered a separate unit or system for purposes of this exemption.

16. Work that does not fall within the definitions of Fire Suppression System Work, HVAC Duct System Work, HVAC Piping System Work, Process Piping System Work or HVAC Servicer-Installer Work as set forth herein.

101A.3 *Qualifications for Application, Examination, License.* An individual or Entity applying for a license shall be licensed as follows:

101A.3.1 *Apprenticeship License.* Applicants shall be issued an apprenticeship license promptly upon submission to the Board of a complete application together with

1. Proof of enrollment in:

(A) an applicable apprenticeship program certified by the Bureau of Apprenticeship and Training of the United States Department of Labor (BAT/ATELS); or

(B) a Board approved, equivalent apprenticeship program that includes classroom/laboratory training by Ranken Technical College, Vatterott Educational Center, Jefferson College or Southwestern Illinois College or by any school or organization approved, accredited or certified, as applicable, by:

(1) the Higher Learning Commission, a Commission of the North Central Association of Colleges and Schools;

(2) the Accrediting Commission of Career Schools and Colleges of Technology; or

(3) the National Center for Construction Education and Research; or

(C) an applicable, integrated 7,500-hour combined classroom and field training apprenticeship program that is conducted by any school or organization approved, accredited or certified, as applicable, by:

(1) the Higher Learning Commission, a Commission of the North Central Association of Colleges and Schools; or

(2) the Accrediting Commission of Career Schools and Colleges of Technology; or

(3) the National Center for Construction Education and Research;

Note: As used in this Section an HVAC Servicer-Installer Apprenticeship Program includes but is not limited to any program certified by BAT/ATELS as a Mechanical Servicer-Installer Apprenticeship Program.

OR

2. Presentation by the applicant or any Entity or organization of a written, individual training program providing a total of 7,500 combined hours of educational training or classes and field work or on-the-job training obtained as follows:

(A) at least 540 classroom hours of educational training or classes covering work that requires a license under this Section (and/or certain exempt work as allowed by the Note to this subsection below) that is conducted by any combination of schools or other organizations approved, accredited, or certified as applicable by:

(1) the Higher Learning Commission, a commission of the North Central Association of colleges and Schools; or

(2) the Accrediting Commission of Career Schools and Colleges of Technology;

(3) the National Center for Construction Education and Research; or (iv) the Board pursuant to subsection 101A 1.2.10 above; and

(B) the balance of the required hours needed to equal 7,500 through field work and/or on-the-job training under the supervision and inspection of a Journeyman licensed under this Section to perform the work involved.

Note: Within the total 540 classroom hours presented as part of any individualized training program pursuant to subsection 101A.3.1.2 above, the individual program must contain a minimum of 480 hours technical instruction in the installation, alteration, reconstruction, repair, replacement and/or servicing of HVAC Systems, HVAC Duct Systems, HVAC Piping Systems, Fire Suppression Systems and/or Process Piping Systems, as applicable based on the Apprentice license sought by the applicant, and within these 480 hours:

(1) no more than 75 hours may be introductory level courses and

(2) with respect to individuals seeking a Pipefitter, Sheet Metal or Sprinkler fitter license, no more than 75 hours may relate to technical training on work that is exempt from licensure under subsections 101A.2.1.2 through 101A.2.1.13 and 101A.2.1.15 through 101A.2.1.18 above. All technical training on work that is exempt from licensure under subsections 101A.2.1.1 and 101A.2.1.14 above shall be counted, without limitation, to the full extent required by subsection 101A.3.2.1 below. Individuals seeking an HVAC Servicer-Installer license shall have no limitation on the number of course hours that relate to work that is exempt from licensure under any or all of subsection 101A.2.1 above, and

(3) \$10.00 registration fee,

The Secretary shall present the complete application to the Board for action in accordance with the provisions of subsection 101A.1.2.7 above. However, if the applicant is (or is to be) employed by a contractor who has held a Contractor's License in St. Louis County for three years or more, then the applicant shall be issued an Apprenticeship License immediately and will not be required to wait until the next meeting of the St. Louis County Board of Examiners for Mechanical Licensing. If for whatever reason the License cannot be issued immediately, then the Applicant will receive a letter which will serve as his License until the actual License is issued.

Upon determination by the Board that the applicant has satisfied the requirements of this subsection, the Secretary shall issue an apprenticeship license to the applicant with "Pipefitting

Apprentice, Sheet Metal Apprentice, Sprinkler Fitter Apprentice, or HVAC Servicer-Installer Apprentice" plainly marked on it (which determination shall be based on the nature of the program or class in which the applicant has enrolled or has completed), and the apprentice's name and date of issue.

An individual may hold an Apprentice License for no more than seven (7) years. Upon an individual's application for an Apprentice License, the Board shall consider the individual's application and may grant the application, whereupon the individual will receive an Apprentice License which shall be valid for the first two (2) years of his apprenticeship. Following the first two (2) years of his apprenticeship, the apprentice may apply to the Board for an extension of his Apprentice License which, if granted, shall make the license valid for an additional three (3) years. In order to receive the extension, the apprentice or his sponsoring organization must provide verification that the apprentice is still active in the Apprentice Program. Following the first five (5) years of his apprenticeship, the apprentice may apply to the Board for an extension which, if granted, shall make the license valid for an additional two (2) years, which shall be the final two (2) years of his apprenticeship. In order to receive the extension, the apprentice or his sponsoring organization must provide verification that the apprentice is still active in the Apprentice Program. Notwithstanding any provisions of this Section, any Apprentice License may be extended by the Board for a term beyond the seven (7) years allowed by this Section when good cause is shown or in cases involving hardship or extenuating circumstances.

Apprentices are authorized to perform work described in this Section under the supervision and inspection of a licensed Journeyman in the employ of a Mechanical Contractor, Sheet Metal Contractor, Sprinkler Fitter Contractor, or HVAC Servicer-Installer Contractor. During the first two years of his Licensed Apprenticeship, an Apprentice shall work under the close and direct supervision of a licensed Journeyman. In the event that an Apprentice is not being closely and directly supervised by a Journeyman, then it shall be the responsibility of the Journeyman and the Contractor, upon request by the Board, to provide documentation and reasoning as to why the Apprentice was not working under the close and direct supervision of a Journeyman. Following the first two years of the apprenticeship,

the Journeyman is not required to directly and closely supervise the Apprentice, but the Journeyman shall be available to be contacted at all times that the Apprentice is performing work and shall supervise the Apprentice's work as appropriate. It shall be the responsibility of the Contractor to ensure that the Apprentice receives appropriate supervision at all times. Regardless of the experience of the Apprentice, the ratio of Apprentice to Journeyman shall be one Apprentice assigned to one Journeyman.

101A.3.2 *Journeyman License*. Applicants shall be issued a Journeyman license promptly upon submission of a complete application and a \$45.00 registration fee to the Board together with:

1. Proof of:

(A) A total of 7,500 hours of training and/or experience obtained through:

(1) the successful completion of a pipefitting, sheet metal, sprinkler fitter, or HVAC Servicer-Installer apprenticeship program conducted by any school or organization approved, accredited or certified, as applicable, as required by subsection 101A.3.1.1 above; or

(2) completion of at least 540 (Five Hundred Forty) hours of education or training classes, plus field work and/or on-the-job training under the supervision and inspection of a Journeyman licensed under this Section to perform the work involved, pursuant to an individual training program as allowed by subsection 101A.31.2 above; or

(B) 7,500 hours of:

(1) HVAC Residential Servicer-Installer Work for an HVAC Residential Servicer-Installer Journeyman License, or

(2) HVAC Servicer-Installer Work, which may include all work on HVAC Systems that are exempt from

licensure under Subsection 101A.2.1 above for an HVAC Servicer-Installer Journeyman license, or

(3) Process Piping System Work for a Pipefitter Journeyman license, or

(4) HVAC Duct System Work for a Sheet Metal Journeyman license, or

(5) Fire Suppression System Work for a Sprinkler fitter Journeyman license during the preceding twelve (12) years.

*Notes:*

(A) In determining whether an applicant has acquired sufficient experience to qualify for a Pipefitter, Sheet Metal, Sprinkler Fitter or HVAC Servicer-Installer Journeyman's license, the Board shall include all of the applicant's experience, as applicable based on the type of Journeyman license sought by the applicant, obtained while installing, constructing, altering, repairing, replacing or servicing Process Piping Systems, HVAC Duct Systems, fire Suppression Systems, HVAC Piping Systems or HVAC Systems (as applicable), except for work that is exempt from licensure under subsections 101A.2.1.2 through 101A.2.1.11 and 101A.2.1.13 through 101A.2.1.16 above. All work that is exempt from licensure under subsection 101A.2.1.1 and 101A.2.1.12 above shall be counted without limitation, provided the work is of a similar nature and technical requirements as work that requires a license under this Section. All experience will be considered by the Board regardless of where the work was performed, in St. Louis County or elsewhere. For HVAC Residential Servicer-Installer applicants, all Residential HVAC System Work will be considered regardless of whether or not the work was performed under the supervision of a licensed contractor or by a sole proprietor of a company that maintained a Registered Financial Responsibility Certificate or exempt from licensure under Subsections 101A.2.1.1 and 101A.2.1.12.

(B) For the purposes of determining whether an applicant for a Journeyman license has completed 540 or more hours of educational or training classes pursuant to an individual

training program as described in subsection 101A.3.1.2 above, each applicant shall submit for each class successfully completed by the applicant, pursuant to the grading system used by the school or organization conducting the class, the total number of hours indicated by the school or organization as applying to the work for which the applicant seeks a license (a syllabus, or a transcript or grade sheet or a letter from any Dean or equivalent administrator at the school or organization will satisfy this requirement).

2. The Secretary shall present the complete application to the Board for action in accordance with the provisions of subsection 101A.1.2.7 above.

Upon determination by the Board that the applicant has satisfied the above requirements and falls within one of the exceptions set forth in Section 101A.3.4, the Secretary shall issue the Journeyman license. Upon determination by the Board that the applicant has satisfied the above requirements and does not fall within one of the exceptions set forth in Section 101A.3.4, the Secretary shall give the applicant a written notice of the date and place of the examination. The cost of the examination(s) shall be paid by the applicant. The applicant will have one year to successfully pass the examination. Within that one year, the applicant may take the examination as many times as he/she desires. Failure to pass the examination within one year will require the applicant to re-apply for the desired license. If the applicant passes the examination, a Journeyman license shall be issued.

3. The Journeyman license shall be valid for three (3) years from the date of issue. The Secretary of the Board shall send a notice of renewal to the last known address of each licensed Journeyman and a thirty (30) day grace period after the expiration shall be given in which renewal shall be given without re-qualification or re-examination. Failure of the Secretary to provide the renewal notice shall not excuse the licensee from filing for the renewal license prior to the expiration of the grace period.

All licensed Journeymen seeking renewal shall furnish proof of twelve (12) Professional Education Units (24 hours) received within the last three (3) years on the then current Mechanical Code or accepted practices in the performance of work covered by

the then current Mechanical Code or equivalent proof of maintaining and improving Journeyman work skills as determined and approved by the Board. Said proof shall be provided at the time of renewal. There may be a carryover of four (4) Professional Education Units (8 hours) in excess of the required hours to the next license cycle.

4. There shall be no limitation as to the type or number of Journeymen licenses that can be obtained by an individual.

5. Any person who possesses a valid Journeyman license under this Section for a minimum of one year shall be allowed to test for another Journeyman's license under this Section.

Exception: An HVAC Service-Installer Journeyman or an HVAC Residential Service-Installer Journeyman shall not take the Sprinkler Fitter Journeyman's license test unless the applicant has received the necessary sprinkler training and/or experience per Section 101A.3.2.1.

Upon submission to the Board of a completed application by a person licensed under this Section as a Journeyman (which application shall not require any proof of the applicant's experience or training except the applicant must provide proof of possessing a Journeyman's license for a minimum of one year) and a \$45.00 registration fee, such person shall be permitted to take the examination for an additional Journeyman's license and, upon passage of such examination, shall promptly be issued a Journeyman's license in the trade covered by the examination so passed.

101A.3.2.A *Manufacturer and Manufacturer's Representative Restricted License.* A restricted license shall be issued under this Section to any manufacturer or manufacturer's representative and their employees engaged in the supply of equipment and appliances covered by this Section and/or in the supply of parts and/or the performance of service work, repairs, maintenance, start-up, testing or tuning of such equipment and appliances. Such license shall be issued by the Board upon submission by the applicant of evidence that the applicant is a manufacturer of, or has a representative relationship with one or more manufacturers of, equipment and/or appliances covered by this Section and payment of a \$45.00 license fee. Upon such submission, the Secretary shall issue a license in the name of

the applicant, identifying the equipment and/or appliance manufacturers with respect to which the license is issued. Such license shall authorize the licensee and its employees to supply parts and perform service work, repairs, maintenance, start-up, testing and/or tuning of any equipment and/or appliances which are supplied by the manufacturers listed on the license. There shall be no restriction on the number of such licenses that are issued to any one person or entity. Each such license shall be valid for as long as the licensee remains a manufacturer or a manufacturer's representative of the equipment and/or appliance manufacturers listed in the license. Notwithstanding the foregoing, however, no license shall be required for any manufacturer, manufacturer's representative or their employees to perform work covered by subsection 101A.2.1.10 above or to perform emergency repair work on any equipment or appliance supplied or represented by the manufacturer or manufacturer's representative.

*101A.3.3 Mechanical Contractor, Sheet Metal Contractor, Sprinkler Fitter Contractor; HVAC Service-Installer Contractor.*

1. Any entity, which has in its employ one or more individuals having any of the following qualifications, may submit an application for a Contractor's License:

(A) a minimum of three (3) years verifiable training and/or experience directing and supervising at least one (1) Journeyman; or

(B) a degree in civil or mechanical engineering from an accredited college and a minimum of one (1) year verifiable training or experience directing and supervising at least one (1) Journeyman; or

(C) a license for at least three (3) years under the Plumbing Code of St. Louis County as a Master Plumber or Master Pipefitter and a minimum of one (1) year verifiable training or experience directing and supervising at least one (1) Journeyman; or

(D) an individual having a minimum of three (3) years verifiable experience who performed or who was the owner, operator or supervisor of a company, that performed residential HVAC Servicer-Installer work exempted from

licensing by previous ordinances, may submit an application for a HVAC Servicer-Installer Contractor's License.

2. The application shall be accompanied by proof of the qualifications of the individual or individuals with the foregoing training or experience and proof of the Journeyman's license, proof of bond and insurance as specified in subsection 101A.3.3.2 and \$100.00 registration fee.

3. The Secretary will present the complete Contractor's application to the Board for action in accordance with the provisions of subsection 101A.1.2.7 above. Upon determination that the applicant has satisfied the requirements of this subsection, a license shall be issued.

4. The Contractor's License shall be valid for three (3) years from the date of issue. The Secretary of the Board shall send a notice of renewal to the last-known address of the Contractor, and a thirty (30) day grace period after the expiration shall be given in which renewal shall be given without re-qualification. Failure of the Secretary to provide renewal notice shall not excuse the licensee from filing for the renewal license prior to the expiration of the grace period.

5. The contractor shall provide the Department of Public Works with current proof of bond and insurance in order to maintain the license. The Secretary shall inform the Board of any Contractor who has failed to provide such proof of bond and insurance.

6. The Contractor shall notify the Department of Public Works within ten (10) days if it no longer employs a supervisor who possesses the qualifications set forth herein.

7. There shall be no limitation as to the type or number of Contractor's licenses that an individual or entity can obtain, so long as the applicant satisfied the requirements for each license.

101A.3.3.1 *Holder of Certificate of Authority from A.S.M.E. or National Board of Boiler and Pressure Vessel Inspectors.* Any entity which holds an appropriate A.S.M.E. Certificate of Authority with extension to field work or an "R" Certificate of Authority issued by the National Board of Boiler and Pressure Vessel Inspectors shall be authorized to engage in the repair

and alteration of boilers, steam generators and pressure vessels which are covered by this code. Any such entity holding such Certificate of Authority shall be authorized to perform the aforesaid work and shall be issued a license hereunder as a Contractor, provided that such entity shall pay a registration fee of \$45.00, file with the Secretary of the Board a copy of its Certificate or Certificates of Authority and proof of bond and insurance as specified in subsection

101A.3.3.2 Upon receipt of such Certificate or Certificates of Authority and proof of bond and insurance, the entity shall be Contractor's license.

101A.3.3.3 *Bond and Insurance Required.* Notwithstanding any provisions of Section 101B to the contrary, no permit shall be issued for installing, constructing, replacing, altering or repairing any HVAC System, Process Piping System, HVAC Duct System, Fire Suppression System, or any other work requiring a license under this Section, until the permit applicant shall have on file in the Department of Public Works, a current approved Surety Bond & Certificate of Insurance as specified in Section 101B. Permit applicants who have paid the license or registration fees specified in this Section shall not be required to pay the registration fee specified in Section 101B.

101A.3.4 *Examination and Re-Examination.*

1. All individuals desiring to be licensed as a Journeyman under this Section must successfully pass an examination in order to qualify as same.

*Exception:*

(A) Every person who is licensed under the Plumbing Code of St. Louis County as a Journeyman Pipefitter or Journeyman Sprinkler fitter shall not be required to pass an examination to be licensed as a Pipefitter Journeyman or Sprinkler fitter Journeyman under this Section. However, any individual may use this exemption only once. After the Mechanical License has been obtained, the individual must obtain required PEU's and any other obligations of the Mechanical License in order to avoid re-applying and testing.

101A.3.5 *Temporary Licenses.* A temporary license shall be issued to journeymen for up to six (6) months upon submittal to the Secretary of the Board of the name and location of the project and the name of the licensed Mechanical Contractor, Sheet Metal Contractor, Sprinkler Fitter Contractor, or HVAC Servicer-Installer Contractor for such project, provided the Board first finds that issuance of said temporary license will not compromise the public safety of St. Louis County residents. The temporary license may be renewed upon application and proof of employment by a licensed contractor.

101A.4 *Suspension or Revocation of License.*

1. The Board of Examiners shall have the power to suspend or revoke any license issued pursuant to this Section on any of the following grounds:

(A) Said license was obtained by fraud or misrepresentation.

(B) Violation of any of the provisions of this code.

(C) The licensee employed an unlicensed individual or business entity to perform work for which a license is required under this Section.

(D) The licensee permitted Apprentices to work without the supervision and inspection of a Journeyman required by this Section or falsified the documentation of any Apprentice's training and experience.

(E) Procurement of permits for individuals who are not in the licensee's employ.

(F) Failure to protect the health, safety and welfare of the public by violating the expressed intent of this code through irresponsibility, incompetence, neglect or wrongful intent.

(G) Performance of work requiring a license under this Section without the required license.

(H) Failure to provide the information required of an Apprentice and/or sponsor as described in 101A.3.1 above.

2. No license shall be suspended or revoked until the licensee has been afforded an opportunity for a hearing before the Board after notice of at least fifteen (15) days.

3. Notice shall be served either personally or by Certified Mail to the licensee's address of record and shall state the date, time and place of hearing and set forth the charges against the licensee. In the event service cannot be made by certified mail, personal service shall be accomplished in such manner as is reasonably calculated to achieve actual service upon the licensee.

4. A licensee shall have the opportunity to present evidence and/or witnesses before the Board in person or by counsel. A record of the hearing shall be made. The Board shall issue a decision in writing denying or compelling suspension or revocation within thirty (30) days of the conclusion of the hearing. The suspension period shall not commence until at least 30 days after the mailing or delivery of the written decision, unless the licensee requests an earlier commencement date and there are no outstanding permits.

5. The duration of suspension of any license suspended pursuant to this section shall be as follows:

(A) First Offense shall result in a warning or a suspension period of not more than ninety (90) days and shall continue until reinstated by order of the Board pursuant to paragraph 6 of this subsection.

(B) Second Offense shall result in a suspension period of not more than one hundred and eighty (180) days and shall continue until reinstated by order of the Board pursuant to paragraph 6 of this subsection.

(C) Subsequent Offenses shall result in revocation of the license, certificate or registration for a period of not less than one (1) year.

*Note:* If the Board determines the particular violation charged is of such a major or aggravated nature that a license should be revoked, nothing in this subsection shall limit the Board's authority to do so regardless of whether there be any prior offenses or suspensions.

6. A suspended license shall be reinstated by order of the Board upon written request of the holder provided that said request is submitted to the Code Official not more than 30 days prior to or 180 days after the expiration of the suspension period and provided that the suspended license holder has complied with all requirements of the suspension.

7. A revoked license may be reinstated by order of the Board only upon application and examination, if required, and in the same manner as provided for new applicants.

## **SECTION 101B**

### **REGISTERED FINANCIAL RESPONSIBILITY**

101B.1 *When Registration Required.* Any company, corporation, partnership, joint venture, individual, or other business entity that performs work which requires a permit under this code, including those licensed and exempted from licensing as specified in Section 101A.2.1, shall register proof of financial responsibility with the Code Official prior to issuance of a permit.

101B.2 *Registration not Required.* Registered financial responsibility shall not be required for the following work:

(A) Work exempted from licensure by Section 101A.2.1.7 above.

(B) Work exempted from licensure by Section 101A.2.1.1 above.

(C) Work exempted from licensure by Section 101A.2.1.12 above.

(D) Work exempted from licensure by Sections 101A.2.1.8 and 101A.3.2.A above.

101B.3 *Registration.* Proof of financial responsibility shall be demonstrated by filing and maintaining in the Department of Public Works an approved surety bond in the amount of \$10,000.00 and a Certificate of Insurance for combined \$500,000.00 minimum limits liability insurance for bodily injury and property damage. Owners or operators of amusement devices shall carry a minimum of \$1,000,000.00 per occurrence general liability

insurance as specified in Section 2201.6. The bonds and insurance required herein shall be approved by the County Counselor and shall be given for the faithful observance of this Code and all orders, rules and regulations adopted hereunder for the protection of the public health and safety and shall indemnify St. Louis County, Missouri or any other governmental agency, or any person, firm or corporation for any damage or injury sustained through the negligence or malfeasance of such applicant, their servants, agents or employees in performing work or for any damages or injury sustained due to such applicant's failure to perform work in a careful and workmanlike manner, in conformity with this Code and the orders, rules and regulations adopted hereunder or for the use of St. Louis County, Missouri due to non-payment of fees thirty (30) days from the due date, or for the use of any person, firm or corporation with whom said applicant contracts to do work to indemnify any such person, firm or corporation for damages sustained due to failure of applicant to do work so contracted.

101B.4 *Issuance, Expiration and Renewal of Registration.*

1. Registration of Licensed Entities: The Registration of a licensed entity shall run concurrently with the issuance, expiration and renewal of the license. The bond and insurance shall be maintained in place without interruption during the full period of the license.

2. The registration of unlicensed entities that hold a Financial Responsibility Registration Certificate must be renewed every three (3) years. The fee for such renewal shall be \$75.00 and the Registration will remain effective for the three year period so long as the entity maintains the bond and insurance in place without interruption and the Registration is not suspended or revoked as identified in Section 101B.5.

3. The Registration of unlicensed entities that do not hold a Financial Responsibility Registration Certificate on the effective date of this Ordinance shall be issued for a three (3) year period. The fee for such registration and subsequent renewals (if any) shall be \$75.00 and the Registration will remain effective for the three year period so long as the entity maintains the bond and insurance without interruption, and the Registration is not suspended or revoked as identified in Section 101B.5.

101B.5 *Suspension or Revocation of Registration.*

1. The Board of Examiners shall have the power to suspend or revoke the Registration of any entity pursuant to this Section on any of the following grounds:

(A) Said Registration was obtained by fraud or misrepresentation.

(B) Violation of any of the provisions of this code including working without required permits.

(C) Procurement of permits for individuals who are not in the Registrant's employ or entities that are not registered.

(D) Failure to protect the health, safety and welfare of the public by violating the expressed intent of this Code through irresponsibility, incompetence, neglect or wrongful intent.

(E) Performance of work requiring a license under this Code without the required license.

2. No Registration shall be suspended or revoked until the licensee has been afforded an opportunity for a hearing before the Board after notice of at least fifteen (15) days.

3. Notice shall be served either personally or by certified mail, to the registrant's address of record and shall state the date, time and place of hearing and set forth the charges against the registrant. If notice cannot be served by certified mail, notice shall be served by such other manner as is reasonably calculated to achieve personal service upon the registrant.

4. A registrant shall have the opportunity to present evidence and/or witnesses before the Board in person or by counsel. A record of the hearing shall be made. The Board shall issue a decision in writing denying or compelling suspension or revocation within thirty (30) days of the conclusion of the hearing. The suspension period shall not commence until at least 30 days after the mailing or delivery of the written decision, unless the registrant requests an earlier commencement date and there are no outstanding permits.

5. The duration of suspension of any Registration suspended pursuant to this section shall be as follows:

(A) A first Offense shall result in a warning or a suspension period of not more than ninety (90) days and shall continue until reinstated by order of the Board pursuant to paragraph 6 of this subsection.

(B) A second Offense shall result in a suspension period of not more than one hundred and eighty (180) days and shall continue until reinstated by order of the Board pursuant to paragraph 6 of this subsection.

(C) Subsequent Offenses shall result in revocation of the Certificate of Registration for a period of not less than one (1) year.

*Note:* If the Board determines the particular violation charged is of such major or aggravated nature that a Registration should be revoked, nothing in this subsection shall limit the Board's authority to do so regardless of whether there be any prior offenses or suspensions.

6. A suspended Registration shall be reinstated by order of the Board upon written request of the holder provided that said request is submitted to the Code Official not more than 30 days prior to or 180 days after the expiration of the suspension period and provided that the suspended Registration holder has complied with all requirements of the suspension.

7. A revoked Registration may be reinstated by order of the Board only.

8. The holder shall surrender the Registered Financial Responsibility Certificate to the Code Official during the period of any suspension or revocation of the Registration.

9. Decisions of the Board are subject to judicial review pursuant to Chapter 536 R.S. Mo.

*103.1 Code Official.* The Code Official shall be the Director of Transportation and Public Works of St. Louis County, Missouri or the Director's duly authorized representative who is vested with executive and administrative authority to enforce all laws, ordinances and codes regulating construction, alteration,

addition, repair, removal, demolition, use, location, occupancy and maintenance of all buildings and structures, electrical, plumbing, drain laying and mechanical systems pursuant to Chapters 1102, 1103, 1108, 1115, 1116 and 1117, SLCRO 1974 as amended. Said Director shall be appointed and qualified pursuant to St. Louis County Charter.

103.2 *Appointment.*- Deleted.

104.1.1 *Rule-making authority.* The Code Official shall have authority, as necessary in the interest of public health, safety and general welfare, to adopt and promulgate rules and regulations to interpret and implement the provisions of this code, to secure the intent thereof and to designate requirements applicable because of local climatic or other conditions. Such rules, copies of which shall be retained in the office of the Code Official, shall not have the effect of waiving structural or fire performance requirements specifically provided for in this code or of violating accepted engineering practices involving public safety.

104.5 *Authority to Enter.* Upon presentation of proper credentials, the Code Official shall have the authority to enter at reasonable times any building, structure or premises to perform any duty imposed upon him by this code, subject to constitutional restrictions on unreasonable searches and seizures. If entry is refused or not obtained, the Code Official is authorized to pursue recourse as provided by law and the person who failed to provide entry will be subject to the penalties provided in this code.

104.5.1 *Interference with Code Official.* No person shall hinder, obstruct, resist, fail to provide entry at reasonable times or otherwise interfere with the Code Official in the performance of his official duties.

104.8 *Code Interpretations.* When the Code Official deems it appropriate, or at the request of the Building Commission, the Code Official shall be permitted to issue formal interpretations of the provisions of this code. A written record of all such code interpretations shall be maintained and subject to review and appeal in accordance with Section 109.

105.1.1 *Records of Modifications.* The application for modification and the final decision of the Code Official shall

be in writing and shall be officially recorded with the application for the permit in the permanent records of the Department of Public Works. A copy of the application and the final decision shall be distributed to the Mechanical Code Review Committee and the Building Commission.

106.1.1 *Authorization to Proceed.* The Code Official shall be permitted to authorize the commencement of construction prior to issuance of a building or mechanical permit when it can be shown that (a) the project is in compliance with the applicable regulations of St. Louis County for that portion of the work to be performed, and (b) the applicant agrees to proceed at his own risk. All necessary inspections shall be performed as required by this code.

106.1.2 *Annual permit records.*-Deleted

106.3.1 *Construction Documents.* The application for permit shall be accompanied by four or more complete sets of construction documents prepared in accordance with Section 111 of this code. The Code Official is permitted to waive the requirements for filing construction documents when the scope of the work is of a minor nature. When the quality of the materials is essential for conformity to this code, specific information shall be given to establish such quality, and this code shall not be cited, or the term "Legal" or its equivalent used as a substitute for specific information.

106.3.3 *Time Limitation of Application.* An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless such application has been diligently pursued or a permit has been issued. However, the Code Official may grant one or more extensions of time for additional periods not exceeding ninety (90) days each. A permit application extension fee in the amount specified in Chapter 1100 shall be paid for each additional extension period of 90 days beyond the initial 180 days allowed after the date of filing. An additional inspection fee may be charged for an inspection to verify that work has not been started prior to granting the extension. The extension shall be requested in writing and justifiable cause demonstrated. The Code Official shall notify those delinquent applicants in writing and give them fourteen (14) days notice prior to abandonment of the application and destruction of the plans.

106.3.4 *Transfers Prohibited.* The transfer of an application for mechanical permits from one location to another shall be prohibited. When relocation is necessary, the original application shall be canceled and a new application submitted.

106.4 *Permit Issuance.* The Code Official shall examine or cause to be examined all applications for permits and amendments thereto within a reasonable time after filing. If the application or the construction documents do not conform to the requirements of all pertinent laws, the Code Official shall notify the applicant in writing of all such deficiencies. If the Code Official is satisfied that the proposed work conforms to the requirements of this code and all laws and Ordinances applicable thereto, the Code Official shall issue a permit therefor as soon as practicable.

106.4.1.1 *Compliance with construction documents.* Work shall be installed in accordance with the approved construction documents. Any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents.

106.4.3 *Expiration.* Every permit issued shall become invalid unless the work commences within 180 days after permit issuance or if the work on the site authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. The Code Official is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each. Each extension shall be requested in writing and justifiable cause demonstrated.

106.4.4 *Extensions.* Mechanical Permits may be extended at any time up to thirty days prior to the expiration date of the specific permit.

106.4.9 *Separate Permits.* Permit applicants shall be permitted to submit separate applications for building, mechanical, electrical, or plumbing permits. As a condition of approval the owner or owner's agent shall agree to assume full responsibility for the coordination of all applicable code requirements relating to these permits.

106.4.10 *Additional Approval Requirements.* Prior to issuing any permit, approvals shall be obtained from the following

departments when applicable: The St. Louis County Department of Public Health and the Metropolitan St. Louis Sewer District. Missouri Department of Transportation approval must be submitted when property developed fronts on right-of-way controlled by the State of Missouri.

106.4.11 *Addendums to Permits.* Once a permit is issued all addendums submitted as an amendment to the approved construction documents shall be charged an additional review fee as specified in Chapter 1100, SLCRO 1974 as amended and in accordance with this code.

106.4.12 *Integrated Permits.* The Code Official shall be permitted to issue integrated building, plumbing, electrical and/or mechanical permits on a single permit application.

106.4.12.1 *Applicant Responsibility.* The integrated permit applicant shall be responsible for the return to the Department of Public Works copies of the plumbing, electrical and/or mechanical permit form with the name, signature and license number of the appropriate sub-contractor. Any change in the identity of the named sub-contractor after issuance of the permit shall result in the assessment of a transfer fee in the amount specified in Chapter 1100, SLCRO 1974 as amended.

106.4.13 *Approval of Part.* The Code Official is authorized to issue a permit for a portion of the mechanical work to be performed for a particular project, provided that adequate information and detailed statements have been filed complying with all of the pertinent requirements of this code. The holder of such permit for a portion of the mechanical work shall proceed, at the holder's own risk, with the building operation and without assurance that a permit for the entire mechanical project will be granted.

106.4.14 *Existing Violations.* If the Code Official determines that an applicant for a permit governed by this code has failed to pay any permit fees or related charges, the Code Official shall not issue such permit until the applicant pays such fees and related charges. If the Code Official determines that an applicant has failed to correct violations of this code, the Code Official shall not issue permits related to this code to such applicant except to correct such violations.

106.4.15 *Federal, State or other public entities.* The Code Official may withhold issuance of a permit for any facility or site if any Federal, State or other public entity determines that such facility or site is in violation of any code or regulation of such entity

106.4.16 *Emergency and Disaster Work.* In the event of emergency, as defined in this code, work may begin by securing permission from the Code Official upon condition that written application be filed with the Code Official the next working day. The application shall describe in detail the nature of such work and shall state the location thereof. In the event of a disaster, as defined in this code, no work shall begin on a mechanical system unless the Code Official issues the appropriate permit.

106.5 *Fees.* The fees for plan examinations, filing fee, permits and inspection pursuant to this code shall be charged at the rate specified in Chapter 1100, SLCRO 1974 as amended, and shall be paid to the Treasurer of St. Louis County.

106.5.1 *Fees for Amending Permits.* After a permit has been issued and an amendment or supplemental revision is applied for, the fee or service charge shall be as follows:

(A) All amendments, which involve additional work not originally applied for to complete the project, shall be charged the appropriate fee for the additional work calculated in the normal manner plus the partial permit fee. The minimum fee shall be as established in Chapter 1100, SLCRO 1974 as amended.

(B) All amendments or supplements not involving additional work shall be charged a minimum fee or service charge even though the scope of the work may be reduced. See Chapter 1100, SLCRO 1974 as amended for the amount of the service charge.

106.5.2 *Partial Permit Fee.* The fee for a partial permit as described in this code shall be charged in addition to the permit fee as normally computed for that part of the work involved. See Chapter 1100, SLCRO 1974 as amended for amount of fees.

106.5.3 *Permit Extension Fee.* Permits that are extended in accordance with this code are charged an extension fee at the rate prescribed in Chapter 1100, SLCRO 1974 as amended.

106.5.4 *Board of Appeals Filing Fee.* All appeals filed for review by the Board of Appeals under the procedures described in this code are to be accompanied by a filing fee as prescribed in Chapter 1100, SLCRO 1974 as amended.

106.5.5 *Subcontractor Transfer Fee.* A transfer fee shall be charged whenever a subcontractor is replaced by another subcontractor. The amount of the transfer fee shall be at the rate prescribed in Chapter 1100, SLCRO 1974 as amended.

106.5.6 *Extra Inspection Fee.* An extra inspection fee shall apply for each preliminary inspection required and for each re-inspection that the Code Official must perform due to noncompliance with the approved development or site plans, construction documents or the applicable requirements of this code or work not ready or accessible for inspection when requested. The amount of such extra inspection fee shall be as prescribed in Chapter 1100, SLCRO 1974 as amended.

(A) *Work Not Commenced, Suspended or Abandoned:* An extra inspection fee may be charged for each inspection made to determine the status of a project when work is not commenced, or is suspended or abandoned, for more than six months.

106.5.7 *Refunds.* In the case of revocation of a permit no refund shall be permitted. Any excess fee for the incomplete work on abandoned or discontinued projects shall be returned to the permit holder upon written request received not later than twelve (12) months after the date the permit was issued. All plan examination and permit processing fees and all penalties that have been imposed upon the permit holder under the requirements of this code shall be deducted from the refund or paid by the permit holder prior to any refund being issued.

106.5.8 *Disaster Damage Repair Permit Fees.* The Code Official may reduce or waive mechanical permit fees for repairs related to a disaster as defined in this code if the permit is issued within 90 days after the end of a disaster, as determined by the Code Official, and authorizes the work indicated therein to be completed within one year of the date of issuance. The Code

Official may extend the 90 day period if the Code Official determines that just cause exists.

107.1 *General.* Work for which a permit is required shall be subject to inspection by the Code Official and such work shall remain accessible and exposed for inspection purposes until approved. Neither the Code Official nor the County or any other jurisdiction shall be liable for any expenses entailed in the removal or replacement of any material required to allow full inspection. All work shall be installed in accordance with the approved construction documents. Any changes made during construction that are not in compliance with the approved construction documents shall be resubmitted for approval as an amended set of construction documents. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid.

107.2.2 *Inspection requests.* It shall be the duty of the holder of the permit or their duly authorized agent to notify the Code Official when work is ready for inspection. It shall be the duty of the permit holder to provide access to and means for inspections of such work that are required by this code. Failure of the permit holder to request and obtain required inspections shall constitute a violation of this code.

107.7 *Periodic Inspections.* Periodic inspections shall be made by the Code Official of all equipment and devices listed in Table 107.7 at the frequency specified in Table 107.7, or at such other times as the Code Official shall deem appropriate. Fees for inspections shall be paid by the owner of such equipment or devices in accordance with Chapter 1100, SLCRO 1974 as amended.

Table 107.7  
Periodic Mechanical Inspection Frequencies

Item	Frequency	Remarks
Air filtration systems required to	Annually	Engineered systems specifically approved

maintain indoor air quality		to allow reduced outdoor air quantities
Amusement Devices, Kiddie Rides and concessions		
	Permanent Location	Twice during season
	Not Permanent	Whenever relocated
Auto Lifts	Annually	
Boilers	Annually	R-2 and R-3 residential heating boilers are exempted
Conveyors, Power Operated	Annually	
Crematories	Annually	
Dumbwaiters Power Operated over 100 lb. capacity	Annually	
Elevators - Freight and Passenger, Man lifts, Moving Stairways and Chairlifts	Not less than annually, up to three times per year, at the discretion of the Code Official	An elevator mechanic is required to perform tests witnessed by a qualified County Inspector during a Comprehensive Annual Elevator Inspection that meets both County and State obligations.

Emergency Generator	Annually	
Hoists	Annually	
Incinerators	Annually	Class IA and domestic are exempted
Kitchen Exhaust Systems	Semi-Annually	Domestic systems within individual dwelling units are exempted.
Miscellaneous Equipment	Annually	
Moving Walks	Annually	
Paint Spray Booth Exhaust Systems	Annually	
Pressure Vessels with Manhole	Annually	
Unfired Pressure Vessels (Air Compressors)	Annually	
Water Heaters and/or Storage Tanks of 120 Gallons or More	Annually	

107.8 *Additional Inspections.* In addition to the required inspections specified above, the Code Official may make other inspections, which in his judgment are reasonably necessary to enforce this code. The Code Official shall have the authority to inspect any construction work to verify compliance with this code and to properly enforce the rules promulgated pursuant to this code. Fees for additional inspections shall be as specified in Chapter 1100, SLCRO 1974 as amended.

107.9 *Extra Inspections.* In addition to the inspections otherwise required the Code Official is authorized to perform extra inspections or re-inspections which in his judgment are reasonably necessary due to non-compliance with Mechanical Code requirements, or work not ready or accessible for inspection when requested. Fees for extra inspections shall be as specified in Chapter 1100, SLCRO 1974 as amended.

107.10 *Special or Qualified Inspectors.* Whenever a special or qualified inspection has been made by an insurance company or special inspector, the owner or user of equipment shall pay a certification fee as prescribed in Chapter 1100, SLCRO 1974 as amended, in lieu of the prescribed fees set forth in this code. A copy of the special or qualified inspection report dated not more than 90 days prior to the scheduled certificate month shall be transmitted to the Code Official not less than 60 days before the first day of the scheduled certificate month. Upon receipt of payment of the proper fees, the Code Official shall issue a certificate evidencing that said equipment has been inspected in accordance with the provisions of this code.

107.10.1 *Special Inspectors.* Insurance inspectors or special inspectors of mechanical equipment, such as air conditioning and cooling towers, boilers, unfired pressure vessels, hot water heaters, elevators and escalators, shall apply for a Certificate of Competency issued by the Department of Transportation and Public Works. Upon receipt of the proper application, a photostatic copy of their National Board Certificate, and a fee as prescribed in Chapter 1100, SLCRO 1974 as amended, the applicant shall be issued a Certificate of Competency, valid for one year from date of issue, and renewable annually prior to the anniversary date. If the holder of the Certificate of Competency should change his employment, a new certificate shall be issued without charge upon receipt of a request by letter, stating the change of employment, and his proper certificate. The inspection certificate shall be current for the year in which inspections are made.

107.11 *Duty to Request Final Inspection.* Upon completion of the work described in the permit application, the permit holder shall request and obtain a final inspection before any occupancy of the structure except as provided in Section 111 of the Building Code, Chapter 1115 SLCRO 1974 as amended. Failure of the permit holder to request and obtain a final inspection before occupancy will constitute a violation of this code.

108.2 *Notices of Violation.* When the Code Official determines that a violation of this code exists, the Code Official shall notify the violator as soon as practicable. The notification shall be in writing and shall be hand-delivered to the violator or his legally authorized representative or mailed to his last known address via certified mail, or served in such manner as is reasonably calculated to achieve personal service upon the violator. Any person having been notified that a violation exists by means other than a stop work order and who fails to promptly abate the violation after notification shall be subject to the penalties enumerated in this code. If a permit has been issued, the permit holder shall be notified of any violations of the approved construction documents or permit and the notice shall set forth the discrepancies.

108.4 *Violations and Penalties.* A person, firm or corporation is in violation of this code if they:

1. Fail to comply with any of the requirements thereof; or
2. Erect, construct, alter, occupy, or repair a structure in violation of the approved construction documents, a directive of the Code Official or a permit or certificate issued under the provisions of this code; or
3. Start any work requiring a permit without first obtaining such permit; or
4. Continue any work in or about a structure after having been served a stop work order, except for such work which that person, firm or corporation has been directed to perform to remove a violation or unsafe condition; or
5. Maintain any structure or premises in which a violation exists; or
6. Fail to request a required inspection after a permit is issued.

A violation of this code may be punishable by a fine of not more than \$1,000 or by imprisonment not exceeding 90 days or by both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.

108.4.1 *No-permit and no-inspection request penalties.* In addition to the penalties set out above, the following procedure shall be followed where the Code Official determines that work has been started prior to the acquisition of a permit required by this code or when the permit holder failed perform due diligence as per Code Official's Policy in attempting to schedule the required inspection:

1. The Code Official shall issue a stop work order when work requiring a permit was started prior to the acquisition of that permit. The Code Official shall issue a Notice of Violation when a required inspection was not requested.

2. The Code Official shall notify the violator of the penalty amount to be assessed against the violator. A no-permit penalty shall not exceed the greater of \$500 or 1 percent of the cost of construction of the work involved up to a maximum of \$1,000. A no-inspection request penalty shall not exceed \$500.

In making the assessment, the Code Official shall consider whether the violator has previously violated this code and whether the occupation or experience of the violator indicates that the violator knew or should have known that a permit or inspection was required. In no case will a penalty be assessed against a property owner unless the property owner actually performed the work involved.

If 180 days has transpired since the last inspection on record or if the permit has automatically expired, a permit extension fee shall be added to a no-inspection request penalty amount.

3. The stop work order for failure to obtain a permit or the violation for failure to request an inspection shall remain in full force and effect until such time as the penalty amount is paid and the violator has complied with all other regulations pertaining to the issuance of the required permit, or requested the required inspection.

At the violator's option, the violator may place the assessed penalty amount in escrow (by certified check or cash only) with the Department of Transportation and Public Works and the violator's right to an appeal is preserved.

4. No-permit and no-inspection request penalties are appealable to the Board of Appeals in the same manner as other decisions of the Code Official. The Code Official may revise the assessment upon notice to both the Board of Appeals and the alleged violator at any time prior to the hearing. At any time prior to the hearing, the violator may accept and pay the assessed penalty amount and the hearing will be canceled.

At the hearing before the Board of Appeals, said board shall afford both the Code Official and the alleged violator an opportunity to present any evidence or make any statements they wish to have considered.

Following the hearing, the Board of Appeals shall determine whether a permit or inspection was required:

4.1. If the Board of Appeals determines that a permit or inspection was required, an appropriate penalty amount shall be assessed, taking into account the same considerations as noted in 108.4.1. The stop work order for failure to obtain a permit or the violation for failure to request an inspection shall remain in full force and effect until such time as the penalty amount is paid and the violator has complied with all other regulations pertaining to the issuance of the required permits, or requesting the required inspection.

4.2. If the Board of Appeals determines that a permit or inspection was not required, the Code Official shall immediately cancel the stop work order for failure to obtain a permit or abate the no-inspection request violation. Any associated penalty assessment amount held in escrow shall be released.

108.4.2 *No-Certificate Penalty.* In addition to the penalties set out under 108.4.1, the following procedure shall be followed where the Code Official determines that no certificate has been issued for equipment requiring periodic inspection as noted in Section 107.7, a re-inspection failure, or for failure to pay a Mechanical Invoice for a periodic inspection.

1. The owner of equipment shall submit to the Code Official in writing, within 30 days of re-inspection failure, the reason the equipment is in a failed status and a plan to remedy the failure. No penalty will be assessed if the plan is approved by the Code Official. If the failure is not

remedied in accordance with the approved plan a penalty will be assessed.

The Code Official shall notify the violator of his decision regarding the appropriate penalty amount to be assessed against the violator, which shall not exceed \$250.00. If equipment continues to remain in a failed status after 30 days from the official notification of penalty, the equipment will be deemed unsafe for use and shall be removed from service.

108.5 *Stop Work Orders.* Upon notice from the Code Official that mechanical work is being done contrary to the provisions of this code or in a dangerous or unsafe manner, such work shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to the owner's agent, or to the person doing the work. The notice shall state the conditions under which work is authorized to resume. Where an emergency exists, the Code Official shall not be required to give a written notice prior to stopping the work.

108.5.1 *Unlawful Continuance.* Any person who fails to obtain permits when required, fails to request a required inspection, or continues any work in or about the structure or premises after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as specified in this code.

108.7.4 *Temporary Safeguards.* When, in the opinion of the Code Official, there is imminent danger due to an unsafe condition, the Code Official shall cause the necessary work to be done to render such structure temporarily safe, whether or not the legal procedure herein described has been instituted.

108.8 *Closing Streets.* When necessary for the public safety, the Code Official shall temporarily close structures and close, or order the authority having jurisdiction to close, sidewalks, streets, public ways and places adjacent to unsafe structures, and prohibit the same from being used.

108.9 *Emergency Repairs.* For the purposes of this section, the Code Official shall employ the necessary labor and materials to perform the required work as expeditiously as possible.

108.10 *Costs of Emergency Repairs.* Costs incurred in the performance of emergency work shall be paid from the treasury of the jurisdiction on approval of the Code Official. The legal counsel of the jurisdiction shall institute appropriate action against the owner of the premises where the unsafe structure is or was located.

108.11 *Unsafe Equipment.* Equipment deemed unsafe by the Code Official shall not be operated after the date stated in the notice unless the required repairs or changes have been made and the equipment has been approved, or unless an extension of time has been secured from the Code Official in writing.

108.11.1 *Authority to Seal Equipment.* In the case of an emergency, the Code Official shall have the authority to seal out of service immediately any unsafe device or equipment regulated by this code.

108.11.2 *Unlawful to Remove Seal.* Any device or equipment sealed out of service by the Code Official shall be plainly marked with a sign or tag indicating the reason for such sealing. The sign or tag shall not be tampered with, defaced or removed except by the Code Official.

109.1 *Application for Appeal.* Any person aggrieved by any decision, ruling or order of the Code Official or the Board of Examiners may appeal to the Board of Appeals pursuant to the procedures set out in Chapter 1115, SLCRO, 1974 as amended. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under have been incorrectly interpreted, the provisions of this code do not fully apply, or an equivalent form of construction is to be used.

109.1.1 *Limitation of Authority.*-Deleted

109.2 *Membership of Board.* The Board of Appeals shall consist of the five members of the St. Louis County Building Commission as set forth in the St. Louis County Charter.

109.2.1 *Qualifications.*-Deleted

109.2.2 *Alternate Members.*-Deleted

109.2.3 *Chairman, Vice Chairman and Secretary.* The Board shall select one of its members to serve as chairman, one to serve as vice-chairman, and the Code Official shall designate a representative of the Department to serve as Secretary to the Board, who shall keep a detailed record of all proceedings on file in the Department.

109.2.5 *Secretary.*-Deleted

109.3 *Notice of Hearing on Appeal.* The Board shall meet and shall give notice of all appeals in accordance with the procedures set forth in Chapter 1115, SLCRO 1974 as amended.

109.4.1 *Procedure.* Hearings shall be conducted in accordance with the procedures set forth in Chapter 1115, SLCRO 1974 as amended.

109.5 *Postponed Hearing.* When a quorum is not present to hear an appeal, the hearing shall be postponed in accordance with the procedures set forth in Chapter 1115 SLCRO 1974 as amended.

109.6 *Board Decision.* The Board shall render a decision in accordance with the procedures set forth in Chapter 1115, SLCRO 1974 as amended.

109.6.1 *Notification of Decision.* The Secretary of the Board shall notify the appellant of the decision of the Board in writing in a timely manner.

109.7 *Judicial Review.* Decisions of the Board of Appeals are subject to judicial review pursuant to Chapter 536 R.S.Mo.

**SECTION 111**  
**PROFESSIONAL ARCHITECTURAL AND ENGINEERING SERVICES**

111.1 *General.* The construction documents for new construction, alteration, repairs, expansion, addition or modification of mechanical systems shall be prepared by a registered design professional. All construction documents shall be prepared by the appropriate registered design professional consistent with the professional registration laws of the State of Missouri. The construction documents shall include the name and address of the registered design professional and shall be signed, sealed and dated by the registered design professional in accordance with this code.

*Exceptions:*

1. Construction documents for mechanical systems in single-family dwellings that are designed by and signed by the owner of the proposed building. Such buildings shall be built for the exclusive occupancy by the owner for a period of at least one year. The Code Official may request that a registered design professional participate in the design and/or preparation of construction documents when the owner prepared documents are not comprehensive and complete or when engineering expertise is necessary to verify compliance with this code.
2. Miscellaneous structures related to buildings of the R-3 and R-4 Use Groups, such as room additions, carports, garages, sheds and other similar structures.
3. Work of a minor nature approved by the Code Official.
4. Construction documents for pre-engineered wet and dry chemical fire suppression systems.
5. Construction documents for the installation of aboveground or in-ground hydraulic auto lifts that bear the label of an approved agency.
6. Construction documents for the relocation of less than 5 automatic sprinkler heads.
7. Relocation of ceiling supply and return air diffusers without a change of occupancy.
8. Replacement of commercial rooftop units, if unit has similar design capacities and no additional structural load is applied to the roof.
9. Walk-in cooler or freezer units.

111.2 *Application of Seals.* All construction documents submitted with an application for a permit shall bear an original embossed or wet ink seal, the date and original signature of the registered design professional for each discipline on the front sheet of each discipline within each set of construction documents or on the cover sheet of each set of construction documents.

In addition, all other sheets of the construction documents other than specifications or calculations shall bear the original embossed, wet ink, or mechanically reproduced seals of the registered design professional. Any addenda or modifications submitted for changes to the construction documents shall also bear an original seal and signature of the registered design professional. Such changes shall be clearly indicated.

**1108.200 Amendment to International Mechanical Code - Chapter 2 Definitions.** --Chapter 2 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

**SECTION 202.0  
GENERAL DEFINITIONS**

*Additional Inspection:* An inspection which is not otherwise required by this code, but which in the judgment of the Code Official is reasonably necessary to enforce this code.

*Board of Appeals:* The St. Louis County Building Commission created in the St. Louis County Charter.

*Building Commission:* The St. Louis County Building Commission created in the St. Louis County Charter.

*Code Official:* The Director of Transportation and Public Works of St. Louis County or the Director's duly authorized representative.

*Department:* The St. Louis County Department of Transportation and Public Works.

*Disaster:* A disaster shall include but not necessarily be limited to flood, windstorm, tornado, severe storm, earthquake, bomb blast, explosion or similar natural or man-made type event. The Code Official shall make the determination whether an event shall be declared a disaster.

*Emergency:* An event or occasion that requires immediate action in order to preserve or restore the public peace, health, safety or welfare.

*Extra Inspection:* An inspection, which is required as a result of unusual or complicated construction and/or is defined as an inspection, which is made as a result of non-compliance, not ready, or lockout.

*Owner:* Any person, agent, firm or corporation having a legal or equitable interest in the property.

*Public Health Department:* The St. Louis County Department of Public Health.

*Transportation:* The St. Louis County Department of Transportation and Public Works.

**1108.300 Amendment to International Mechanical Code - Chapter 3**

**General Regulations.** --Chapter 3 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

301.3 *Identification.*-Delete

301.4 *Plastic pipe, fittings and components.*-Delete

301.5 *Third-party testing and certification.*-Delete

305.3 *Structural Attachment.* Hangers and anchors shall be attached to the building construction in a manner approved by a registered design professional.

307.2.1 *Condensate Disposal.* Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not discharge into a street, alley or other area so as to cause a nuisance. Condensate from roof mounted equipment shall be discharged as follows:

1. Condensate shall be piped directly to the roof surface and shall be discharged a minimum of 15 feet away from the fresh air inlet to the unit, any operable window or any other fresh air intake to the building.

2. Condensate shall be piped to a section of roof that slopes to the roof drain, gutter or scupper and does not pool. At no time shall the open condensate drainage across the roof come within 15 feet of any operable window or any fresh air intake to the building.

3. Condensate may be piped directly to a roof drain or roof gutter.

4. Condensate piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth inch per foot.

307.2.3.1 Deleted

307.2.4.1 Ductless mini-split system traps. Ductless mini-split equipment that produces condensate and is equipped with a pump, shall be provided with an inline check valve located in the drain line, or a trap.

312.1.1 *Design Conditions*. Calculations for sizing HVAC equipment shall use the following minimum design parameters for St. Louis County:

	Outdoor temperature	Indoor temperature
WINTER	DB 2 F	DB 72 F
SUMMER	DB 95 F	DB 75 F
	WB 76 F	

312.1.2 *Air Conditioning Design Conditions*. Where air conditioning is provided in the following occupancies, it shall be designed in accordance with the specified design conditions listed in Section 312.1.1.

1. private dwellings, single or multiple, and hotel rooms
2. offices and conference rooms

3. customer areas in food and beverage service
4. customer areas in retail stores and specialty shops

**1108.400 Amendment to International Mechanical Code - Chapter 4 Ventilation.** --Chapter 4 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

401.2 *Ventilation Required.* Every occupied space shall be ventilated by mechanical means in accordance with Section 403 except where ventilation by natural means in accordance with Section 402 is otherwise allowed by Sections 401.2.1 through 401.2.5. Operable windows are not prohibited where ventilation by mechanical means is required, but cannot be used to satisfy the ventilation requirements.

Exception: Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.

401.2.1 *General Requirements for Group R Occupancies.*

1. Rooms or spaces containing water closets, showers, hot tubs or spas shall be equipped with a means of mechanical exhaust which discharges to the outside.

2. Kitchens shall be equipped with a means of mechanical exhaust directly over or adjacent to a range or cook top. The mechanical exhaust system may be of the recirculating type or may exhaust directly to the outside. Recirculating systems shall be equipped with the appropriate filtration for grease removal and odor control, and must be capable of operating in a moist environment. Either type of system shall be a listed exhaust system. With either type, the mechanical exhaust systems shall be allowed to run on an intermittent basis. Provisions for makeup air shall be in accordance with Section 505.2.

3. Enclosed common core areas of all multi-family dwellings shall be provided with continuous mechanical ventilation. Any areas within the common core that require exhaust shall be provided with continuous mechanical exhaust. The mechanical ventilation must offset the mechanical exhaust requirements.

4. Where either natural or mechanical ventilation is allowed, the required ventilation shall be provided entirely by one or the other method.

401.2.2 *Occupancy Group R1.* The required ventilation for all Occupancy Group R1 buildings shall be provided with continuous mechanical ventilation and continuous mechanical exhaust. Mechanical ventilation and exhaust systems shall conform to the ventilation and exhaust requirements of this code.

Exception: Occupancy Group R1 buildings where each guest room unit has at least one door opening directly to an exterior exit access which leads directly to the exit, may have the required ventilation provided by natural ventilation with operable windows, or by mechanical ventilation. Each guest room's toilet/bath/shower/spa areas shall be provided with mechanical exhaust. The operation of the exhaust system may be on an intermittent basis. Natural ventilation in accordance with Section 402 is not permissible in a dwelling unit where the air infiltration rate is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code.

401.2.3 *Occupancy Group R2.* The required ventilation for all Occupancy Group R2 buildings may be provided by natural ventilation with operable windows or by means of mechanical ventilation. Each toilet, bath, shower, spa, or similar area shall be provided with mechanical exhaust. The operation of the exhaust system may be on an intermittent basis. Natural ventilation in accordance with Section 402 is not permissible in a dwelling unit where the air infiltration rate is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with

Section R402.4.1.2 of the International Energy Conservation Code.

401.2.4 *Occupancy Group R3*. The required ventilation for all Occupancy Group R3 buildings may be provided by natural ventilation with operable windows or by means of mechanical ventilation. Each toilet, bath, shower, spa, or similar area shall be provided with mechanical exhaust. The operation of the exhaust system may be on an intermittent basis. Natural ventilation in accordance with Section 402 is not permissible in a dwelling unit where the air infiltration rate is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code.

401.2.5 *Occupancy Group R4*. The required ventilation for all Occupancy Group R4 buildings may be provided by natural ventilation with operable windows, or by means of mechanical ventilation. Each toilet, bath, shower, spa, or similar area shall be provided with mechanical exhaust. The operation of the exhaust system may be on an intermittent basis. Natural ventilation in accordance with Section 402 is not permissible in a dwelling unit where the air infiltration rate is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code.

401.8 *Moisture sources*. Rooms containing bathtubs, showers, spas and similar bathing fixtures or other sources of excessive moisture shall be mechanically ventilated in accordance with Section 403.

**1108.500 Amendment to International Mechanical Code - Chapter 5 Exhaust Systems.** --Chapter 5 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding

section, subsection or clause number in the code is hereby enacted and added thereto.

502.1.1 *Exhaust Location*. The inlet to an exhaust system shall be located in the area of heaviest concentration of contaminants. It shall be the responsibility of the registered design professional to determine the location, number, and manner that exhaust is collected.

504.8.7 *Multiple Dryers*. Multiple domestic dryers shall not be connected to a single exhaust system unless designed by a registered design professional.

504.10 *Common Exhaust Systems for Clothes Dryers Located in Multistory Structures*. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the construction of the system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistance rated as required by the International Building Code.
2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2.
3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) and in accordance with SMACNA Duct Construction Standards.
4. An approved means for cleanout shall be provided at each offset in ductwork installed in shafts.
5. The exhaust fan motor design shall be in accordance with Section 503.2.
6. The exhaust fan motor shall be located outside of the airstream.
7. The exhaust fan shall run continuously.

8. Exhaust fan operation shall be monitored in an approved location and shall initiate an audible or visual signal when the fan is not in operation.

9. Makeup air shall be provided for the exhaust system.

10. A cleanout opening shall be located at the base of the shaft to provide access to the duct to allow for cleaning and inspection. The finished opening shall be not less than 12 inches by 12 inches (305 mm by 305 mm).

11. Screens shall not be installed at the termination.

12. The common multistory duct system shall serve only clothes dryers and shall be independent of other exhaust systems.

505.2 *Makeup Air Required.* Exhaust hood systems capable of exhausting in excess of 600 cfm shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

505.3 *Common exhaust systems for domestic kitchens located in multistory structures.* Where a common multistory duct system is designed and installed to convey exhaust from multiple domestic kitchen exhaust systems, the construction of the system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistance rated as required by the International Building Code.

2. Dampers shall be prohibited in the exhaust duct, except as specified in Section 505.1. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2.

3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.4712 mm) (No. 26 gage) and in accordance with SMACNA Duct Construction Standards.

4. The ductwork within the shaft shall be designed and installed without offsets.

5. The exhaust fan motor design shall be in accordance with Section 503.2.

6. The exhaust fan motor shall be located outside of the airstream.

7. The exhaust fan shall run continuously, and shall be connected to a standby power source.

8. Exhaust fan operation shall be monitored in an approved location and shall initiate an audible or visual signal when the fan is not in operation.

9. Where the exhaust rate for an individual kitchen exceeds 600 cfm (0.29 m<sup>3</sup>/s) makeup air shall be provided in accordance with Section 505.2.

10. A cleanout opening shall be located at the base of the shaft to provide access to the duct to allow for cleanout and inspection. The finished openings shall be not less than 12 inches by 12 inches (305 mm by 305 mm).

11. Screens shall not be installed at the termination.

12. The common multistory duct system shall serve only kitchen exhaust and shall be independent of other exhaust systems.

506.1 *General*. Commercial kitchen hood ventilation ducts and exhaust equipment shall comply with the requirements of this section. Commercial kitchen grease ducts shall be designed for the type of cooking appliance and hood served. All kitchen exhaust equipment shall be installed in accordance with NFPA 96 listed in Chapter 15.

506.2 *Corrosion protection*. Ducts exposed to the outside atmosphere or subject to a corrosive environment shall be protected against corrosion in a manner compatible with the material of duct construction to protect against premature failure.

507.3.7.2 *Cleaning Schedule*. The owner or occupant shall maintain a cleaning schedule on the premises for each commercial kitchen exhaust system. The schedule shall be available to the

inspector and shall indicate methods of cleaning and time intervals between cleanings.

506.3.8.1 *Personnel Entry*. Where ductwork is 22 inches by 20 inches or greater, not less than one approved or listed opening having dimensions not less than 22 inches by 20 inches (559 mm by 508 mm) shall be provided in the horizontal sections, and in the top of vertical risers. Where such entry is provided, the duct and its supports shall be capable of supporting the additional load, and the cleanouts specified in Section 506.3.8 are not required.

507.1 *General*. Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I or Type II and shall be designed to capture and confine cooking vapors and residues. A Type I or Type II hood shall be installed at or above all commercial cooking appliances in accordance with Sections 507.2 and 507.3. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type II hood is required, a Type I or Type II hood shall be installed. Where a Type I hood is installed, the installation of the entire system, including the hoods, ducts, exhaust equipment and makeup air system shall comply with the requirements of Sections 506, 507, 508, and 509. All kitchen exhaust hoods and cooking equipment shall be installed in accordance with NFPA 96 listed in Chapter 15.

*Exceptions:*

1. Factory-built commercial exhaust hoods which are listed and labeled in accordance with UL 710, and installed in accordance with Section 304.1 shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4, and 507.5

2. Factory-built commercial cooking recirculating systems which are tested in accordance with UL 710B, and installed in accordance with Section 304.1 shall not be required to comply with Sections 507.1.5, 507.2.3, 507.2.5, 507.2.8, 507.3.1, 507.3.3, 507.4, and 507.5. Spaces in which such systems are located shall be considered to be kitchens and shall be ventilated in accordance with Table 403.3.1.1. For the purpose of determining the floor area required to be ventilated, each individual *appliance* shall be considered as occupying not less than 100 square feet (9.3 m<sup>2</sup>).

3. Where cooking appliances are equipped with integral down-draft exhaust systems and such appliances and exhaust systems are listed and labeled for the application with NFPA 96, a hood shall not be required at or above them.

507.2 Type I hoods. Type I hoods shall be installed where cooking appliances produce grease or smoke as a result of the cooking process. Type I hoods shall be installed over medium-duty, heavy-duty, and extra-heavy-duty cooking appliances.

Exceptions:

1. A Type I hood shall not be required for an electric cooking appliance where an approved testing agency provides documentation that the appliance effluent contains 5 mg/m<sup>3</sup> or less of grease when tested at an exhaust flow rate of 500 cfm (0.236 m<sup>3</sup>/s) in accordance with UL 710B.

2. The installation of a domestic cooking appliances in a commercial building such as a residential range, that is capable of producing grease or smoke, primarily intended for warming and the code official believes the frequency of use to be minimal must comply with Section 505 and be protected by a listed automatic range top fire suppression system or comply with Section 509. This exception does not apply to Use Group or Occupancy Types A, E, and I for their primary cooking operations.

507.3 *Type II Hoods.* Type II hoods shall be installed above dishwashers and appliances that produce heat or moisture and do not produce grease or smoke as a result of the cooking process, except where the heat and moisture loads from such appliances are incorporated into the HVAC system design or into the design of a separate removal system. Type II hoods shall be installed above all appliances that produce products of combustion and do not produce grease or smoke as a result of the cooking process. Spaces containing cooking appliances that do not require Type II hoods shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00033 m<sup>3</sup>/s). For the purpose of determining the floor area required to be exhausted, each individual appliance that is not required to be installed under a Type II hood shall be considered as occupying not less than 100 square feet (9.3

m<sup>2</sup>). Such additional square footage shall be provided with exhaust at a rate of 0.70 cfm per square foot (0.00356 m<sup>3</sup>/(s x m<sup>2</sup>)).

*Exceptions:*

1. Under-counter-type commercial dishwashing machines.

507.4.1 *Canopy Size and Location.* The inside lower edge of canopy-type Type I and II commercial cooking hoods shall overhang or extend a horizontal distance of not less than 6 inches (152 mm) beyond the edge of the top horizontal surface of the appliance on all open sides. Hoods over enclosed cooking appliances and dishwashers shall overhang horizontally a minimum of 6 inches on all sides which have openable doors. The vertical distance between the front lower lip of the hood and the cooking surface shall not exceed 4 feet (1219 mm).

*Exception:* The hood shall be permitted to be flush with the outer edge of the cooking surface where the hood is closed to the appliance side by a noncombustible wall or panel.

508.1.3 *Separate Makeup Air Unit.* A separate makeup air unit shall be provided when the volumetric rate of exhaust exceeds 1000 cfm or when the air balance within the kitchen area cannot be achieved by using existing equipment.

*Exception:* Makeup air that is part of the air conditioning system and dedicated to the kitchen area.

508.2 *Compensating Hoods.* Manufacturers of compensating hoods shall provide a label indicating minimum exhaust flow and/or maximum makeup airflow that provides capture and containment of the exhaust effluent.

*Exception:* Compensating hoods with *makeup air* supplied only from the front face discharge and side face discharge openings shall not be required to be labeled with the maximum makeup airflow.

509.1 *Where Required.* Commercial cooking appliances required by Section 507.2.1 to have a Type I hood shall be provided with an approved automatic fire suppression system complying with the International Building Code, the International Fire Code, and Sections 509.2 through 509.2.6.

509.1.1 Existing commercial food heat processing appliances that produce grease laden vapors or smoke, such as occurs with griddles, fryers, broilers, open and conveyor type ovens, ranges and wok ranges shall be provided with an approved automatic fire suppression system complying with the International Building Code, the International Fire Code, and Sections 509.2 through 509.2.6.

(F) 509.2 *Commercial Cooking Systems*. The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire-extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire-extinguishing systems of the following types shall be installed in accordance with the referenced standard indicated, as follows:

1. Carbon dioxide extinguishing systems, NFPA 12.
2. Automatic sprinkler systems, NFPA 13.
3. Foam-water sprinkler system or foam-water spray systems, NFPA 16.
4. Dry-chemical extinguishing systems, NFPA 17.
5. Wet-chemical extinguishing systems, NFPA 17A.

*Exception:* Factory-built commercial cooking recirculating systems that are tested in accordance with UL710B, and listed, labeled and installed in accordance with Section 304.1 of the International Mechanical Code.

(F) 509.2.1 *Manual System Operation*. A manual actuation device shall be located at or near a means of egress from the cooking area a minimum of 10 feet (3048 mm) and a maximum of 20 feet (6096 mm) from the kitchen exhaust system. The manual actuation device shall be installed not more than 48 inches (1200 mm) nor less than 42 inches (1067 mm) above the floor and shall clearly

identify the hazard protected. The manual actuation shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to actuate the fire suppression system.

*Exception:* Automatic sprinkler systems shall not be required to be equipped with manual actuation means.

(F) 509.2.2 *System Interconnection.* The actuation of the fire extinguishing system shall automatically shut down the fuel or electrical power supply to the cooking equipment. The fuel and electrical supply reset shall be manual.

509.2.2.1 *System Interlock.* Dedicated makeup air units shall be electrically interlocked with the automatic fire suppression system and shall shut down upon activation of the automatic fire suppression system. The exhaust fan(s) shall remain in operation during fire conditions unless the listing of the hood requires the fan(s) to shut down.

(F) 509.2.3 *Carbon Dioxide Systems.* When carbon dioxide systems are used, there shall be a nozzle at the top of the ventilating duct. Additional nozzles that are symmetrically arranged to give uniform distribution shall be installed within vertical ducts exceeding 20 feet (6096 mm) and horizontal ducts exceeding 50 feet (15 240 mm). Dampers shall be installed at either the top or the bottom of the duct and shall be arranged to operate automatically upon activation of the fire-extinguishing system. Where the damper is installed at the top of the duct, the top nozzle shall be immediately below the damper. Automatic carbon dioxide fire-extinguishing systems shall be sufficiently sized to protect against all hazards venting through a common duct simultaneously.

(F) 509.2.3.1 *Ventilation System.* Commercial-type cooking equipment protected by an automatic carbon dioxide-extinguishing system shall be arranged to shut off the ventilation system upon activation.

(F) 509.2.4 *Special Provisions for Automatic Sprinkler Systems.* Automatic sprinkler systems protecting commercial-type cooking equipment shall be supplied from a separate, readily accessible, indicating-type control valve that is identified.

(F) 509.2.4.1 *Listed Sprinklers*. Sprinklers used for the protection of fryers shall be tested in accordance with UL 199E, listed for that application and installed in accordance with their listing.

509.2.5 *Nozzles*. Access shall be provided to all nozzles or sprinklers in the automatic fire suppression system for the purposes of inspection and maintenance.

509.2.6 *System Test and Inspection*. The automatic fire suppression system shall be acceptance-tested in accordance with the fire prevention code and installation standard listed in Section 509.2, and with the manufacturer's instructions.

510.1 *General*. This section shall govern the design and construction of duct systems for hazardous exhaust and shall determine where such systems are required. Hazardous exhaust systems are systems designed to capture and control hazardous emissions generated from product handling or processes, and convey those emissions to the outdoors. Hazardous emissions include flammable vapors, gases, fumes, mists or dusts, and volatile or airborne materials posing a health hazard, such as toxic or corrosive materials. For the purposes of this section, the health-hazard rating of materials shall be as specified in NFPA 704. Laboratory ventilation systems and hoods shall be designed and installed in accordance with NFPA 45 Chapter 8.

514.3 *Access*. A means of access shall be provided to the heat exchanger and other components of the system as required for service, maintenance, repair or replacement. Access shall be provided in accordance with Section 306.

**1108.600 Amendment to International Mechanical Code - Chapter 6 Duct Systems.** --Chapter 6 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

601.2 *Air Movement in egress elements*. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.

Exception:

1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bath rooms, dressing rooms, locker rooms, smoking lounges and janitors closets, shall be permitted provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor. A dwelling unit or guest room with an enclosed bathroom that opens directly into the dwelling unit is not considered to open directly to the corridor. Outside air for ventilation for these types of spaces must be ducted directly into the dwelling unit or guest room and may not be transferred from the corridor. The outside air must be introduced in such a manner that the outside air is allowed to traverse the entire distance of the living space before being exhausted into the bathroom. Corridors may be used as supply plenums in all types of occupancies only if the direction of airflow is from the corridor to the space for transfer of makeup air to spaces that open directly onto the corridor. This shall be permitted for rated and nonfire rated corridors, and sprinklered and unsprinklered buildings up to a maximum of 200 cfm per space.

A. For 100 cfm or less the air may be transferred by natural leakage at the door, or by undercutting of the door to allow the air to be transferred. Undercutting of doors shall comply with NFPA 80 Fire Doors and Fire Windows as required by the building code.

B. For an amount greater than 100 cfm but less than 201 cfm the air shall be transferred by means of grilles and associated ducts, or by utilizing a door louver. If the corridor is rated, either for fire or smoke, the transfer shall be accomplished with grilles, associated ducts and dampers in the ducts in compliance with the building code.

2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited.

3. Where located within tenant spaces of 1,000 square feet (93 m<sup>2</sup>) or less in area, use of corridors for conveying return air is permitted.

4. Incidental air movement from pressurized rooms within health care facilities, provided that the corridor is not the primary source of supply or return to the room.

601.5 *Return air openings.* Return air openings for heating, ventilation and air-conditioning systems shall comply with all of the following:

1. Openings shall not be located less than 10 feet (3048 mm) measured in any direction from an open combustion chamber or draft hood of another appliance located in the same room or space.
2. Return air shall not be taken from a hazardous or insanitary location or a refrigeration room as defined in this code.
3. The amount of return air taken from any room or space shall be not greater than the flow rate of supply air delivered to such room or space.
4. Return and transfer openings shall be sized in accordance with the appliance or equipment manufacturer's installation instructions, ACCA Manual D or the design of the registered design professional.
5. Return air taken from one dwelling unit shall not be discharged into another dwelling unit.
6. Taking return air from a crawl space shall not be accomplished through a direct connection to the return side of a forced air furnace. Transfer openings in the crawl space enclosure shall not be prohibited.
7. Return air shall not be taken from a closet, bathroom, toilet room, kitchen, garage, boiler room, furnace room, or unconditioned attic.

Exceptions:

1. Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen and are located not less than 10 feet (3048 mm) from the cooking appliance.
2. Dedicated forced air systems serving only the garage shall not be prohibited from obtaining return air from garage.

8. Separate return air is required from each floor in multi-story dwelling units regulated by this code. Open stairways shall not be used as a means to convey return air.

602.2 *Construction*. Plenum enclosure construction materials that are exposed to the airflow shall comply with the requirements of Section 703.5 of the International Building Code or such materials shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E 84 or 723.

The use of gypsum boards to form plenums shall be limited to systems where the air temperatures do not exceed 125° F (52°C) and the building and mechanical system design conditions are such that the gypsum board surface temperature will be maintained above the airstream dew-point temperature. Air plenums formed by gypsum boards shall not be incorporate in air-handling systems utilizing evaporative coolers.

Exception: Interstitial space between adjacent combustible studs or joists, allowed by the building code, complying with Section 602.3.

602.2.1 *Materials within plenums*. Except as required by Sections 602.2.1.1 through 602.2.1.7, materials within plenums shall be noncombustible or shall be listed and labeled as having a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM 84 or UL 723.

Exceptions:

1. Rigid and flexible ducts and connectors shall conform to Section 603.
2. Duct coverings, linings, tape and connectors shall conform to Sections 603 and 604.
3. This section shall not apply to materials exposed within plenums in one-and two-family dwellings.
4. This section shall not apply to smoke detectors.

5. Combustible materials fully enclosed within one of the following:

5.1. Continuous noncombustible raceways or enclosures.

5.2. Approved gypsum board assemblies.

5.3. Materials listed and labeled for the specific protection application within a plenum.

6. Materials in Group H, Division 5 fabrication area and the areas above and below the fabrication area that share a common air recirculation path with the fabrication area.

603.10.1 *Structural Attachment*. Hangers and anchors shall be attached to the building construction in a manner approved by the Registered Design Professional.

603.16 *Weather Protection*. All ducts including linings, coverings and vibration isolation connectors installed on the exterior of the building shall be protected against the elements. Where galvanizing is used as the method of weather protection, the galvanizing shall be applied to a minimum level of G90 in accordance with ASTM A653.

604.8 *Lining Installation*. Linings shall be interrupted at the area of operation of a fire damper and at a minimum of 6 inches (152mm) upstream of and 6 inches (152mm) downstream of electric-resistance and fuel burning heaters in a duct system. Exposed duct liner edges that face opposite the direction of air flow shall be constructed in accordance with the appropriate SMACNA standard referenced in Chapter 15.

604.9 *Thermal Continuity*.- Delete

607.2 *Installation*. Fire dampers, smoke dampers, combination fire/smoke dampers and ceiling dampers located within air distribution and smoke control systems shall be installed in accordance with the requirements of this section, and the manufacturer's installation instructions and listing. Ductwork shall be connected to damper sleeves or assemblies in such a way that collapse of the ductwork will not dislodge the damper or impair its proper operation.

**1108.900 Amendment to International Mechanical Code - Chapter 9 Specific Appliances, Fireplaces and Solid Fuel-Burning**

**Equipment.** --Chapter 9 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

918.3 *Dampers.* Volume dampers shall not be placed in the return air inlet to a furnace in a manner that will reduce the required air to the furnace.

*Exception:* This provision shall not apply to engineered non-residential applications.

**1108.1000 Amendment to International Mechanical Code - Chapter 10 Boilers, Water Heaters and Pressure Vessels.**

--Chapter 10 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

1001.1 *Scope.* This chapter shall govern the installation, alteration and repair of boilers, water heaters and pressure vessels.

Exceptions:

1. Vessels with a nominal water containing capacity of one hundred twenty gallons or less for containing potable water under pressure, including those containing air, the compression of which serves only as a cushion.
2. Portable unfired pressure vessels and Interstate Commerce Commission containers.
3. Containers for bulk oxygen and medical gas.

4. Unfired pressure vessels that does not exceed fifteen cubic feet (122.2 gallons) in volume and two hundred fifty psig when not located in a place of public assembly.
5. Unfired pressure vessels that do not exceed five cubic feet (37.4 gallons) volume and two hundred fifty psig when located in a place of public assembly.
6. Unfired pressure vessels that do not exceed one and one-half cubic feet (11.7 gallons) in volume or an inside diameter of six inches with no limitation on pressure.
7. Pressure vessels used in refrigeration systems that are regulated by Chapter 11 of this code.
8. Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables and other similar humidity control systems.
9. Any boiler or pressure vessel subject to inspection by federal or state inspectors.
10. Pressure vessels installed on the right-of-way of railroads and used directly in the operation of trains.
11. Pressure vessels designed for and operating at a working pressure not exceeding fifteen psig.
12. Any boiler constructed, reconstructed or maintained as a personal hobby or for other recreation purposes.
13. Vessels containing water and operating as water softeners, water filters, dealkalizers, demineralizers and cold water storage tanks when:
  - 13.1 The temperature of the water in the vessel does not exceed one hundred twenty degrees Fahrenheit.
  - 13.2 Heat is not applied to the water prior to entering the vessel or to the vessel itself.
  - 13.3 The pressure of the water in the vessel does not exceed one hundred fifty psig.

13.4 The vessel does not contain any hazardous, toxic or explosive material.

14. Potable water heaters where none of the following limitations are exceeded which are governed by the St. Louis County Plumbing Code:

14.1 Heat input of one hundred ninety nine thousand nine hundred ninety nine (199,999) British thermal units per hour (BTU/hr) (57.1kw).

14.2 Water temperature of two hundred ten degrees Fahrenheit (210 F).

14.3 Nominal water capacity of one hundred nineteen gallons (119 gallons) and which are provided with one or more safety relief valves.

14.4 An operating pressure of 150 psig.

15. Tankless Water heaters serving potable water distribution systems

1003.1 *General*. All pressure vessels, unless otherwise approved, shall be constructed and certified in accordance with ASME Boiler and Pressure Vessel Code or similar approved standard, and shall be installed in accordance with the manufacturer's installation instructions and nationally recognized standards. Direct fired pressure vessels shall meet the requirements of Section 1004.

1003.3 *Welding*. Welding on pressure vessels shall be performed by an R-Stamp-holder in accordance with the National Board Inspection Code, Part 3 or in accordance with an approved standard.

1004.1 *Standards*. Boilers and water heaters shall be designed, constructed, and certified in accordance with the ASME Boiler and Pressure Vessel Code, Sections I or IV as applicable. Controls and safety devices for Boilers with fuel input ratings of 12,500,000 Btu/hr(3,662,500W) or less shall meet the requirements of ASME CSD-1. Controls and safety devices for

boilers with inputs greater than 12,500,000 Btu/hr (3,662,500 w) shall meet the requirements of NFPA 85. Packaged Oil-fired boilers shall be listed and labeled in accordance with UL 726. Packaged Electric boilers shall be listed and labeled in accordance with UL 834. Solid-fuel boilers shall be listed and labeled in accordance with UL 2523.

Exceptions. The following shall be exempt from the ASME Code construction requirements of 1004.1:

1. Water heaters where none of the following limitations are exceeded:

1.1 Heat input of less than two hundred thousand (200,000) British thermal units per hour (BTU/hr) (57.1kw).

1.2 Water temperature of two hundred ten degrees Fahrenheit (210 F).

1.3 Nominal water capacity of less than one hundred twenty gallons (120 gallons) and which are provided with one or more safety relief valves.

2. Coil-type hot water boilers used only for steam vapor cleaning when none of the following limitations are exceeded:

2.1 One inch diameter tubing or three-fourths inch nominal pipe size with no steam drums or headers attached.

2.2 Nominal water containing capacity does not exceed six gallons.

2.3 Water temperature does not exceed three hundred fifty degrees Fahrenheit.

2.4 Steam is not generated within the coil.

2.5 One or more safety relief valves must be installed and adequate controls provided.

1006.5 *Installation*. Safety or relief valves shall be installed directly into the safety or relief valve opening on the boiler or pressure vessel. Valves shall not be located on either side of a safety or relief valve connection. The relief valve shall discharge by gravity.

*Exception*: Shutoff valves on either side of a safety or relief valve connection appropriate for the unfired system type and allowed by ASME Boiler and Pressure Vessel Code.

## **SECTION 1012 CONDENSATE RETURN**

1012.1 Condensate when discharging into a sanitary sewer system shall not be in excess of 140F and shall discharge into an open floor drain, a special drain connection or an approved receptor. If the floor drain or drain connection to the sewer is above the level of the return piping so that it cannot flow by gravity, an automatic sump pump shall be installed to pump the condensate from the sump to the sewer drain.

**1108.1100 Amendment to International Mechanical Code - Chapter 11 Refrigeration.** --Chapter 11 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

1105.3 *Refrigerant Detector*. Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air into the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in Table 1103.1 OEL column for the refrigerant classification. Detectors and alarms shall be placed in approved locations. The detector shall transmit a signal to an approved location.

*Exception*: Detectors shall not be required for ammonia systems where the machinery room complies with Section 1106.3.

1107.2 *Piping Location*. Refrigerant piping that crosses an open space that affords passageway in any building shall be not less

than 7 feet 3 inches (2210 mm) above the floor unless the piping is located against the ceiling of such space. Refrigerant piping shall not be placed in any elevator, dumbwaiter or other shaft containing a moving object or in any shaft that has openings to living quarters. Refrigerant piping shall not be installed in an exit enclosure.

**1108.1200 Amendment to International Mechanical Code - Chapter 12 Hydronic Piping.** --Chapter 12 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

1201.1 *Scope.* The provisions of this chapter shall govern the construction, installation, alteration, and repair of hydronic piping systems. This chapter shall apply to hydronic piping systems that are part of heating, ventilation, and air-conditioning systems. Such piping systems shall include, but are not limited to, steam, hot water, chilled water, steam condensate and ground source heat pump loop systems. Potable cold and hot water distribution systems shall be installed in accordance with the plumbing code.

1202.2 *Used Materials.* Reused pipe, fittings, valves or other materials shall be clean and free of foreign materials and shall be approved by the registered design professional for reuse.

1202.5 *Pipe Fittings.* Hydronic pipe fittings shall be rated for the temperatures and pressures of the systems in which they are installed and shall be constructed of materials compatible with the piping materials and fluids in the system and shall conform to the respective pipe standards or to the standards listed in Table 1202.5.

1202.7 *Flexible Connectors, Expansion and Vibration Compensators.* Flexible connectors, expansion, and vibration control devices and fittings shall be rated for the temperatures and pressures of the systems in which they are installed and

shall be constructed of materials compatible with the piping materials and fluids in the system.

1205.1.5 *Equipment and Appliances.* Shutoff valves shall be installed on connections to mechanical equipment and appliances. This requirement does not apply to components of a hydronic system such as air separators, metering devices and similar equipment.

1205.1.6 *Expansion Tanks.* -Deleted

1206.1 *General.* Piping, valves, fittings, and connections shall be installed in accordance with this code.

1206.10 *Pipe Support.* Pipe shall be supported in accordance with Section 305 or as determined by the registered design professional.

1208.1 *General.* Hydronic piping systems other than ground-source heat pump loop systems shall be tested hydrostatically at one and one-half times the maximum system design pressure. The duration of each test shall not be less than one hour. Ground-source heat pump loop systems shall be tested in accordance with section 1210.10.

1210.3 *Material rating.* Pipe and tubing shall be rated for the operating temperature and pressure of the ground-source heat pump loop system. Fitting shall be suitable for the pressure applications and recommended by the manufacturer for installation with the pipe and tubing installed. All underground piping and tubing shall be High-Density Polyethylene (HDPE). All above ground piping and tubing shall be either High-Density Polyethylene (HDPE) or Schedule 80 Polyvinyl Chloride (PVC).

1210.4 *Piping and tubing materials standards.* Ground-source heat pump ground-loop pipe and tubing shall conform to the following standards:

HDPE: ASTM D2737; ASTM D3035; ASTM F714; AWWA C901; CSA B137.1; CSA C448; NSF 358-1

PVC Schedule 80: ASTM D1785; ASTM D2241

Table 1210.4. Ground-Source Loop Pipe. -Deleted

1210.5 *Fittings*. Ground-source heat pump fittings shall be approved for installation with the piping materials to be installed and shall conform to the following standards:

HDPE: ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1; CSA C448; NSF 358-1

PVC Schedule 80: ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3

Table 1210.5. Ground-Source Loop Pipe Fittings. -Delete

1210.6.1.1 *Plastic to metal connections*. Soldering on the metal portion of the system shall be performed not less than 18 inches (457mm) from a plastic-to-metal adapter in the same water line.

1210.6.2 *Preparation of pipe ends*. Pipe shall be cut square, be reamed, and be free of burrs and obstructions. PVC pipe shall be chamfered. Pipe ends shall have full bore openings and shall not be undercut.

1210.6.4 *CPVC plastic pipe*. -Deleted

1210.6.5 *Cross-linked polyethylene (PEX) plastic tubing*. -Deleted

1210.6.5.1 *Compression-type fittings*. -Deleted

1210.6.5.2 *Plastic-to-metal connections*. -Deleted

1210.6.6 *Polyethylene plastic pipe and tubing for ground-source heat pump loop systems*. Joints between polyethylene plastic pipe and tubing or fittings for ground-source heat pump loop systems shall be heat fusion joints complying with Section 1210.6.6.1 or electrofusion joints complying with Section 1210.6.6.2.

1210.6.6.3 *Stab-type insert fittings*. -Deleted

1210.6.7 *Polypropylene (PP) Plastic.*- Deleted

1210.6.7.1. *Heat-fusion joints.* -Deleted

1210.6.7.2. *Mechanical and compression sleeve joints.*-Deleted

1210.6.8. *Raised temperature polyethylene (PE-RT) plastic tubing.*-Deleted

1210.6.8.1. *Compression-type fittings.*-Deleted

1210.6.8.2. *PE-RT-to metal connections.*-Deleted

1210.6.9. *PVC plastic pipe.* Joints between PVC plastic pipe and fittings shall be solvent-cemented or threaded joints complying with Section 1230.3.

1210.7.6 *Expansion tanks.* Deleted

1210.8 *Installation.* Piping, valves, fittings, and connections shall be installed in accordance with the conditions of approval. Vertically drilled loops shall be fully grouted with a bentonite based grout.

1210.10 *Tests.* Before connection header trenches are back-filled, the assembled loop system shall be pressure tested with water or air in accordance with one of the following methods:

1. 100 psi (689 kPa) for 15 minutes.
2. One and one-half (1.5) times the normal operating pressure for 24 hours.

There shall be no leaks during the test. Flow and pressure loss testing shall be performed and the actual flow rates and pressure drops shall be compared to the calculated design values. If actual flow rate or pressure drop values differ from the calculated design values by more than 10 percent, the cause shall be identified and corrective action taken.

1210.11 *Embedded piping.*-Deleted

1210.12 *Sizing of Ground-source heat pump loop.* The sizing of the ground-source heat pump loop shall be done per the manufacturer's installation instructions but at a minimum, the following criteria shall be met:

A load calculation on the building served by the ground-source heat pump loop shall be completed and the data entered into a ground loop analysis program. The maximum returning ground loop temperature shall not exceed 90° F (32°C) and the minimum returning ground loop temperature shall not be less than 35° F (2°C).

**1108.1300 Amendment to International Mechanical Code - Chapter 13 Fuel Oil Piping and Storage.** --Chapter 13 of the 2015 International Mechanical Code is amended by the following provisions. Each section, subsection or clause of the code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the code is hereby enacted and added thereto.

### **CHAPTER 13**

#### **FLAMMABLE AND COMBUSTIBLE LIQUID AND FUEL OIL PIPING AND STORAGE**

1301.1 *Scope.* This chapter shall govern the design, installation, construction and repair of flammable and combustible liquid and fuel-oil storage and piping systems. The storage of fuel oil and flammable and combustible liquids shall be in accordance with the International Fire Code.

1301.3 *Fuel Type.* An appliance shall be designed for use with the type of fuel to which it will be connected. Such appliance shall not be converted from the fuel specified on the rating plate for use with a different fuel without securing reapproval from the appliance manufacturer and the registered design professional.

1301.4 *Flammable and Combustible Liquid Tanks, Piping and Valves.* The tank, piping and valves for appliances burning oil shall be installed in accordance with the requirements of this chapter and NFPA 31. When an oil burner is served by a tank, any part of which is above the level of the burner inlet connection

and where the fuel supply line is taken from the top of the tank, an approved antisiphon valve or other siphon-breaking device shall be installed in lieu of the shutoff valve. Flammable and combustible liquid tanks, piping and valves shall be in accordance with the International Fire Code.

1302.3 *Pipe Standards.* Flammable and combustible liquids and fuel oil piping shall comply with one of the standards listed in Table 1302.3.

Table 1302.3

FLAMMABLE AND COMBUSTIBLE LIQUID and FUEL OIL PIPING

<b>MATERIAL</b>	<b>STANDARD (see Chapter 15)</b>
Copper or copper-allow pipe	ASTM B 42; ASTM B 43; ASTM B 302
Copper or copper-allow tubing (Type K, L, or M)	ASTM B 75; ASTM B 88; ASTM B 280
Labeled pipe	(See Section 1302.4)
Nonmettalic pipe	ASTM D 2996
Steel pipe	ASTM A 53L ASTM A 106
Steel tubing	ASTM A 254; ASTM A 539

1302.5 *Fittings and Valves.* Fittings and valves shall be listed by the manufacturer as suitable for the piping systems, and shall be compatible with, or shall be of the same material as, the pipe or tubing.

1302.7 *Pumps.* Pumps that are not part of an appliance shall be of a positive-displacement type. The pump shall automatically shut off the supply when not in operation. Fuel oil pumps shall be listed and labeled in accordance with UL 343. Flammable and combustible liquid pumps shall be listed and labeled by an approved agency.

1303.1 *Approval*. Joints and connections shall be approved and of a type approved for the liquid in the piping systems. All threaded joints and connections shall be made tight with suitable lubricant or pipe compound. Unions requiring gaskets or packings, right or left couplings, and sweat fittings employing solder having a melting point of less than 1,000 E F (538 E C) shall not be used in oil lines. Cast-iron fittings shall not be used. Joints and connections shall be tight for the pressure required by test.

1305.2 *Protection of Pipe, Equipment and Appliances*. All fuel oil pipe, tanks, equipment and appliances shall be protected from physical damage.

1305.2.1 *Flood Hazard*. All fuel oil pipe, tanks, equipment and appliances located in flood hazard areas shall be located above the elevation required by Section 1612 of the International Building Code for utilities and attendant equipment or shall be capable of resisting hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding up to such elevation. Underground tanks shall be installed in accordance with Section 1309.

1305.6 *Fill Piping*. A fill pipe shall terminate outside of a building at a point at least 5 feet (1524 mm) from any building opening at the same or lower level. A fill pipe shall terminate in a manner designed to minimize spilling when the filling hose is disconnected. Fill opening shall be equipped with a tight metal cover designed to discourage tampering.

1305.7 *Vent Piping*. Liquid fuel vent pipes shall terminate outside of buildings at a point not less than 2 feet (610 mm) higher measured vertically or 10 feet measured horizontally from any building opening. Outer ends of vent pipes shall terminate in a weatherproof vent cap or fitting or be provided with a weatherproof hood. All vent caps shall have a minimum free open area equal to the cross-sectional area of the vent pipe and shall not employ screens finer than No. 4 mesh. Vent pipes shall terminate a minimum of 24 inches above the ground to avoid being obstructed with snow or ice. Vent pipes from tanks containing heaters shall be extended to a location where oil vapors discharging from the vent will be readily diffused. If the static head with a vent pipe filled with oil exceeds 10 pounds per square inch (psi) (69 kPa), the tank shall be designed for the maximum static head that will be imposed.

Liquid fuel vent pipes shall not be cross connected with fill pipes, lines from burners or overflow lines from auxiliary tanks.

1307.2 *Appliance Shutoff*. A shutoff valve shall be installed at the connection to each appliance. The shutoff valve shall be in the same room and within 6 feet of the appliance served. Access shall be provided to the shutoff valve.

1308.1 *Testing Required*. Fuel oil piping shall be tested in accordance with NFPA 31. Flammable and combustible liquid piping shall be tested in accordance with the International Fire Code.

### **SECTION 1309 UNDERGROUND STORAGE TANK INSTALLATION**

1309.1 *General*. Flammable and combustible liquid and fuel oil storage tanks shall be installed in accordance with the International Fire Code.

1309.2 *Anchoring Required*. All underground tanks shall be anchored to resist the effects of buoyancy because of a rise in the water table, flooding or accumulation of water from fire suppression operations. Uplift protection shall be provided in accordance with NFPA 30.

### **SECTION 1310 FUEL-DISPENSING SYSTEMS**

1310.1 *General*. All fuel-dispensing systems shall be installed in accordance with the International Fire Code.

**1108.1500 Amendments to International Mechanical Code - Chapter 15 Referenced Standards.** --Chapter 15 of the 2015 International Mechanical Code is amended by the following provisions. Each reference standard of the code that corresponds to one of the following numbered standards is hereby deleted where so noted or amended to read as set forth below. Each provision set out below without a corresponding standard in the code is hereby enacted and added thereto. Standards appearing in the published edition of this code which are not set forth below remain a part of this code.

American Society of Heating, Refrigerating and Air  
Conditioning Engineers, Inc.

**ASHRAE**

1791 Tullie Circle, NE; Atlanta, GA 30329-2305

Standard Reference Number	Title	Referenced in Code Section Number
ASHRAE Handbook - 2014	HVAC Systems & Equipment	1009.2

American Society of Mechanical Engineers  
345 East 47<sup>th</sup> Street, New York, NY 10017

**ASME**

Standard Reference Number	Title	Referenced in Code Section Number
BPVC-2007 w/2010 and 2011 addenda	Boiler & Pressure Vessel Code-07 edition	1003.1, 1004.1 1006.5, 1011.1

ASTM International  
100 Barr Harbor Dr.  
West Conshohocken, PA 19428

**ASTM**

Standard Reference Number	Title	Referenced in Code Section Number
A653/A653M-13	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron	603.16

	Alloy-Coated (Galvannealed) by the Hot-Dip Process	
F853-05	Standard Practice for Maintenance Procedures for Amusement Rides and Devices	2201.5.1

**CAGI** Compressed Air & Gas Institute  
1300 Sumner Ave  
Cleveland, OH 44115-2851

Standard Reference Number	Title	Referenced in Code Section Number
B19.1-2011	Safety standard for air compressor systems	2216.1

**GOVERNMENT OF ST LOUIS COUNTY MISSOURI** 41 S. Central Ave  
Clayton, MO 63105

Standard Reference Number	Title	Referenced in Code Section Number
Building Code	Chapter 1115 SLCRO 1974, as amended	107.11, 109.1, 109.3, 109.4.1, 109.5, 109.6, 201.3, 202, 301.15, 301.16, 301.17, 301.18, 302.1, 302.2, 304.8, 304.11, 308.4.2.2, 308.4.2.4, 401.4, 401.5, 406.1, 501.3.1, 501.10.2, 502.10, 502.10.1, 504.2, 504.10, 505.3,

		506.3.3, 506.3.10, 506.3.12.2, 506.4.1, 509.1, 509.1.1, 510.6, 510.6.2, 510.6.3, 510.7, 510.7.1.1, 510.7.2, 510.7.3, 510.8, 511.1.5, 513.1, 513.2, 513.3, 513.4.3, 513.5, 513.5.2, 513.5.2.1, 513.5.3, 513.5.3.2, 513.6.2, 513.10.5, 513.11.1, 513.12, 513.12.2, 513.20, 601.3, 602.2, 602.2.1.5.1, 602.2.1.5.2, 602.2.1.6.1, 602.2.1.6.2, 602.3, 602.4, 603.1, 603.10, 603.13, 603.18.2, 604.5.4, 607.1.1, 607.1.2, 607.3.2.1, 607.5.1, 607.5.2, 607.5.3, 607.5.4, 607.5.4.1, 607.5.5, 607.5.5.1, 607.5.6, 607.6, 607.6.1, 607.6.2, 607.6.2.1, 607.6.3, 701.2, 701.4.1, 701.4.2, 801.3, 801.16.1, 801.18.4, 801.18.4.1, 902.1, 908.3, 908.4, 910.3, 924.1, 925.1, 926.1, 927.2, 928.1, 1105.1, 1206.4, 1210.8.2, 1305.2.1, 1402.4, 1402.4.1, 1601.1, 1901.1, 2001.1, 2217.4.1, 2217.5
Electrical Code	Chapter 1102 SLCRO 1974, as amended	201.3, 301.7, 306.3.1, 306.4.1, 513.11, 513.12.1, 602.2.1.1, 2100.40, 2218.1
Existing Building Code	Chapter 1117 SLCRO 1974, as amended	101.2
Plumbing Code	Chapter 1103 SLCRO 1974, as amended	101A.2.1, 101A.3.4, 201.3, 301.8, 512.2, 908.5, 1001.1, 1002.1, 1002.2, 1002.3, 1005.2, 1006.6, 1008.2, 1009.3, 1101.4, 1201.1, 1206.2, 1206.3, 1401.2, 2100.40

Residential Code	Chapter 1116 SLCRO 1974, as amended	101.2, 1601.1
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International Code Council, Inc.

**ICC** 500 New Jersey Avenue N.W., 6<sup>th</sup> floor  
Washington, D.C. 20001

Standard Reference Number	Title	Referenced in Code Section Number
IFC-15	International Fire Code	201.3, 310.1, 311.1, 502.4, 502.5, 502.7.2, 502.8.1, 502.9.5, 502.9.5.2, 502.9.5.3, 502.9.8.2, 502.9.8.3, 502.9.8.5, 502.9.8.6, 502.10, 502.10.3, 502.16.2, 509.1, 509.1.1, 510.2.1, 510.2.2, 510.4, 511.1.1, 513.12.3, 513.15, 513.16, 513.17, 513.18, 513.19, 513.20.2, 513.20.3, 606.2.1, 908.7, 1101.9, 1105.3, 1105.9, 1106.5, 1106.6, 1301.1, 1301.2, 1301.4, 1308.1, 1309.1, 1310.1, 2217.6
IFGC-15	International Fuel Gas Code	101.2, 201.3, 301.3, 701.1, 801.1, 901.1, 906.1, 1101.5, 2100.020, 2100.040

**State of  
Missouri**

State of Missouri, Department of Health and Senior  
Services

Jefferson City , MO

Standard Reference Number	Title	Referenced in Code Section Number
Chapter 20- Hospitals	Missouri Rules of the Dept. of Health and Senior Services  Division 30 Division of Regulations and Licensure Chapter 20 Hospitals	1701.2

**NFPA**

National Fire Protection Association

Batterymarch Park, Quincy, MA 02269

Standard Reference Number	Title	Referenced in Code Section Number
10-13	STANDARD FOR PORTABLE FIRE EXTINGUISHERS	2217.6
12-11	STANDARD ON CARBON DIOXIDE EXTINGUISHING SYSTEMS	509.2
13-13	STANDARD FOR THE INSTALLATION OF	509.2

	SPRINKLER SYSTEMS	
16-11	STANDARD FOR THE INSTALLATION OF FOAM-WATER SPRINKLER AND FOAM-WATER SPRAY SYSTEMS	509.2
17-13	STANDARD FOR DRY CHEMICAL EXTINGUISHING SYSTEMS	509.2
17A-13	STANDARD FOR WET CHEMICAL EXTINGUISHING SYSTEMS	509.2
30-15	Flammable and Combustible Liquids Code	1309.2
31-11	Installation of Oil-burning Equipment	801.2.1, 801.18.1, 801.18.2, 920.2, 922.1, 1301.4, 1308.1
45-11	Fire Protection for Laboratories using Chemicals	510.1
54-15	National Fuel Gas Code	Chapter 21-301.3 (IFGC)
80-13	STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES	601.2

85-11	Boiler and Combustion Systems Hazards Code	1004.1
96-14	Ventilation Control and Fire Protection of Commercial Cooking Operations	506.1, 507.1
99-15	Standard for Health Care Facilities	1701.2
701-2010	Standard Methods of Fire Tests for Flame Propagation of textiles and films	2217.2

Sheet Metal & Air Conditioning Contractors National Assoc., Inc.

**SMACNA**

4021 Lafayette Center Road, Chantilly, VA 22021

Standard Reference Number	Title	Referenced in Code Section Number
ANSI/SMACNA 006-2006	HVAC Duct Construction Standards-Metal and Flexible	504.8, 603.2, 603.4, 603.9, 604.8,

UL

Underwriters Laboratories, Inc.

333 Pfingsten Road, Northbrook, IL 60062-2096

Standard Reference Number	Title	Referenced in Code Section Number
197-10	Commercial Electric Cooking Appliances	507.1
199E-04	FIRE TESTING OF SPRINKLERS AND WATER SPRAY NOZZLES FOR PROTECTION OF DEEP FAT FRYERS	509.2.4.1
300-05	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment	509.2, 2213.1
710B-11	Recirculating Systems	507.1, 509.2

**1108.1600 Amendments to International Mechanical Code - Chapter 16 Residential Mechanical Systems.** -The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 16, Residential Mechanical Systems to read as follows:

1601.1 *General.* Mechanical Systems for detached one and two family dwellings and townhouses, as defined by the St. Louis County Building Code, shall be designed and installed in accordance with the applicable provisions of the St. Louis

County Residential Code, Title XI, Chapter 1116, SLCRO 1974, as amended and referenced standards listed therein.

**1108.1700 Amendment to International Mechanical Code - Chapter 17 Medical Gas Systems.** -The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 17, Medical Gas Systems to read as follows:

1701.1 *Scope.* The provisions of this chapter shall govern the design, construction, installation, and repair of medical gas piping systems. This chapter shall apply to all medical gas piping systems including, but not limited to Oxygen, Surgical Air, Nitrous Oxide, Nitrogen, Carbon Dioxide, and Clinical Suction.

1701.2 *Requirements.* The medical gas systems, components, appurtenances and piping shall conform to the requirements of NFPA 99 and the "Missouri Rules of the Department of Health and Senior Services Division 30-Division of Regulations and Licensure Chapter 20 - Hospitals".

**1108.1900 Amendments to International Mechanical Code - Chapter 19 Mechanical Fire Protection Systems.** -The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 19, Mechanical Fire Protection Systems to read as follows:

1901.1 *General.* Mechanical Fire Protection Systems including automatic fire suppression systems, automatic fire sprinkler systems, standpipe systems, and smoke control systems shall be designed and installed in accordance with the applicable provisions of the St. Louis County Building Code, Title XI, Chapter 1115, SLCRO 1974, as amended and referenced standards listed therein.

**1108.2000 Amendments to International Mechanical Code - Chapter 20 Elevators and Conveying Systems.** --The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 20, Elevators and Conveying Systems to read as follows:

2001.1 *General.* Elevators, escalators, dumbwaiters, moving walks, hoists, automotive lifts, conveyors, freight lifts, and manlifts shall be designed and installed in accordance with the applicable provisions of the St. Louis County Building Code,

Title XI, Chapter 1115, SLCRO 1974, as amended and referenced standards listed therein.

**1108.2100 Amendment to International Mechanical Code - Chapter 21 Fuel Gas Code.** --The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 21, Fuel Gas Code which shall read as follows:

2100.020 *Fuel Gas Code Adopted.* The International Fuel Gas Code 2015 edition is hereby adopted as the Fuel Gas Code of St. Louis County.

2100.40 *References to Other St. Louis County Adopted Codes.* Throughout the International Fuel Gas Code 2015 Edition, wherever a reference appears to the "International Plumbing Code" or "plumbing code" it shall mean "The Plumbing Code" as adopted by St. Louis County ordinance with the additions, deletions and changes prescribed by that ordinance. Wherever a reference appears to the "International Electrical Code" or "electrical code" it shall mean "The Electrical Code" as adopted by St. Louis County ordinance with the additions, deletions and changes prescribed by that ordinance.

2100.100 *Amendments to International Fuel Gas Code 2015 Edition.* The 2015 International Fuel Gas Code is amended by the following provisions. Each section, subsection or clause of the International Fuel Gas Code that numerically corresponds to one of the following numbered provisions is hereby deleted where so noted, or amended to read as set forth below. Each provision set out below without a corresponding section, subsection or clause number in the International Fuel Gas Code is hereby enacted and added thereto.

102(IFGC) *Applicability.*-Deleted.

103(IFGC) *Department of Inspection.*-Deleted.

104(IFGC) *Duties and Powers of Code Official.*-Deleted.

105(IFGC) *Approval.*-Deleted.

106(IFGC) *Permits.*-Deleted.

107(IFGC) *Inspections and Testing.*-Deleted.

108(IFGC) *Violations.*-Deleted.

109(IFGC) *Means of Appeal*.-Deleted.

110(IFGC) *Temporary Equipment, Systems and Uses*.-Deleted.

301.3(IFGC) *Listed and Labeled*. Appliances regulated by this code shall be listed and labeled for the application in which they are used unless otherwise approved in accordance with Section 105. The approval of unlisted appliances in accordance with Section 105 shall be based upon approved engineering evaluation and the NFPA 54.

403.10.5(IFGC) *Joints Between Different Piping Materials*. Joints between different piping materials shall be made with approved adapter fittings. Joints between different metallic piping materials at the point of delivery, and at other locations where necessary, shall be made with approved dielectric fittings to isolate electrically above-ground piping from underground piping or to isolate electrically different metallic piping materials joined underground. Dielectric fittings shall not be required in joints located within the interior of the building.

404.21 (IFGC) *Piping into Masonry Fireboxes*. Above ground gas piping serving an appliance installed in a masonry firebox shall be installed as required by this Chapter. Piping shall enter the firebox through the firebox wall a minimum of 3 inches above the firebox floor. A high temperature seal is required on the inside of the firebox and a weatherproof seal is required on the outside if exposed to weather. Fuel-gas piping serving decorative gas-fired appliances shall be allowed to be installed through an existing ash dump.

409.5.4 (IFGC) *Gas Barbeque Shutoff Valve*. Shutoff valves for gas barbeques installed outdoors shall not be required to be within 6 feet of the appliance. Such valves shall not be prohibited from being installed indoors provided they are readily accessible, permanently identified and serve no other equipment.

411.1(IFGC) *Connecting Appliances*. Except as required by Section 411.1.1, *appliances* shall be connected to the *piping* system by one of the following:

1. Rigid metallic pipe and fittings.

2. Corrugated stainless steel tubing (CSST) where installed in accordance with the manufacturer's instructions.

3. Semirigid metallic tubing and metallic fittings. Lengths shall not exceed 6 feet (1829 mm) and shall be located entirely in the same room as the *appliance*. Semirigid metallic tubing shall not enter a motor-operated *appliance* through an unprotected knockout opening.

4. *Listed* and *labeled appliance* connectors in compliance with ANSI Z21.24 and installed in accordance with the manufacturer's installation instructions and located entirely in the same room as the *appliance*.

5. *Listed* and *labeled* quick-disconnect devices used in conjunction with *listed* and *labeled appliance* connectors.

6. *Listed* and *labeled* convenience outlets used in conjunction with *listed* and *labeled appliance* connectors.

7. *Listed* and *labeled* outdoor *appliance* connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's installation instructions.

8. *Listed* outdoor gas hose connectors in compliance with ANSI Z21.54 used to connect portable outdoor appliances. The gas hose connection shall be made only in the outdoor area where the appliance is used, and shall be to the gas piping supply at an appliance shutoff valve, a *listed* quick-disconnect device or *listed* gas convenience outlet.

9. A union shall be installed between the appliance and the appliance shutoff valve.

501.16(IFGC). *Outdoor Design Temperature*. The outdoor winter design temperature for St. Louis County shall be 2F.

504.2.9 (IFGC) *Chimney and vent locations*. Tables 504.2(1), 504.2(2), 504.2(3), 504.2(4), and 504.2(5) shall be used for chimneys and vents not exposed to the outdoors below the roof line. A Type B vent or *listed* chimney lining system passing through an unused masonry chimney flue shall not be considered to be exposed to the outdoors. Where vents extend outdoors above the roof more than 5 feet (1524 mm) higher than required

by Figure 503.6.4, and where vents terminate in accordance with Section 503.6.4, Item 2, the outdoor portion of the vent shall be enclosed as required by this section for vents not considered to be exposed to the outdoors or such venting system shall be engineered. A Type B vent shall not be considered to be exposed to the outdoors where it passes through an unventilated enclosure or chase insulated to a value of not less than R8.

Table 504.2(3) in combination with Table 504.2(6) shall be used for clay-tile-lined exterior masonry chimneys, provided that all of the following are met:

1. Vent connector is a Type B double wall.
2. Vent connector length is limited to 1 ½ feet for each inch (18 mm per mm) of vent diameter.
3. The appliance is draft hood equipped.
4. The input rating is less than the maximum capacity given by Table 504.2(3).
5. For a water heater, the outdoor design temperature is not less than 2°F (-17°C)

603.2 (IFGC) *Shutoff Valves*. Shutoff valves required by Section 409.5 and serving gas-fired log lighters shall be located outside of the fireplace firebox, adjacent to within 6 feet and in the same room as the fireplace.

614.8.7 (IFGC) *Multiple Dryers*. Multiple domestic dryers shall not be connected to a single exhaust system.

*Exception:* Multiple domestic clothes dryers may be connected to a single exhaust system designed by a registered design professional.

614.10 (IFGC) *Common Exhaust Systems for Clothes Dryers Located in Multistory Structures*. Where a common multistory duct system is designed and installed to convey exhaust from multiple clothes dryers, the construction of such system shall be in accordance with all of the following:

1. The shaft in which the duct is installed shall be constructed and fire-resistant rated as required by the *International Building Code*.

2. Dampers shall be prohibited in the exhaust duct. Penetrations of the shaft and ductwork shall be protected in accordance with Section 607.5.5, Exception 2, of the *International Mechanical Code*.
3. Rigid metal ductwork shall be installed within the shaft to convey the exhaust. The ductwork shall be constructed of sheet steel having a minimum thickness of 0.0187 inch (0.471 mm) (No. 26 gage) and in accordance with *SMACNA Duct Construction Standards*.
4. An approved means for cleanout shall be provided at each offset in ductwork installed in shafts.
5. The exhaust fan motor design shall be in accordance with Section 503.2 of the *International Mechanical Code*.
6. The exhaust fan motor shall be located outside of the airstream.
7. The exhaust fan shall run continuously.
8. The exhaust fan operation shall be monitored in an *approved* location and shall initiate an audible or visual signal when the fan is not in operation.
9. Makeup air shall be provided for the exhaust system.
10. A cleanout opening shall be located at the base of the shaft to provide access to the duct to allow for cleaning and inspection. The finished opening shall be not less than 12 inches by 12 inches (305 mm by 305 mm).
11. Screens shall not be installed at the termination.

618.3 (IFGC) *Dampers*. Volume dampers shall not be placed in the return air inlet to a furnace in a manner that will reduce the required air to the furnace.

*Exception:* This provision shall not apply to engineered non-residential applications.

629.1 (IFGC) *General*. Ceramic kilns with a maximum interior volume of 20 cubic feet (0.566 m<sup>3</sup>) and used for hobby and non-commercial purposes shall be installed in accordance with the

manufacturer's installation instructions and the provisions of this code. Kilns shall comply with Section 301.3

IFGC Chapter 8 Referenced Standards

International Code Council, Inc.

**ICC** 500 New Jersey Avenue N.W., 6<sup>th</sup> floor

Washington, D.C. 20001

Standard Reference Number	Title	Referenced in Code Section Number
IMC-15	International Mechanical Code	101.2.5, 201.3, 301.1.1, 301.13, 304.11, 501.1, 614.2, 614.10, 618.5, 621.1, 624.1, 631.2, 632.1, 703.1.2

**1108.2200 Amendments to International Mechanical Code - Chapter 22 Amusement Devices.** -The 2015 International Mechanical Code is hereby amended by enacting and adding thereto Chapter 22, Amusement Devices to read as follows:

**CHAPTER 22 AMUSEMENT DEVICES  
SECTION 2201 GENERAL**

2201.1 *Scope:* The provisions of this chapter shall govern the installation, repair, alteration, maintenance, operation, and inspection of every amusement ride or device and any accessories connected or attached to such rides or devices.

*Exceptions:*

1. Non-powered playground equipment
2. Inflatable device setup for private residential event.

2201.2 *Requirements Not Covered.* Any requirement necessary for the strength or stability of an amusement ride or device or for the protection of the health or safety of the occupants or general public, which is not specifically covered by this chapter shall be determined by the Code Official.

2201.3 Identification. Every amusement ride or device shall be identified by a descriptive name, manufacturer and identification number. There shall be permanently attached to every ride or device, in a readily visible location, the name of the manufacturer, name of the ride or device, the year of manufacture, and the unique identification number. The Code Official may request additional information and reports of tests and analysis, as necessary.

2201.4 *Permit-Required*. No person shall install, erect, set up or operate any amusement ride or device unless the required permit therefore has been issued. Application for such permit shall be made not less than fourteen (14) days prior to date of installation or operation. Special circumstances will be reviewed by the Code Official.

2201.4.1 *Permit Status*. A St. Louis County issued permit shall be construed to be a license to proceed with installation and erection. The operation after inspection and approval shall not be construed as authority to set aside, neglect, cancel or violate any provisions of this code nor shall issuance of such permit prevent the Code Official thereafter from requiring correction of errors or provision of additional needed safeguards. No amusement ride shall operate without a current Missouri state operating permit.

*Exception:* Inflatable bounce houses do not require a state permit.

2201.4.2 *Application*. The permit application procedure for permanent amusement rides or devices shall be as required by Section 106 of the mechanical code.

2201.4.3 The application for a Temporary amusement ride or device permit shall be accompanied by the following:

1. A copy of the site plan identifying the location of each amusement ride or device and the required separation distances showing buildings and overhead electrical wiring.
2. Copy of the general liability insurance certificate required by Section 2201.6.
3. A copy of the current certificate of compliance required by Section 2204.2.

2201.5 *Inspections.* No person shall operate or permit the operation of an amusement ride or device unless it is certified for operation pursuant to a currently valid inspection and approval as provided by this chapter and other applicable provisions of this code.

2201.5.1 Owners and operators shall comply with ASTM F-24 Standard Practice for Maintenance Procedures for Amusement Rides and Devices.

2201.6 *Insurance.* All owners or operators of amusement devices shall carry general liability insurance through a carrier licensed and operating in the State of Missouri. The minimum amount of such coverage shall be: \$1,000,000.00 per occurrence to include Bodily Injury and Property Damage. No permits shall be issued until proof of such insurance coverage is provided to the St. Louis County Department of Public Works in the form of an insurance certificate.

2201.6.1 *Insurance Certificates.* The limits of liability specified in Section 2201.6 are minimum requirements and shall be carried by the amusement operator or owner covering all operations in St. Louis County, Missouri and said County shall be named as an additional insured. Insurance certificates shall be filed with the Code Official.

2201.7 *Fees.* Permit and inspection fees shall be as specified in Chapter 1100, SLCRO 1974 as amended.

## **SECTION 2202 DEFINITIONS**

2202.1 *Definitions.* For the purposes of this chapter, words and phrases listed below shall have the meanings indicated.

*Amusement Rides or Devices:* Any device or combination of devices, which carries passengers or expects persons to walk or crawl along, around or over a fixed or restricted course for the purpose of amusement.

*Inflatable devices/rides* - Structures made of flexible outer membrane or fabric that is filled with air to give shape and strength to the structure while individuals climb, jump or slide within the structure.

*Mechanical device/ride* - Any device that is propelled by actuation of either motors, hydraulics or by manual operation.

*Major attraction device/ride* - Any permanent device that has a passenger height requirement of 42 inches or greater.

*Owner*: Any person, agent, firm or corporation having a legal or equitable interest in the equipment.

*Private residential event*: Inflatable devices(s) setup on a parcel serving a single family dwelling, two family dwelling, or a townhouse for the exclusive use of the occupants of the dwelling(s) and their invited guests. This does not include inflatable devices setup for block/subdivision parties.

*Restraining Device*: A safety belt, harness, chain, bar or other physical support, retention, or restraint to the passenger of a ride or device.

*Special Amusement Buildings*: Any temporary or permanent building or portion thereof that is occupied for amusement and entertainment and the means of egress path is not readily apparent due to visual or audio distractions or is not readily available because of the nature of the attraction or mode of conveyance though the building or structure.

### **SECTION 2203 OPERATORS**

2203.1 *Operators*. An amusement ride or device shall be operated by a ride operator certified by the owner or his designated agent. A ride or device operator shall have knowledge of the use and function of all normal operating controls, signal systems and safety devices applicable to the ride or device and of the proper use, function, capacity and speed of the particular ride or device which is operating. When the ride or device is shut down, provision shall be made to prevent operations by the public. No person other than a certified ride operator shall be permitted to handle the controls of a ride or device during normal operation except where such ride or device is designed to be controlled by the passenger.

2203.2 All devices shall have the proper number of ride operators in accordance with the manufacturer's requirements.

### **SECTION 2204 NON-DESTRUCTIVE TESTING**

2204.1 *Non-Destructive Testing (NDT)*. A non-destructive test as required by the manufacturer of amusement ride or device shall be performed on an annual basis, or at the frequency specified by the manufacturer. This examination shall be performed in accordance with the manufacturer's written inspection procedure by a certified testing agency. NDT is not required on inflatable bounce houses.

2204.2 *Certificate of Compliance*. A current certificate of compliance must be submitted annually by the owner certifying that each amusement device has been tested in accordance with the manufacturers' written test procedures.

### **SECTION 2205 MODIFIED OR REBUILT EQUIPMENT**

2205.1 *Modified and Rebuilt Rides and Devices*. An amusement ride or device which has been rebuilt or modified other than repaired and restored to its original condition shall be re-identified by a new name and identification number and shall be re-certified as a completely new piece of equipment.

### **SECTION 2206 ASSEMBLY AND DISASSEMBLY**

2206.1 *Assembly and Disassembly*. Assembly and disassembly of amusement rides or devices shall be by competent personnel trained and experienced in assembly and erection of such equipment.

2206.2 *Supervision*. The assembly and disassembly of an amusement ride or device shall be done by or under the immediate supervision of a person experienced in the proper performance of such work in respect to the device or structure.

2206.3 *Assembly*. Parts shall be properly aligned, and shall not be bent, distorted, cut or otherwise modified to force a fit. Parts requiring lubrication shall be lubricated in course of assembly and as required by the manufacturer. Fastening and locking devices, such as bolts, cap screws, cotter pins and lock washers shall be installed where required for dependable operation. Nuts shall be drawn tight, cotter pins shall be spread and lock nuts firmly set. Welding shall be done by welders certified in accordance with the requirements of the American Welding Society (AWS).

2206.4 *Replacement of Parts.* Parts which are excessively worn or which have been materially damaged shall be replaced or repaired.

2206.5 *Tools and Equipment.* Persons engaged in the assembly or disassembly of amusement rides or devices or temporary structures shall use tools of proper size and design to enable the work to be done safely.

2206.6 *Supports Required.* A portable amusement ride or device shall be placed on stable supports to prevent shifting, tipping, swaying or erratic motion. Use of shim blocks shall be kept to a minimum. Adequate means of drainage shall be provided to prevent water from collecting and softening supporting areas. The area surrounding the amusement ride or device shall be clear and kept free from trash and tripping hazards.

2206.7 *Permanent Foundations.* A non-portable amusement ride or device permanently erected shall be set on properly designed and constructed foundations or footings and secured to these footings in a manner to prevent shifting, tipping, swaying or erratic motion.

*Exception:* The provisions pertinent to erratic motion or sway does not apply to an amusement ride or device designed to permit flotation characteristics or flexibility.

2206.8 *Leveling and Alignment.* Corner posts, central columns or support structures of an amusement ride or device designed to operate on a vertical axis shall be plumbed and secured so that the path of the sweeps or platforms shall be level and operate on a true horizontal plane at right angles to the axis of the pivot. An amusement ride or device whose carriers are designed to operate on a horizontal axis shall be leveled so that the carriers all orbit in a true vertical plane.

2206.8.1 The base of an amusement ride or device employing a combination of orbiting planes or a ride whose carriers operate normally in a plane other than true horizontal or vertical shall be leveled, plumbed and secured so that they will not tip or shift and will be stable under the most adverse operating conditions, except for an amusement ride or device designed to permit flotation characteristics or flexibility or designed to operate properly regardless of whether the base is plumb or level.

## **SECTION 2207 SAFEGUARDS**

2207.1 *Guarding of Machinery.* Machinery used in or with an amusement ride or device shall be enclosed, barricaded or otherwise effectively guarded against contact. Guards removed for maintenance purposes shall be replaced before normal operation is resumed. All amusement rides or devices containing or having a mounting or mountings that would catch, wind up or entangle long hair shall have adequate guards.

2207.2 *Public Protection.* An amusement ride or device shall not be used or operated while any person is to be endangered by it. Areas in which persons may be so endangered shall be fenced, barricaded or otherwise guarded against public intrusion.

2207.3 *Signage.* Signage describing any limitations of usage or the safety of riders or operators shall be placed in a prominent location at the entry to the ride where the patrons cannot obstruct it. The signage shall include number of riders, minimum or maximum rider height, weight, age or any other restrictions imposed by the ride manufacturer.

## **SECTION 2208 DESIGN LOAD AND SPEED**

2208.1 *Design Load and Speed Shall Not be Exceeded.* An amusement ride or device shall not be overcrowded or loaded in excess of its safe carrying capacity, nor shall it be operated at an unsafe speed or at any speed beyond that recommended by the manufacturer. See Section 2201.3.

## **SECTION 2209 INSPECTIONS**

2209.1 *Daily Inspection.* Prior to carrying passengers, the owner/operator shall conduct or cause to be conducted a daily documented and signed pre-opening inspection, based on the manufacturer provided instructions, to ensure the proper operation of the ride or device. The inspection program shall include, but not be limited to the following:

1. Inspection of all passenger-carrying devices, including restraint devices and latches.
2. Visual inspection of entrances, exits, stairways, and ramps.

3. Functional test of all communication equipment necessary for the operation of the ride.
4. Inspection or test of all automatic and manual safety devices.
5. Inspection or test of the brakes, including service brakes, emergency brakes, parking brakes, and backstops.
6. Visual, inspection of all fencing, guarding, and barricades.
7. Visual inspection of the ride structure.
8. The ride or device shall be operated for a minimum of one complete operating cycle.
9. Hydraulic systems shall be checked for leaks, damaged pipes and worn or deteriorated hoses. Only manufacturer approved hydraulic fluid shall be used.
10. A record of each inspection shall be maintained and shall be readily available to the Code Official at the time of inspection.

2209.2 *Unscheduled Cessation*. An amusement ride or device, or the specifically affected element, shall be appropriately inspected and operated, without passengers, to determine that it is functioning properly following an unscheduled cessation of operation caused by:

1. Malfunction or significant adjustment, or
2. Mechanical, electrical, or operational modification, or
3. Environmental conditions that affected the operation, or any combination of the three.
4. A record of each inspection shall be maintained and shall be readily available to the Code Official at the time of inspection.

2209.3 *Documentation*. Device setup, maintenance and inspection manuals from the manufacture, along with an operator training record signed by the trainer and trainee, shall be presented to the Code Official at the time of inspection.

## **SECTION 2210 WEATHER HAZARDS**

2210.1 *Wind and Storm Hazards.* An amusement ride or device shall not be operated above wind limits established by the manufacturer or when storm warnings have been posted by the weather service, except as may be necessary to release or discharge passengers.

## **SECTION 2211 LIGHTING**

2211.1 *Lighting.* Amusement rides or devices, temporary structures, access thereto and exits there from shall, while in operation or occupied, be provided with illumination by natural or artificial means sufficient to guard against personal injuries.

## **SECTION 2212 ACCESS AND EGRESS**

2212.1 *Access and Egress.* Safe and adequate means of access to and egress from amusement rides, devices and temporary structures shall be provided. Such means of access and egress shall have:

1. Protection provided from hazards or falling by the use of rails, enclosures, barriers or similar means.
2. All passageways shall be kept free from debris, obstructions, projections and other hazards. All surfaces shall be maintained to prevent slipping and tripping.
3. Width of passageways shall not be less than the width of exit doors or stairs to which they lead. Headroom clearance shall not be less than 6' 8".
4. Stairways or ramps and the necessary connecting landings or platforms shall be provided whenever the entrance to or exit from such amusement device, ride, or temporary structure is above or below grade or floor level.

2212.2 *Design.* Stairways, landings and ramps shall provide the following:

1. Stairways, landings and ramps shall be designed, constructed and maintained to sustain safely a live load of at least 100 pounds per square foot.

2. Stairways, landing and ramps leading to or from an amusement ride or device intended for the public shall not be less than 36 inches wide for single lane passage. Landings shall have at least dimensions equal to the ramp width. Stair treads shall not be less than 11 inches (measured from riser to riser) and the rise shall not be greater than 7 inches (measured from tread to tread). Between any two connected levels, the treads shall be of uniform depth and the risers shall be of uniform height. The slope of ramps shall not exceed one-foot rise in 12 feet of run.

3. Guard rails shall be a minimum of 42 inches in height, non-climbable with no opening greater than 4 inches.

4. Handrails for stairs shall be a minimum of 34 inches in height and a maximum of 38 inches. The intermediate rail shall be 30 inches in height. These measurements are from nose of tread.

#### **SECTION 2213 BOOTHS**

2213.1 *General.* Temporary booths utilized for cooking food shall be located such that at least ten (10) feet of clearance exists on two sides for the use of fire equipment or other emergency vehicles, and shall not be located within ten (10) feet of amusement rides or devices. Each booth used for cooking shall be provided with at least one 2A10BC fire extinguisher. When cooking produces grease the cooking appliance shall be under a Type 1 hood with a UL300 fire suppression system with a current service inspection tag and a Type K fire extinguisher shall also be provided.

*Exception:* Type I hoods are not required for cooking equipment in tents.

#### **SECTION 2214 SIGNAL SYSTEMS**

2214.1 *Signal Systems.* Signal systems for the starting and stopping of amusement rides or devices shall be provided where the operator of the device does not have a clear view of the point at which passengers are loaded or unloaded. Any code of signals adopted shall be printed and kept posted at both operator's and signalman's stations. All persons who may use these signals shall be carefully instructed in their use. Signals for the movement or operation of an amusement device

shall not be given until all passengers, operators, and other persons who may be endangered are in a position of safety.

## **SECTION 2215 DESIGN AND CONSTRUCTION**

2215.1 *Allowable Loads.* Amusement rides or devices subject to the provisions of this code shall be so designed and constructed that the maximum allowable loads will not stress any part beyond allowable limits.

2215.2 *Anchors.* Amusement rides or devices shall be anchored, guyed, stayed or otherwise supported to provide proper stability and to restrict any adverse change in stability.

2215.3 *Brakes.* If tubs or other components of an amusement ride or device may collide upon failure of normal controls, emergency brakes sufficient to prevent such collisions shall be provided. On rides or devices which make use of inclined tracks, automatic anti-rollback devices shall be installed to prevent backward movement of the tubs in case of failure of the propelling mechanism.

2215.4 *Speed Limiting Devices.* An amusement ride or device capable of exceeding its maximum safe operating speed shall be provided with a speed-limiting device.

2215.5 *Passenger Protections.* The interior and exterior parts of all passenger-carrying amusement rides or devices with which a passenger may come in contact shall be smooth and rounded, free from sharp, rough or splintered edges and corners, with no protruding studs, bolts, screws or other projections that could cause injury. Interior parts upon which or against which a passenger may be forcibly thrown by the action of the ride shall be adequately padded.

2215.5.1 *Guards.* Devices that are self-powered and that are operated by passengers shall have the driving mechanism so guarded and the guards so locked in place as to prevent passengers from gaining access to the mechanism.

2215.5.2 *Restraining Devices.* Restraining devices, such as belts, bars, foot rests and other equipment as may be necessary for safe entrance and exit and for support while the device is in operation shall be provided. Such equipment and the fastenings shall be of sufficient strength to retain the

passengers. The fastenings shall be of a type, which cannot be inadvertently released.

2215.6 *Fences*. All amusement devices shall be enclosed with a fence with entrance and exit gates. Fences shall be a minimum of 42 inches high with no opening or space over 4 inches, non-climbable, and shall be self-supporting. The exit gate shall swing away from the device.

#### **SECTION 2216 ANCILLARY EQUIPMENT**

2216.1 *Air Compressors*. Air compressors, air compressor tanks and equipment used in connection therewith, shall be constructed, equipped and maintained in accordance with ANSI/CAGI B19.1 listed in Chapter 15. The equipment shall be inspected and tested at least once a year. A record of each inspection shall be kept by the owner and/or manager on the premises where the equipment is located and shall be made available on request by the Code Official. Compressor relief valves shall be piped so as to direct the relieved air away from passengers and operators.

2216.2 *Engine Driven Power Sources*. Internal combustion power sources shall be of adequate type, design and capacity to handle the design load.

2216.2.1 *Fuel Supply*. Fuel tanks shall be of adequate capacity to permit uninterrupted operation during normal operating hours. Where it is impossible to provide tanks of proper capacity for a complete day, the ride or device shall be shut down and unloaded or evacuated during the refueling procedure. Under no circumstances shall the fuel supply be replenished while the engines are running.

2216.2.2 *Ventilation*. An enclosed area in which an internal combustion engine is operated shall be ventilated. Exhaust fumes from the engine shall be discharged outside the area.

2216.2.3 *Location*. Internal combustion power sources shall be located in a manner permitting proper maintenance and shall be protected either by guards, fencing or enclosure.

2216.3 *Mechanical Power Transmission*. All power transmission parts shall be shielded, enclosed or barricaded to protect the public.

## **SECTION 2217 FIRE PROTECTION**

2217.1 *Accessibility*. Provisions shall be made for fire and emergency vehicle access to all portions of any site on which amusement devices or rides, as defined herein, are located whether permanent or temporary installations.

2217.2 *Fire Resistance of Fabrics*. Fabrics constituting part of an amusement ride or device or enclosure therefore shall be flame resistant and shall be capable of passing a flame resistant field test in accordance with Chapter 6 of NFPA 701 listed in Chapter 15.

2217.3 *Flammable Waste*. Flammable waste such as oily rags and other flammable materials shall be placed in covered metal containers. Such containers shall not be kept at or near site.

2217.4 *Flammable Liquids and Gases*. Gasoline and other volatile liquids and flammable gases shall be stored in cool and ventilated places. Smoking and the carrying of lighted cigars, cigarettes or pipes is prohibited in any area where such liquids or gases are stored or are transferred from one container to another.

2217.4.1 *Storage*. Storage and use of flammable liquids and gases shall comply with the requirements of the building code as listed in Chapter 15.

2217.5 *Special Amusement Buildings*. Temporary amusement buildings shall be equipped with an automatic fire detection system and an automatic sprinkler system throughout. Actuation of any fire detection device shall immediately sound an alarm at a constantly attended location at the building. Permanent amusement building shall comply with the building code.

2217.6 *Fire Extinguishers*. Each ride shall have at least one serviceable and tagged type ABC fire extinguisher provided by the ride operator and shall be sized in accordance with NFPA 10 and the requirements of the IFC. Extinguishers shall be within an easy reach of operator.

## **SECTION 2218 ELECTRICAL INSTALLATIONS**

2218.1 *Electrical Installation*. Electrical permits shall be required for permanent installations including wiring, equipment

and appliances. All electrical installations shall be in accordance with the St. Louis County Electrical Code. All electrical disconnects, connection boxes, connectors, raceways and wiring shall be UL listed. The Code Official shall be permitted to require additional safety measures such as extra grounding, ground fault interrupters, etc. if in his opinion conditions at the site or the type or condition of equipment justify such additional protection. The Code Official may issue supplemental rules and regulations to further interpret the electrical requirements as provided for in paragraph 104.1.1 of this code.

2218.2 *Junction Boxes and Components.* All junction boxes and electrical components for operation of amusement rides or devices shall be segregated from passageways by fencing. All fencing shall be constructed such that it prohibits unauthorized entry, and shall be maintained for the duration of the event.

#### **SECTION 2219 INFLATABLE DEVICES**

2219.1 *Stakes.* Inflatable devices shall be staked in accordance with the manufacturer's and Consumer Product Safety Commission requirements, whichever is more restrictive. Stakes shall be a minimum of 30 inches in length, 7/8 in diameter and driven a minimum of 24 inches into the ground. Sandbags shall not be used outdoors unless specifically approved by the manufacturer. Sandbags shall have documentation of their weight or a scale shall be provided to verify the weight.

2219.2 *Tethers.* All tethers shall be in good condition, of the proper length and size with no knots and shall not be frayed. Connections at each end shall be made in accordance with the manufacturer's directions. The connection points at the inflatable shall be in good condition and not modified.

2219.3 *Repairs.* The inflatable shall be clean and in good condition. All repairs shall be approved by the manufacturer.

2219.4 *Blower and Fans.* Inflation devices shall be of proper CFM required by the manufacturer, UL listed and in good condition. All air supply tubes shall be utilized unless manufacturer states a different requirement.

2219.5 *Electrical Connection.* Extension cords shall be a minimum of 12 gauge wire size, listed for rough service and not over 100

feet in length. If building power is utilized to power the blower only one extension cord may be plugged into a branch circuit. GFIC protection is required.

SECTION 2. If any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, unenforceable or otherwise unlawful; such decision shall not affect the validity of the remaining portions of this ordinance. The St. Louis County Council hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses and phrases be declared unconstitutional, unenforceable or otherwise unlawful.

SECTION 3. Nothing in this ordinance or in the Codes hereby adopted shall be construed to affect any suit or proceeding pending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance hereby repealed as cited in Section 2 of this ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this ordinance.

SECTION 4. This ordinance and the rules, regulations, provisions, requirements, orders and matters established and adopted hereby shall take effect and be in full force and effect on the 1<sup>st</sup> day of the month following ninety (90) calendar days from and after the date of its enactment.