ORDINANCE #69255
Board Bill No. 88
Committee Substitute

An ordinance adopting the Uniform Plumbing Code, 2009 Edition, as the Plumbing Code of the City of Saint Louis; repealing Ordinance 66615, which adopted the Uniform Plumbing Code, 2003 Edition; repealing Ordinance 61713, Ordinance 62610, Ordinance 62682, Ordinance 65031 and Ordinance 65932, all of which modified Ordinance 60826; and containing a penalty clause, a savings clause and an emergency clause.

BE IT ORDAINED BY THE CITY OF SAINT LOUIS AS FOLLOWS:

SECTION ONE.

An ordinance repealing Ordinance 60826 approved July 18, 1989, pertaining to the Plumbing Code of the City of Saint Louis which adopted the National Standard Plumbing Code/1987; repealing Ordinance 61713 approved December 20, 1989, which dealt with lawn sprinklers; repealing Ordinance 62610, approved April 7, 1992, which dealt with annual inspections; repealing Ordinance 62682 approved July 27, 1992, which dealt with licensing fees; repealing Ordinance 65031 approved August 9, 2000, which dealt with the Plumbing Board; repealing Ordinance 65932 approved June 26, 2003, which amended Plumbing fees; repealing Ordinance 66615, which adopted the Uniform Plumbing Code/2003 and enacting in lieu thereof a new Plumbing Code and adopting the Uniform Plumbing Code/2009.

The Uniform Plumbing Code/2009, Twenty-Fourth Edition, as published by the International Association of Plumbing and Mechanical Officials, three copies of which are filed on record in the Office of the Register of the City of Saint Louis, being marked and designated as the Uniform

Plumbing Code, including Appendix Chapters A, B, D, E, H, I and M be and is hereby adopted as 'The Plumbing Code of the City of Saint Louis, in the State of Missouri; for the control of buildings and structures as herein provided; and that each and all of the regulations, provisions, penalties, conditions and terms of said Building Code are hereby referred to, adopted and made a part hereto, as if fully set out in this ordinance with the additions, insertions, deletions and changes prescribed in Section Three of this ordinance.

Section Three.

That the Uniform Plumbing Code/2009 is amended and changed in the following respects:

Delete Chapter 1 in its entirety with the following substitution:

SECTION 101
GENERAL

101.1 Title. These regulations shall be known as the Plumbing Code of the City of St. Louis, hereinafter referred to as “this code.”

101.2 Scope. This code shall regulate the design, erection, installation, alteration, repairs, relocation, replacement, addition to, removal, use, maintenance and inspection of plumbing equipment and systems within the City of St. Louis.

> **101.2.1 Appendices.** Provisions in the appendices shall not apply unless specifically adopted. Appendices A, B, D, E, I, L,M are hereby adopted for use by the City of Saint Louis. Appendices, and **Chapter 16** are accepted as reference only and may be used as an engineered system if approved by the Authority Having Jurisdiction. .

101.3 Code intent. The purpose of this code is to provide minimum standards to safeguard life and limb, health, property and public welfare by regulating and controlling the design, erection, installation, alteration, repairs, relocation, replacement, addition to, use, maintenance and inspection of plumbing equipment and systems. This code shall be construed to secure its expressed intent, which is to insure public health, safety and welfare insofar as they are affected by the design, erection, installation, alteration, repairs, relocation, replacement, addition to, use, maintenance and inspection of plumbing equipment and systems.

SECTION 102
APPLICABILITY

102.1 General. The provisions of this code shall apply to all matters affecting or relating to structures and premises as set forth in Section 101. Where, in a specific case, different sections of this code specify different materials, methods of construction or other

requirements, the most restrictive sections shall govern.

102.2 Existing installations. Except as otherwise provided for in this chapter, a provision in this code shall not require the removal, alteration or abandonment of, nor prevent the continued utilization and maintenance of an existing plumbing system lawfully in existence at the time of adoption of this code.

102.3 Maintenance. Plumbing systems, materials and appurtenances, both existing and new, and all parts thereof shall be maintained in proper operating condition in accordance with the original design and in a safe and sanitary condition. All devices or safeguards which are required by this code shall be maintained in compliance with the code edition under which installed. The owner or the owner's designated agent or the person collecting rent shall be responsible for maintenance of plumbing systems. To determine compliance with this provision, the code official shall have the authority to require any plumbing system to be re-inspected.

102.4 Additions, alterations or repairs. Additions, alterations, renovations or repairs to any plumbing system shall conform to that required for a new plumbing system without requiring the existing plumbing system to comply with all the requirements of this code. Additions, alterations or repairs shall not cause an existing plumbing system to become unsafe, unsanitary, hazardous or overloaded.

Installed fixtures, piping or plumbing equipment of any premises found to be in an unsatisfactory or hazardous condition shall be repaired, renovated, replaced or removed immediately subsequent to the issuance of a written notice of the unsanitary or hazardous condition by the Plumbing Inspection Section of the Division of Building and Inspection, or by the Health Commissioner.

Minor additions, alteration, renovations and repairs to existing plumbing systems shall meet the provisions for new construction, unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is approved.

102.5 Change in occupancy. It shall be unlawful to make any change in the occupancy of any structure which will subject the structure to any special provision of this code applicable to the new occupancy without approval of the code official. The code official shall certify that such structure meets the intent of the provisions of law governing building construction for the proposed new occupancy and that such change of occupancy does not result in any hazard to public health, safety or welfare.

102.6 Historic buildings. The provisions of this code relating to the construction, alteration, repair, enlargement, restoration, relocation or moving of building or structures shall not be mandatory for existing buildings or structures identified and classified by the state or City of Saint Louis as historic buildings when such buildings or structures are judged by the code official to be safe and in the public interest of health, safety and welfare regarding any proposed construction, alteration, repair, enlargement, restoration, relocation or moving of buildings.

102.7 Moved buildings. Except as determined by Section 102.2, plumbing systems that are a part of buildings or structures moved into or within the City of Saint Louis shall comply with the provisions of this code for new installations.

Before any structure that have been moved into or within the City of Saint Louis is occupied, the plumbing system shall be inspected and tested for safe operation and compliance with the requirements of this code. This testing shall be performed by a licensed plumber.

Exception: *Unaltered plumbing systems within manufactured units bearing certification of the Missouri Public Service Commission.*

102.8 Referenced codes and standards. The codes and standards referenced in this code shall be those that are listed in Chapter 14 and in Appendix I and shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the most stringent provision shall apply. Referenced standards shall be permitted to be updated by the rule making authority of the code official.

102.9 Requirements not covered by code. Any requirements necessary for the strength, stability or proper operation of an existing or proposed plumbing system, or for the safety of the occupants thereof, or for the public safety, health and general welfare, not specifically covered by this code, shall be determined by the code official.

102.10 Workmanship. All work shall be conducted, installed and completed in a workmanlike and approved manner so as to secure the results intended by this code.

SECTION 103
VALIDITY

103.1 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any or the other parts or provisions thereof, which are determined to be legal; and it shall be presumed that this code would have been passed without such illegal or invalid parts or provisions.

103.2 Segregation of invalid provisions. Any invalid part of this code shall be segregated from the remainder of the code by the court holding such part invalid, and the remainder shall remain effective.

103.3 Decisions involving existing structures. The invalidity of any provision in any section of this code as applied to existing buildings and structures shall not be held to affect the validity of such section in its application to buildings and structures hereafter erected.

SECTION 104
SECTION OF PLUMBING REGULATIONS AND INSPECTIONS

104.1 General. There is hereby created the Section of Plumbing Regulations and Inspections within the Division of Building and Inspection which shall have control and enforce all codes, regulations and ordinances pertaining to plumbing and drainlaying installations and systems in accordance with this code. The head of this section shall be known as the Plumbing Inspection Supervisor, who shall be appointed by the Building Commissioner. Throughout this code, the Plumbing Inspection Supervisor, the Chief Mechanical Engineer and the Building Commissioner shall be referred to as the code official. Throughout this code, the Building Commissioner or his designee shall be referred to as the code official.

104.2 Plumbing inspection supervisor (Chief Plumbing Inspector). There shall be appointed by the Building Commissioner a Plumbing Inspection Supervisor (Chief Plumbing Inspector). The Plumbing Inspection Supervisor shall have served an apprentice training program or shall have a certificate of completion in plumbing technology from an accredited trade or technical institute. The Plumbing Inspection Supervisor shall also have ten (10) years experience as a licensed plumber and possess the qualifications established by the Department of Personnel.

104.3 Plumbing inspectors. There shall be appointed by the code official a sufficient number of Plumbing Inspectors to adequately perform all inspection duties and enforce all ordinances pertaining to the Section of Plumbing Regulations and Inspections in accordance with subsequent sections of this code and City of Saint Louis budgetary constraints. All plumbing inspectors shall have had at least five (5) years experience as a licensed plumber and possess the qualifications set forth by the Department of Personnel.

> **104.3.1 Assistant to the supervisor.** One such inspector shall assist the Plumbing Inspection Supervisor. The assistant shall assume the responsibilities of the Plumbing Inspection Supervisor in the Supervisor's absence or disability.
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> **104.3.2 Restriction of employees.** An official or employee connected with the Section of Plumbing Regulations and Inspections, except one whose only connection is that of a member of the Board of Examiners for Master Plumber, Drainlayer and Journeyman Plumbers, or a member of the Board of Examiners for Sprinkler System Contractors, or a member of the Committee of Plumbing Review shall not be engaged in or directly or indirectly be connected with the furnishing of labor, materials, equipment or appliances for the construction, alteration or maintenance of a building, or the preparation of construction documents thereof, unless that person is the owner of the building, or a first degree relative of the owner of the building, nor shall such code official or employee engage in any work that conflicts with official duties or with the interests of the department.

104.4 Relief from personal liability. The code official and employees charged with the enforcement of this code, while acting for the City of Saint Louis, shall not thereby be rendered liable personally, and are hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act required or permitted in the discharge of official duties.

Any suit instituted against any code official or employee because of an act performed by that person in the lawful discharge of duties and under the provisions of this code shall be defended by the City of Saint Louis City Counselor's Office until the final termination of the proceedings. The code official or any employees shall not be liable for any costs or judgment in or arising from any action, suit or preceding that is instituted in pursuance of the provisions of this code. Any code official or employee of the Division of Building and Inspection, Department of Public Safety, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.

The above protection shall also extend to former employees for work performed during their period of employment with the City of Saint Louis.

104.5 Official records. An official record shall be kept of all business and activities of the department specified in the provisions of this code, and all such records shall be open to public inspection at all appropriate times.

Pursuant to Missouri Revised Statutes, Section 610 (Missouri Sunshine Law), a ~~A~~ reasonable charge **may** ~~shall~~ be established for making copies of documents. If staff time is required to assemble requested data, an estimate **may** ~~shall be made~~ of ~~personnel~~ **charges may be made.** ~~including fringe benefits, and a signed agreement made prior to undertaking such projects. The Section of Plumbing Regulations and Inspections is not obligated to assemble data into formats that it does not use or need in the ordinary prosecution of its work.~~

SECTION 105
DUTIES AND POWERS OF THE CODE OFFICIAL

105.1 General. The code official shall enforce all of the provisions of this code and shall act on any question relative to the mode or manner of construction and the materials to be used in the erection, installation, alteration, repair, removal, maintenance or operation of all plumbing systems, devices, equipment and appliances, except as otherwise specifically provided for by statutory requirements or as provided for in Sections 105.2 through 105.7.

105.2 Applications and permits. It shall be the duty of the code official to examine all applications and construction documents of proposed plumbing and drainlaying, and if the same are in all respects found to be in conformity with the provisions of this code, the code official shall approve them. The code official shall investigate all reported cases of improper plumbing, pipefitting and sprinkler fitting work or material, old or new, and of improper sanitation as to established principles of public health. The code official shall cause an inspection to be made of all water and sewer connections and approve all permits for excavations made for the purpose of making or repairing same. The code official shall cause the inspection of the plumbing and drain laying of all buildings, public and private, in the course of erection, alteration, reconstruction or repair and cause the inspection of existing plumbing as often as may be necessary in a manner and to the extent necessary to carry out the provisions of this code regulating plumbing and drain laying.

Exception: *Buildings, structures or premises owned and occupied by the United States of America or the State of Missouri.*

105.3 Notices and orders. The code official shall issue all necessary notices or orders in writing to assure compliance with this code. The notice to the person having responsibility for the building, structure or premises found by the code official to be dangerous or in violation of this code shall be directed to that person by name **or names, and** ~~if known; if not known, then under~~ the name **or names** of the owner or owners of the building, structure or premises as indicated by the records of the Assessor's Office of the City of Saint Louis, and shall be served in any one of the following ways:

A. Deliver to owner - by causing said notice to be delivered to such owner, either in the City of Saint Louis or elsewhere.

B. Posting - by posting a copy of such notice upon the building or structure or premise **and said notice to be affixed in such a manner that it cannot be removed and/or replaced if removed.**

C. Mailing - by mailing such notice or copy thereof enclosed in a sealed envelope, postage prepaid, directed to such owner, either at the owner's place of business or residence address in the city or elsewhere~~;~~ ~~, said notice to be deemed served twenty-four (24) hours after the mailing of said notice, in case it is directed to the business or residence address of the owner in the city. Provided that if said owner or owners be nonresidents of the city and have no business addresses or offices in the city, then the said notice shall be deemed served at the end of such period after the mailing thereof as in the ordinary course of transmission of the mail by the United States Postal Service.~~

D. Publication - by publication in a newspaper of general circulation in the City of Saint Louis or in "The City Journal", said notice to be deemed served twenty-four (24) hours after publication.

105.3.1 Emergency condemnation. Whenever the code official shall find any building, structure, premises or portion thereof no matter for what purpose used, to be in an unsafe or dangerous condition and that there is an actual and potential danger to the occupants or those in the proximity of any building, structure or premises which poses an immediate danger to public safety or welfare, the code official shall order the immediate evacuation of said building, structure or premises.

All of the occupants so notified shall immediately vacate the building, structure, or premises and no person shall re-enter until authorized to do so by the code official.

Any person who refuses to leave, interferes with the evacuation of other occupants, or continues any operation after having been given an evacuation order by the code official, except such person(s) directed to perform work to remove a violation or unsafe condition shall be deemed in violation of this section whereupon it shall be the duty of the Police Department to immediately remove such person(s) from said building, structure, or premises and prevent anyone from re-entering the building, structure or premises until such time that the Police Department shall have been notified by the Building Division that the same is in a safe condition.

Any person who shall violate any provisions of this section shall, upon conviction thereof, be penalized as set forth in Section Four.

105.3.2 Authority to placard. The code official has the authority to post a placard in a conspicuous place on a building or premises where the plumbing system has been found to be unsafe or inadequate.

105.3.3 Placarded building. Placards shall remain on said building until the required repairs, replacements or improvements have been made and accepted by the code official, and it shall be unlawful to deface or willfully remove any such placard that has been posted on a building without first obtaining consent of the code official. It shall be unlawful for any person to reside in, use, rent lease or occupy such building for any purpose while so placarded and no person shall remove said placards without the consent of the code official.

105.4 Inspections. The code official shall make all of the required inspections, or the code official shall accept reports of inspection by approved agencies, design professionals or individuals, and all reports of said inspections shall be in writing and certified by a responsible officer of said approved agency or by the responsible individual. The code official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise subject to the approval of the appointing authority. The owner shall provide such special inspections as are required by the code official.

105.4.1 Dangerous, hazardous, unsanitary, or unapproved installations. The code official shall have the authority to seal out of service plumbing equipment, devices and appurtenances covered by the Building and Plumbing Codes when, in the code official's opinion, any of these items are in an unsafe, hazardous, or unsanitary condition, or if the installation was made without obtaining the necessary permit or permits, or if the installation violates the provisions of these codes.

105.4.2 Notice of sealing out of service. Before sealing any device out of service, the code official shall, except in cases of emergency, serve ten-(10) calendar days written notice upon the building owner, occupant, or collector of rent as directed in Section 105.2.

105.4.3 Unlawful to remove seal. Any device sealed out of service by the code official shall be plainly marked with a sign or tag indicating such sealing, and any defacing or removal of the sign or tag, or any tempering with or removal of the seal without approval of the code official, or operation of the sealed unit, shall constitute a violation of this code. The penalty for violation of this section shall be as set forth in Section Four.

105.4.4 Utility disconnect. Whenever the code official determines that there is an eminent danger to public safety, the code official may request that the public utilities be disconnected to that structure or premises.

105.5 Identification. The code official shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

105.6 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 **approve a variance to the code for that particular** instance the provisions of this code to secure the intent thereof, and to designate requirements applicable because of local climatic or other conditions. Such rules shall not have the effect of waiving structural or fire performance requirements specifically provided for in this code or of violating accepted engineering practice involving public safety.

105.6.1 Accepted engineering practice. In the absence of provisions not specifically contained in this code or approved rules, the regulations, specifications and standards listed in Chapter 14 and Appendix I shall be deemed to represent accepted engineering practice in respect to the material, equipment, system or method of construction therein specified.

105.6.2 Suspensions and cancellations. The code official shall have the power and is directed to suspend for a definite

time or to cancel any license granted hereunder, if, after notice and opportunity to be heard, the party named therein is found guilty by the Board of Examiners of violating rules and regulations established by the Section of Plumbing Regulation and Inspections, and do all other acts necessary to carry out these provisions. The code official shall review all notices and licenses required to be issued by the Section of Plumbing Regulations and Inspections and keep a record of all transactions.

105.7 Department records. The code official shall keep official records of plumbing applications received, permits issued, licenses issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for three (3) years, except notices and orders which have been complied need not be kept.

Original or file copies, when subpoenaed, shall be electrostatic copies certified by the code official to be true and accurate copies of original documents. Original documents shall remain in the possession of the Section of Plumbing Regulations and Inspections, unless filed with the Central File Section of the Division of Building and Inspection.

105.8 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in a building or upon any premises any condition or violation of this code which makes the building or premises unsafe, unsanitary, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the code official by this code. If such building or premises is occupied, the code official shall present credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the code official has recourse to every remedy provided by law to secure entry.

When the code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to promptly permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

Change to read as follows:

105.9 By whom work is performed. The code official shall see that all plumbing, pipefitting, sprinkler fitting, drain laying and sewer work is done in accordance with the provisions of this code and that the work is performed by a **Master Plumber, Master Drain Layer, Master Mechanical Pipefitter, Master Sprinkler Fitter and/or Journeymen and Apprentices licensed within the City of St. Louis and employed by a Master Plumber, Master Drain Layer, Master Mechanical Pipe Fitter and/or Master Sprinkler Fitter Contractor licensed** within the City of Saint Louis.

License, Registration Or Certification – Required.

1. ***Plumbing.*** **Except as otherwise provided in this Code, no person shall engage in or perform the work of installing, altering or repairing plumbing including the initial installation of backflow prevention devices appurtenant to a plumbing system, including the installation testing and repair of drainage waste and vent piping and hot and cold water piping to laboratory equipment in hospitals, clinics, first-aid stations, dispensaries, and all elementary school, high schools, and college level schools including graduate level schools, except minor repairs, and except work performed in accordance with Home Owner Permits issued under this Code pursuant to Section 111.12, unless licensed as a Master Plumber, a Journeyman Plumber, or an Interim Journeyman Plumber under this Code or unless he shall be registered as a Plumber Apprentice or Experienced Plumber Apprentice under this Code and working under the direction of a licensed Master Plumber. In addition to those licenses authorized by the Mechanical Code, a Master Plumber, Journeyman Plumber, Interim Journeyman Plumber, Plumber Apprentice, or Experienced Plumber Apprentice under this Code and working under the direction of a licensed Master Plumber, may work on wet or dry standpipes under this Code, that are not part of an automatic Fire Sprinkler system and that do not have as a part of the standpipe system one or more sprinkler heads. A licensed Master, Journeyman, Interim Journeyman, Experienced Apprentice, and an Apprentice Plumber may install fuel gas systems in one (1) and two (2) family dwellings under this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be licensed as aforesaid.**

2. ***Drainlaying.*** **Except as otherwise provided in this Code, no person shall engage in or perform the work of installing the sanitary or storm building sewer, starting five (5') feet beyond the building foundation wall (end of building drain) or any work concerning the installation of sanitary or storm, trunk, main and lateral sewers, in public property, recorded easements or private property unless said person is a Master Drainlayer or under the direct supervision of a Master Drainlayer duly licensed pursuant to this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed as aforesaid. No person shall engage in or perform the work of installing or repairing private sewage systems unless licensed to perform such work by the Missouri Department of Health and Senior Services (MoDHSS), and unless said person is a Master Drainlayer or under the direct supervision of a Master Drainlayer duly licensed pursuant to this Code. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be licensed as aforesaid.**

   a. **Direct Supervision shall mean that the Master Drainlayer is directly responsible for the installation of the drainlaying work and shall supervise such installations, or provide a competent person to be on site to supervise the work.**

   The actual installation of all piping, setting of grade, and competent person to supervise the work shall be employees of and on the direct payroll of the entity which has the assignment of the Master Drainlayers license, who holds the permit for the work. The person (s) who does the excavation, backfill, and/or hauling may be subcontractors, and not on the direct payroll as indicated above however, they shall be under the supervision of the Master Drainlayer or his representative.

   Exception: In order to not void material warranties, persons who have been trained by methods satisfactory to the manufacturer for this installation may do the installation of proprietary components. This does not relieve the manufacturer from providing training where practical to the employees of the Master Drainlayer. At all times the installation shall be supervised by the competent person employed by the Master Drainlayer and assisted by equivalent minimum number of personnel employed by the Master Drainlayer equal to the number of manufacturer personnel required.

3. ***Cross-Connection Control Backflow Prevention Device Testing And Repair.*** **No person shall test, repair, undertake to test or repair or hold himself/herself as being available for the testing, or repair of any backflow prevention assembly or device unless he/she shall possess a Backflow Prevention Device Tester Certificate for the particular application involved pursuant to this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be certified as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be certified as aforesaid.**

4. ***Process Piping Systems.*** **Except as otherwise provided in this Code, no person shall install, test or repair backflow prevention devices within or appurtenant to process drains, process drain facilities, process drainage systems or piping drains, drainage systems or facilities from mechanical manufacturing, industrial processing, refrigeration, heating, air conditioning or parts, materials, devices or appurtenances in connection therewith, drainage waste or vent piping specifically installed for laboratories in commercial, industrial, research, and manufacturing plants and like entities, the primary purpose of these installations being the development, improvement, research, or discovery of a product or products, unless he/she shall be a licensed Journeyman Pipefitter or a licensed Master Pipefitter pursuant to this Code. No person shall test or repair backflow prevention devices within or appurtenant to process drains, process drain facilities, process drainage systems or piping drains, drainage systems or facilities from mechanical manufacturing, industrial processing, refrigeration, heating, air conditioning or parts, materials, devices or appurtenances in connection therewith unless he/she shall be certified as a Backflow Prevention Device Tester pursuant to this Code. No person shall hold himself/herself out as being available to perform such work unless he/she shall be a licensed Journeyman Pipefitter or registered and bonded as a licensed Master Pipefitter and possess the appropriate Backflow Prevention Device Tester Certificate pursuant to this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed, certified, or registered as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall**

be licensed, certified or registered as aforesaid.

5. ***Fire Suppression Systems.*** **Except as otherwise provided in this Code, no person shall install, undertake to install or hold himself/herself out as being available for the installation of backflow prevention devices appurtenant to fire suppression systems, unless he/she shall be a licensed Journeyman Sprinkler fitter or a Licensed and Bonded Master Sprinkler Fitter pursuant to this Code. No person shall test or repair backflow prevention devices appurtenant to fire suppression systems, unless he/she shall be Certified as a Backflow Prevention Device Tester pursuant to this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed, certified, or registered as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be licensed, certified or registered as aforesaid.**

6. ***Lawn Irrigation Systems.*** **Except as otherwise provided in this Code, no person shall install, test or repair, undertake to install, test or repair or hold himself/herself out as being available for the testing or repair of backflow prevention devices appurtenant to lawn irrigation systems unless he/she shall be a Licensed and Bonded Master Plumber or a Licensed Journeyman Plumber when in the employ of a Master Plumber and possess the appropriate Backflow Prevention Device Tester Certificate pursuant to this Code. No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed, certified, or registered as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be licensed, certified or registered as aforesaid.**

7. ***Residential Hydronic Heat Systems.*** **Except as otherwise provided in this Code, no person shall install, test or repair, undertake to install, test or repair or hold himself/herself out as being available for the installation, testing or repair of backflow prevention devices appurtenant to residential heating systems of a size not exceeding four hundred thousand (400,000) BTUH heating, and steam generators intended for the production of steam for single person, single family residential steam saunas, unless he/she shall be a Licensed and Bonded Master Pipefitter or Master Plumber or a Licensed Journeyman Pipefitter or Journeyman Plumber when in the employ of a Master Pipefitter or Master Plumber and possess the appropriate Backflow Prevention Device Tester Certificate pursuant to this Code.**

No person shall hold herself/himself out as being available to perform any such work unless she/he shall be licensed, certified or registered as aforesaid. 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 such work in any advertising medium or publication unless a principal or employee of such entity shall be licensed, certified or registered as aforesaid.

8. ***Hardship Clause.*** **In the event of a loss of a Master Licensee to a company licensed in St. Louis City, through no fault of that company, a licensed Journeyman of the trade of the absent Master Licensee; or in the event of the loss of a Master Drainlayer to a company through no fault of that company, a person who would otherwise be eligible to qualify as a Master Drainlayer in the trade of the absent Master Drainlayer; and who shall be a full time employee of that company, shall be designated as an Interim Master after meeting all bonding and insurance requirements. That company may operate under an Interim Master, who will have the same rights, responsibilities and standing of a Master in that trade, for a period of not more than one (1) year from the date of the hardship. That company must submit to the person responsible for maintaining license data the standard submittals any other Master would submit to activate a Master License. The Acting Secretary of the Board of Examiners shall determine judgment of fault.**

If anyone has information and wishes to appeal the existence of a hardship license that person may appeal to the Board of Plumbing Examiners who shall hold an emergency hearing at the next regularly scheduled meeting of the Board no sooner than (7) calendar days and no later than thirty-eight (38) calendar days following the date appeal is received by the Board Secretary. The appeal must state the reasons for the appeal and must be accompanied by a fee of one hundred ($100.00) dollars. The decision of the Board involving a hardship clause is appealable in the same manner as other decisions of the Board. Additional appeals may be made pursuant to the procedures of the City of St. Louis.

Exception: *Buildings, structures or premises owned and occupied by the United States of America or the State of Missouri.*

SECTION 106
APPROVAL

Change 106.1 to read as follows:

106.1 Approved materials and equipment. All materials, equipment, and devices approved for use by the **Committee of Plumbing Review** and the code official shall be constructed and installed in accordance with such approval.

106.2 Modifications. Whenever there are practical difficulties involved in carrying out the provisions of this code, the code official shall have the authority to grant modifications for individual cases, provided the code official shall first find that the special individual reason makes the strict letter of this code impractical and the modification is in compliance with the intent and purpose of this code and that such modification does not lessen health, life and fire safety requirements.

106.2.1 Records. 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 records of the Division of Building and Inspection.

106.3 Used material, equipment, and devices. Materials, equipment, and devices shall not be reused unless such elements have been reconditioned, tested and placed in good and proper working condition and approved by the code official.

106.4 Alternative materials, methods, and equipment. The provisions of this code are not intended to prevent the installation of any material or equipment or to prohibit any method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, equipment or method of construction shall be approved where the Committee of Plumbing Review and the code official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code for quality, strength, effectiveness, fire resistance, durability and safety.

106.4.1 Research and investigations. The Committee of Plumbing Review and the code official shall require that a nationally accredited listing agency approve the proposed use of any material or assembly, and if it is determined that the evidence submitted is satisfactory proof of performance for the use intended, the Committee of Plumbing Review and the code official shall approve its use subject to the requirements of this code. The costs of all tests, reports and investigations required under these provisions shall be paid by the applicant or owner.

106.4.2 Research reports. Supporting data, when required by the Committee of Plumbing Review and the code official to assist in the approval of all materials or assemblies not specifically provided for in this code, shall consist of duly authenticated research reports from approved sources.

106.5 Required testing. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, the Committee of Plumbing Review and the code official shall require that sufficient technical data and/or test data be submitted to substantiate the proposed use of any material, equipment, assembly or method, and if it is determined that the evidence submitted by an approved agency is satisfactory proof of performance for the use intended, the Committee of Plumbing Review and the code official shall approve its use subject to the requirements of this code. The costs of all tests, reports and investigations required under these provisions shall be paid by the applicant.

106.5.1 Test methods. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the code official shall approve the testing procedure.

106.5.2 Testing agency. All tests shall be performed by an approved independent testing agency.

106.5.3 Test reports. Reports of test shall be retained by the code official for a period required for the retention of public records.

106.6 Alternative engineered design. The design, documentation, inspection, testing and approval of an alternative engineered design plumbing system shall comply with sections 106.6.1 through 106.6.6.

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

106.6.2 Submittal. The registered design professional shall indicate on the permit application that the plumbing system is an alternative engineered design. The permit and permanent permit records shall indicate that an alternative engineered design was part of the approved installation.

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

106.6.4 Construction documents. The registered design professional shall submit to the Committee of Plumbing Review and the code official two complete sets of sealed, signed and dated construction documents for the alternative engineered design. The construction documents shall include floor plans and a riser diagram of the work. When appropriate, the construction documents shall indicate the direction of flow, all pipe sizes, grade of horizontal piping, loading and location of fixtures and appliances.

106.6.5 Design approval. Where the Committee of Plumbing Review and the code official determine that the alternative engineered design conforms to the intent of this code, the plumbing system shall be approved. If the alternative engineered system is not approved, the code official shall notify the registered design professional in writing, stating the reasons.

106.6.6 Inspection and test. The alternative engineered design shall be tested and inspected in accordance with the requirements of Section 108 and 301.2. If the alternative engineered design does not pass the test and inspection to the satisfaction of the code official, the system must be modified, re-tested and re-inspected until testing and inspection of the alternative engineered system is shown to meet the intent of the provisions of this code to the satisfaction of the code official.

SECTION 107
PERMITS

Change 107.1 to read as follows:

107.1 When required. Any owner, lessee, authorized agent or contractor who desires to construct, enlarge, alter, repair, move, demolish or change the occupancy of a building or structure or premises, or to erect, install, enlarge, alter, repair, remove, convert or replace any plumbing system **and/or drainlaying work,** the installation of which is regulated by this code, or to cause any work to be done, shall engage a licensed plumbing contractor who shall first make application to the code official and obtain the required permit for the work. All work shall be done by the person or corporation in whose name the permit or permits required by this section are issued. Any person who shall fail to comply with or who shall violate any of the provisions of this section shall be subject to the penalty provisions of Section Four.

107.2 Permits not required. Permits shall not be required for any of the following:

A. The stopping of leaks in drains, water, soil, waste or vent pipe; provided, however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.

B, The cleaning of stoppages or the repairing of leaks in pipes, valves or fixtures, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes or fixtures.

C. Minor Repairs as used in this section shall mean repairs to traps or cocks, opening waste or supply pipes, traps or drains or frozen pipes. Minor repairs shall not include the doing of any work where connection to soil pipes, supply pipes, waste pipes or vent pipes are disturbed or inside leader pipes are used; nor shall it include the setting or replacing of fixtures.

D. Temporary plumbing installations for demonstration purposes which are not connected to either the public water supply or the public sewer system.

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

Change 107.3 to read as follows:

107.3 Application for permit. Each application for a permit, with the required fees, shall be filed with the code official in such written form as the code official prescribes and shall be accompanied by an adequate written description of the proposed plumbing **and/or drainlaying work** and its location.

107.4 By whom application is made. The application for permit shall be made by the license holder responsible for the proposed installation of all or part of any plumbing system. The applicant shall meet all qualifications established by rules promulgated with this code or by ordinance, resolution, or statute. The full names, addresses and telephone numbers of the owner, lessee, and the applicant shall be stated in the application.

107.5 Description of work. The applicant shall list the number of fixtures of each type to be installed, the location of the work, and the use and occupancy of the building in which the work is to be performed.

107.6 Construction documents. The code official is authorized to require the submission and approval of a set of construction documents showing the nature and extent of the proposed work before a permit is issued. If, in the course of the work, it is found necessary to make any change from the approved construction documents on which a permit has been issued, amended construction documents shall be submitted, and if approved, a supplementary permit shall be issued, after payment of any additional fees, to cover the change after the same conditions required to secure the original permit have been satisfied. The code official is permitted to waive the requirements for filing construction documents where the work involved 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.

A plumbing hold or denial shall be placed on construction documents that are incomplete or are not drawn in compliance with this code.

When inspection by the Section of Plumbing Regulations and Inspection reveals that work is not being performed in compliance with this code, the code official shall be authorized to require the submission and approval of construction documents if these documents have not been submitted and approved prior to the issue of the plumbing permit.

The code official is authorized to require the submission of specific information in order to determine compliance with this code.

All construction documents prepared by a registered design professional shall bear the original seal, date and signature in ink of that person. Where applicable, construction documents shall indicate how required structural and fire resistance rating integrity will be maintained, and where penetrations will be made for plumbing systems.

107.6.1 Types of construction documents. Construction documents, where required by the code official, shall include a floor plan and a riser diagram showing the work. Such documents shall show the direction of flow, pipe size, grade of horizontal piping, elevations, drainage fixture unit loads of both stacks and drains in the drain, waste and vent systems, and the supply fixture unit load for the water system and any branch supplies which serve more than one plumbing fixture, appliance or hose outlet.

107.6.2 Requirements for plumbing construction documents. Plumbing construction documents shall be available for review at the job site on every project requiring a plumbing permit except construction or renovation of:

1. Residential structures, four families or less;

2. Structures with less than twenty (20) plumbing fixtures and less than ten thousand (10,000) square feet of roof area.

Change 107.6.3 to read as follows:

107.6.3 Construction document content. Plumbing construction documents submitted for review shall contain the following:

1. A plot plan drawn to scale showing sewer and water services;

2. Floor plans and roof plan;

3. Schematic stack/vent diagram indicating fixture units connected to each stack at each level, fixture unit

totals carried by each stack, and totals collected by the under floor drains (ground work);

4. Pipe sizes for all piping covered above;

5. Flow line elevations for all under floor piping and outside piping; also the percent of slope on which pipe sizing is based. Depth of footings and sleeves shall be indicated. Profiles are preferred;

6. Schematic roof leader diagram, showing each roof drain, its collection area, and the leader it connects to;

7. Total roof area connected to each roof leader, total roof areas carried by connecting storm drains, and the combined load carried by the main house sewer;

   NOTE: City of Saint Louis code uses six (6) inches per hour rainfall;

8. Details for pipe bracing and supports, bath trap access, size of interceptors, clean out locations, expansion joints, manholes, house traps, sump pump settings, garage traps, stack flashing, back water protection, and sub-soil drains;

9. Schematic supply riser diagrams showing total supply fixture units connected at each level, the total carried by each riser, and the total supply fixture units carried by supply headers and water service;

10. Pipe sizes for items covered above;

11. Location of pressure regulators to restrict pressure on fixtures to less than eighty (80) psi (where house pumps are used);

12. Details for backflow protection at special equipment and fire suppression systems, water heater relief valves, safe pans, hot water circulation, system and riser valves, pipe supports and bracing, and water metering arrangements.

13. **Plans for new plumbing systems or alterations to existing plumbing systems shall be accompanied by a diagram showing the relative elevation of the lowest fixture, elevation of the next upstream manhole cover and flow line, and the next downstream manhole cover and flow line and the top of the public sewer referred to the established datum of Metropolitan St. Louis Sewer District or other appropriate sewer district when such public sewer is available. The plans shall show the size, number, location, and potential date of availability of all new sewer connections.**

14. **Requirements for plans may be waived by the Code Official, for commercial plumbing installation(s) and for strip stores with twenty (20) fixtures or less, and for any plumbing installation for a single family dwelling with twenty-five (25) fixtures or less, and/or when the work is of a minor nature. However, plumbing and sewer plans and specifications shall be submitted where required by the Code Official.**

15. **Details of Plumbing work in 1 & 2 Family dwellings, and details of Plumbing work in a commercial plumbing installation and for strip stores with twenty (20) fixtures, or less may be submitted as shop drawings prepared by a Master Plumber. Such shop drawings shall be signed by the Master Plumber and bear his St. Louis City License number.**

16. **Commercial buildings housing beauty, medical facilities or restaurants shall be prepared by the appropriate registered design professional consistent with the professional registration laws of the State of Missouri and shall bear an original embossed or wet ink seal, the date and original signature of the registered design professional.**

    Exception: Addition of three (3) or less, fixtures or equipment; in an existing beauty/hair/nail/spa facility, medical facilities or restaurants, shop drawings may be signed by the Master Plumber and bear his St. Louis County License Number if permitted by the Code Official.

107.6.4 Drain-waste-vent pipe (DWV). Specifications for DWV pipe materials, supply pipe materials, valves, pumps, fixtures and backflow prevention devices shall be included on the plumbing construction documents or attached thereto.

107.6.5 Site plan. There shall also be filed a site plan showing the location of water service and sewer connections with respect to any building in which a plumbing system is to be installed. Vent stack terminations shall be shown with respect to building ventilation openings which could allow introduction of sewer gases into the building or any adjacent building.

107.6.6 Seismic installations. Construction documents for installations which must meet the seismic requirements of the building code shall show the details of all pertinent anchorage and bracing and shall bear the original seal, date and signature in ink of a registered design professional licensed to practice in the State of Missouri.

107.6.7 Engineering details. The code official shall require adequate details of plumbing work, including computations and other technical data, to be filed.

The plumbing drawings submitted for a permit shall be sealed, dated and signed by a registered professional engineer with current Missouri registration, or submitted by a Licensed Plumbing Contractor with their license number and notarized signature.

107.7 Amendments to application. Subject to the time limitations of Section 107.8, amendments to the construction documents, application or other records accompanying the same shall be filed at any time before completion of the work for which the permit is sought or issued. Such amendments shall be deemed part of the original application and shall be filed in the same manner as the original.

107.8 Time limit of application. An application for a permit for any proposed work shall be deemed to have been abandoned six (6) months after the date of filing, unless such application has been diligently prosecuted or a permit shall have been issued. The code official shall grant one or more extensions of time for additional periods not exceeding one hundred eighty (180) days if there is reasonable cause.

107.9 Previous approvals. Except for unsafe plumbing systems, this code shall not require changes in the construction documents or plumbing work for which a lawful permit has been heretofore issued or otherwise lawfully authorized, and the installation of which shall have been actively prosecuted within ninety (90) days after the effective date of this code and completed with dispatch.

107.10 Permit issuance. The application, construction documents and other data filed by an applicant for permit shall be reviewed by the code official. If the code official finds that the proposed work conforms to the requirements of this code and all laws and ordinances applicable thereto, and that the fees specified in Section 107.11 have been paid, a permit shall be issued to the applicant. A plumbing permit shall not be transferable.

If the application or the construction documents do not conform to the requirements of all pertinent ordinances of the City of Saint Louis, the code official shall reject such application in writing, stating the reasons therefore.

107.10.1 Approved construction documents. When the code official issues a permit where construction documents are required, such approved construction documents shall not be changed, modified or altered without authorization from the design professional and the code official. Work shall be done in accordance with the approved construction documents.

107.10.2 Approval in part. The code official is authorized to issue a permit for the installation of a part of a plumbing system before the whole system has been submitted or approved, provided adequate information and detailed statements have been filed complying with all the pertinent requirements of this code. The holder of such permit shall proceed at their own risk without assurance that the permit for the entire plumbing system will be granted.

107.10.3 Validity. The issuance of a permit or approval of construction documents shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of other ordinances of the City of Saint Louis. A permit presuming to give authority to violate or cancel the provisions of this code shall be invalid.

The issuance of a permit based upon construction documents and other data shall not prevent the code official from thereafter requiring the correction of errors in said construction documents and other data or from preventing building operations from being carried on there under when in violation of this code or of other ordinances of the City of Saint Louis.

107.10.4 Expiration. Every permit issued by the code official under the provisions of this code shall expire by limitation and become null and void if the work authorized by such permit is not commenced within one hundred eighty (180) days from the date of such permit, or if the work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of one hundred eighty (180) days. Before such work recommences, a new permit shall be first obtained and a new fee paid.

107.10.5 Extensions. Any permittee holding an unexpired permit shall have the right to apply for an extension of the time within which the permittee will commence work under that permit when work is unable to be commenced within the time required by this section for good and satisfactory reasons. The code official may grant one or more extensions of time for additional periods if there is reasonable cause, the total of which shall not exceed one hundred eighty (180) days.

107.10.6 Suspension or revocation of permit. The code official shall suspend or revoke a permit or approval issued under the provisions of this code in case of any false statement or misrepresentation of fact in the application or on the construction documents upon which the permit or approval was based. A permit shall also be considered for revocation under the following provisions:

1. The owner of the property or the contractor shall request cancellation in writing stating the reasons for the request for cancellation. No refund of fees shall be made.

2. The code official may revoke the permit for fraud.

3. The code official may revoke the permit for non-compliance with the code.

4. The code official may revoke the permit for failure to pay the prescribed fees.

5. A permit may be revoked if payment is returned for insufficient funds.

Before a permit is considered for revocation prior to the completion of all work, the permit holder shall request an inspection of the work that has been completed. Upon inspection, if the work complies with the code and is done in a workmanlike manner, the code official shall so indicate in writing to the person requesting revocation.

107.10.7 Work not in compliance. Should the plumbing contractor install work that is not in compliance with the plumbing, fire or building code, the contractor shall be directed by the code official to make necessary corrections to assure code compliance and no other permits shall be issued to said contractor until such work is corrected and approved by the code official.

107.10.8 Retention of construction documents. One (1) set of construction documents shall be retained by the code official until final approval of the work covered therein. One (1) set of construction documents shall be returned to the applicant and said set shall be kept at the site of the building or work at all times during which the work authorized thereby is in progress.

107.10.9 Posting of permit. A true copy of the permit shall be kept on the site of operations, open to public inspection during the entire time of prosecution of the work and until the completion of the same.

107.11 Fees. A permit shall not be issued until the fees prescribed in Table 107.11.3 have been paid, nor shall an amendment to a permit necessitating an additional fee because of the additional work involved be released until the additional fee has been paid. Fees for the inspections herein prescribed shall be paid to and collected by the City of Saint Louis. A permit may be revoked if payment is returned for insufficient funds.

107.11.1 Work commencing before permit issuance. In case any work for which a permit required by this code is started or proceeded with prior to the permit being issued, the total normal fees applicable shall be increased by the amount as set forth in Table 107.11.1. The payment of said surcharge shall not relieve any persons from fully complying with the requirements of this code for performance or execution of the work, nor from other penalties prescribed by law.

Change Tables 107.11.1 & 107.11.3 to read as follows:

TABLE 107.11.1
SCHEDULE FOR SURCHARGE

PERMIT FEE	SURCHARGE
$ 0 TO $ 50	**$ 35.00**
$ 51 TO 200	**$ 95.00**
$ 201 TO $ 500	**$ 245.00**
$ 501 TO $ 2,000	**$ 365.00**
$ 2,001 TO $ 10,000	**$ 485.00**
OVER $ 10,000	**$ 1005.00**

107.11.2 Inspection fees. It shall be the duty of the code official to cause the following inspections to be made as required by this code. An inspection is to be made of each tap, water connection or extension, each sewer extension, and for repairs of water service pipe, or of sewer pipe, whether on a public or private street, alley, thoroughfare or premises. Inspection shall also be made after completion of all work and be known as a finish inspection. Mechanical pipefitting and sprinkler fitting installations shall also be inspected.

107.11.3 Fee schedule. Fees for new construction or alteration of plumbing systems and inspections thereof shall be paid to and collected by the City of Saint Louis as indicated in Table 107.11.3.

TABLE 107.11.3
PLUMBING FEES

TYPE	FEE
Application Fee	**$ 30.00**
Tap, water connection or extension, each	**$ 25.00**
Sewer extension, connection or repair, each	**$ 25.00**
Irrigation System (does not include backflow device), each	**$ 25.00**
Fixtures, each (floor drain, sump, water heater, reduced pressure backflow device or double gate/double check valve, roof drain or trapped outlet)	**$ 10.00**
Test of a reduced pressure backflow device or double gate/double check valve	**$ 40.00**
Late fee for all backflow tests not performed within 30 days of anniversary date, each	**$ 30.00**
Rough inspection, each	**$ 25.00**

Finish inspection, each	**$ 25.00**
Re-inspection, each	**$ 30.00**
Special inspection, each	**$ 45.00**

One rough inspection and one finish inspection for every 20 fixtures or fraction thereof; one additional rough inspection and one additional finish inspection for every 20 additional fixtures or fraction thereof.

107.11.4 Re-inspections. Re-inspections of plumbing installations and systems on any premises shall be made when deemed necessary by the code official. Where a re-inspection is required to be made due to faulty workmanship or work not completed at the time of a requested inspection. Fees for a re-inspection fee shall be as indicated in Table 107.11.3.

107.11.5 Fees for abandoned work or revoked permit. Fees shall not be waived or refunded for any plumbing permit that has been abandoned, canceled or revoked.

107.11.6 Special inspections. A special inspection may be requested by the owner or occupant of a building or premises. Fees for special inspections shall be as indicated in Table 107.11.3.

SECTION 108
INSPECTIONS AND TESTING

Change 108.1 number 4 to read as follows:

108.1 Required inspections and testing. The code official upon notification from the permit holder or the permit holder's agent shall make the following inspections and other such inspections as necessary, and shall either release that portion of the construction or shall notify the permit holder or agent of any violation which must be corrected. The holder of the permit shall be responsible for the scheduling of such inspections. All inspections are visual inspections. The contractor shall be responsible for repairing defects hidden from the inspector.

1. Underground inspections shall be made after trenches or ditches are excavated and bedded, piping installed, and before any backfill is put in place. When excavated soil contains rocks, broken concrete, frozen chunks and other rubble which would damage, break the piping or cause corrosive action, clean backfill shall be on the job site next to trenches or ditches.

2. Rough-in inspection shall be made after the roof, framing, fire-blocking, fire- stopping, draft-stopping and bracing is in place and all sanitary, storm and water distribution piping is roughed-in, and prior to the installation of wall and ceiling membranes. Any portion of the plumbing system covered by the permit which is intended to be concealed by any permanent portion of the structure shall not be concealed until inspected. The code official shall have the authority to require any concealment to be removed. Failure to comply with this order of the code official may result in condemnation of the structure or any part thereof and prohibition of occupancy. Furthermore, the plumbing contractor shall not be issued any other permits until such work is properly inspected and approved by the code official.

3. Final inspection shall be made after the building is complete, all plumbing fixtures are in place and properly connected, and the structure is ready for occupancy. All violations of any code, any approved construction document or the plumbing permit shall be noted, and the holder of the plumbing permit shall be notified in writing of the discrepancies. All violations shall be abated before final approval. If the plumbing contractor refuses to abate any violation, the contractor shall not be issued any other permits until such violation is remedied, properly inspected and approved by the code official.

4. **Exposure of Work. All new, altered, extended or replaced plumbing and drainlaying shall be left uncovered and unconcealed until it has been tested and approved. Where such work has been covered or concealed before it is tested and approved, the Code Official may require that it be exposed for testing and approval.**

108.1.1 Approved inspection agencies. The code official shall accept reports of approved inspection agencies, provided such agencies satisfy the requirements as to qualification and reliability.

108.1.2 Evaluation and follow-up inspection services. Prior to the approval of a closed, prefabricated plumbing system and the issuance of a plumbing permit, the code official shall require the submittal of an evaluation report on each prefabricated plumbing system, indicating the complete details of the plumbing system, including a description of the system and its components, the basis upon which the plumbing system is being evaluated, test results and similar information, and other data as necessary to the code official to determine conformance to this code.

108.1.2.1 Evaluation service. The code official shall designate the evaluation service of an approved agency as the evaluation agency, and review such agency's evaluation report for adequacy and conformance to this code.

108.1.2.2 Follow-up inspection. Except where ready access is provided to plumbing systems, service equipment and accessories for complete inspection at the site without disassembly or dismantling, the code official shall conduct the in-plant inspections as frequently as necessary to assure conformance to the approved evaluation report or shall designate an independent approved inspection agency to conduct such inspections. The inspection agency shall furnish the code official with the follow-up inspection manual and a report of inspections upon request, and the plumbing system shall have an identifying label permanently affixed to the system indicating that factory inspections have been performed.

108.1.2.3 Test and inspection records. All required test and inspection records shall be available to the code official at all times during the fabrication of the plumbing system and the erection of the building; or such records as the code official designates shall be filed.

108.2 Special inspections. Special inspections of alternative engineered design plumbing systems shall be conducted in accordance with Sections 108.2.1 and 108.2.2.

108.2.1 Periodic inspection. The registered design professional or designated inspector shall periodically inspect and observe the alternative engineered design to determine that the installation is in accordance with the approved plans. All discrepancies shall be brought to the immediate attention of the plumbing contractor for correction. Records shall be kept of all inspections.

108.2.2 Written report. The registered design professional shall submit a final report in writing to the code official upon completion of the installation, certifying the alternative engineered design conforms to the approved construction documents. A notice of approval for the plumbing system shall not be issued until a written certification has been submitted.

108.3 Testing. Plumbing systems shall be tested as required in this code and in accordance with Sections 108.3.1 through 108.3.3. Tests shall be made by the permit holder and observed by the code official.

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

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

2. In any case where plumbing equipment is set up temporarily for exhibition purposes and is not connected to the public water supply or the public sewer system.

108.3.2 Equipment, material and labor for tests. All equipment, material and labor required for testing a plumbing system or part thereof shall be furnished by the permit holder.

108.3.3 Re-inspection and testing. Where any work or installation does not pass an initial test or inspection, the necessary corrections shall be made so as to achieve compliance with this code. The work or installation shall then be resubmitted to the code official for inspection and testing.

108.4 Contractor's responsibilities. It shall be the duty of every contractor who enters into contracts for the installation or repair of plumbing systems for which a permit is required to comply with adopted federal, state and local rules and regulations concerning certification and licensing.

108.5 Coordination of inspections. Whenever in the enforcement of this code or another code or ordinance, the responsibility of more than one code official is involved, it shall be the duty of the code officials involved to coordinate their inspections and administrative orders as fully as practicable so that the owners and occupants of the structure shall not be subjected to visits by numerous inspectors or multiple or conflicting orders. Whenever an inspector from any agency or department observes an apparent or actual violation of some provision of some law, ordinance, or code not within the inspector's authority to enforce, the inspector shall report the findings to the code official having jurisdiction.

108.5.1 Legal compliance. All legal assistance necessary to effect compliance of the plumbing systems of such premises with this section shall be supplied to the code official by the City Counselor and other City of Saint Louis agencies. The Fire and Police Departments of the City of Saint Louis shall, upon request, assist the code official in the enforcement of this code.

108.6 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.

108.7 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility source for the purpose of testing plumbing systems or for a temporary certificate of occupancy.

108.8 Plumbing inspection certificate. The Section of Plumbing Regulations and Inspection, upon completion of repair and remodeling work, as per permit issued, shall, upon request of the property owner, the occupant or the licensed plumbing contractor, furnish a plumbing inspection certificate to the property owner or occupant who has authorized the work to be performed. The plumbing inspection certificate shall state the address of where the work was performed, name and license number of the licensed plumbing contractor performing the work, permit number, approved by inspector's signature, the inspector's identification number, date and time of inspection. Certificates are filled out by plumbing inspectors within ninety (90) days of the final inspection.

SECTION 109
VIOLATIONS

109.1 Unlawful acts. It shall be unlawful for any person, firm or corporation to erect, construct, alter, repair, remove demolish or utilize any plumbing system, or cause same to be done, in conflict with or in violation with any of the provisions of this code. All work shall be conducted, installed and completed in a workmanlike and approved manner so as to secure the results intended by this code.

109.2 Notice of violation. The code official shall serve a written notice of violation or order, as heretofore described in Section 105.3, to the person, firm, or corporation responsible for the erection, installation, alteration, extension, repair, removal, demolition or operation of plumbing equipment or systems in violation of the provisions of this code, or in violation of a detailed statement, or the approved construction documents there under, or in violation of a permit issued under the provisions of this code. Such order shall direct the discontinuance of the illegal action or condition and the abatement of the violation. Failure to comply with the written order of the code official may result in revocation of the bond and/or license of that person, firm, or corporation. Failure to comply with the order of the code official shall result in the denial to issue any additional permits in that person's, firm's, or corporation's name.

109.2.1 Written notice of violation. If the building inspection, re-inspection, or test reveals failure of any new installation, addition, alteration, maintenance or replacement to comply with the provisions of this code, the installation shall be declared unlawful by the code official, and a written notice of violation shall be given or mailed to either the responsible individual, person, firm or corporation to whom the permit was issued, or to the legally authorized representative of the permit holder.

109.3 Prosecution of violation. If the notice of violation is not complied within the time stated in the Notice of Violation, but no longer than thirty (30) days, the code official shall request the legal counsel of the City of Saint Louis to institute the appropriate proceedings at law or in equity to restrain, correct or abate such violation, or to require the removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant thereto. The time for compliance may be extended by the code official, upon written request, if there are extenuating circumstances.

109.4 Violation penalties. Any person, partnership or corporation who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, construct, alter or repair plumbing equipment or systems in violation of the approved construction documents or directive of the code official, or of a permit or license issued under the provisions of this code, shall, upon conviction thereof, be penalized as set forth in Section Four.

109.5 Stop work order. Upon notice from the code official that plumbing work is being done contrary to the provisions of this code or in a dangerous or unsafe manner, or without permit, or by unlicensed individuals, such work shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property involved, or to the owner's agent, or to the person doing the work. The stop work order 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. Any person who shall continue any work on the system 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 conditions, shall be subject to immediate arrest and, upon conviction thereof, be penalized as set forth in Section Four.

109.6 Abatement of violation. The imposition of the penalties herein prescribed shall not preclude the legal officer of the City of Saint Louis from instituting appropriate action to prevent unlawful construction or to restrain, correct or abate a violation, or to prevent illegal occupancy of a building, structure or premises, or to sop an illegal act, the conduct of business or the utilization of plumbing equipment or systems on or about any premises.

109.7 Unsafe plumbing. Any plumbing system that is unsafe, constitutes a fire or health hazard, unsanitary condition or is otherwise dangerous to human life, as regulated by this code, is hereby declared as an unsafe plumbing system. Use of a plumbing system regulated by this code constituting a hazard to health, safety, or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster, damage, or abandonment is hereby declared an unsafe use. Such unsafe equipment is hereby declared to be a public nuisance and shall be abated by repair, rehabilitation, demolition, or removal.

109.7.1 Authority to condemn plumbing systems. Whenever the code official determines that any plumbing system, or portion thereof, regulated by this code has become hazardous to life, health, property, or has become unsanitary, the code official shall order in writing that such plumbing either be removed or restored to a safe condition. A time limit for compliance with such order shall be specified in the written notice. A person shall not use or maintain a defective plumbing system after receiving such notice.

When such plumbing system is to be disconnected, written notice as prescribed in Section 109.2 shall be given. In cases of immediate danger to life or property, such disconnection shall be made immediately without such notice.

109.7.2 Authority to order disconnection of utilities. The code official shall have the authority to order disconnection of any utility supplied to a building, structure or plumbing system regulated by this code when it is determined that the plumbing system or any portion thereof has become hazardous, unsafe or unsanitary. Written notice of such order to disconnect service and the causes therefore shall be given within twenty-four (24) hours to the owner and occupant of such building, structure, or premises, provided, however, that in cases of immediate danger to life of property; such disconnection shall be made immediately without such notice. The code official shall immediately notify the serving utility in writing of the issuance of such order to disconnect.

109.7.3 Connection after order to disconnect. A person shall not make utility connections to plumbing systems regulated by this code which have been disconnected or ordered to be disconnected by the code official, or the use of which has been ordered to be discontinued by the code official until the code official authorizes the reconnection and use of such plumbing system.

When any plumbing system is maintained in violation of this code, and in violation of a notice issued pursuant to the provisions of this section, the code official shall institute any appropriate action to prevent, restrain, correct or abate the violation.

109.7.4 Authority to order vacation of structure. When there is an actual and immediate condition which would endanger life, the code official is hereby authorized and empowered to order and require the occupants to vacate a structure forthwith. The code official shall cause to be posted at each entrance to such structure a notice reading as follows: **DANGER! THIS BUILDING IS UNSAFE. ALL PERSONS ARE WARNED TO KEEP AWAY.** It shall be unlawful for any person to enter such structure except for the purpose of making the required repairs or removal. The procedure for this notice shall be as set forth in Section 105.3.

109.8 Time for compliance and notification to department. All notices of violation shall indicate the requirement of immediate compliance. Upon compliance of violation, the recipient of the notices, the recipient's agent, contractor, or subcontractor shall notify the code official according to the procedure set forth in this code. Upon notification, the code official shall re-inspect the premises in which the violation was found, and if compliance is shown to exist, the violation notice shall be terminated and type of inspection recorded.

109.8.1 Noncompliance. On new construction, alterations, additions, or replacements, violations not abated within 10 days

shall be referred to court. On existing structures which involve occupancy, general rehabilitation, or other problems which involve the development of construction documents or issuance of a building permit, restoration to original occupancy, or other problems which require concurrent action by other departments of the City of Saint Louis, the code official may make its compliance date of any violation notice with regard to any given premises coincide with the compliance date of violations against the same premises by said other departments of the City of Saint Louis.

109.8.2 Immediate compliance. The following types of violations may be followed immediately by referral to court:

1. Failure to secure any required plumbing permit or permits;
2. Operating as a Plumbing Contractor, Drainlayer, Sprinkler Fitter or Mechanical Pipefitter Contractor or as an installer of plumbing without compliance with licensing and registration requirements of this code;
3. Failure to maintain a plumbing system in a safe and/or sanitary condition;
4. Creation of a nuisance or a hazard to either health or safety.

109.8.3 Compliance. Any violation pertaining to any otherwise illegal installation of plumbing may be referred to a court of competent jurisdiction if not abated within a reasonable time after issuance of the notice of violation by the code official.

109.8.4 City counselor. The City Counselor shall assign such employees as from time to time are necessary to prepare and present to the City Court, or if necessary, to higher courts, the facts pertaining to any violation which has exceeded the time specified in sections of this code, or if no time is specified, any reasonable time in the judgment of the code official.

109.8.5 Court dates and re-inspections. Before requesting the court to hear any incomplete violation case, the premise involved shall be re-inspected and then the code official assigned to act as a witness for the case shall set forth the facts in a record and the court shall specify the date of the hearing.

Change 109.9 to read as follows:

~~**109.9 Authority of Board of Examiners for Master Plumbers, Master Drainlayers, and Journeyman Plumbers to levy fines.**~~

~~**A. Any person or entity that violates any provision of the Code shall be guilty of a Class A Misdemeanor.**~~

The Board of Examiners for Master Plumbers, Master Drainlayers, and Journeyman Plumbers (Board) shall have the authority to take disciplinary action as set out in the Code. ~~**and to impose civil penalties, not to exceed one thousand dollars ($1,000.00), per offense, if the Board finds, after such notice to the individual and a hearing on the matter, that the individual or entity has violated any provisions of the Code.**~~

~~**In determining the amount of penalty to be imposed, the Board may consider both any mitigating circumstances and severity of the violation in relation to the deterrent value of the fine.**~~

~~**Any final order imposing a civil penalty is subject to appeal or review as specified in Section 110.0.**~~

Payment of a civil penalty shall be made within (30) thirty days after the decision of the Board, pending an appeal. Failure to pay a civil penalty by any person licensed under this code shall be grounds for non-renewal or denial of reinstatement of a license. In addition, action will be taken against any bonds which may exist to obtain payment of civil penalty.

SECTION 110
MEANS OF APPEAL

110.1 Appeals. Any person aggrieved by the decision of the code official, or any Board hereunder, may appeal said decision to the Board of Building Appeals in the manner prescribed in the building code. The fee for said appeal shall be as prescribed in said building code.

SECTION 111
BOARD OF EXAMINERS FOR MASTER PLUMBERS, MASTER DRAINLAYERS AND JOURNEYMAN PLUMBERS

Change 111.1 and 111.2 to read as follows:

111.1 How constituted. The Mayor, with the approval of the Board of Aldermen, shall appoint one (1) City of Saint Louis ~~certified~~ **licensed** Master Plumber, **who will act as Chairman of the Board,** one (1) City of Saint Louis licensed Master Drainlayer; one **(1) City of Saint Louis licensed Journeyman Plumber, one (1) practicing plumbing designer holding a Certified in Plumbing Design Certificate, CPD, issued by the American Society of Plumbing Engineers who has actually engaged in the design of plumbing or sanitary or sewer systems, and one (1) representative from the Plumbing Division, the Plumbing Supervisor or his duly appointed representative.** Each of whom shall be a resident of the City of St. Louis ~~**or a resident of St. Louis County,**~~ each **of whom shall be a United States Citizen,** and each of whom shall have been actively engaged at the trade or business of plumbing for five (5) years in the Saint Louis metropolitan area. ~~These three (3) members together with the Health Commissioner or the Health Commissioner's duly appointed representative, who shall be the Chairman Ex Officio, shall constitute the Board of Examiners.~~ **These five (5) members shall constitute the Board of Examiners. A majority of the members of said committee shall constitute a quorum for the transaction of business.**

111.2 Term of office, compensation. The members of the Board of Examiners, except the **Plumbing Supervisor or the Plumbing Supervisor's** duly appointed representative, shall hold office for a term of four (4) years or until their successors are duly qualified, unless removed by the Mayor. They shall, except the **Plumbing Supervisor or the Plumbing Supervisor's duly appointed representative,** receive compensation for their services, as provided by separate ordinance on a per-meeting basis.

Change 111.3 to read as follows:

111.3 Powers and duties of the Board of Examiners. It shall be the duty of the Board of Examiners to meet on the fourth Monday of each month (the Board may make variances when a holiday falls on this date) to: hear and determine any charges or complaints which may be lawfully made against any Master Plumber, Drainlayer or licensed Journeyman Plumber; approve apprentice applications; transact any other lawful business of the Board. Additional meetings may be held at the request of the chairman of the board. Suitable quarters for the use of the Board of Plumbing Examiners shall be provided. **Three (3) members of the Board of Examiners in attendance shall constitute a quorum. A majority vote of the board members present is necessary for the approval of any motion.**

1. Administration - The Board of Examiners shall receive applications and they shall approve or deny licenses as described herein based on Sections 111.7, 111.8, 111.9, 111.10 and 111.11.

2. Test - The Board of Examiners shall prescribe the administration, form and content of tests for master plumbers, master drainlayers, journeyman plumbers and the form and content of licenses as described herein. The Board shall also determine the passing grade for each test.

3. Notice - All complaints by citizens concerning plumbing or drainlaying procedures or rules and regulations shall be made to the Board of Examiners in writing. After a thorough investigation, the Board shall respond in writing to each complaint.

4. Adoption of Rules - The Board of Examiners shall adopt rules and regulations, when and as required at the discretion of the Board, consistent with the provisions of this ordinance and the laws of the City of Saint Louis, related to the Board's powers and duties as herein stated. Such rules and regulations adopted by the Board shall be posted in the Section of Plumbing Regulations and Inspections for two weeks prior to becoming effective.

5. Inspection - Order the inspection of any plumbing or drain system whenever deemed necessary for the public safety.

6. Revocation/Suspension of Licenses - After investigation and hearings in accordance with Section 111.12, the Board may revoke or suspend any license that it has issued.

7. **The Board shall, pursuant to the regulations and standards herein set forth, determine the qualifications of and provide for the examining, licensing, registration and/or certification of applicants who meet the qualifications and successfully pass the appropriate examination, if required, under this code. Evidence of license "The License' shall be provided to those who meet the qualifications and successfully pass the**

appropriate examination, or successfully meet all requirements of renewal of the license. This evidence of license "The License" shall remain the property of St. Louis City and shall be surrendered immediately when demanded under conditions listed elsewhere in this document.

111.4 Secretary of the Board, duties. The code official or his duly appointed representative shall act as Secretary to the Board of Examiners. The Secretary of the Board shall be nonvoting. It shall be the duty of the Secretary to:

1. Keep full and complete records of the proceedings of said Board;

2. Keep a file of the name, residence and place of business of every licensed person engaged in or working at the business of plumbing and drainlaying in the City of Saint Louis (these records shall be updated within ninety days of the renewal period stated in Section 111.5);

3. Give all applicants for examination a written notice of the date and place of examination. The Secretary shall give the applicant an informational letter on examination procedures with an outline of suggested study for the examination applied for;

4. Return all incomplete applications to the applicants;

5. All records shall be open to supervised public inspection during normal working hours, subject to staff availability. Test questions and answers shall not be open to the public.

6. The Secretary shall maintain and secure all examinations, examination documents and materials for the examinations given by the Board as directed by the Board

Change 111.5 through 111.6 to read as follows:

111.5 Renewal date for licenses. The renewal of all licenses for Master Plumbers, Master Drainlayers and Journeyman Plumbers shall be due on one date, December 31, **2009,** and every three (3) years thereafter.

1. **A person applying for renewal of a license, registration or certification may file his/her application up to one hundred twenty (120) days prior to but not more than thirty (30) days after the license, registration or certificate expires. A person applying for such renewal, prior to its expiration, shall file only a new application form, surety bond, (if required) and pay the fee(s) required under this Code.**

2. **Upon written application and for good cause shown, waivers or extension of time of the credit hour or reporting requirements of this Code may be granted by the Board in individual cases or classes of cases involving hardship or extenuating circumstances. Extensions granted by the Board may be conditioned on the payment of a late filing fee of thirty ($30) dollars. If the Board grants an extension, the license expiration date shall be extended to the date set by the Board for completion of the credit hour and reporting requirements.**

3. **A person who fails to comply with all of the above requirements for renewal of his/her license, registration or certificate prior to its expiration shall be renewed within a grace period of thirty (30) following the renewal date. Following the grace period, any master plumber, master drainlayer, journeyman plumber, Master Pipefitter, Journeyman Pipefitter, Master Sprinklerfitter or Journeyman Sprinklerfitter that has not renewed shall be required to re-apply and re-test in order to obtain a new license at the discretion of the Board of Examiners (if examination is required) under the same terms and conditions imposed upon new applicants.**

4. **Failure to receive an application for renewal of a license or certificate of authority shall not relieve the licensee or certificate holder from their duty to timely renew, nor shall it relieve them from the obligation to any additional fee(s) necessitated by any late renewal.**

111.5.1 Licenses obtained between renewal dates. Any new license issued more than thirty days prior to the renewal date shall expire on the renewal date. There shall be prorating of license fees.

111.5.2 Failure of Master Plumber, Master Drainlayer, Master Pipefitter, or Master Sprinklerfitter to renew. The failure of any Master Plumber or Master Drainlayer, **Master Pipefitter, or Master Sprinklerfitter** to renew their license

during the grace period shall terminate their license, and no permit for doing work under this or any other ordinance of the City of Saint Louis shall be issued them until after they have obtained a new license following re-application and re-testing (if necessary), and they shall be disqualified from carrying on any work authorized to be done under any permit theretofore issued to them or any job unfinished at the date of termination of their license.

NOTE: Failure to renew Department of Natural Resources Backflow Prevention Assembly Certification or to notify the Office of Plumbing and Sewer Inspection of such renewal shall cancel any registration or certification issued by the Board of Plumbing Examiners for the testing of Backflow Prevention Assemblies on the expiration date indicated on the Department of Natural Resources certification.

111.5.2 Licensed Renewal Applicants shall:

A. **Submit a completed application for license renewal, a full-face photograph, or the equivalent as determined by the Board, for identification purposes with each renewal.**

B. **As soon as practicable after the passage of this Code, the Board of Plumbing Examiners shall, after providing reasonable opportunity for public participation, adopt reasonable rules and regulations to interpret and implement the provisions of this Code with respect to continuing education. A licensee may obtain a copy of the rules and regulations upon application and upon payment of fee established for this purpose.**

C. **Holders of active licenses shall also submit verification that they have attended continuing education courses, seminars, films or other training approved by the Board of Plumbing Examiners in the following minimums starting January 1, 2013:**

D. **Holders of active licenses shall also submit verification that they have attended continuing education courses, seminars, films or other training approved by the Board of Sprinkler Fitter Examiners in the following minimums starting January 1, 2013:**

1. **Masters / Contractors twelve (12) PEU (Professional Education Units) per three-year (3) license cycle pro rated on a yearly base.**

2. **Journeyman Licensee twelve (12) PEU per three-year license cycle pro rated on a yearly base.**

3. **There may be a carryover of a maximum of four (4) PEU's in excess of the required amount of PEU's to the next license cycle.**

111.5.3 License Limitations. Any Master licensed or registered under this Code shall be limited to obtaining permits required under the provisions of this Code, for a single company, firm, proprietorship, partnership or corporation at any given date or time and shall be registered with the Saint Louis City Office of Plumbing and Sewer Inspection as an officer or a full time employee of said company at least thirty (30) days prior to exercising the privileges of the license / registration on behalf of said company. Such companies shall be registered with the state of Missouri, Office of Secretary of State, Jefferson City, Missouri.

111.5.4 Advertising. No person, corporation, partnership, joint venture or other entity shall place or authorize the placement of an advertisement or message offering services subject to any provision of this Code in any advertising medium unless the advertisement or message clearly states the name, business address and license number of at least one (1) appropriately licensed, certified and / or registered person qualified to perform such services and who is in responsible charge and control of work performed by said entity.

111.6 Inactive license. Any licensed person who is not working at his/her licensed trade and who desires to retain his/her license may do so by notifying the Board of Plumbing Examiners that he/she wishes to be placed in inactive status. Such notice shall be in writing and shall state that the license holder is not working at his/her licensed trade, wishes to be placed in inactive status, understands that he/she is prohibited from working while inactive and agrees to notify the Board to activate his/her license prior to resuming work. It shall be a Violation of this Code for a license holder to perform work in his/her license category while in inactive status. In order to keep an inactive license as a Master Plumber, the license holder must maintain an active license as a Journeyman Plumber.

The Board shall respond in writing to the license holder in each inactivation or reactivation action and each such action shall be noted in the Board minutes. An inactive license shall be issued stating the license number and type, which is inactive. This inactive license shall be valid for a period of ten (10) years. Three (3) months prior to the expiration date, the department shall notify the holder at his last known address, the date that his inactive license will expire so that it can be renewed at the holder's request and payment of fees and other requirements of the Board.

It is the responsibility of the Inactive License holder to notify the Board of any license change or change in address. Maintenance of any other license will be equivalent to notifying the Board of address change.

License holders in inactive status, who renew their licenses, are not required to accrue continuing education course hours, as a condition of renewal. However, they are required to accrue the minimum continuing education hours for any prior year or any part thereof in which their license was active.

TABLE 111
BOARD AND COMMITTEE FEES

Item	Fee	Duration	Section	Remarks and Requirements
Board of Plumbing Examiners Licenses:				
Application Fee (all classes)	50.00			To Cover cost of application only
Journeyman	50.00	3 years	111.10	To cover cost of licensing
Master Drainlayer	300.00	3 years	111.9	To cover cost of licensing
Master Plumber	300.00	3 years	111.8	To cover cost of licensing
Master Plumber/Drainlayer	600.00	3 years	111.8 & .9	To cover cost of licensing
Registration Fee (Apprentice)	25.00	5 years	111.7	To cover cost of registration
Replacement of lost license	25.00			To cover cost of replacement license
Testing				
Home owners examination	25.00	2 years	111.11	To cover cost of application & examination
All other tests administered by the City of Saint Louis	50.00			To cover cost of examination only
Board of Sprinkler Contractors & Sprinkler Fitters Licenses:				
Application Fee (all classes)	50.00			To cover the cost of application only
Sprinkler Contractor	300.00	3 years	112.7	To cover the cost of licensing
Sprinkler Fitter	50.00	3 years	112.8	To cover the cost of licensing
Registration Fee (Apprentice)	25.00	5 years	112.9	To cover the cost of registration
Replacement of lost license	25.00			To cover the cost of replacement registration
Backflow Tester				
Mechanical Contractor	300.00	3 years	113.4	To cover cost of application & licensing
Journeyman Pipefitter	50.00	3 years	113.4	To cover cost of application & licensing
Replacement of lost license	25.00			To cover cost of replacement license

NOTE: FEES SHALL BE PRORATED

Change 111.7 to read as follows:

111.7 License as a Master Plumber.

1. **An applicant for a Master Plumber's license shall have the following qualifications:**

A. **At least five (5) years experience as a Journeyman Plumber licensed under this Code, in addition to meet the requirements of the Journeyman Plumber License, or under laws and regulations requiring similar qualifications The intent of this requirement is that the applicant for Master Plumber shall have at least ten (10) years practical experience in the design, planning, installation and supervision of plumbing systems including but not limited to, drainage and vent piping facilities; potable water supply and distribution piping systems; Plumbing Appliances, Appurtenance, and fixtures, and potable water cross connection control facilities. Or, in lieu thereof, possess such experience or training, as is the equivalent**

thereto. Equivalent training and experience shall mean that:

1. **The applicant shall be a civil or mechanical engineer, registered with the Missouri Board for Architects, Professional Engineers and Land Surveyors, and have four (4) years of experience in the design, planning and installation of plumbing, drainage, vent piing facilities, potable water supply and distribution piping and potable water cross connection control which must be obtained under the direction of a Master Plumber licensed under this Code or under laws and regulations requiring similar qualifications;**

Or;

2. **The applicant shall have satisfactorily completed a five (5) year course in practical plumbing, drainage, vent piping facilities, potable water supply and distribution piping and potable water cross connection control at a recognized trade or technical school, and five (5) years experience in the design, planning and installation of plumbing, drainage, and vent piping facilities, potable water supply and distribution piping and potable water cross connection control, which must be obtained under the direction of a Master Plumber licensed under this Code or under laws and regulations requiring similar qualifications;**

Or;

3. **The applicant shall be a Master Plumber who has qualified for a license under examination, rules and regulations, similar to the St. Louis City, Missouri, Board of Plumbing Examiners Examination rules and regulations; has been working under rules and regulations equal to or exceeding the rules and regulations of this Code; has been examined and qualified for a St. Louis City Journeyman Plumber license; and has worked under the direction of a licensed St. Louis City, Missouri, Master plumber for at least two (2) years;**

Or;

4. **Such other experience and/or training as the Board of Plumbing Examiners determines is equivalent.**

B. **He/she shall possess the ability to direct other persons in the performance of plumbing work and shall be skilled in designing and installing plumbing fixtures and facilities, and shall have a thorough knowledge of the art of plumbing necessary for the protection of the public health.**

2. Applicant's qualifications shall be presented to the Board of Examiners for approval to take the written examination.

3. Approved applicant shall be notified by the Secretary of the Board as to the date and place of the written examination. The Secretary shall also give the applicant an informational letter on the examination procedures with an outline of suggested study for the examination. The applicant is responsible for all testing fees.

4. **An applicant shall be required to successfully pass an examination designed or selected by the Board of Examiners in addition to the foregoing requirements.**

5. Applicant shall be notified in writing by the Secretary of the Board of the examination results. Applicants that pass shall be notified to come to the Section of Plumbing Regulations and Inspection and obtain their license within ninety - (90) days. **Applicants that have not passed the examination for the first time shall be notified that they may re-take the examination after three (3) months (90 days) and shall be eligible every three (3) months (90 days) there after until he/she has passed the examination.**

6. Successful applicant shall bring a 3/4" by 3/4" color photograph **and/or bring a digital picture,** a certificate of liability insurance for bodily injury and property damage in the amount of at least one million dollars ($1,000,000) naming the applicant as an additionally insured, and the license fee required by Table 111 to the Section of Plumbing Regulations and Inspections in order to be issued

a license as a master plumber.

7. No journeyman plumber shall be allowed to hold a master plumber's license. When a journeyman plumber qualifies as a master plumber, the journeyman must relinquish the journeyman plumber's license to the Board of Plumbing Examiners before a master plumber license can be issued.

Change 111.8 to read as follows:

111.8 License as a Master Drainlayer.

1. **An applicant for a Master Drainlayers license shall possess a current Master Plumber license issued by St. Louis City or have the following qualifications:**

A. **Five (5) years experience in drainlaying under the personal direction of a Master Drainlayer licensed under the rules and regulations of this Code, or under laws and regulations requiring similar qualifications or such other experience and/or training as the Board of Plumbing Examiners determines is equivalent. In lieu thereof the applicant shall have a degree in civil or mechanical engineering from an accredited college or university, and three (3) years experience in design, installation, and planning of private and public sanitary storm sewers and sewerage systems.**

B. **The applicant shall possess the ability to direct other persons in the installation of sanitary and storm sewers, and sewerage systems, private and public and shall have a thorough knowledge of the art of drainlaying necessary for the protection of the public health.**

C. **An applicant shall be required to successfully pass an examination designed or selected by the Board of Examiners in addition to the foregoing requirements.**

2. Applicant's qualifications shall be presented to the Board of Examiners for approval to take the written examination.

3. Approved applicant shall be notified by the Secretary of the Board as to the date and place of the written examination. The Secretary shall also give the applicant an informational letter on the examination procedures with an outline of suggested study for the examination. The applicant is responsible for all testing fees.

4. Applicant shall be notified in writing by the Secretary of the Board of the examination results. Applicants that pass shall be notified to come to the Section of Plumbing Regulations and Inspection and obtain their license within ninety - (90) days. **Applicants that have not passed the examination for the first time shall be notified that they may re-take the examination after ninety (90) days (3 months) and shall be eligible every ninety (90) days (3 months) there after until he/she has passed the examination.**

5. Successful applicant shall bring a 3/4" by 3/4" color photograph **and/or a digital picture,** a certificate of liability insurance for bodily injury and property damage in the amount of at least one million dollars ($1,000,000) naming the applicant as an additionally insured, and the license fee required by Table 111 to the Section of Plumbing Regulations and Inspections in order to be issued a license as a Master Drainlayer.

Change 111.9 to read as follows:

111.9 License as a Journeyman Plumber.

1. Journeyman Plumber

An applicant for a Journeyman Plumber license shall possess training and experience in all phases of the plumbing industry, they shall be skilled in installing plumbing fixtures and facilities and shall have a thorough knowledge of the art of the plumbing system for the protection of the public health and shall have at least five (5) years of experience as an Apprentice Plumber under the direction and supervision of a Master or Journeyman Plumber licensed under the rules and regulations of this Code, or under laws and regulations requiring similar qualifications, or under an established code having comparable requirements, or, in lieu thereof, the applicant shall possess such experience or training as is the equivalent thereto. Equivalent training and experience may be considered to mean either:

a. A degree in civil or mechanical engineering from an accredited college or university, and three (3) years of experience in the design, planning and/or installation of plumbing, drainage, vent piping facilities, potable water supply and distribution piping and potable water cross connection control under the direction of a Master or Journeyman Plumber licensed under the rules and regulations of this Code, or under laws and regulations requiring similar qualifications.

Or;

b. The satisfactory completion of a three (3) year course in practical plumbing, drainage, vent piping facilities, potable water supply and distribution piping, and potable water cross connection control at a recognized trade or technical school and five (5) years experience as an Apprentice Plumber under the personal direction of a Master or Journeyman Plumber licensed under the rules and regulations of this Code, or under rules and regulations requiring similar qualifications;

Or;

c. Such other experience and/or training as the Board of Plumbing Examiners determines is equivalent.

Note 1: A maximum of one (1) years experience may be used as a part of required experience while employed in plumbing maintenance. It may be deemed equivalent experience for one (1) year of experience required for Master or Journeyman Plumber license.

Note 2: Experience for this license may not be acquired during the same time period as experience is acquired for another license.

2. Applicant's qualifications shall be presented to the Board of Examiners for approval to take the written examination.

3. Approved applicant shall be notified by the Secretary of the Board as to the date and place of the written examination. The Secretary shall also give the applicant an informational letter on the examination procedures with an outline of suggested study for the examination. The applicant is responsible for all testing fees.

4. **An applicant shall be required to successfully pass an examination designed or selected by the Board of Examiners in addition to the foregoing requirements.**

5. Applicant shall be notified in writing by the Secretary of the Board of the examination results. Applicants that pass shall be notified to come to the Section of Plumbing Regulations and Inspection and obtain their license within ninety - (90) days. **Applicants that have not passed the examination for the first time shall be notified that they may re-take the examination after ninety (90) days (3 months) and shall be eligible every ninety (90) days (3 months) there after until he/she has passed the examination.**

6. Successful applicant shall bring a 3/4" by 3/4" color photograph **and/or** a digital picture and the license fee required in Table 111 to the Section of Plumbing Regulations and Inspections in order to be issued a license as a journeyman plumber.

7. **The intent of this section is that candidates meet the approval of the Board of Plumbing Examiners as having acquired the experience requirements for each license for which an application has been reviewed by this Board of Plumbing Examiners, and in addition successfully pass an examination designed or selected by the Board of Examiners. The order of obtaining approval from the Board or in acquiring a passing grade does not remove the requirements that both are obtained.**

Change 111.10 to read as follows:

111.10 Registration as an Apprentice Plumber.

1. A Master licensed by St. Louis City, who employs an apprentice in St. Louis County, and/or the Missouri Counties of St. Louis, Jefferson, Franklin, and St. Charles County, and/or the Illinois Counties of Monroe, Madison, and St. Clair County shall register that apprentice in St. Louis City under the rules contained in this ordinance. All persons serving an apprenticeship in any trade registered under this Code shall register with the Board of Plumbing Examiners prior to the start

of their work training in that trade. The Master is held solely responsible to register all apprentices. Penalties for failure to register an apprentice shall be as defined in this code for violations, and shall also be subject to suspension or revocation of license by the Board of Plumbing Examiners. A Joint Apprenticeship Training Committee (JATC), registered with the Labor Department, may act on behalf of an employer who is not licensed as a Master under this Plumbing Code to facilitate the registration of apprentices.

a. **The word "apprentice" as used in this Code shall mean a person learning, or already having experience in, the principles and art of the trade category in which the person is registered, under the personal direction and supervision of a licensed Master or Journeyman.**

b. **The word "Experienced Apprentice" as used in this Code shall mean a person, who in the judgment of the Board of Plumbing Examiners, previous to his application, has received a minimum of two and one-half (2-½") years equivalent training and experience learning the principles and art of the trade category in which the person is registered during which the applicant has received a minimum of five hundred (500) hours of approved classroom training, and who has received a minimum of ten (10) hours of OSHA approved Safety Training for Construction, and who has been certified by the Master for whom he/she is currently employed that said apprentice is capable of performing installations that are in compliance with the Code and with the principals and art of the trade category, and who shall continue his training and experience under the direction and supervision of a licensed Master until qualified to apply for Journeyman in that trade.**

c. **An Apprentice applicant whose training was not received under a St. Louis City licensed Master may also apply for "Experience Apprentice" upon meeting the requirements listed in the above paragraph or the equivalent as determined by the Board.**

2. Personal Supervision of Apprentices.

An Apprentice is to be under the supervision of a Master or Journeyman at all times. Experienced apprentices are not authorized to supervise an apprentice. The Master or Journeyman is not required to constantly watch the Apprentice but is to lay out the work required and permit the Apprentice to perform the work on his/her own. Masters or Journeymen are permitted to leave the immediate work area and remain on job site without being accompanied by the Apprentice. But, the Apprentice should know where the Master or Journeyman is located on the jobsite, so she/he can request assistance and/or direction.

Job site is defined as follows:

I. A single building or structure, or a group of related and supporting buildings, on one site covered by one or more permits, or

II. A designated subdivision consisting of more than one single family residence on one contiguous section of land, or

III. A residential complex containing one or more multi-family structures on one contiguous section of land and contained within one designated development.

3. The minimum term of apprenticeship or experienced apprentice or experienced apprentice registrations shall continue until the apprentice or experienced apprentice *passes the Journeyman examination or the Board cancels the registration. An apprentice* or experienced apprentice must make an initial application to the Board within twelve (12) months of completion of the experience requirement for license (minimum term as set forth in this section). The Board may revoke an apprentice license for failure to make such application for Journeyman License. The Board may review all apprentice and experienced apprentice's registrations that have extended more than two (2) years beyond the listed minimum term. Registration may be canceled if the Board determines, after providing the registrant with notice and an opportunity to be heard, that the registrant is not learning the principles and art of the trade category in which he or she is registered, and is not making an attempt to become licensed. The Board may remove "Experienced Apprentice" status, if the Board determines that the registrant has inadequate knowledge of the principals and art of the trade category to hold such registration in which he or she is registered. The Board may return such registrant to a lesser classification. The decision of the Board involving a registration may be appealed in the same manner as other decisions of the Board.

a. Plumber Apprentice - minimum term of apprenticeship shall be five (5) years.

b. Experienced Plumber Apprentice - minimum term of apprenticeship shall be as determined by the Board of Plumbing Examiners but no less than a total of five (5) years equivalent training and experience.

4. Apprentices and/or Experienced Apprentices are prohibited from registering in more than one (1) trade category in the same time period.

5. An applicant for Apprentice or Experienced Apprentice Registration shall:

a. Register with the Board of Plumbing Examiners using the form approved and provided by the Board. Said registration shall include the applicant's name, Social Security Number, address, zip Code, age and telephone number. The applicant shall also include on the application the name of the licensed Master under which the applicant will be receiving training and instructions.

b. Furnish a letter from a St. Louis City Master, licensed in the trade in which he/she is registering confirming the apprentice's or experienced apprentice's employment and previous experience and accepting responsibility for training said apprentice.

c. Furnish a listing of all journeymen, apprentice and experienced apprentices currently in the St. Louis City Master's employ by name and license or registration number, or indicate no apprentices employed.

d. Proof of enrollment within six months of application in (This requirement to become effective Jan 1, 2011):

1. (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 such as 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:

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

(ii) The Accrediting Commission of Career Schools and Colleges of Technology; or

(iii) The National Center for Construction Education and Research; or

(C) An applicable, integrated five (5) year combined classroom and field training apprenticeship program that is conducted by any school or organization approved, accredited or certified, as applicable, by:

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

(ii) The Accrediting Commission of Career Schools and Colleges of Technology; or

(iii) The National Center for Construction Education and Research; or

2. Presentation by the applicant or any Entity or organization of a written, individual training program providing five (5) years combined of educational training or classes and field work or on-the-job training obtained as follows:

(A) At least 500 classroom hours of educational training or classes covering work that requires a license under this Section 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:

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

(ii) The Accrediting Commission of Career Schools and Colleges of Technology; or

(iii) The National Center for Construction Education and Research and;

(B) The balance of the required hours needed to equal five (5) years 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 500 classroom hours presented as part of any individualized training program the individual program must contain a minimum of 440 hours technical instruction in the installation, alteration, reconstruction, repair, replacement and/or servicing of Plumbing Systems.

(C) Applicants shall also have taken by St. Louis City, a full-face photograph or the equivalent as determined by the Board, for identification purposes, and pay a registration fee of Ten Dollars ($25.00).

6. Apprentices and Experience Apprentices shall, during the [first] month of July of each year after registration, report their training and employment status to the Board. Such report shall be on a form provided by the Board, shall list for the past year, (July 1 to June 30,) all employers, and period of time worked.

NOTE: Failure to report this required information to the Board of Examiners may cause the registration to be canceled.

7. Any Master employing an apprentice and/or an experienced apprentice shall advise the Board in writing immediately upon the commencement or termination of the apprentice's employment. In addition by the last work day of July [January] of each year the Master shall provide to the Board a list of each apprentice and/or experienced apprentice in their employ as of June 30th [December 31st] of the prior month .

8. The total number of apprentices and experienced apprentices employed by a Master at any given time shall not exceed the total number of licensed Journeyman employed at that time plus one (1) additional apprentice or experienced apprentice for each active Master. In times of work shortages, upon application, consideration may be given by the Board of Plumbing Examiners to a St. Louis City licensed Master or JATC which supervises the training of apprentices, to waive this rule with the intention of maintaining training of previously registered apprentices.

Change 111.11 and 111.11.1 to read as follows:

111.11 Interim Journeyman License:

In the event the Board of Plumbing Examiners determines that a shortage of licensed Journeymen in a particular trade exists in St. Louis City, an Interim Journeyman License for that trade may be granted.

A. An applicant for an Interim Journeyman License for that trade may be granted to a person whose most recent residence and employment as a journeyman or apprentice was more than 125 miles from the St. Louis City courthouse and who has previously registered and is currently registered as an apprentice working under a bonded St. Louis City Licensed Master in that trade and who meets all the practical experience and training qualifications required by this Code for license as a Journeyman in that trade, and by the applicants choice has not passed the required written examination. Applicants for an Interim Journeyman License shall submit a written application to the Board and pay the same fee(s) as an applicant for a regular Journeyman License.

B. Interim Journeyman licenses shall expire one year after the date of issuance and are non-renewable. A person who's Interim Journeyman License has expired is not eligible to apply for another Interim Journeyman license in that trade.

C. Interim Journeyman license may be upgraded to a regular Journeyman license by passing the appropriate examination. Applicant for the appropriate examination must apply for issuance of the exam credentials during the term of the Interim License. If the Interim license has expired, a new application must be made to the Board. The Board will accept the previous review of qualification for experience and training unless there is information that the previous review considered information that was falsified or otherwise invalid.

D. An interim Journeyman License may not be used to qualify the number of Apprentices that may be approved for an entity employing Journeymen.

111.11.1 The intent of this section is that candidates meet the approval of the Board of Plumbing Examiners as having the experience requirements for each license for which an application has been reviewed by this Board of Plumbing Examiners, and in addition successfully pass an examination designed or selected by the Board of Examiners. The order of obtaining approval from the Board or in acquiring a passing grade does not remove the requirement that both are obtained.

Add 111.11.2 to read as follows:

111.11.2 Interceptors (Separators) – Registration, Maintenance and Inspection Required.

1. Upon adoption of Rules and Regulations by The Metropolitan St. Louis Sewer District, MSD, for inspections of existing interceptors to be scheduled annually, the Building Commissioner and/or the Code Official is authorized to enter into a contract with MSD for record keeping of such inspections per the requirements of this section.

2. Interceptors, including but not limited to grease interceptors, oil interceptors/separators, installed in accordance with this code shall be inspected and certified as to proper maintenance and operation annually, by persons who are properly licensed Plumbers pursuant to this Code. The owner/user shall maintain all interceptors in proper working condition.

3. The owner of these devices shall maintain a written record of interceptor maintenance for two years. All such records shall be available at all times and shall be submitted to the inspector at the inspector's request. These records shall contain the date of inspection or maintenance, name of the person performing the inspection or maintenance, and the manager's signature or initials for verification.

(A). Hydromechanical grease interceptors shall be cleaned as required by use and as required by the manufacturer, but at intervals not longer than ninety (90) days at the owners/users expense. Gravity Grease interceptors and Oil and sand interceptors shall be cleaned as required by use, but at intervals not longer than one hundred eighty (180) days. Interceptors shall be kept free of inorganic solid materials such as grit, rocks, gravel, sand, eating utensils, cigarettes, shells, towels, rags, etc., which could settle into the interceptor and thereby reduce the effective volume. The use of biological chemicals as a grease degradation agent is conditionally permissible upon written approval of the Chief Plumbing Inspector. Any establishment using this method shall maintain the interceptor in such a manner that abatement from the interceptor's outlet is consistently attained.

(B). The results of such inspections shall be submitted to the Office of Plumbing and Sewer Inspection, within thirty (30) days after making such test, on a form which is acceptable to the Code Official, and shall be completed and signed by the tester. A copy shall also be provided at time of inspection, or an appropriate sticker shall be applied to maintenance records posted in the location of the device.

(C) The Office of Plumbing and Sewer Inspection shall maintain all records of inspections performed in accordance with the Code requirements and notify all owners when retesting is required. Violation notices shall be issued and notification shall be sent to the Health Department and MSD, for failure to perform or register the required test.

(D). The fee for such notification, record maintenance and registration shall be ten dollars ($10) per each inspection report submitted. Fees shall be paid by the employing Master in a manner approved by the Code Official, at the time the test report is submitted by the device tester to the Office of Plumbing and Sewer Inspection.

(E). Installations of grease and oil interceptors/clarifiers by persons who are properly licensed pursuant to this Code as a Plumber and certified by the Board of Plumbing Examiners for this inspection.

(F). Inspections of grease and oil interceptors/clarifiers by persons who are properly licensed pursuant to this Code as a Plumber and certified by the Board of Plumbing Examiners for this inspection.

(G) This provision shall take effect no later than one year and no sooner than ninety (90) days after the final adoption of this ordinance and the adoption of regulations requiring such inspections by MSD.

111.12 Certification for homeowner's permit. A homeowner that is found qualified by the Board of Examiners shall be allowed to do plumbing work on an owner-occupied single family dwelling under the following conditions:

1. The homeowner shall reside in the one-family dwelling and present proof of ownership to the Board of Examiners;

2. Such plumbing work shall be done by the homeowner and used exclusively by the homeowner and the homeowner's family;

3. Homeowners making plumbing repairs on a one-family dwelling for rental or sale purposes are in violation of this section.

4. The applicant shall complete application provided by the Section of Plumbing Regulations and Inspections and pay the application fee shown in Table 111.

5. The Board of Examiners shall allow the homeowner to take the homeowner examination only once. If the homeowner fails to qualify by obtaining a passing score, the homeowner shall not be permitted to take the examination again for one year and the plumbing work must be done by certified individuals.

6. If the homeowner qualifies, the Board of Examiners shall certify the homeowner to work on the specified owner-occupied one family dwelling. This certification shall be valid for two (2) years only at the address listed on the application.

7. The homeowner with this certification shall be allowed to obtain one permit at a time for up to four (4) plumbing fixtures. Only one permit for a homeowner shall be open at any time. Plumbing permits for homeowners may not be extended beyond six (6) months. Any open permit shall be revoked when the homeowner's certification expires. The homeowner shall not be permitted to do work outside of the building.

8. After the homeowner's certification has expired, the homeowner may re-apply and re-test for a new certification.

111.13 Powers of the Board to suspend or revoke licenses.

Upon receipt of a written complaint to the Board filed by the Code Official, or the Building Commissioner or any aggrieved person, or upon the Board's own motion, the Board shall make an investigation into the complaint which it may deem necessary and thereafter shall conduct a hearing upon such complaint.

Add 111.13.1 to read as follows:

111.13.1 Reasons for suspension or revocation of licenses.

The Board of Examiners shall have the power to suspend or revoke any license, registration, or certificate issued pursuant to this Code for cause. Although such actions may be based upon causes other than those enumerated, the following are declared to be adequate causes for suspension or revocation.

The following offenses shall be cause for a hearing on a master plumber's, master drainlayer's or journeyman plumber's license:

1. If the license holder has obtained same by fraud or misrepresentation, that license shall be immediately revoked;

2. The license holder has intentionally violated any of the provisions of this section or any other portion of this code;

3. The license holder is found to be negligent, unskilled, and unfaithful in their work or found to be unfit, incompetent, or untrustworthy in the work of plumbing or drainlaying.

4. The license holder has been convicted of a crime or of violating an Ordinance involving moral turpitude;

5. The licensed master plumber has intentionally employed an unlicensed person to perform plumbing work covered by this code;

6. The licensed master plumber has directed apprentices to work without the supervision of a licensed journeyman or licensed master plumber;

7. The licensed master plumber or licensed master drainlayer has obtained permits for individuals who are not in their employ or under their supervision;

8. The licensed master plumber or licensed master drainlayer has allowed anyone to enter an excavation that has not been properly shored.

9. **Disciplinary action against the holder of a license or certificate of authority, or other right to practice any profession regulated by this chapter granted by another state, territory, federal agency, or country upon grounds for which revocation or suspension is authorized in this Code;**

10. **The suspension or revocation of a Master or Journeyman license by any jurisdiction;**

11. **A revoked license, registration, or certification 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.**

12. **Upon suspension and or revocation the license holder is to surrender his/her license(s) at the close of the Board of Plumbing Examiners hearing.**

111.13.2 Notice of hearing. Within seventy-five (75) days after the filing of a written complaint at a Board meeting, a notice of hearing shall be sent to the license holder. The notice shall be served to the last known address by certified main, return receipt requested, at least ten (10) calendar days prior to any scheduled hearing and shall include:

1. A statement of the time, place, and nature of the hearing;

2. A reference to the particular section(s) of the code and rules involved;

3. A short, plain statement of the complaint and a statement of the issues before the Board;

4. A statement that the nature of the proceeding before the Board will be an ~~informal~~ **a formal** inquiry into the complaint, at which time an opportunity will be afforded the individual or contractor to respond to the allegations in the complaint by his/her testimony, the testimony of witnesses, or by documentary evidence;

5. A statement that the individual or contractor has a right to be represented by legal counsel; and

6. A statement that based upon the evidence presented at the hearing, the Board may suspend or revoke the homeowner's, apprentices, journeymen, or master's license.

111.13.3 Determining vote. A decision to suspend or revoke a journeyman's or master's license shall require the concurring vote of at least three (3) of the five (5) members of the Board.

111.13.4 Decisions of the Board are final unless appealed. All rulings or decisions of the Board of Examiners shall become final and binding upon all parties thereto unless appealed to the Board of Building Appeals as provided for in the Building Code.

111.13.5 Enforcement stayed. If the decision of the Board of Examiners is appealed to the Board of Building Appeals, enforcement of any ruling or decision by the Board shall be stayed until the Board of Building Appeals has rendered its decision.

Add 111.13.6 to read as follows:

111.13.6 Authority of Board of Plumbing Examiners to levy fines.

~~**Any person or entity that violates any provision of the Code shall be guilty of a Class A Misdemeanor.**~~

The Board of Plumbing Examiners (Board) shall have the authority to take disciplinary action as set out in the Code. ~~and impose civil penalties, not to exceed one thousand dollars ($1,000.00), per offense, if the Board finds, after notice to the individual and a hearing on the matter, that the individual or entity has violated any provision of the Code.~~

~~**In determining the amount of penalty to be imposed, the Board may consider both any mitigating circumstances and the severity of the violation in relation to the deterrent value of the fine.**~~

~~**Any final order imposing a civil penalty is subject to appeal or review as specified in section 110.1.**~~

~~**Payment of a civil penalty shall be made within thirty (30) days after the decision of the Board, pending an appeal. Failure to pay a civil penalty by any person licensed under this Code shall be grounds for non-renewal or denial of reinstatement of a license. In addition, action will be taken against any bonds which may exist to obtain payment of civil penalty.**~~

111.14 Hardship Clause. In the event of a loss of a Master Licensee to a company employing tradesmen licensed in the City of Saint Louis, through no fault of that company, a licensed Journeyman of the trade of the absent Master Licensee; or in the event of the lass of a Master Drainlayer to a company through no fault of that company, a person who would otherwise be eligible to qualify as a Master Drainlayer in the trade of the absent Master Drainlayer; and who shall be a full time employee of that company, shall be designated as an Interim Master after meeting all bonding and insurance requirements. That company may operate under an Interim Master, who will have the same rights, responsibilities and standing of a Master in that trade, for a period of not more than one (1) year from the date of the hardship. The Code Official shall determine judgment of fault.

Disagreement of judgment may be appealed to the Board of Examiners who shall hold an emergency hearing no later than fourteen (14) calendar days following the date the appeal is received by the Board Secretary. The decision of the Board involving a hardship clause is appealable in the same manner as other decisions of the Board. Additional appeals may be made pursuant to the procedures in Section 110 of this Code

SECTION 112
BOARD OF EXAMINERS FOR SPRINKLER SYSTEM CONTRACTORS

Change 112.1 to read as follows:

112.1 How constituted. The Mayor, with the approval of the Board of Aldermen, shall appoint one (1) licensed employing sprinkler contractor, one (1) registered professional engineer with experience in fire suppression sprinkler system design and one (1) licensed journeyman sprinkler fitter. Each of whom shall be a resident of the City of St. Louis ~~**or a resident of St. Louis County,**~~ each of whom shall be a United States citizen, and each of whom shall have been actively engaged at the trade or business of sprinkler systems for five (5) years in the Saint Louis metropolitan area. These three members, together with the Fire Marshal or the Fire Marshal's appointed representative, and the Building Commissioner or the Building Commissioner's appointed representative, shall constitute the Board of Examiners.

112.2 Term of office, compensation. The members of the Board of Examiners, except the Fire Marshal or the Fire Marshal's appointed representative, and the Building Commissioner or the Building Commissioner's duly appointed representative, shall hold office for a term of four (4) years or until their successors are duly qualified, unless removed by the Mayor. They shall, except for the Fire Marshal or the Fire Marshal's appointed representative, and the Building Commissioner or the Building Commissioner's duly appointed representative, receive compensation for their services, as provided by separate ordinance on a per-meeting basis.

112.3 Meetings. Three (3) members of the Board in attendance shall constitute a quorum. An affirmative vote of three (3) board members is necessary for the approval of any motion. The Board shall elect one of its members to be the chairman. Suitable quarters for the use of the Board of Examiners shall be provided by the Building Division.

Add 112.4.7 to read as follows:

112.4 Powers and duties of the Board of Examiners. It shall be the duty of the Board of Examiners to meet as often as necessary to: hear and determine any charges or complaints which may be lawfully made against any licensed sprinkler contractor or licensed journeyman sprinkler fitter; approve apprentice applications; and transact any other lawful business of the Board. Meetings may be held at the request of the chairman of the board. Suitable quarters for the use of the Board of Examiners shall be provided.

1. Administration – The Board of Examiners shall receive applications and after review they shall approve or deny them based on Sections 112.8, 112.9 and 112.10.

2. Test – The Board of Examiners shall prescribe the administration, form and content of tests for journeyman sprinkler fitters and sprinkler fitter contractors and the form and content of licenses as described herein. The Board of Examiners shall also determine the passing grade for each test.

3. Complaints – All complaints by citizens concerning sprinkler fitting procedures or rules and regulations shall be made to the Board of Examiners in writing. After a thorough investigation, the Board shall respond in writing

to each complaint.

4. Adoption of Rules – The Board of Examiners shall adopt rules and regulations, when and as required at the discretion of the Board, consistent with the provisions of this ordinance and the laws of the City of Saint Louis, related to the Board's powers and duties as herein stated. Such rules and regulations adopted by the Board shall be posted in the Section of Plumbing Regulations and Inspections for two weeks prior to becoming effective.

5. Inspection – Order the inspection of any sprinkler system whenever deemed necessary for the public safety.

6. Revocation/Suspension of Licenses – After investigation and hearings in accordance with Section 112.11, the Board may revoke or suspend any license that it has issued.

7. **The Board shall, pursuant to the regulations and standards herein set forth, determine the qualifications of and provide for the examining, licensing, registration and/or certification of applicants who meet the qualifications and successfully pass the appropriate examinations, if required, under this code. Evidence of license "The License" shall be provided to those who meet the qualifications and successfully pass the appropriate examination, or successfully meet all requirements of renewal of the license. This evidence of license "The License" shall remain the property of St. Louis City and shall be surrendered immediately when demanded under conditions listed elsewhere in this document.**

Add 112.4.1 to read as follows:

112.4.1 Inactive license. Any licensed person who is not working at his/her licensed trade and who desires to retain his/her license may do so by notifying the Board of Sprinkler Fitter Examiners that he/she wishes to be placed in inactive status. Such notice shall be in writing and shall state that the license holder is not working at his/her licensed trade, wishes to be placed in inactive status, understands that he/she is prohibited from working while inactive and agrees to notify the Board to activate his/her license prior to resuming work. It shall be a Violation of this Code for a license holder to perform work in his/her license category while in inactive status remain the property of St. Louis City and shall be surrendered immediately when demanded under conditions listed elsewhere in this document.

The Board shall respond in writing to the license holder in each inactivation or reactivation action and each such action shall be noted in the Board minutes. An inactive license shall be issued stating the license number and type, which is inactive. This inactive license shall be valid for a period of ten (10) years. Three (3) months prior to the expiration date, the department shall notify the holder at his last known address, the date that his inactive license will expire so that it can be renewed at the holder's request and payment of fees and other requirements of the Board.

It is the responsibility of the Inactive License holder to notify the Board of any license change or change in address. Maintenance of any other license will be equivalent to notifying the Board of address change.

License holders in inactive status, who renew their licenses, are not required to accrue continuing education course hours, as a condition of renewal. However, they are required to accrue the minimum continuing education hours for any prior year or any part thereof in which their license was active.

112.5 Secretary of the board, duties. The Code Official or his duly appointed representative shall act as Secretary to the Board of Examiners. The Secretary of the Board shall be nonvoting. It shall be the duty of the Secretary to:

1. Keep full and complete records of the proceedings of said Board;

2. Keep a file of the name, residence and place of business of every licensed person engaged in or working at the business of sprinkler fitting in the City of Saint Louis (these records shall be updated within ninety days of the renewal period stated in Section 112.6);

3. Give all applicants for examination a written notice of the date and place of examination. The Secretary shall give the applicant an informational letter on examination procedures with an outline of suggested study for the examination applied for;

4. Return all incomplete applications to the applicants;

5. All records shall be open to supervised public inspection during normal working hours, subject to staff availability. Test questions and answers shall not be open to the public.

Change 112.6 and 112.6.1 to read as follows:

112.6 Renewal date for licenses. The renewal of all licenses for sprinkler contractors and journeyman sprinkler fitters shall be due on one date, December 31, **2009,** and every three (3) years thereafter. Licenses shall be renewed up **to one hundred twenty (120) days prior to but not more than thirty (30) days after the license, registration or certification expires.**. Following the grace period, any sprinkler contractor or journeyman sprinkler fitter that has not renewed shall be required to re-apply and re-test in order to obtain a new license at the discretion of the Board of Examiners.

112.6.1 Licenses obtained between renewal dates. Any new license issued more than thirty days prior to the renewal date shall expire on the renewal date. There shall be prorating of license fees.

112.6.2 Failure of sprinkler contractor to renew. The failure of any sprinkler contractor to renew their license during the grace period shall terminate their license, and no permit for doing work under this or any other ordinance of the City of Saint Louis shall be issued them until after they have obtained a new license following re-application and re-testing (if necessary), and they shall be disqualified from carrying on any work authorized to be done under any permit theretofore issued to them or any job unfinished at the date of termination of their license.

Add 112.7 to read as follows:

112.7 Inactive license. Any licensed person who is not working at his/her licensed trade and who desires to retain his/her license may do so by notifying the Board of Plumbing Examiners that he/she wishes to be placed in inactive status. Such notice shall be in writing and shall state that the license holder is not working at his/her licensed trade, wishes to be placed in inactive status, understands that he/she is prohibited from working while inactive and agrees to notify the Board to activate his/her license prior to resuming work. It shall be a Violation of this Code for a license holder to perform work in his/her license category while in inactive status. The license holder must maintain an active journeyman sprinkler fitter license.

Change 112.8 number 8 to read as follows:

112.8 License as a sprinkler contractor. An applicant shall successfully complete all of the following requirements in order to receive a license as a sprinkler contractor:

1. Applicant shall be twenty-one (21) years of age.

2. Applicant shall complete application provided by the Section of Plumbing Regulations and Inspections and pay the application fee shown in Table 111.

3. Applicant shall have served a five (5) year apprenticeship and have five (5) years' experience as a certified sprinkler fitter or the applicant shall have ten (10) years' experience as a certified sprinkler fitter. (Five years of experience consists of a minimum of 8,500 working hours with a maximum of 1,700 working hours considered for any one year.) Equivalent training and experience shall also be considered. Equivalent training and experience shall mean a degree in engineering from an accredited university in which the applicant shall have received training in the design of sprinkler system design, planning and installation of same, and has had three (3) years of experience in the design, planning and installation of sprinkler systems, and must be a registered professional engineer licensed to practice in the State of Missouri.

4. Applicant's credentials shall be reviewed by the Board of Examiners as to qualifications and experience. The applicant shall provide proof of knowledge, training and experience through transcripts from educational institutions, apprenticeship agreements, reference letters from employers and other documents as requested by the Board of Examiners.

5. The Secretary of the Board shall arrange a testing date with the approved applicant. The Secretary shall also give the applicant an informational letter on the examination procedures with an outline of suggested study for the examination. The applicant shall schedule the test within ninety (90) days of approval. The applicant is responsible for all testing fees.

6. Applicant shall successfully complete the written examination and receive a passing grade on all parts of the

examination.

7. Applicant shall be notified in writing by the Secretary of the Board of the examination results. Applicants that pass shall be notified to come to the Section of Plumbing Regulations and Inspection and obtain their license. Applicants that have failed the examination for the first time shall be notified that they may schedule a re-take of the examination after ninety (90) days. Applicants that have failed the examination for a second time shall be notified that they may schedule a re-take of the examination after an additional one hundred eighty (180) days. Applicants that have failed the examination for a third time shall wait a minimum of twelve (12) months before re-application and re-testing. The applicant is responsible for all application and testing fees.

8. Successful applicant shall bring a 3/4" by 3/4" color photograph **and/or bring a digital picture,** a certificate of liability insurance for bodily injury and property damage in the amount of at least one million dollars ($1,000,000) naming the applicant as an additionally insured, and the license fee required by Table 111 to the Section of Plumbing Regulations and Inspections in order to be issued a license as a sprinkler contractor.

   No journeyman sprinkler fitter shall be allowed to hold a sprinkler contractor license. When a journeyman sprinkler fitter qualifies as a sprinkler contractor, the journeyman must relinquish the journeyman sprinkler fitter's license to the Board of Plumbing Examiners before a sprinkler contractor's license can be issued.

Change 112.9 number 3 and 9 to read as follows:

112.9 License as a journeyman sprinkler fitter. An applicant shall successfully complete all of the following requirements in order to receive a license as a journeyman sprinkler fitter:

1. Applicant shall be twenty-one (21) years of age.

2. Applicant shall complete application provided by the Section of Plumbing Regulations and Inspections and pay the application fee shown in Table 111.

3. Applicant shall have a minimum of five (5) years experience as an apprentice in the installation of sprinkler systems under the direct personal and immediate supervision of a licensed journeyman sprinkler fitter or licensed sprinkler contractor in the City of St. Louis, or have a license issued by another licensing authority in another jurisdiction, or equivalent training and experience prior to the date of the examination. (Five years of experience consists of a minimum of 8,500 hours with a maximum of **2,000** working hours considered for any one year.) The applicant shall receive a one (1) year credit toward their five (5) year apprenticeship training when presenting a certificate of completion from a trade or technical school recognized by the Board of Examiners. Any applicant living within one hundred (100) miles of the limits of the City of Saint Louis must have held a valid apprentice sprinkler fitter registration for five (5) years.

4. The applicant shall provide proof of knowledge, training and experience through transcripts from educational institutions, apprenticeship agreements, letters of reference from employers and any other documents requested by the Board of Examiners.

5. Applicant's qualifications shall be reviewed by the Board of Examiners for approval to take the written examination.

6. The Secretary of the Board shall arrange a testing date with the applicant. The Secretary shall also give the applicant an informational letter on the examination procedures with an outline of suggested study for the examination. The applicant shall schedule the test within ninety (90) days of approval. The applicant is responsible for all testing fees.

7. Applicant shall successfully complete the written examination and receive a passing grade on all parts of the examination.

8. Applicant shall be notified in writing by the Secretary of the Board of the examination results. Applicants that pass shall be notified to come to the Section of Plumbing Regulations and Inspection and obtain their license. Applicants that have failed the examination for the first time shall be notified that they may schedule a re-take of the examination after ninety (90) days. Applicants that have failed the examination for a second time shall be notified that they may schedule a re-take of the examination after an additional one hundred eighty (180) days.

Applicants that have failed the examination for a third time shall wait a minimum of twelve (12) months before re-application and re-testing. The applicant is responsible for all application and testing fees.

9. Successful applicant shall bring a 3/4" by 3/4" color photograph **and/or a digital picture** and the license fee required in Table 111 to the Section of Plumbing Regulations and Inspections in order to be issued a license as a journeyman sprinkler fitter.

Change 112.10 to read as follows:

112.10 Registration as an apprentice sprinkler fitter. Every applicant learning the business or trade of sprinkler fitting within the City of Saint Louis, shall be registered by the Board of Examiners and shall receive a registration from the Board of Examiners with "Apprentice" plainly marked on it, their name and the date issued **and a color or digital picture.** The registration fee for an Apprentice shall be as prescribed in Table 111 and the registration will be issued for a five (5) year period.

The apprentice's employer shall furnish a notarized letter to the Board of Examiners naming all journeyman sprinkler fitters and all apprentice sprinkler fitters in his/her employment. The sprinkler system contractor shall employ at least one licensed journeyman sprinkler fitter for each apprentice sprinkler fitter.

An apprentice who is undergoing an apprenticeship or course of training for the purpose of learning the trade of sprinkler fitting shall perform no work regulated by this code or its amendments thereto, except as an assistant, under the direct personal and immediate supervision of a **journeyman** sprinkler fitter or sprinkler contractor licensed under the terms and provisions of this code.

The apprentice registration shall not be renewed. Upon written application, the apprentice shall be allowed to be extended his registration for a maximum of six (6) months if the apprentice has been approved to take the journeyman sprinkler fitter examination as prescribed in Section 112.8. It shall be mandatory for an Apprentice sprinkler fitter, on the completion of their five (5) year training period, to make application for the journeyman sprinkler fitter's examination.

112.11 Powers of the Board to suspend or revoke licenses. Upon receipt of a written complaint to the Board filed by the Building Commissioner or any aggrieved person, or upon the Board's own motion, the Board shall make an investigation into the complaint which it may deem necessary and thereafter shall conduct a hearing upon such complaint.

Add 112.11.1 numbers 8 through 11 to read as follows:

112.11.1 Reasons for suspension or revocation of licenses. The following offenses shall be cause for a hearing on a sprinkler contractor's or journeyman sprinkler fitter's license:

1. If the license holder has obtained same by fraud or misrepresentation, that license shall be immediately revoked;

2. The license holder has intentionally violated any of the provisions of this section or any other portion of this code or the fire code;

3. The license holder is found to be negligent, unskilled and unfaithful in their work or found to be unfit, incompetent or untrustworthy in the work of sprinkler fitting;

4. The license holder has been convicted of a crime or of violating an Ordinance involving moral turpitude;

5. The licensed sprinkler contractor has intentionally employed an unlicensed person to perform sprinkler fitting work covered by this code;

6. The licensed sprinkler contractor has directed apprentices to work without the supervision of a licensed journeyman sprinkler fitter.

7. The licensed sprinkler contractor has obtained permits for individuals who are not in their employ and under their supervision.

8. **Disciplinary action against the holder of a license or certificate of authority, or other right to practice any profession regulated by this chapter granted by another state, territory, federal**

agency, or country upon grounds for which revocation or suspension is authorized in this Code;

9. **The suspension or revocation of a Contractor, Master or Journeyman license by any jurisdiction;**

10. **A revoked license, registration, or certification 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.**

11. **Upon suspension and or revocation the license holder is to surrender his/her license(s) at the close of the Board of Sprinkler Fitter Examiners hearing.**

112.11.2 Notice of hearing. Within seventy-five (75) calendar days after the filing of a written complaint at the Board meeting, a notice of hearing shall be sent to the license holder. The notice shall be served to the last known address by certified mail, return receipt requested, at least ten (10) days prior to any scheduled hearing and shall include:

1. A statement of the time, place and nature of the hearing;

2. A reference to the particular section(s) of the code and rules involved;

3. A short, plain statement of the complaint and a statement of the issues before the Board;

4. A statement that the nature of the proceeding before the Board will be an ~~informal~~ **formal** inquiry into the complaint, at which time an opportunity will be afforded the individual or contractor to respond to the allegations in the complaint by his/her testimony, the testimony of witnesses, or by documentary evidence;

5. A statement that the journeyman sprinkler fitter or sprinkler contractor has a right to be represented by legal counsel; and

6. A statement that, based upon the evidence presented at the hearing, the Board may suspend or revoke the apprentice's, journeyman sprinkler fitter's or sprinkler contractor's license.

112.11.3 Determining vote. A decision to suspend or revoke an apprentice's, a journeyman sprinkler fitter's or a sprinkler contractor's license shall require the concurring vote of at least three (3) members of the Board.

112.11.4 Decisions of the Board are final unless appealed. All rulings or decisions of the Board of Examiners shall become final and binding upon all parties thereto unless appealed to the Board of Building Appeals as provided for in the Building Code.

112.11.5 Enforcement stayed. If the decision of the Board of Examiners is appealed to the Board of Building Appeals, enforcement of any ruling or decision by the Board shall be stayed until the Board of Building Appeals has rendered its decision.

Add 112.11.6 to read as follows:

112.11.6 Authority of Board of Sprinkler Fitter Examiners to levy fines.

Any person or entity that violates any provision of the Code shall be guilty of a Class A Misdemeanor.

The Board of Sprinkler Fitter Examiners (Board) shall have the authority to take disciplinary action as set out in the Code. ~~and impose civil penalties, not to exceed one thousand dollars ($1,000.00), per offense, if the Board finds, after notice to the individual and a hearing on the matter, that the individual or entity has violated any provision of the Code.~~

~~In determining the amount of penalty to be imposed, the Board may consider both any mitigating circumstances and the severity of the violation in relation to the deterrent value of the fine.~~

~~Any final order imposing a civil penalty is subject to appeal or review as specified in section 112.11.4.~~

~~Payment of a civil penalty shall be made within thirty (30) days after the decision of the Board, pending an appeal. Failure to pay a civil penalty by any person licensed under this Code shall be grounds for non-renewal or denial of reinstatement of a license. In addition, action will be taken against any bonds which may exist to obtain payment~~

~~of civil penalty.~~

112.12 Hardship Clause. In the event of a loss of a Master Licensee to a company employing tradesmen licensed in the City of Saint Louis, through no fault of that company, a licensed Journeyman of the trade of the absent Master Licensee and who shall be a full time employee of that company, shall be designated as an Interim Master after meeting all bonding and insurance requirements. That company may operate under an Interim Master, who will have the same rights, responsibilities and standing of a Master in that trade, for a period of not more than one (1) year from the date of the hardship. The Code Official shall determine judgment of fault.

Disagreement of judgment may be appealed to the Board of Examiners who shall hold an emergency hearing no later than fourteen (14) calendar days following the date the appeal is received by the Board Secretary. The decision of the Board involving a hardship clause is appealable in the same manner as other decisions of the Board. Additional appeals may be made pursuant to the procedures in Section 110 of this Code.

SECTION 113
COMMITTEE OF PLUMBING REVIEW

Change 113.1, 113.3, 113.4 to read as follows:

113.1 How constituted. The Mayor, with the approval of the Board of Aldermen, shall appoint one (1) registered professional engineer **or a practicing plumbing designer holding a Certified in Plumbing Design Certificate, CPD, issued by the American Society of Plumbing Engineers who has actually engaged in the design of plumbing or sanitary or sewer systems may be appointed as a substitute for the position held by the Registered Engineer engaged in the design of plumbing and sanitary systems,** one (1) licensed **City of St. Louis** master plumber, one (1) licensed **City of St. Louis** master drainlayer, one (1) licensed **City of St. Louis** journeyman plumber, and one (1) member at large. Each of whom shall be a resident of the City of St. Louis **~~or a resident of St. Louis County,~~** each of whom shall be a United States Citizen, and each of whom shall have been actively engaged at the trade or business of plumbing systems for five (5) years in the Saint Louis metropolitan area, except for the member at large. These five members, together with the Plumbing Supervisor or the Plumbing Supervisor's **duly** appointed representative, shall constitute the Committee of Plumbing Review.

113.2 Term of office, compensation. The members of the Committee of Plumbing Review, except the Plumbing Supervisor or the Plumbing Supervisor's duly appointed representative, shall hold office for a term of four (4) years or until their successors are duly qualified, unless removed by the Mayor. They shall, except for the Plumbing Supervisor or the Plumbing Supervisor's duly appointed representative, receive compensation for their services, as provided by separate ordinance on a per-meeting basis.

113.3 Meetings. Three (3) members of the Committee in attendance shall constitute a quorum. A majority vote of the board members **present** is necessary for the approval of any motion. The Committee shall elect one of its members to be the chairman **on an annual basis.** The Plumbing Supervisor or the Plumbing Supervisor's duly appointed representative shall be the Committee's secretary. Suitable quarters for the use of the Committee of Plumbing Review shall be provided by the Building Division. The Committee shall meet a minimum of three (3) times per year. Additional meetings may be called at the request of any Committee member.

113.4 Powers and duties of the Committee of Plumbing Review. It shall be the duty of the Committee of Plumbing Review to consider all proposed changes in this code relative to the use, adoption, or incorporation of any plumbing materials, or the method of construction or installation of plumbing when referred to the Committee by the code official. The Committee shall consider any petition for the adoption or incorporation of any plumbing materials or methods of construction or installation of plumbing referred to the Committee by the Board of Building Code Review. The Committee shall accept research, approval, investigations, and report reviews when referred by the code official for assistance.

The Committee of Plumbing Review shall review new and/or unique plumbing systems, methods of piping, appurtenances, and appliances and make recommendations to the Authority Having Jurisdiction for the purpose of finding acceptable such new and/or unique plumbing systems, piping, appurtenances and/or appliances acceptable for use under this Code.

113.5 Secretary of the board, duties. It shall be the duty of the Secretary to:

1. Prepare and distribute the agenda to all Committee members for all upcoming meetings.

2. Keep full and complete records of the proceedings of said Committee.

3. All records shall be open to supervised public inspection during normal working hours, subject to staff

availability.

SECTION 114
BACKFLOW CERTIFICATION

114.1 General. The installation and annual testing of backflow prevention devices shall be performed only by individuals that have been licensed for this specific work by the Section of Plumbing Regulations and Inspections.

Change 114.2 and 114.2.2 to read as follows:

114.2 Master plumbers and journeyman plumbers.

A licensed plumbing contractor shall have a licensed master plumber or licensed journeyman plumber in possession of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 to install and/or test backflow prevention devices on any installation other than dedicated fire sprinkler and suppression systems that requires a licensed Sprinkler Contractor to install and test.

An applicant for a Backflow Prevention Device Tester Certification shall have the following qualifications:

1. Be certified by the Missouri Department of Natural Resources as a Backflow Prevention Device Tester.

2. Must be licensed, certified and/or registered as a Master Plumber, Journeyman Plumber, Master Pipefitter, Journeyman Pipefitter, Master Sprinkler Fitter, or Journeyman Sprinkler Fitter under the foregoing provisions of this Code.

NOTE: EVERY BACKFLOW PREVENTION CERTIFICATE LICENSE NUMBER SHALL INDICATE THE TYPE (S) OF WATER SYSTEMS FOR WHICH THE HOLDER IS QUALIFIED.

114.2.1 Validation of master plumber or journeyman plumber licenses. Upon application for or renewal of a master plumber or journeyman plumber license, the master plumber or journeyman plumber shall present proof of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 certification to the plumbing section and the master plumber or journeyman plumber license will be notated as complying with Section 114.2.

Change 114.2.2 to read as follows:

114.2.2 The installation and initial test of backflow prevention devices shall be performed in accordance with this code and the standards and procedures established by the Missouri Department of Natural Resources, Public Drinking Water Program by persons who are properly licensed pursuant to this Code who also posses a current Backflow Prevention Device Tester Certificate issued by the Missouri Department of Natural Resources.

Clarification:

The Plumbing Code Ordinance requires the installer to hold the appropriate license (Plumber, Pipefitter, or Sprinkler Fitter) to install a Backflow Device.

The testing, repair, replacement or retrofit installation of existing Backflow Prevention Devices for Plumbing Systems, and Process Piping systems may be performed by Journeymen Plumbers, Journeymen Pipefitters, Master Plumbers, Master Pipefitters licensed under this Code who also possesses a current Backflow Prevention Device Tester Certificate issued by the Missouri Department of Natural Resources.

Clarification;

The Plumbing Code Ordnance requires two (2) licenses to test and repair Backflow Devices. To test Backflow devices the Plumbing Code Ordinance requires the tester to hold the appropriate license (Plumber, Pipefitter, Sprinkler Fitter) as well as be certified by the MODNR as a Backflow tester and the certification be registered under the plumbing Code Ordinance. All testing must be performed under the supervision of an appropriately licensed master.

Change 114.3 to read as follows:

114.3 Sprinkler fitter contractors and journeyman sprinkler fitters. A licensed **Master** Sprinkler fitter employing a licensed journeyman sprinkler fitter in possession of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 may install and/or test backflow prevention devices on any sprinkler system installation. The licensed sprinkler contractor is authorized to perform work on any sprinkler system up to and including the backflow device and the branch pipe in which the backflow device is installed. If the sprinkler system originates from a separate water main tap, the licensed sprinkler contractor may work on the line up to but not including the tap.

114.3.1 Validation of journeyman sprinkler fitter licenses. Upon application for or renewal of a journeyman sprinkler fitter license, the journeyman sprinkler fitter shall present proof of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 certification to the plumbing section and the journeyman sprinkler fitter license will be notated as complying with Section 114.3.

114.4 Mechanical contractors and journeyman pipefitters. A mechanical contractor employing a licensed journeyman pipefitter in possession of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 may use that employee to install and/or test backflow prevention devices on any mechanical system installation. The licensed journeyman pipefitter employed by the mechanical contractor is authorized to perform work on the backflow prevention device serving any mechanical system. A mechanical contractor licensed by the Plumbing Section of the Division of Buildings and Inspections is authorized to work on process piping up to the backflow prevention device and the branch pipe in which the backflow device is installed.

Change 114.4.1 to read as follows:

114.4.1 Journeyman pipefitter license. An individual in possession of a valid journeyman mechanical pipefitter license issued by the Mechanical Section of the Division of Buildings and Inspections may obtain a journeyman pipefitter license from the Plumbing Section upon completion of a written application, proof of possessing the journeyman mechanical pipefitter license, a 3/4 inch by 3/4 inch color photograph **and/or a digital picture** and payment of the application and license fee stated in Table 111.

114.4.2 Validation of journeyman pipefitter licenses. Upon application for or renewal of a journeyman pipefitter license, the journeyman pipefitter shall present proof of a valid Missouri Department of Natural Resources Public Drinking Water Certification for Backflow Prevention Assembly Tester Rule 10CSR60-11.010 certification to the plumbing section and the journeyman pipefitter license will be notated as complying with Section 114.4.

Amendments To The Uniform Plumbing Code
2010 Saint Louis City Ordinance Chapter 2 Definitions

25.04.040 Chapter 2 Amended.

-A-

Addition - is defined as an increase in building area, aggregate floor area, height or number of stories of a structure.

Additional Inspection - An inspection which is not a required inspection as defined in this Code but which in the judgment of the Code Official is reasonably necessary to enforce this Code or as 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, lockout etc. See Extra Inspection. Fees for additional inspections shall be as specified in Table 107.11.3.

Authority Having Jurisdiction - Whenever the term "Authority Having Jurisdiction" is used it shall be deemed to mean "Code Official" as hereinafter defined in Section 104.1 of this Code.

Alteration – Any construction or renovation to an existing structure other than repair or addition

-B-

Backflow Device – A device or means to prevent backflow into the potable water system.

Backflow Device Installed – When potable water is connected to the inlet side and a potential backflow hazard is present at the outlet

side of a backflow device.

Bathroom Group – Unless specifically cited in the body of the Code, a bathroom group shall consist of a water closet, a lavatory and a bathtub and/or shower stall.

Bedroom – A room furnished with a bed and intended primarily for sleeping.

Board – The Board of Examiners for Master Plumbers, Master Drainlayers and Journeyman Plumbers.

Board of Appeals – The Board of Building Appeals as defined in the Building Code.

Add the following definition:

***Boiler* – See Water Heater Boiler**

Building Classification - The arrangement adopted by within the Building Code for the designation of buildings in classes according to occupancy.

Building Code - The Building Code adopted by the City of St. Louis.

Change definition to read as follows:

Building Drain - That part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer beginning five (5) feet (1525 mm) outside the building wall, **or five (5) feet (1525 mm) beyond the plumbing appliances, appurtenances or equipment installed outside the walls of building such as but not limited to grease, oil and sand interceptors.**

Add the following definition:

***Building Supply/Water Service Pipe* - The pipe from the water main or other source of potable water supply to the water distributing system of the building served, the meter and street service. (See "Water Service Pipe/Building Supply").**

Building Trap - A device, fitting, or assembly of fittings installed in the building drain to prevent circulation of air between the drainage system of the building and the building sewer.

-C-

Central Use Facility(s) - A restroom facility or facilities designed and sized to accommodate the total occupant load of the building, located within the distance required by the Code for maximum access and meeting the requirements of the Code within its use category.

Certified Backflow Assembly Tester - A person who is certified by the Missouri Department of Natural Resources as a Backflow Prevention Device Tester and possesses a Backflow Prevention Device Tester Certificate issued pursuant to this Code for the particular application involved.

Add the following definition:

***Certified in Plumbing Design (CPD)* – A person who has successfully completed the CPD examination as a part of the international certification program for engineers and designers of plumbing systems and so designated by the American Society Of Plumbing Engineers.**

Code - The Uniform Plumbing Code, 2003 2009 Edition, "IAPMO/ANSI UPC 2003 2009" with the additions, deletions and changes prescribed in this Ordinance.

Committee - The Committee of Plumbing Code Review as created herein.

Containment - (Cross-connection) Protection of the public water system is obtained by installation of an approved backflow prevention assembly or air-gap separation at the user connection from the main service line(s).

Cross-Connection - Any actual or potential connection or structural arrangement, between a public or private potable water supply system and any other source or system through which it is possible to introduce into any part of the private or public water system any used water, industrial fluid, gas or substance other than the intended potable water with which the system is supplied. By-pass arrangements, jumper connections, removable sections, swivel or change-over devices through which or because of which, backflow can or may occur are considered to be cross-connections.

Cross-Connection, Direct - A continuous, enclosed interconnection or cross-connection to allow the flow of fluid from one system to the other.

Cross-Connection, Indirect - A potential cross-connection such that the interconnection is not continuously enclosed and the completion of the cross-connection depends on the occurrence of one or more abnormal conditions.

Cross-Connection - Isolation. Protection of the user water system by installation of an approved backflow prevention device or assembly at the point of connection between the users water system and any device, equipment, appliance, appurtenance assembly or area which might constitute a real or potential cross-connection.

Add the following definitions:

Customer - Any person who receives water from a public water system, except those persons receiving water for resale.

Customer Service Line - The pipeline from the public water system to the first tap, fixture, receptacle or other point of customer water use or to the first auxiliary water system or pipeline branch in a building.

Customer Water System - All piping, fixtures and appurtenances, including auxiliary water systems, used by a customer to convey water on his/her premises.

-D-

Dead End – That part or branch of a drainage piping system, which is without a free circulation of air.

Add the following definition:

Direct Cross-Connection – A continuous, enclosed interconnection or cross-connection to allow the flow of fluid from one system to the other.

Change the following definition:

Downspout - The rain leader from the roof to the building storm drain, combined building sewer, or other means of disposal located outside of the building, or, the storm leader from the bridge drain **to the storm drain, combined building sewer below ground, or the storm leader from the bridge drain to the storm drain, combined building sewer below ground.**

DWV - An acronym for "drain-waste-vent" referring to the combined sanitary drainage and venting systems and the storm water drainage system. This term is technically equivalent to "soil-waste-vent" (SWV).

-E-

Engineer - An engineer registered or licensed to practice professional engineering in Missouri in accordance with the professional registration laws of the state of Missouri.

Add the following definition:

Extra Inspection – (re-inspection) is defined as 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, lockout etc. An inspection, which is not a required inspection as defined in this Code but which in the judgment of the Code Official, is reasonably necessary due to non-compliance with Code requirements, or work not ready or accessible for inspection when requested. Fees for extra inspections shall be as specified in 107.11.3 / 107.11.4.

-F-

Add the following definition:

Facility - A single tract or contiguous tracts of land and any improvements on them, upon which one (1) or more service connections are located, and which, except for easements and public right-of-way, are wholly owned, leased or otherwise subject to the control of the customer.

Fixture Group – A set of fixtures within a room or rooms serving an individual or group of individuals at a unique single time.

-H-

Health Department - The St. Louis City Department of Health.

Add the following definitions:

HDPE – High Density Polyethylene

Change the following definition:

Hydromechanical Grease Interceptor - **A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept nonpetroleum fats, oil, and grease (FOG) from a wastewater discharge and is identified by flow rate, and separation and retention efficiency. The design incorporates air entrainment, hydromechanical separation, interior baffling, and /or barriers in combination or separately, and** ~~an one of the following:~~

A - External flow control, with air intake (vent): directly connected

~~B – External flow control, without air intake (vent); directly connected~~

~~C - Without external flow control; directly connected~~

~~D – Without external flow control; indirectly connected~~

These interceptors comply with the requirements of Table 10-2. Hydromechanical grease interceptors are generally installed outside.

-I-

Add the following definitions:

Irrigation Backflow Assembly – An assembly consisting of a Reduced Pressure Zone Backflow Device and a properly sized Shock Arrestor located downstream and within 12 inches of the backflow device.

Isolation - (Cross-Connection). Protection of the user water system by installation of an approved backflow prevention device or assembly at the point of connection between the users water system and any device, equipment, appliance, appurtenance assembly or area which might constitute a real or potential cross-connection.

-M-

Mechanical Code - The Mechanical Code adopted by the City of St. Louis.

Minor Repairs - The term "minor repairs" shall be construed to mean repairs within the interior of any building to leaks in drains, pipes, traps and valves, opening waste or supply pipes, and traps or drains. It shall not be construed to include any work involving connections to or replacement or rearrangement of soil pipes, supply pipes, waste pipes, vent pipes or inside rain leader pipes, or the replacing or setting of any fixture, or replacement or repairs to Backflow Prevention Devices, pressure reducing or regulating valves, or any other installation, repair or alteration which in the judgment of the Chief Plumbing Inspector is of such a nature which if improperly installed, repaired or altered would endanger the public health.

Exemption from the permit requirements of this Code shall not be deemed to grant authorization for any work to be done

in violation of the provisions of this Code or any other laws or ordinances of this jurisdiction.

Add the following definitions:

MSD – The Metropolitan St. Louis Sewer District.

Multiple single-family dwelling: Wherever the term multiple single-family dwelling is used in this Code, it shall be construed to include two-family dwellings.

-O-

Office - The Office of the Section of Plumbing Regulations and Inspections.

Other Establishment - Any public or private structure other than a dwelling, which generates sewage.

- P-

Plumbing System – Includes all potable water building supply and distribution pipes, all plumbing fixtures and traps, all drainage and vent pipe (s), and all building drains and building sewers, including their respective joints and connection, devices, receptors, and appurtenances within the property lines of the premises, and shall include storm water drainage from all private and St. Louis City constructed bridges and structures including bridge drains and drainage piping to a connection with the storm or combined sewer, and shall include potable water piping, potable water treating or using equipment, water heaters and water heating boilers for potable water and vents for same.

Exclusion #1: The receiving, unloading, moving, storing, hoisting, setting, aligning and leveling of casework housing plumbing components, such as laboratory fume hoods and hospital headwall units, shall not be considered to be components of plumbing systems and shall not be subject to the licensing provisions of this code.

Public water system - A system for the provision to the public of piped water for human consumption, if such system has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days per calendar year. Such system includes any collection, treatment, and storage or distribution facilities used in connection with such system.

-Q-

Add the following definition:

Quick Closing Valve – A fast-action solenoid valve, spring loaded self closing faucet, push- pull type valves and faucets, or any other device capable of instantaneously closing.

-R-

Add the following definitions:

Rainwater Harvesting – a technology used to collect, convey, and store rain from relatively clean surfaces such as roof, land surface, or rock catchment for later use.

Registered Design Professional – An architect or engineer, registered or licensed to practice architecture or engineering, as defined by the statutory requirements of the professional registration laws of the state of Missouri.

Re-inspection – A re-inspection is defined as an inspection which is required as a result of unusual or complicated construction and/or defined as an inspection which made as a result of non-compliance, not ready, lock-out, etc. An inspection which is not a required inspection as defined in this Code but which in the judgment of the Code Official is reasonably necessary due to non-compliance with Code requirements, or work not ready or accessible for inspection when requested. Fess for re-inspection shall be as specified in Section 107 of this Code. (See Extra Inspection)

Required Inspection - An inspection which falls within the minimum number of inspections required by this Code.

Roof Drain - A drain installed to receive water collecting on the surface of a roof and to discharge it into a leader, down spout, or

conductor. Roof drain includes sump receivers, clamps, grates, sumps, extensions, hangers, supports and all other appurtenances necessary for its function, security and stability.

Roughing - In - The installation of all parts of the plumbing system, which can be completed prior to the installation of fixtures. This includes drainage, water supply, gas piping, and vent piping and the necessary fixture supports.

1. **Ground Rough In** - All underground piping, which shall include aste, vent, and distribution piping.

2. **Stack Rough In** - All waste, vent and distribution water supply lines above ground.

-S-

Sanitary Sewer - A sewer, which carries sewage and excludes storm, surface, and ground water.

Service Connection - Any water line or pipe connected to a water distribution main or pipe for the purpose of conveying water to a point of use.

Sewer District - The Metropolitan St. Louis Sewer District (MSD) or private sewer company having jurisdiction in the location where work is to be performed.

Single Family Dwelling - A one family dwelling, which is the only dwelling located on a parcel of ground, with the usual accessory buildings.

Standpipe – A vertical pipe generally used for the storage and distribution of water for fire extinguishing.

Add the following definition:

Strapped Plumbing – A plumbing scheme where drain piping from upper floors is supported just below first floor joists of lowest floor providing gravity flow to public or private sewer, and exits the building through a wall penetration.

Street Department – The City of St. Louis Street Department.

-W-

Water customer - Any person who receives water from a public water system.

Add the following definitions:

Water Distribution system - All piping, conduits, valves, hydrant, storage facilities, pumps and other appurtenances, excluding service connections, which serve to deliver water from a water treatment plant or water supply source to the public.

Water Heater Boiler - A water heater boiler, **a plumbing appurtenance designed to produce** domestic **hot water, which** has one or more of the following parameters:

1. **Has an** input capacity of 200,000 But/hr (57.1 kW) or more.

2. **Has** 120 gallons storage capacity or more.

3. **Has an** 160 psi operating pressure of 160 psi or more.

4. **Has an** operating temperature of 210 degrees Fahrenheit or more Equipment must be constructed to standards established by the American Society of Mechanical Engineers (ASME).

Water Service Pipe/Building Supply - The pipe from the water main or other source of potable water supply, including the corporation, and meter (if installed), to the water distributing system of the building served.

Add the following definitions:

Water System - All sources from which water is derived for drinking or domestic use by the public, also all structures,

conduits and appurtenances by means of which water for use is treated, stored or delivered to consumers, except service connections from water distribution systems to buildings and plumbing within or in connection with buildings served.

Water Supply Source - All sources of water supply including wells, infiltration galleries, springs, reservoirs, lakes, streams or rivers from which water is derived for public water systems, including the structures, conduits, pumps and appurtenances used to withdraw water from the source or to store or transport water to the water treatment facility or water distribution system.

Add the following definitions:

Welded Joint or Seam – Any joint or seam obtained by the joining of metal or plastic parts in the plastic molten state.

Welder, Pipe – A person who specializes in the welding of pipes and holds a valid certificate of competency from a recognized testing laboratory, based on the requirements of the ASME Boiler and Pressure vessels code, Section IX for metal pipe and/or based on the requirements of the AWS B2.4 Specification and / or Plastics-Pipe-Institute (PPI), Generic Butt Fusion Joining Procedure for Field
Joining of Polyethylene Pipe for Welding Procedure and Performance Qualification for Thermoplastics.

Workmanlike - Executed in a skilled manner; i.e., generally plumb, level, square, in line, undamaged and without marring adjacent work.

Amendments To The Uniform Plumbing Code 2010
Saint Louis City Ordinance Chapter 3 General Regulations

Chapter 3 Amended.

Change Section 305.1 to read as follows::

301.1.4 *Existing Buildings.* The plumbing systems in all existing buildings or premises shall be maintained in accordance with this Code and the City of St. Louis Property Maintenance Code. In existing buildings or premises in which plumbing installations are to be altered, repaired, or renovated, this Code and the City of St. Louis Existing Building Code shall govern all work. Where conflicts occur, the more stringent provisions shall apply. The licensing provision of this Code shall apply in all cases.

(1.) **Alterations: An alteration to any structure shall conform to the Code requirements for a new structure and shall not result in an increase in hazard to the occupants. Portions of the structure not altered and not affected by the alteration are not required to comply with the Code requirements for a new structure except as specified in the Building Code as amended. Where alterations are made in an existing building or structure requiring the addition of any two or more plumbing fixtures, or one or more water closets, or where a new bathroom is installed, or a building is remodeled for an extension in size or change in occupancy in which plumbing work is involved, the new work shall be made to conform to this Code.**

(2.) **Additions: An addition to a structure shall conform to the requirements for a new structure without requiring the existing structure to comply with the requirements of this Code for new construction and shall not result in any increase in hazard to the occupants.**

(3.) **Reuse of Building Sewers and Building Drains: Existing building sewers and building drains may be used in connection with new buildings or new plumbing and drainage work only when they are found on examination and test to conform in all respects to the requirements governing new work and the proper Authority Having Jurisdiction shall notify the owner to make any changes necessary to conform to this Code. No building or part thereof shall be erected or placed over any part of a drainage system, which is constructed of materials other than those approved elsewhere in this Code for use under or within a building.**

(4.) **Reuse of Water Service:**

a. **Existing water service may be used in connection with new buildings or new plumbing and drainage work only when they are found on examination and test to conform in all respects to the requirements governing new work and the proper Authority Having Jurisdiction shall notify**

the owner to make any changes necessary to conform to this Code. No building or part thereof shall be erected or placed over any part of a water service, which is constructed of materials other than those approved elsewhere in this Code for use under or within a building.

b. For alterations and additions to a building with an existing 3/4" size water service:

1. For the installation of an additional 9 WSFU's which then results in an existing residential or commercial building to total no more than 2½ baths and a maximum total of 31 WSFU's the 3/4" size water service shall be allowed to remain with no change.

2. For the installation adding more than 9 WSFU's or totaling more than 31 WSFU's, the 3/4" size water service shall be replaced and sized in accordance with the provisions of Chapter 6 of this Code.

301.4.4 *Design Documents.* The registered professional engineer shall provide four (4) complete sets of signed and sealed documents for the alternative engineered design for submittal to the Authority Having Jurisdiction. The design documents shall include at a minimum, a floor plan and a riser diagram of the work. Where appropriate, the design documents shall indicate the direction of flow, all pipe sizes, grade of horizontal piping, loading and location of fixtures and appliances.

305.0 Sewers Required

Change Section 305.1 to read as follows:

305.1 Every building in which plumbing fixtures are installed shall have a connection to a public sewer.

Change Section 310.1 to read as follows:

310.1 Workmanship

The intent of this Code is to require that all piping be installed in a consistent and uniform manner, straight and true, with change of direction obtained by use of fittings designed for that purpose and not be deflecting pipe. All work shall be performed in a workmanlike manner. **All design, construction, and workmanship shall be in conformity with accepted engineering practices and shall be of such character as to secure the results sought to be obtained by this Code.**

311.0 Prohibited Fittings and Practices.

Change Section 311.2 to read as follows:

311.2 No drainage or vent piping shall be drilled and tapped, nor may a saddle be used for the purpose of making connections thereto, and no cast iron soil pipe shall be threaded.

Change Section 311.5 to read as follows:

311.5 No fitting, fixture and piping connection, appliance, device, or method of installation that obstructs or retards the flow of water, wastes, sewage or air in the drainage or venting systems, in amount exceeding the normal frictional resistance to flow, shall be used unless it is indicated as acceptable in this code or is approved per Section 301.1 of this code. **The use of an automatic air vent type fitting is prohibited.** The enlargement of a three (3) inch (80mm) closet bend or stub to four (4) inches (100 mm) shall not be considered an obstruction.

Add Section 311.9 to read as follows:

311.9 Lead Water Services. All damaged lead water services, residential and / or commercial, shall be entirely replaced with copper or other acceptable material.

Change 312.0 to read as follows:

312.0 Independent Systems.

The drainage of each new building and of new work installed in any existing building shall be separate and independent from that of any other building, and, when available, every building shall have an independent connection with a public or private sewer.

Exception: Where one (1) building stands in the rear of another building on an interior lot, and no private sewer is available or can be constructed to the rear building through an adjoining court, yard, or driveway, the building drain from the front building shall be permitted to be extended to the rear building.

Change Section 312.1 to read as follows:

312.1 General requirements for building and building sewers serving single service Fats, Oil, or Grease (FOG) generating facilities. (See drawing # 45 in Appendix M).

1. Multi-Family Units – (Other than one, two and four family dwellings)

a. A separate waste stack shall be installed for waste from kitchen sinks, disposals and dishwashers and shall exit the building separately from other building drains. Solids interceptor not required except prior to a common grease interceptor.

2. Commercial units

a. Separation of sanitary, and FOG building drains exiting the building

1. All sanitary, and FOG building drains shall exit the building separately and shall be combined in a sampling manhole prior to leaving the property. Storm drains shall exit the property separately where conditions allow.

Exception: Where the footprint of the building on the property does not provide adequate clearance for this installed inside the building. Access from the outside shall be provided for this installation.

3. One, Two & Four Family Residential

a. Separate FOG building drain not required.

Change Section 312.2 to read as follows:

312.2 General requirements for building drains and building sewers serving multi-tenant one and two story buildings (also called strip stores.) (See drawing # 46 Appendix M)

1. There shall not be installed within the building structure a common drain to all tenant units. Each tenant will have installed an independent connection with a private sewer through a sampling tee. The private sewer will be located a minimum of five feet (5') from the building and a minimum of five feet (5') from the property line.

2. If the tenant is a FOG generating facilities there shall be a separate FOG building drain.

a. All grease generating appliances and all fixtures collecting FOG laden wastes shall pass through a hydromechanical grease interceptor (HGI) before connection to the separate FOG building drain.

Exception: Strip stores and or commercial plumbing installations as shown in Figure 46, containing a maximum of 75 gpm (maximum 4 inch diameter outlet) discharge from the hydromechanical interceptor may be routed to the common sanitary drain within three (3) feet prior to exiting the building.

3. Waste drain lines from garbage disposals, dishwashers and pre-rinse sinks shall, before entering a grease interceptor, first flow through a solids interceptor.

313.0 Protection of Piping, Materials and Structures.

Change Section 313.2 to read as follows:

313.2 All piping in connection with a plumbing system shall be so installed that the piping connections will not be subject to undue strains or stresses, and provisions shall be made for expansion, contraction, and structural settlement. No plumbing piping shall be directly embedded in concrete or masonry, **unless permission be otherwise granted by the Authority Having Jurisdiction.** No structural member shall be seriously weakened or impaired by cutting, notching or otherwise as defined in the Building Code.

313.2.1 All trenches deeper that the footing of any building, or structure and paralleling the same shall be at least forty-five (45) degrees (0.79 rad) there from, or as approved per Section 301.1 of this code.

313.4 **3** No building drain or drainage piping or part thereof, constructed of materials other than those approved for use under or within a building shall be installed, or less than one (1) foot (305 mm) below the surface of the ground.

No building sewer or drainage piping or part thereof, shall be installed under or within five (5) feet (1524 mm) of any building or structure nor less than thirty (30) inches (760 mm) below the surface of the ground.

***Exception:* Transition from all drainage thirty (30) inches (760 mm) below the surface of the ground to the building sewer at a maximum of forty-five (45?) degrees.**

Change Section 313.3 to read as follows:

313. 3 No building drain or drainage piping or part thereof, constructed of materials other than those approved for use under or within a building shall be installed, or less than one (1) foot (305 mm) below the surface of the ground.
No building sewer or drainage piping or part thereof, shall be installed under or within five (5) feet (1524 mm) of any building or structure nor less than thirty (30) inches (760 mm) below the surface of the ground.

Exception: Transition from all drainage thirty (30) inches (760 mm) below the surface of the ground to the building sewer at a maximum of forty-five (45?) degrees.

Change Section 313.9 to read as follows:

313.9 Plastic and copper piping penetrating a framing members to within one (1) inch (25.4mm) of the exposed framing shall be protected by steel nail plates not less than 0.0478 inches (18 gauge) (1.3mm) in thickness. The steel nail plate shall extend along the framing member a minimum of 1-1/2 inches beyond the outside diameter of the pipe or tubing.

***Exception:* See the St. Louis City Mechanical Code and Section 1211.3.4 and the City of St. Louis Fuel Gas Code for protection of Fuel Gas Piping and other systems governed by the Mechanical Code.**

313.10 Sleeves

Change 313.10.1 to read as follows:

313.10.1 Sleeves shall be provided to protect all piping through concrete and masonry walls and concrete floors.

Exceptions: Sleeves shall not be required where openings are drilled or bored. **Initial entry of 1-1/4" (inches) and smaller copper water service piping to residential single-family dwellings.**

314.7 Gas Piping

314.7.1 Piping shall be supported with pipe hooks, metal pipe straps, bands, brackets, or hangers suitable for the size of the piping, of adequate strength and quality, and located so as to prevent or damp out excessive vibration. Piping shall be anchored to prevent undue strains on connected equipment and shall not be supported by other piping. Pipe hangers and supports shall conform to the requirements of ANSI/MSS SP-58, Pipe Hangers and Supports-Material Design and Manufacture.

314.7.2 Spacing of supports in gas piping installations shall not be greater than shown in Table 3.0. Spacing of supports for CSST shall be in accordance with the CSST manufacturer's instructions.

314.7.3 Supports, hangers, and anchors shall be installed so as not to interfere with the free expansion and contracting of the piping between anchors. All parts of the supporting equipment shall be designed and installed so they will not be disengaged by movement of the supported piping.

Add Table 3-0 to read as follows:

Table 3-0 Support of Gas Piping

Steel Pipe Nominal Size of Pipe (inches)	Spacing of Support (feet)	Nominal Size of Tubing (Smooth Wall) (inch o.d.)	Spacing of Supports(feet)
½	6	½	4
¾ or 1	8	5/8 or 3/4	6
1-1/4 or larger (Horizontal)	10	7/8 or 1 (Horizontal)	8
1-1/4 or larger (Vertical)	Every Floor Level	1 or larger (Vertical)	Every Floor Level

For SI units: 1 ft = 0.0305 m.

315.2 Driving may be done in yards, courts, or driveways of any building site. When pipes are driven, the drive pipe shall be at least one (1) size larger than the pipe to be laid. Tunneling is not allowed.

316.0 ***Joints and Connections***
316.1 ***Types of Joints***

Add Section 316.1.7.1 to read as follows:

316.1.7.1 Welding Thermoplastic Pipe and Fittings. Plastic pipe and fittings designed to be joined by thermoplastic welding processes used for owner and/or operator installed gas transmission mains and for other applications such as Gas Service Lines and Gas Mains, Domestic Water Mains and Potable Water Service Lines shall comply with AWS B2.4 Specification and/or Plastic-Pipe-Institute (PPI), Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe, for Welding Procedure and Performance Qualification for Thermoplastics. Welding shall be performed by certified or qualified installers meeting the requirements of AWS B2.4 Individual Manufacturer Qualifications under the regulations of PPI, qualifications given by material distributor or manufacturer, or certification or qualification issued by owner. Qualification by Manufacturers will last for the duration of one (1) year from time qualified unless installer has used the proceeded within the time allotted (determined by individual manufacturer). The one (1) year qualification for a refresher course will commence from the date of the refresher course.

Add Section 316.1.11.1 to read as follows:

316.1.11.1 Heat-fusion joints shall be made in accordance with qualified procedures that have been established and proven by test to produce gastight joints at least as strong as the pipe or tubig joined utilizing the Plastic-Pipe-Institute (PPI), Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe, for Welding Procedure and Performance Qualification for Thermoplastics and/or AWS B2.4 Specification fir Welding Procedure ands Performance Qualification for Thermoplastics.

Change Section 316.2.2 to read as follows:

316.2.2 Unions Approved unions may be used in drainage piping when accessibly located in the trap seal or between a fixture and its trap in the vent system, except underground or in wet vents, at any point in the water supply system. Unions shall not be used in gas piping where it is to be concealed.

Add Section 316.1.6.1 to read as follows:

316.1.6.1 Use of Purple Primer. Primer shall not be purple.

320.0 Medical Gas and Vacuum Systems. All such piping shall be installed, tested, and verified in compliance with the Saint Louis City Mechanical Code.

321.0 Parking Garages

Add Section 321.0 to read as follows:

321.0 Parking Structures Drainage. Drainage systems for parking structures shall be designed and installed in the following manner:

A. **Drainage systems for roofs and all uncovered areas shall discharge into the storm sewer in a manner prescribed by this code (See "F").**

B. **Drainage systems for intermediate floor areas and all other covered areas shall discharge into the sanitary sewer in a manner prescribed by this code (See "F")**

C. **Floor drains for parking structures, in parking areas, need not be trapped.**

D. **Sanitary and storm drains and and shall discharge through sand and oil interceptors. The oil interceptor shall be located on the outside of the building.**

E. **All storm and sanitary piping that connect to sanitary or combination sewers shall be trapped prior to connection to the sewer.**

F. **Drainage and vent systems installed in parking structures shall not be interconnected with internal sanitary systems.**

G. **All drainage lines, sanitary and storm, shall be routed through inspection manhole prior to connection to sewer main or other approved discharge.**

Add Section 322.0 to read as follows:

322.0 Hospitals and Ambulatory Care Facilities and Nursing Homes

All plumbing facilities shall comply with the Missouri Licensing Law Regulations and Codes for Hospitals and Ambulatory Care Facilities and Nursing homes.

Add Section 322.1 to read as follows:

322.1 General – Flushing rim clinic sinks, bedpan washers, or other approved fixtures and equipment shall be provided for the disposing of bedpan contents and the cleansing and disinfection of bedpans in soiled utility rooms.

322.2 Water Heating Equipment

Add Section 322.2 to read as follows:

A. **The water heating equipment shall have sufficient capacity to supply six and one-half (6-1/2) gallons of water at one hundred ten (110) degrees Fahrenheit per hour per bed for fixtures; four (4) gallons of water at one hundred and twenty (120) degrees Fahrenheit per hour per bed for kitchens, and four and one half (4-1/2) gallons of water at one hundred and sixty (160) degrees Fahrenheit per hour per bed for laundry. The rinse water temperature of automatic ware washing equipment shall be one hundred and eighty (180) degrees Fahrenheit.**

B. **Such water heating equipment may be of the instantaneous, semi-instantaneous, flash or storage type. Where direct fired water heaters are used, they shall be of an approved high pressure type. Submerged steam heating coil shall be of copper. All water heating equipment shall be fabricated of non-corrosive metal or lined with non-corrosive material.**

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 4 - Plumbing Fixtures

Chapter 4 Amended.

Chapter 4 of the **2009** ~~2003~~ Uniform Plumbing Code TM is amended by the following provisions. Each section in the UPC that

corresponds to one of the following provisions is hereby deleted where so note or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

402.0 Water-Conserving Fixtures and Fittings

402.3.1 Non-water Urinals.

Delete Section as follows:

~~402.3.1 Nonwater Urinals. Nonwater urinals shall be listed and comply with the applicable standards referenced in Table 14-1. Nonwater urinals shall have a barrier liquid sealant to maintain a seal trap. vNonwater urinals shall permit the uninhibited flow of waste through bthe urinal to the sanitary drainage system. Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after installation. Where nonwater urinals are installed they shall have a water distribution line rough-in to the urinal location to ballow for the installation of an approved backflow prevention device in the event of retrofit.~~

Change 402.4 to read as follows:

402.4 Metered Faucets. **Manual,** self-closing, or self-closing, metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants and convention halls. Metered faucets shall deliver not more than 0.25 gallons (1.0 liter) of water per use.

Change 405.2 to read as follows:

405.2 Prohibited Urinals. Trough urinals **and urinals with an invisible seal** shall be prohibited.

~~Exception: Non-water urinals~~

405.3 Fixed wooden, concrete, cement, or tile wash trays or sinks for domestic use shall not be installed in any building designed or used for human habitation. No sheet metal-lined wooden bathtub shall be installed or reconnected. No dry or chemical closet (toilet) shall be installed in any building used for human habitation, unless first approved by the Health Officer.

Add 405.4 to read as follows:

405.4 Used or Condemned Fixtures. Previously used fixtures or fixtures which have been condemned shall not be installed in any plumbing system. This does not include the use of fixtures removed and then reinstalled for the same use and in essentially the same location.

406.0 Special Fixtures and Specialties.

Change 406.1 through 406.2 to read as follows:

406.1 Water and Waste Connections. Baptisteries, ornamental and lily ponds, aquaria, ornamental fountain basins, and similar fixtures and **specialties requiring water and/or waste connections shall have adequate backflow and back-siphonage protection and shall be submitted for approval to the Authority Having Jurisdiction prior to installation.** ~~constructions when provided with water supplies shall be protected from back-siphonage.~~

406.2 Restaurant kitchen and other special use sinks may be made of approved type bonderized and galvanized sheet metal of not less than No. 16 U.S. Grade (0.0625) (1.6mm) **and stainless steel of approved quality and grade.** All sheet metal plumbing fixtures shall be adequately designed, constructed, and braced in an approved manner to satisfactorily accomplish their intended purpose

Change 406.3 to read as follows:

406.3 Materials – Alternates

Special use fixtures shall be made of one of the following:

(A) Soapstone

(B) Chemical stoneware

(C) Copper-based alloy

(D) Nickel-based alloy

(E) Corrosion-resistant steel

~~(F) Other materials lined with lead~~

(G) Other materials suited for the intended use of the fixture

412.0 Floor Drains, Floor Sinks and Shower Stalls

411.2 Location of Floor Drains. Floor drains shall be installed in the following areas and the floor shall slope toward the floor drains and shall be protected from evaporation: **(See 1007.0)**

411.2.1 All toilet rooms designated as handicapped, and toilet rooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, except in a dwelling unit.

411.2.2 Commercial and institutional kitchens.

411.2.3 Laundry rooms in commercial and institutional buildings and common laundry facilities in multi-family dwelling buildings.

411.2.4 Toilet rooms designated for Public Use where no central facility is provided.

411.2.5 Within fifteen (15') feet and in the same room as a hot water heater or water heater boiler.

411.2.6 Within fifteen (15') feet and in the same room as emergency showers.

411.2.7 Within fifteen (15') feet and in the same room as backflow devices which have received approval from the Mo DNR, which have in their design the capability of a discharge.

411.2.8 Within fifteen (15') feet and in the same room as a boiler.

Change 411.2.9 to read as follows:

411.2.9 All ~~toilet rooms having public access except in a dwelling unit, and all~~ toilet rooms in daycare or preschool facilities, which are designated for use by children using these facilities. The floor drain shall be protected from evaporation.

Add 411.2.10 through 411.2.15 to read as follows:

411.2.10 All wheel chair accessible roll-in showers shall be supplied, in addition to the shower drain, **with a threshold drain outside the shower within 5 feet of the shower drain, whenever a threshold or obstacle to natural drainage to the shower drain exists. Where the drain is required,** the waste line of the threshold drain shall be connected to the shower drain waste pipe above the trap.

411.2.11 When floor drains are installed in existing floors, a minimum four (4) foot square area (48" x 48") shall be removed, and the replacement floor shall be sloped to the drain.

411.2.12 When required by owner or designer, a floor drain shall be installed within five (5) feet of the mop basin drain, and the waste line of that drain shall be connected to the mop basin drain waste pipe above the trap.

411.2.13 All basements with or without fixtures shall require a floor drain.

411.2.14 Floor drains and floor sinks shall be considered plumbing fixtures and each such drain shall be provided with an approved type strainer having a waterway equivalent to the area of the tailpiece. Floor drains, floor sinks, floor receptors, and shower drains shall be of an approved type, suitably flanged to provide a watertight joint in the floor.

411.2.15. Floor drains and floor sinks shall be installed in accordance with the provisions set forth in this Code and in the manner set forth hereunder:

A. A connection for a floor drain at the automatic clothes washer above ground may be discharged directly into the riser-pipe (stand pipe) above the trap of the automatic clothes washer drain and the floor drain need not be trapped.

B. Above ground floor drains and hub drains three (3") inches in diameter and larger shall be vented at the end of the horizontal line to which they are connected.

C. Underground traps three inches (3") in diameter and larger for floor drains, hub drains or stand pipe receptors need not be vented if sufficient stack vents or vent stack are connected to the underground system to ensure adequate ventilation and protection of the trap seals.

D. Traps two inches (2") in diameter installed for floor drains, hub drains and standpipe receptors shall be vented.

E. Where floor drains are provided the room floors shall be pitched toward the floor drain.

F. The connection of a floor drain, three (3") or four (4") inches in size when installed underground shall be connected into the horizontal building drain not less than five (5') feet downstream from the soil or waste stack.

G. Floor sinks being used as indirect waste receptors for plumbing fixtures or appliances shall be individually wasted and vented in accordance with the provisions established in this Code.

H. Floor sinks, three (3") inch trap size and larger, being used as indirect waste receptors for drip drainage and other similar discharges shall be either individually vented or line vented in accordance with the provisions established in this Code.

Change 411.3 to read as follows:

411.4 Floor Slope. Floors shall be sloped to floor drains. ~~where drainage occurs on a regular or frequent basis, or as otherwise required by the Authority Having Jurisdiction.~~

Change 411.8 to read as follows:

411.8 When the construction of on-site built-up shower receptors is permitted by the Authority Having Jurisdiction, receptors built directly on the ground shall be water-tight and shall be constructed from approved-type dense, nonabsorbent and non-corrosive materials. Each such receptor shall be adequately reinforced, shall be provided with an approved floor drain designed to make a water-tight joint in the floor, and shall have smooth, impervious and durable surfaces. Shower receptors shall have the subfloor and rough side of walls to a height of not less than three (3) inches (76mm) above the top of the finished dam or threshold shall be first lined with **sheet** plastic*, lead*, or copper*, or shall be lined with other durable and water-tight **sheet** materials. Showers that are provided with a built in place, permanent seat or seating area that is located within the shower enclosure, shall be first lined with **sheet** plastic*, lead*, copper*, or shall be lined with other durable and water-tight **sheet** materials that extend not less than three (3) inches (76mm) above horizontal surfaces of the seat or the seating area. "*" Starred wording refers to the *Note located at the end of 411.8 in the 2009 UPC.

Such sheet lining materials shall be pitched one-quarter (1/4) inch per foot (20.9 mm / m) to weep holes in the sub-drain of a smooth and solidly formed sub-base. Such sheet lining materials shall extend upward on the rough jams of the shower opening to a point not less than three (3) inches (76 mm) above the horizontal surfaces of the seat or seating area, the top of the finished dam or threshold and shall extend outward over the top of the permanent seat, permanent seating area, or rough threshold and be turned over and fastened on the outside face of both the permanent seat, permanent seating area, or rough threshold and the jambs.

412.3 ~~413.3~~ Separate Facilities. Separate toilet facilities shall be provided for each sex.

Exceptions:
(1.) Separate toilet facilities shall not be required for Residential installations.

(2.) In occupancies serving ten (10) or fewer people, one (10 toilet facility, designed for use by no more than one (1) person at a time, shall be permitted for both sexes.

(3.) In business and mercantile occupancies with a total floor area of twenty five hundred ((2500) square feet (232.5 m2) or less, except fuel dispensing facilities, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall satisfy the requirements for serving customers and employees of both sexes.

(4.) In assembly occupancies, except for Food Service Establishments, with a total floor area of fifteen hundred (1,500) square feet (135.5m2) or less, having an occupant load of thirty (30) or less, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall satisfy the requirement for serving customers and employees of both sexes.

Add 413.0 to read as follows:

413.0 Fixtures and Fixture Fittings for Persons with Disabilities.

Plumbing fixtures and fixture fittings for persons with disabilities shall conform to the **requirements of the St. Louis City Building Code** and the appropriate standards referenced in Table 14-1 of this code.

> **When unisex toilet facilities or facilities designed for families or for assisted use are provided, the amount of fixtures provided for this use may be used to reduce the number of required fixtures, one for one, either male or female but not both. The maximum number is also limited to never more than 80% of those required within 200 feet on the same floor.**

419.0 Food Service Establishments. Food service establishments with an occupant load of one hundred (100) or more shall be provided with separate facilities for employees and customers. Customer and employee facilities may be combined for occupant loads less than one hundred (100). Customer occupant load shall be determined as one occupant per each 15 square foot or part thereof, of dining and waiting area. Where outdoor seating is provided for a restaurant, the actual outdoor seating area shall be included in the total occupant load area for the restaurant. When separate facilities are required for employees and customers and the total number of employees exceeds 40 at any time, a second toilet room shall be provided for employees and such toilet rooms shall be uni-sex. Employee toilet rooms do not require physically disabled accessibility if other facilities in this establishment are available which meet physically disabled accessibility requirements.

Change Table 4-1 through Footnote #21 to read as follows:

TABLE 4-1
Minimum Plumbing Facilities 1

Each building shall be provided with sanitary facilities, including provisions for the physically disabled as prescribed by the Department Having Jurisdiction. Table 4-1 applies to new buildings, additions to a building, any changes of occupancy or type in an existing building resulting in increased occupant load. 4-1 applies to new buildings, additions to a building, any changes of occupancy or type in an existing building resulting in increased occupant load. Exception: New cafeterias used only by employees. For requirements for the physically disabled, ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities, may be used. **Access to public toilet facilities shall not be areas used by employees preparing food or areas used for the repair or assembly of products obtained or consumed by customers, or storage rooms, or mechanical Equipment rooms.**

The total occupant load shall be determined **by net floor area** ~~in accordance with the Building Code.~~ The type of building or occupancy shall be determined based on the actual use of the various spaces within the building. The minimum number of fixtures shall be calculated at fifty (50) percent male and fifty (50) percent female based on the total occupant load, **except when specific occupancy information is provided acceptable to the Authority Having Jurisdiction.**

Exception: New cafeterias used only by employees. For requirements for the physically disabled, ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities, may be used. Access to public toilet facilities shall not be areas used by employees preparing food or areas used for the repair or assembly of products obtained or consumed by customers, or storage rooms, or mechanical Equipment rooms. The total occupant load shall be determined by net floor area. The type of building or occupancy shall be determined based on the actual use of the various spaces within the building. The minimum number of fixtures shall be calculated at fifty (50) percent male and fifty (50) percent female based on the total occupant load, except when specific occupancy information is provided acceptable to the Authority Having Jurisdiction.

Once the occupant load and uses are determined, the requirements of Section 412.0, 419.0 and Table 4-1 shall be applied to determine

the minimum number of plumbing fixtures required.
State of Missouri regulations that exceed these minimums shall apply.

Exceptions:

1. *For Mercantile occupancies, square feet of net free floor area shall be used to calculate the number of occupants.*

2. *For Industrial and Warehouse occupancies, the actual number of occupants shall be used as the total occupant load. For a building with a warehouse area of ten thousand (10,000) square feet or greater, a minimum of one (1) unisex toilet room including one (1) floor drain, one (1) water closet, and one (1) lavatory with hot water shall be located in the warehouse area.*

3. *Where outdoor seating is provided for a restaurant, the actual outdoor seating area shall be included in the total occupant load for the restaurant.*

4. ***Re-occupancy with no change of use may require a change in the number of fixtures due to increase in occupant load or re-configuration of the space.***

Type of Building or Occupancy[2]	**Water Closets[14]** *(Fixtures per Person)*		**Urinals[5.10]** *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains[3.13]** *(Fixtures per Person)*
Assembly places - Theatres, Auditoriums, Convention Halls, etc. - for permanent employee use1815 *(A Use Group)	Male 1: 1-40 2: 41-60 3: 61-100 4: 101-150	Female 1: 1-15 2: 16-40 3: 41-60 4: 61-75 5: 76-100 6: 101-150	Male 1: 0-15 2:16-75 3:75-150	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*		
	Over 150 add 1 fixture for each addition 80 males and 1 fixture for each additional 40 females		Over 150 add one fixture for each additional 80 males				
Assembly places - Theatres, Auditoriums, Convention Halls, etc. - for public use *(A Use Group)	Male 1: 1-100 2: 101-300 3: 301-600	Female 1: 1-25 2: 26-50 3: 51-100 4: 101-200 5: 201-400	Male 0: 1-25 1: 26-50 2: 51-200 3: 201-450 4: 451-800	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*		1: 1-150 2: 151-400 3: 401-750
	Over 600 add 1 fixture for each additional 500 males and for each additional 150 females over 400		Over 800 add 1 fixture for each additional 400 males				Over 750 add 1 fixture for each additional 500 persons

Type of Building or Occupancy[2]	**Water Closets**[14] *(Fixtures per Person)*		**Urinals**[5.10] *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains**[3.13] *(Fixtures per Person)*
Assembly Places - Outdoor less than 11,000 capacity, Sports Facilities, Football Fields, Baseball Stadiums, Soccer pitches etc. - for public use *(A Use Group)	Male 1: 1-135 2: 136-400 3: 401-800	Female 1: 1-35 2: 36-65 3: 66-135 4: 136-265 5: 266-535	Male 0: 1-35 1: 36-65 2: 66-265 3: 266-600 4: 601-1050	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*		1: 1-150 2: 151-400 3: 401-750
	Over 800 add 1 fixture for each additional 600 males and 1 for each additional 260 females over 535		Over 1050 add 1 fixture for each additional 535 males				Over 750 add 1 fixture for each additional 500 persons
Dormitories[9] School or Labor - (Itinerant Workers) *(R-2 Use Group)	Male 1: 1-10	Female 1: 1-8	Male 1 per 25	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*	1 per 8	1 per 150[12]
	add 1 fixture for each additional 25 males (over 10) and 1 for each additional 20 females (over 8)		Over 150, add 1 fixture for each additional 50 males			For females add 1 bathtub per 30, Over 150, add 1 per 20	
Dormitories - For staff use 1845 *(R-2 Use Group)	Male 1: 1-40 2: 41-60 3: 61-75	Female 1: 1-15 2: 16-30 3: 31-50 4: 51-75	Male 0: 1-15 1: 16-75	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*	1 per 8	
	Over 75 55 add 1 fixture for each additional 80 males and 1 fixture for each additional 40 females		Over 75 add 1 fixture for each additional 80 males				
Dwelling[4] Residential One and two Family Dwellings	1 per dwelling unit			1 per dwelling unit		1 per dwelling unit	
Dwelling[4] Residential Care/assisted living facilities (5 or fewer occupants) *(R-3 Use Group)	1 per dwelling unit			1 per dwelling unit		1 per dwelling unit	

Type of Building or Occupancy[2]	**Water Closets**[14] *(Fixtures per Person)*		**Urinals**[5.10] *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains**[3.13] *(Fixtures per Person)*
Dweelings[4] Multiple dwelling or apartment house *(R-2 Use Group)	1 per dwelling or apartment unit			1 per dwelling or apartment unit		1 per dwelling or apartment unit	
Dwelling[4,18~~15~~] Residential Care/assisted living facilities (6-16 occupants) *(R-4 Use Group)	1 per 10			1 per 10		1 per 8	1 per 150
Hospital waiting rooms	1 per room			1 per room			1 per 150[12]
Hospitals - for employee use[18~~15~~]	Male 1: 1-40 2: 41-60 3: 61-75	Female 1: 1-15 2: 16-30 3: 31-50 4: 51-75	Male 0: 1-15 1: 16-75 10-50	Male ½ # of water closets & urinals *(round up)*	Female ½ # of water closets *(round up)*		
	Over 55 add 1 fixture for each additional 40 persons		Over 75 add 1 fixture for each additional 80 males				
Hospitals - Individual room	1 per room			1 per room		1 per room	
Hospitals - Ward Room	1 per 8 patients			1 per 10 patients		1 per 20 patients	1 per 150[12]
Hotels, Motels[16~~19~~] *(R-1 Use Group)	1 per guestroom			1 per guestroom		1 per guestroom	
Industrial [6,18~~15~~] warehouses, workshops, foundries, and similar establishments - for employee use *(S-1, S-2, F-1, F-2)	Male 1: 1-10 2: 11-25 3: 26-50 4: 51-75 5: 76-100	Female 1: 1-10 2: 11-25 3: 26-50 4: 51-75 5: 76-100		Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]	1 shower for each 15 persons exposed to excessive heat or to skin contamination with poisonous, infectious, or irritating material	
	Over 100, add 1 fixture for each additional 30 persons						

Type of Building or Occupancy[2]	**Water Closets**[14] *(Fixtures per Person)*		**Urinals**[5.10] *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains**[3.13] *(Fixtures per Person)*
Institutiona~~l~~[18] - other than hospitals or penal institutions (on each occupied floor)	Male 1 per 25	Female 1 per 20	Male 0: 1-9 1: 10-50 Add 1 fixture for each additional 50 males	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]	1 per 8	1 per 150[12]
Institutiona~~l~~[18] - other than hospitals or penal institutions (on each occupied floor) - for employee use	Male 1: 1-40 2: 41-60 3: 61-75	Female 1:1-15 2: 16-30 3: 31-50 4: 51-75	Male 0: 1-9 1: 10-50	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]	1 per 8	1 per 150[12]
	Over 75 add 1 fixture for each additional 80 males and 1 fixture for each 40 females		Add 1 fixture for each additional 50 males				
Mercantile or Retail Buildings[17]	Male 1: 1-200 2: 201-400 3: 401-600	Female 1: 1-50 2: 51-100 3: 101-300	Male 0: 1-100 1: 101-300 2: 301-600	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		0: 0-100[12] 1: 101-200 2: 201-600 3: 601-1000 Add 1 fixture for each additional 1000 persons
Office or Public Buildings *(B Use Group)	Male 1: 1-100 2: 101-200 3: 201-400	Female 3: 1-50 4: 51-100 8: 101-200 11: 201-400	Male 0: 1-100 1: 101-300 2: 301-600	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per 150[12]
	Add 1 fixture for each additional 500 males over 400 and 1 fixture for each additional 150 females over 400		Over 600 add 1 fixture for each additions 400 males				
Office or Public Buildings and tenant spaces in Medical Office Buildings - for employee use *(B use group)	Male 1: 1-40 2: 41-60 3: 61-100 4: 101-150	Female 1: 1-15 2: 16-40 3: 41-60 4: 61-75 5: 76-100 6: 101-150	Male 0: 1-15 1: 16-75 2: 76-150	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per floor
	Over 150 add 1 fixture for each additional 80 males and 1 fixture for each additional 40 females		Over 150 add 1 fixture for each additional 80 males				

Type of Building or Occupancy[2]	**Water Closets**[14] *(Fixtures per Person)*		**Urinals**[5.10] *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains**[3.13] *(Fixtures per Person)*
Penal Instutitutions[1] ~~[8][15]~~ - for employee use *(I-3 Use Group)	Male 1: 1-40 2: 41-60 3: 61-75	Female 1: 1-15 2: 16-30 3: 31-50 4: 51-75	Male 0: 1-15 1: 16-75	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per 150[12]
	Over 75 add 1 fixture for each additional 80 males and 1 fixture for each additional 40 females		Over 75 add 1 fixture for each additional 80 males				
Penal Institutions - for prison use Cell Exercise Room *(I-3 Use Group)	1 per cell 1 per exercise room	Male 1 per exercise	1 per cell 1 per exercise room		1 per cell block floor 1 per exercise room		
Public or Professional offices[15]	Same as Office or Public Buildings - for employee use[15]	Same as Office or Public Buildings - for employee use[15]	Same as Office or Public Buildings - for employee use[15]	Same as Office or Public Buildings - for employee use[15]		Same as Office or Public Buildings - for employee use[15]	
Restaurants, Pubs, and Lounges[11] *(A-2 Use Group)	Male 1: 1-50 2: 51-250 3: 251-300	Female 1: 1-25 2: 26-50 3: 51-100 4: 101-150 5: 151-250	Male 0: 1-25 1: 26-100 2: 101-150	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		
	Add 1 fixture for each additional 100 males over 300 add 1 fixture for each additional 75 females over 250		Over 150 add 1 fixture for each additional 150 males				
Schools ~~[18][15]~~ - For staff use All Schools	Male 1: 1-15 2: 16-35 3: 36-55	Female 1: 1-15 2: 16-25 3: 26-35 4: 36-55	Male 1:1-50	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		
	Over 55 add 1 fixture for each additional persons						
Schools - For Students use Child Adult Day Care (greater than 16 occupancy) (Nursery Schools) *(I-4 Use group)	1: 1-15 2: 16-30 3: 31-50			Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]	1 per 150[12]	
	Over 55 add 1 fixture for each additional 50 persons						

Type of Building or Occupancy[2]	**Water Closets**[14] *(Fixtures per Person)*		**Urinals**[5.10] *(Fixtures per Person)*	**Lavatories** *(Fixtures per Person)*		**Bathtubs or Showers** *(Fixtures per Person)*	**Drinking Fountains**[3.13] *(Fixtures per Person)*
Elementary *(E Use Group)	Male 1 per 40	Female 1 per 20	Male 1 per 75	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per 150[12]
Secondary *(E Use Group)	Male 1 per 50	Female 1 per 25	Male 1 per 100	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per 150[12]
Others (colleges, universities, adult education centers, etc.) *(E Use Group)	Male 1 per 50	Female 1 per 25	Male 1 per 100	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1 per 150[12]
Worship places Educational and Activities Unit *(E Use Group)	Male 1: 1-150 2: 151-300	Female 1: 1-75 2: 76-150 3: 151-300	Male 0: 1-75 1: 76-300	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1: 1-300 2: 301-600 3: 601-1000
	Add 1 fixture for each additional 300 males and add 1 fixture for each additional 150 females over 300		Add 1 fixture for each additional 300 males				Add 1 fixture for each additional 1000 persons[12]
Worship places principal assembly place *(A-3 Use Group)	Male 1: 1-150 2: 151-300	Female 1: 1-75 2: 76-150 3: 151-300	Male 0: 1-75 1: 76-300	Male ½ # of water closets & urinals *(round up)*[7, 8]	Female ½ # of water closets *(round up)*[7, 8]		1: 1-300 2: 301-600 3: 601-1000
	Add 1 fixture for each additional 300 males and add 1 fixture for each additional 150 females over 300		Add 1 fixture for each additional 300 males				Add 1 fixture for each additional 1000 persons[12]

(*Use group provided is given for guidance only and is not to be interpreted as the only requirement.)

1. The figures shown are based upon one (1) fixture being the minimum required for the number of persons indicated or any fraction thereof

2. Building categories not shown on this table shall be considered separately by the Authority Having Jurisdiction.

3. Drinking fountains shall not be installed in toilet rooms.

4. Laundry trays. One (1) laundry tray or one (1) automatic washer standpipe for each dwelling unit or one (1) laundry tray or one (1) automatic washer standpipe, or combination thereof, for each twelve (12) apartments. Kitchen sinks, one (1) for each dwelling or apartment unit.

5. For each urinal added in excess of the minimum required, one (1) water closet may be deducted. The number of water closets shall not be reduced to less than two-thirds (2/3) of the minimum requirement.

6. As required by **PSAI Z4.1** ~~ANSI Z4. 1-1995,~~ Sanitation in Places of Employment.

7. Where there is exposure to skin contamination with poisonous, infectious, or irritating materials, provide one (1) lavatory for each five (5) persons.

8. Twenty-four (24) lineal inches (610 mm) of wash sink or eighteen (18") inches (457 mm) of a circular basin, when provided with water outlets for such space, shall be considered equivalent to one (1) lavatory.

9. Laundry trays, one (1) for each fifty (50) persons. Service sinks, one (1) for each hundred (100) persons.

10. General. In applying this schedule of facilities, consideration shall be given to the accessibility of fixtures. Conformity purely on a numerical basis may not result in an installation suited to the need of the individual establishment. For example schools shall be provided with toilet facilities on each floor having classrooms, **for students and for teachers.**

    a. Surrounding materials, wall and floor space to a point two (2) feet (610 mm) in front of urinal lip and four (4') feet (1,219 mm) above the floor, and at least two (2) feet (610 mm) to each side of the urinal shall be lined with non-absorbent materials.

    b. Trough urinals are prohibited.

    c. Waterless urinals are prohibited.

11. A restaurant is defined as a business which sells food to be consumed on the premises.

    a. The number of occupants for a drive-in restaurant shall be considered as equal to the number of parking stalls.

    b. Employee toilet facilities are not to be included in the above restaurant requirements. Hand washing facilities shall be available in the kitchen for employees.

    c. For a drive-thru or take-out restaurant with seating, not to exceed twenty (20) customers, toilet facilities shall be provided available to customers and employees. A minimum of one (1) toilet room consisting of one (1) water closet, one (1) lavatory, and one(1)floor drain shall be available to customers.

    d. For a drive-thru restaurant or take-out with no seating, toilet facilities are required for employees only.

    e. For a facility dispensing fuel to the public which offers food and drink in a structure larger than seven hundred fifty (750) square feet, toilet facilities for male and female shall be provided available to customers and to employees.

        1. Where there are more than twelve (12) but less than twenty-three (23) fuel dispensing stations available, there shall be provided for the male toilet room two (2) water closets, one (1) urinal, one(1)lavatory, and one (1) floor drain and there shall be provided for the female toilet room three (3) water closets, one (1) lavatory, and one (1)floor drain..

        2. For each additional ten (10) fuel dispensing stations there shall be provided for the male toilet room an additional one (1) water closet or urinal, and one (1) lavatory, and there shall be provided for the female toilet room an additional one (1) water closet, and one (1) lavatory.

12. Where food is consumed indoors, water stations may be substituted for drinking fountains. Offices or public buildings for use by more than six (6) persons shall have one (1) drinking fountain for the first one hundred fifty (150) persons and one (1) additional fountain for each three hundred (300) persons thereafter. At least one (1) drinking fountain of those required shall be located within twenty-five (25) feet of the entrance to the primary toilet room on any floor.

13. There shall be a minimum of one (1) drinking fountain per occupied floor in schools, theaters, auditoriums, dormitories, offices or public building.

14. **The total number of water closets for females shall be at least equal to the total number of water closets and urinals provided for men. This requirement does not apply to retail or wholesale stores. For any facility which is constructed or undergoes major** ~~structural~~ **renovation as a place of assembly for public amusement including, but not limited to, sports stadiums,** ~~**and**~~ **arenas, auditoriums and assembly halls, there should be provided, at a minimum, the number of water closets for women as there are provided the total number of water closers** ~~and the~~

~~number of~~ **urinals** ~~provided~~ **for men. The term "major** ~~structural~~ **renovation" means any reconstruction, rehabilitation, addition or other improvement which** ~~requires more than fifty percent (50%) of the gross floor area of the existing facility to be~~ **rebuilt~~ increases the occupant load of the building by more than 20%**

15. For smaller-type Public and Professional Offices such as banks, dental offices, law offices, real estate offices, architectural offices engineering offices and similar uses. A public area in these offices shall use the requirements for Retail or Wholesale Stores.

16. Recreation or community room in multiple dwellings or apartment buildings regardless of their occupant load, shall be permitted to have single-accommodation facilities in common-use areas within tracts or multi-family residential occupancies where the use of these areas is limited exclusively to owners, residents and their guests. Examples are community recreation or multi-purpose areas in apartments, condos, townhouses or tracts.

18. Provide one service sink per floor.

19. Provide one (1) service sink per structure or per wing.

20. Provide one (1) service sink per floor in facilities over Five Thousand Five Hundred (5500) square feet.

21. Provide a minimum of one (1) exterior hose bib on all buildings

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 5 Water Heaters

Chapter 5 Amended

501.0 General. The regulations of this chapter shall govern the construction, location, and installation of fuel-burning and other water heaters heating potable water. The minimum capacity for water heaters shall be in accordance with the first hour rating listed in Table 5-1. All design, construction, and workmanship shall be in conformity with accepted engineering practices, manufacturer's installation instructions, and applicable standards and shall be of such character as to secure the results sought to be obtained by this Code. No water heater shall be hereinafter installed which does not comply in all respects with the type and model of each size thereof approved by the Authority Having Jurisdiction. A list of gas equipment standards is included in Table 14-1.

The St. Louis City Mechanical Code shall govern the installation of chimneys, vents, and their connectors for fuel-burning and other water heaters heating potable water.

Change 501.1 through 512.0 to read as follows:

501.1 Water heaters are water heating appliances and shall not exceed any one of the following limitations:

1. 199,000 Btu (58 kw) maximum input capacity

2. 119 gallons of storage capacity

3. 150 psi operating pressure

4. 210^0 degrees (F) operating temperature

Water heating equipment that does not exceed any of these parameters shall be constructed to either AGA or UL design standards.

In addition to this Code, the St. Louis City Mechanical Code shall also govern water heaters that exceed any of the above limitations.

501.2 Any system with a new or a replacement water heating apparatus **requiring a pressure reducing valve or a closed system** shall be provided with an approved, listed and adequately sized thermal expansion device (expansion tank), installed within ten (10) feet of, and on the cold water supply to the water heater, between the water heater shut-off valve and the water heater, at least 18 inches away from the cold water inlet fitting on the water heater. The tank may be installed in a vertical up, vertical down, or horizontal position in accordance with the manufacturer's recommendation. If the expansion tank is installed horizontally it must be adequately supported. No support shall be provided from the water heater. This expansion tank meets the requirements in 608.2 regarding protection from thermal expansion and maintenance of pressure setting of the regulator.

The measured static building pressure, and the pressure at which the expansion tank has been set shall be written in ink on a permanent durable type label (equal to an Avery #AVE6578 2" x 2-?" Label) attached to the expansion tank in a visible location.

Shut-off valves for water heaters shall be installed in view of, within 10 feet of, within easy reach from the ground, and shall be readily accessible No shutoff shall be installed on the branch to the expansion tank.

The expansion tank shall be installed in such a manner that the removal or replacement of the water heater is not impaired.

Exceptions:

1. *Engineered systems that provide equivalent protection may be approved by the Authority Having Jurisdiction or his/her representative.*

2. *Listed non-storage instantaneous heaters having an inside diameter of not more than three (3") inches (76 mm).*

3. *Water heaters, 30 gallon or less, installed under counter or in confined spaces in multi-family units, where space does not permit the installation of an expansion tank, adequately sized mechanical water hammer arrestors may be used to provide for thermal expansion with the approval of the Authority Having Jurisdiction or his/her representative.*

502.0 Definitions. The following sections are deleted:

502.1 Through 502.14 all installations shall be in accordance with the St. Louis City Mechanical Code.

502. 15 Water Heater – An appliance for supplying hot water for domestic or commercial purposes.

505.0 Water Heater Requirements.

505.1 Location. Deleted.

All locations shall be in accordance with the St. Louis City Mechanical Code.

505.3 Clearance. Deleted.

All clearances shall be installed in accordance with the St. Louis City Mechanical Code.

506.1 Oil-Burning and other Water Heaters. Deleted.

506.1, 506.3 through 507.9 All installations shall be in accordance with the St. Louis City Mechanical Code.

508.0 Other Water Heater Installation Requirements.

508.4 When a water heater is located in an attic, attic-ceiling assemble, floor-ceiling assemble, or floor-subfloor assembly, or furred space, or above the ground or basement level and does not have a floor drain available, where damage may result from a leaking water heater, a watertight safe pan of corrosion-resistant materials shall be installed beneath the water heater and shall be laid on or be supported by a structurally sound base to ensure proper drainage. The drain from the pan shall discharge to a non-concealed point of disposal to alert occupants in the event of a leak.

The pan shall have a minimum depth of 2 inches (51 mm) and shall be of such shape and capacity as to prevent splashing or flooding, and shall be made water-tight. The pan shall not be less than 3 inches (76 mm) larger than the unit in width and length. Metallic pans shall have a minimum thickness of not less than 0.0276-inch (0.7 mm) galvanized sheet metal. Non-metallic pans shall have a minimum thickness of not less than 0.0625 inch (1.6 mm). Non-metallic safe pans shall be permitted to be used only with electric water heaters. Pan shall have a 1 inch (25.4 mm) minimum tapping and increase to a 1-1/4 inch (31.8 mm) diameter drain made of galvanized steel, copper, brass, solid core PVC or CPVC which terminates and discharges through an air gap or air break into a properly trapped and vented, receptor, hub drain, floor drain or floor drain with a funnel grate, or to an approved location. Such piping shall maintain a minimum horizontal slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Every passageway to an attic water heater shall have an unobstructed solid continuous flooring not less than twenty-four (24") inches (610 mm) wide from the trap door or opening to the water heater. If the trap door or opening is more than eleven (11') feet (3352 mm) above the floor, a stairway or ladder permanently fastened to the building shall be provided. Such stairway or ladder shall lead directly to the edge of the trap door or opening and shall comply with the provisions of this section.

Exception: A portable ladder may be used for access for water heaters in attics on the single-story portion of a Group U, Division 1 or R occupancy.

508.5 Relief Valve Discharge. Discharge from a relief valve into a water heater pan is permitted.

508.6 through 512.0 – Deleted

All installations shall be in accordance with the St. Louis City Mechanical Code.

Add 510.8.4; 510.8.5; 510.9; 510.9.1; 510.9.2 to read as follows:

510.8.4 Through-the-wall vents for Category II and Category IV appliances and noncategorized condensing appliances shall not terminate over public walkways or over an area where condensate or vapor could create a nuisance or hazard or could be detrimental to the operation of regulators, relief valves, or other equipment. Where local experience indicates that condensate is a problem with Category I and Category III appliances, this provision shall also apply. Drains for condensate shall be installed in accordance with the manufacturer's installation instructions. [NFPA 54-09:12.9.4]

510.8.5 Where vents, including those for direct-vent appliances or combustion air intake pipes, penetrate outside walls of buildings, the annular spaces around such penetrations shall be permanently sealed using approved materials to prevent entry of combustion products into the building. [NFPA 54-09:12.9.5]

510.9 Condensation Drain.

510.9.1 Provision shall be made to collect and dispose of condensate from venting systems serving Category II and Category IV gas utilization appliances and noncategorized condensing appliances in accordance with Section 510.8.4.[NFPA 54:12.10.1]

510.9.2 Where local experience indicates that condensation is a problem, provision shall be made to drain off and dispose of condensate from venting systems serving Category I and Category III gas utilization appliances in accordance with 510.8.4. [NFPA 54:12.10.2]

Chapter 5 Part II – Deleted

All installations and fuel shall be installed in accordance with the St. Louis City Mechanical Code.

Amendments To The Uniform Plumbing Code 2010
Saint Louis City Ordinance Chapter 6 Water Supply

Chapter 6 Amended.

Add 601.1.1 through 601.1.2 to read as follows:

601.1.1 Hot Water Supply System – In residences and buildings intended for human occupancy, hot water shall be supplied to all plumbing fixtures and equipment used for bathing, washing, culinary purposes, cleansing, laundry or building maintenance. With the approval of the Authority Having Jurisdiction tempered water supply systems may be installed in lieu of hot and cold water systems in buildings.

601.1.2 Temperature Maintenance – Where Required
Heated water distribution systems in buildings where developed length of heated water piping from the source of the heated water to the farthest fixture exceeds hundred (100') feet shall maintain heated water temperature in all supply piping to within twenty-five (25') feet of any heated water outlet.

602.0 Unlawful Connections

Change 601 through 602.5 to read as follows:

602.1 No installation of potable water supply piping or part thereof shall be made in such a manner that it will be possible for used, unclean, polluted or contaminated water, mixtures or substances to enter any portion of such piping from any tank, receptacle, equipment, or plumbing fixture by reason of back-siphonage, by suction or any other cause, either during normal use and operation thereof or when any such tank, receptacle, equipment, or plumbing fixture is flooded, or subject to pressure in excess of the operating

pressure in the hot or cold water piping. **A device or method, which is suitable for isolating potable water from a potential pollutant, may be unacceptable as a means of protection against contamination.**

602.5 Backflow devices shall be installed on the water supply from a community water system to a building, when the use of the building changes to a use that requires containment under this regulation, and/or when any potable or non-potable water is provided within the new or existing building.

Change 603.1 through 603.24 to read as follows:

603.1 Approval of Devices or Assemblies. All devices or assemblies installed in a potable water supply system for protection against backflow shall be maintained in good working condition by the person or persons having control of such devices or assemblies. The Authority Having Jurisdiction or other department having jurisdiction may inspect such devices or assemblies and, if found to be defective or inoperable, shall require the repair or replacement thereof. No device or assembly shall be removed from use or relocated or other device or assembly substituted, without obtaining an approved permit. All devices or assemblies installed shall be a Missouri Department of Natural Resources approved device or assembly.

603.3 General Requirements

603.3.1 All assemblies shall conform to listed standards and be acceptable to the Authority Having Jurisdiction over the selection and installation of backflow prevention assemblies. **In addition to the standards for approval established elsewhere in this Code all Reduced Pressure Principle Backflow Prevention Assemblies and Double Check Valve Backflow Prevention Assemblies of any nature shall have the approval of the University of Southern California Foundation for Cross Connection Control and Hydraulic Research, and the Missouri Department of Natural Resources.**

603.3.4 Access and clearance shall be provided for the required testing, maintenance, and repair. Access and clearance shall require a minimum of one (1) foot (305 mm) between the lowest portion of the assembly and grade, floor or platform. Installations elevated more than five (5) feet (1524 mm) above the floor or grade shall be provided with a permanent platform **within five (5) feet (1524 mm) below the device** capable of supporting a tester or maintenance person.

TABLE 6-2 Backflow Prevention Devices, Assemblies and Methods

NOTE:

STL City accepted Table 6-2 with the following deletions:

~~Spill-Resistant Pressure-Type Backflow Prevention Assembly~~ – entirely

~~Pressure Vacuum Breaker Backflow Prevention Assembly~~ – entirely

TABLE 6-2

Changes to table:

Last column, first line: Installation [2, 3, 6, 7]

Add following notes:

6. Maximum location above grade, floor or platform at center of device, shall be five (5') feet.

7. Must be approved as a Backflow device by MoDNR.

603.3.7 Fixtures, appliances or appurtenances with integral backflow preventers or integral airgaps manufactured as a unit shall be installed in accordance with their listing requirements, the manufacturers' instructions **and as acceptable by the Authority Having Jurisdiction.**

603.4.6 Protection from Lawn Sprinklers and Irrigation Systems

603.4.6.1 Potable water supplies to systems having no pumps or connections for pumping equipment, and no chemical injection or provisions for chemical injection, shall be protected from backflow by the following device: **Reduced Pressure Backflow Preventer**

603.4.6.3 Where systems have a backflow device installed downstream from a potable water supply pump or a potable water supply pump connection, the device shall be the following: **Reduced Pressure Backflow Preventer**

603.4.8 Water Cooled Compressors, Degreasers or any other water cooled equipment shall be protected by a **listed Reduced Pressure Zone** backflow preventer installed in accordance with the requirements of this chapter.

603.4.9 Water Inlets to Water Supplied Aspirators shall be equipped with a listed atmospheric vacuum breaker **with no downstream shutoff and mounted at least six (6) inches (152 mm) above the aspirator unit or equipped with a listed Reduced Pressure Zone Backflow Preventer installed in accordance with its listing requirements** and this chapter. The discharge shall drain through an air gap. When using the tailpiece of a fixture to receive the discharge of an aspirator, the air gap shall be located above the flood level rim of the fixture.

603.4.10 Potable Water Make-Up Connections to Steam or Hot Water Boilers shall be provided with a listed **Reduced Pressure Zone** backflow protection assembly.

603.4.13 Water Treatment Units. Reverse osmosis drinking water treatment units shall be provided with a listed Reduced Pressure Zone backflow protection assembly **when these units are provide water to downstream applications which pose a hazard as defined BY Missouri Department of Natural Resources Regulations and St. Louis City Plumbing Ordinance,** and shall meet the requirements of the appropriate standard(s) referenced in Table 14-1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an air gap.

603.4.16.5 Residential Sprinkler Systems. When residential fire sprinkler systems are installed using the potable water system they shall be installed in accordance with the standards listed in Table 14-1. **When the residential sprinkler system is a separate fire system a Double Check backflow device shall be installed. When a combined system is used all parts must be part of a circulating system, and must meet the requirements of this chapter for potable water.**

603.4.18 Portable cleaning equipment, dental vacuum pumps and chemical dispensers shall be protected from backflow by an air gap, or a reduced pressure principle backflow preventer.

603.4.19 Water Heater Connectors. Flexible metallic water heater connectors or reinforced flexible water heater connectors connecting water heaters to the piping system shall be in compliance with the appropriate standards listed Table 14-1. **That portion of the gas line supplying the water heater that includes the gas shutoff valve, the gas union, the drip leg, the pressure regulator, if required, and the tee shall be hard piped and shall be independently and securely supported. It may not be supported or attached to the water heater.**

603.4.23 Faucets with Pull-Out Spouts shall be in compliance with the appropriate standards listed in Table 14-1 that include these specific types of faucets and require an atmospheric vacuum breaker or vent to atmosphere to protect the water supply. **Faucets with Hose-Attached Sprays shall vent to atmosphere under back-siphonage conditions.**

603.4.24 Installation of Backflow Preventers.

A **No person except those qualified, licensed and/or registered and bonded under this Code shall install a Backflow Prevention Device.**

B. **A permit is required for the installation of all Reduced Pressure Principle Backflow Prevention Devices and Double Check Valve Assembly Backflow Prevention Devices. Permits shall be issued and inspections performed by the plumbing section of the Department of Public Works. Permits shall be issued only to those contractors who are licensed and/or registered and bonded under this Code.**

C. **All backflow prevention devices shall be accessible. Backflow prevention devices shall not be installed in pits or similar potentially submerged locations or in fume, chemical or fuel hoods, or in any area containing fumes that are toxic, poisonous or corrosive.**

D. **Atmospheric vacuum breakers shall be installed with the critical level at least six (6) inches above the flood level rim or highest point of discharge of the fixture being served. Such devices shall be installed on the discharge side of the last control valve to the fixture and no shut off valve or faucet shall be installed downstream of the vacuum breaker. Vacuum breakers on urinals shall be installed with the critical level six (6) inches above the flood level rim of the fixture being served. Such devices shall be installed on the discharge side of the last control valve to the fixture and no shut off valve or faucet shall be installed downstream of the vacuum breaker. Vacuum breakers on**

urinals shall be installed with the critical level six (6) inches above the flood level rim.

E. **Pressure type vacuum breakers shall be installed at a height of at least twelve (12) inches above the flood level rim of the fixture, tank, or similar device.**

F. **Double check valves and reduced pressure principle valves such devices shall be installed at not less than twelve (12) inches above the grade, floor or platform with the maximum of sixty (60)inches above floor. They shall not be installed within access panels, over any machinery or equipment, or in any location, which might create a safety, hazard to those employed in testing and maintenance of these devices.**

G. **Installation shall meet current Missouri Department of Natural Resources Regulations and St. Louis City Current Plumbing Code Ordinance. Where a conflict occurs between this Chapter and Missouri Department of Natural Resources the more stringent requirement shall apply.**

604.0 Materials

Change 604.1 through 604.8 to read as follows:

604.1 Exception: *When plastic pipe is being installed in construction of the water service pipe, the plastic pipe shall terminate ten (10') feet outside the building foundation wall. The metallic pipe allowed by this section shall be installed from ten (10') feet outside the foundation to and within the building to the outlet of the house valve or the outlet of the PRV whichever is further from the entrance to the building. Protection from electrolysis (corrosion) shall be provided.*

604.2 Copper tube for water piping shall have a weight of not less than Type L.

Exception: Type M copper tubing may be used for water piping when piping is above ground in, or on, a building.

604.4 Listed flexible copper water connectors approved by the **Code Official Authority Having Jurisdiction** shall be installed in exposed locations, unless otherwise listed.

604.8 Approved plastic materials may be used in water service piping, provided that where metal water service piping is used for electrical grounding purposes, replacement piping therefore shall be of like materials.

Exception: *Where a grounding system, acceptable to the Authority Having Jurisdiction is installed, inspected, and an approved* ***ten (10') feet*** *of metallic pipe may be replaced with non-metallic pipe. Plastic materials for water service piping outside underground shall have a blue insulated copper tracer wire or other approved conductor installed adjacent to the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the insulation type shall be suitable for direct burial.*

Change Table 6-4-A to read as follows:

TABLE 6-4-A

MATERIAL	Under-Ground		Water Distribution Pipe and Fittings (Inside Building)		Building Supply Pipe and Fittings (Water Service - Outside Building)
			HOT	COLD	COLD
Asbestos - Cement					~~X~~
Brass	X	X	X	X	X
Copper	X	X	X	X	X
Cast Iron	X	X	X	X	X
CPVC (Schedule 40 & above)	X[1]		X	X	X

Galvanized Malleable	X	X	X	X	X
Iron					
Galvanized Wrought Iron	X	X	X	X	X
Galvanized Steel	X	X	X	X	X
HDPE	X	X		X	X
PE					
PE-AL-PE			X[1]	X[1]	
PEX	X[1]		X[1]	X[1]	
PEX-AL-PEX			X[1]	X[1]	
PVC ASTM 2241–Class 160-SDR 26)		X			X
PVC ASTM 2241 – Class 200 SDR 21		X			X
PVC ASTM 1785- Schedule 40	X	X		X	X
PVC ASTM 1785-Schedule 80	X	X		X	X
PVC AWWA C900 (C905 DR 14 Class 200 Pressure Pipe		X			X

Note: [1] Downstream from Pressure Reducing Valve if required.

Change 604.4.14 to read as follows:

604.4.14 Water Heater Connectors. Flexible metallic water heater connectors or reinforced flexible water heaters connectors connecting water heaters to the piping system shall be in compliance with the appropriate standards listed in Table 14-1. **That portion of the gas line supplying the water heater that includes the gas shutoff valve, the gas union, the drip leg, the pressure regulator, if required, and the tee shall be hard piped and shall be independently and securely supported. It may not be supported or attached to the water heater.**

Add 604.10.1 to read as follows:

604.10.1 Lead Water Service(s). All damaged lead water services, residential and/or commercial, shall be entirely replaced with copper or other acceptable approved materials.

Change 605.2 and 605.5 to read as follows:

605.2 A full-way valve and **drain on the house side** controlling all outlets shall be installed on the **service entrance.** Water piping supplying more than one building on any one premises shall be equipped with a separate full-way valve and drain on the house side to each building, so arranged that the water supply can be turned on or off to any individual or separate building; provided however, that supply piping to a single family residence and building accessory thereto, may be controlled on one valve. Such shutoff valves shall be accessible at all times. A full-way valve shall be installed on the discharge piping from water supply tanks at or near the tank. A full-way valve shall be installed on the cold water supply pipe to each water heater at or near the water heater.

605.5 A control valve shall be installed immediately ahead of each water-supplied appliance and immediately ahead of each slip joint or non-metallic fixture supply or appliance supply. A control valve shall be installed for sill cocks, wall hydrants, yard hydrants, street washers, and lawn irrigation systems in addition to required backflow assemblies.

Parallel water distribution systems shall provide a control valve either immediately ahead of each fixture being supplied, or installed

at the manifold and shall be identified with the fixture being supplied.

Change 608.2 through 608.3 to read as follows:

608.2 Excessive Water Pressure. An approved type pressure regulator preceded by an adequate strainer shall be installed in all water service pipes near its entrance to the building and the static pressure reduced to eighty (80) pounds per square inch (552 kPa) or less. Such regulator (s) shall control the pressure to all water outlets in the building unless otherwise approved by the Authority Having Jurisdiction. **Pressure at any fixture shall be limited to no more than eighty (80) psi under no-flow conditions. Sill cocks and outside hydrants may be left on full main pressure at the option of the owner. For potable water services up to and including one and one-half (1-1/2) inch (40 mm) regulators, provision shall be made to prevent pressure on the building side of the regulator from exceeding main supply pressure. Approved regulators with integral bypasses are acceptable.**

Exception: Where the water service pipe supplies water directly to a water pressure booster system, an elevated water gravity tank, or to pumps provided in connection with a hydro-pneumatic or elevated water supply tank system a pressure-reducing valve is not required.

Each such regulator and strainer shall be accessibly located above ground or in a vault equipped with a properly sized and sloped bore-sighted drain to daylight, shall be protected from freezing, and shall have the strainer readily accessible for cleaning without removing the regulator or strainer body or disconnecting the supply piping. All pipe size determinations shall be based on eighty (80%) percent of the reduced pressure when using Table 6-6.

608.3 Any water system provided with a check valve, backflow preventer, or any other normally closed device that dissipation of building water pressure back into the water main **or a pressure regulating device which does not have a bypass feature at its source** shall be provided with an approved, listed adequately sized pressure relief valve or a means to control expansion. Any water system containing storage water heating equipment shall be provided with an approved, listed, adequately sized combination pressure and temperature relief valve, except for listed non-storage instantaneous heaters having an inside diameter of not more than three (3") inches (80 mm). Each such approved combination temperature and pressure relief valve shall be installed on the water-heating device in an approved location based on its listing requirements and the manufacturer's instructions. Each such combination temperature and pressure relief valve shall be provided with a drain as required in Section 608.5.

608.5 Relief valves located inside a building shall be provided with a drain, not smaller than the relief valve outlet, of galvanized steel, and hard drawn copper piping and fittings, with fittings which will not reduce the internal bore of the pipe or tubing (straight lengths as opposed to coils) and shall extend from the valve with the end of the pipe not more than six (6) inches (152 mm) nor less than **2 diameters** above the ground or the flood level of the area receiving the discharge and pointing downward. Such drains may terminate at other approved locations. No part of such drainpipe shall be trapped and the terminal end of the drainpipe shall not be threaded.

609.0 Installation, Testing, Unions, and Location

Change 609.1 through 610.1 to read as follows:

609.1 Installation. All water piping shall be adequately supported in accordance with Section 314.0. Burred ends shall be reamed to the full bore of the pipe or tube. Changes in direction shall be made by the appropriate use of fittings, except that changes in direction in copper tubing may be made with bends, provided that such bends are made with bending equipment, which does not deform or create a loss in the cross-sectional area of the tubing. Provisions shall be made for expansion in hot water piping. Piping, equipment, appurtenances, and devices shall be installed in a workman-like manner in conformity with the provisions and intent of the Code. **All potable water service yard piping shall be a depth of at least forty-two (42") inches (107 mm) below finish grade.**

609.2 Except as permitted below, the underground water service pipe and the building sewer shall be not less than ten feet (10') apart horizontally and shall be separated by undisturbed or compacted earth. The water service pipe may be placed in the same trench with the building sewer, and water piping may be placed in the same trench as the building drain within the limits of the building foundation, provided approval is given by the Authority Having Jurisdiction and the following conditions are met:

609.2.1 The bottom of the water pipe, at all points, shall be at least twelve (12") inches (305 mm) above the top of the sewer or drain line.

609.2.2 The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a minimum clear horizontal distance of at least twelve (12") inches (305 mm) from the sewer or drain line. Water pipes crossing sewer or drainage piping

constructed of clay or materials, which are not approved for use within a building, shall be laid a minimum of twelve (12") inches (305 mm) above the sewer or drainpipe.

609.4 Testing. Upon completion of a section of the hot and cold water supply system, **prior to being covered,** it shall be tested and proved tight under water pressure not less than the working pressure under which it is to be used **or eighty (80) pounds per square inch whichever is greater.** The water used for tests shall be obtained from a potable source of supply. Except for plastic pipe, **a one hundred (100) pound per square inch** (689.5 kPa) air pressure may be substituted for the water test. **For plastic pipe, testing by compressed gas or air pressure is prohibited.** In either method of test, the piping shall withstand the test without leaking for a period of not less than fifteen (15) minutes.

609.5 Unions. Unions shall be installed in **exposed locations** in the water supply piping within twelve (12") inches (305 mm) of regulating equipment, water heating, conditioning tanks, and similar equipment which may require service by removal or replacement in a manner which will facilitate its ready removal.

609.10 Water Hammer. All building supply systems shall be provided with devices to absorb water hammer caused by high pressures resulting from quick-closing valves. **These pressure-absorbing devices shall be or an approved mechanical device size "AA" through "F". Mechanical devices to absorb water hammer, shall be installed on the hot and cold water lines at each fixture or fixture group. Where applications require the installation of a mechanical shock arrester larger than size "F" data to determine ability to provide the protection needed, shall be submitted to provide such a device.** Water pressure-absorbing devices shall be installed as close as possible to quick-acting valves.

609.10.1 Mechanical Devices. When listed mechanical devices are used, the manufacturers' specifications as to location and method of installation shall be followed. **Such mechanical devices shall be accessible. Mechanical devices, which meet ASSE 1010 or PDI-WH 201 standards (see Chapter 14), do not need to be accessible.**

Exception: For one (1) family, and two (2) families attached residential units, in order to absorb water hammer a mechanical water hammer arrester shall be installed as follows:

A Bathroom groups:

1. Single bathrooms, minimum size "A" or single bathrooms back to back on a branch, minimum size "B", an approved mechanical device on both the hot and cold water branches serving the bathroom group.

2. For more than one (1) bathroom group served by a vertical riser approved, minimum size "B", mechanical device on both the hot and cold water at the top of the riser.

3. For each appliance with quick-acting valves a properly sized approved mechanical device on both the hot and cold water shall be installed as close as possible to the quick-acting valves. Appliances that include quick-closing valves are washing machines, dishwashers and ice makers. Other appliances that are not listed here may be determined to have a quick-closing valve, and shall be properly protected.

B. Lawn Irrigation Systems

1. Where a lawn irrigation system is installed, an Irrigation Backflow Assembly consisting of a Reduced Pressure Zone Backflow Device and within twelve (12") inches a properly sized mechanical water hammer arrestor shall be installed on the supply line to the irrigation system.

    a. **The size of the water hammer arrestor shall be a minimum of size "C". It shall be sized based on the following Table 609.10 -1.**

Table 609.10 – 1

Pipe Size	Arrestor Size
3/4"	"C"
1"	"D"
1 1/4" - 1 ½"	"F"
2"	"C" + "F"

Based on PDI Reference Standards

Change Table 6-6 to read as follows:

Table 6-6 Minimum Required Air Chamber Dimensions– *Deleted*

610.0 Size of Potable Water Piping

610.1 The size of each water meter shall be as determined by the water purveyor. Each potable water supply pipe from the meter or other source of supply to the fixture supply branches, risers, fixtures, connections, outlets, or other uses shall be based on the total demand and shall be determined according to the methods and procedures outlined in this section. Other than systems sized by the use of Table 6-6, the system shall be designed to ensure that the maximum velocities allowed by the Code and the applicable standard are not exceeded.

Change 610.7 through 610.9 to read as follows:

610.7 On any proposed water piping installation sized using Table 6-6 the following conditions shall be determined:

(1) Developed length of supply pipe from the property line to most remote **outlet.**

(2) Difference in elevation between the **property line** or other source of supply and the highest fixture or outlet.

610.8 Size of Meter and Building Pipe Using Table 6-6. The size of the building supply pipe and the building branch piping shall be determined as follows: (Note: The water purveyor will determine the size of the meter installed.)

Table 6-6 – In the title line delete "and Meter Sizes".

The column in Table 6-6 titled "Meter and Street Service, Inches" is deleted.

(1) Determine the available pressure at the source of supply.

(2) Subtract one-half (1/2) pound per square inch pressure (3.4 kPa) for each foot (305 mm) of difference in elevation between such source of supply and highest water supply outlet in the building or on the premises;

(3) Use the "pressure range" group within which this pressure will fall using Table 6-6;

(4) Select the "length" column which is equal to or longer than the required length;

(5) Follow down the column to a fixture unit value equal to or greater than the total number of fixtures units required by the installation;

(6) Having located the proper fixture unit value for the required length, size of **building supply pipe and the building branch piping as found in the left hand columns titled "Building Supply and Branches, Inches" shall be applied.**

No building supply pipe shall be less than one (1) inch (25.4 mm) in diameter. **For light commercial strip centers, when the water service serves more than one tenant space, a one and one-half (1-½) inch minimum size water service shall be provided to the most remote tenant space.**

610.9 Size of Branches. When Table 6-6 is used, the minimum size of each branch shall be determined by the number of fixture units to be served by that branch, the total developed length of the system, and the street service size, **minimum one (1) inch (26.7 mm)** in diameter as per Section 610.8. No branch piping is required to be larger in size than that required by Table 6-6 for the building supply pipe.

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 7 Sanitary Drainage

Chapter 7 Amended.

Add the Note to Table 7-4 to read as follows:

NOTE Table 7-4
ERRATA UPC
Discharge Capacity in Gallons Per Minute
For Intermittent Flow Only

GPM	(L/sec)	
0-7-1/2	0.00 to 0.47	1 Fixture Unit

703.0 Size of Drainage Piping

703.1 The minimum sizes of vertical and/or horizontal drainage piping shall be determined from the total of all fixture units connected thereto, and additionally, in the case of vertical drainage pipes, in accordance with their length.

Change 703.1.1 Exceptions to read as follows:

703.1.1 Exceptions.

1.) **Any portion of the building drain which is underground and which receives the discharge from a water closet shall be a minimum size of four inches (4") and the four inch (4") pipe size shall terminate at the clean-out thirty-six inches (36") above the finish floor. The minimum size of any other portion of the drainage system, which receives the discharge from a water closet, shall be a minimum size of three inches (3").**

a. **Approval may be given by the Authority Having Jurisdiction or his representative to approve the use of a minimum size of three (3")inches for the discharge of a single water closet when there is no four (4")inches or larger underground drain readily available. This approval may be given, if such approval does not exceed the capacity of the drain, and, that it would be an undue hardship, or interrupt ongoing business activity, or require extensive demolition of a finished living area, or damage or destroy existing architectural or decorative furnishings.**

2.) **Minimum size of the building sewer shall be six inches (6") in diameter and shall have the minimum of a two (2%) percent slope.**

3.) **No soil or waste stack shall be smaller than the largest horizontal branch connected thereto. A 3" X 4" inch water closet bend shall not be considered a reduction in pipe size.**

4.) **Any structure in which a building drain is installed shall have at least one stack vent or vent stack sized in accordance with section 12.16.6, not less than three inches (3") in diameter, or the size of the building drain. If the building drain is less than three inches (3") in diameter the vent shall be carried full size through the roof.**

5.) **Any vent pipe extending through the roof shall be not less than two (2")inches in diameter and shall extend from its terminus at least eighteen (18") inches below the interior side of the roof deck.**

6.) **No portion of the drainage system installed underground or below a basement or cellar shall be less than two (2") inches in diameter with the exception of vent piping which shall be a minimum of one and one-half (1-1/2") inches and condensate waste discharge lines which shall not be less than one and one-quarter (1 1/4") inches in diameter.**

7.) **The maximum length of two (2") inch underground kitchen sink waste piping shall not exceed fifteen (15') feet from**

the point of connection to a horizontal branch drain or building drain to the point where the kitchen sink waste piping extends above the floor. The clean out above the floor shall be the same size as the underground kitchen sink waste piping and shall be thirty-six (36") inches above the finished floor level.

705.2 Use of Joints.

Change 705.2.5 to read as follows:

705.2.5 Joints of dissimilar materials used in the system shall be designed for that purpose and used in accordance with their approvals. When such joints are used inside a building they shall include a metallic shield.

706.0 Changes in Direction of Drainage Flow.

Change 706.4 to read as follows:

706.4 Vertical drainage lines connecting with horizontal drainage lines shall enter through forty-five (45°) degree (0.79 rad) wye branches, combination wye and one-eighth (1/8) bend branches, **short radius or long radius 90? degree (1.58 rad) sweeps** or other approved fittings of equivalent sweep. **Branches or offsets of** sixty (60?) degree (1.05 rad) may be used only when installed in a true vertical position.

707.0 Cleanouts.

Change 707.4.1 through 707.4.2 to read as follows:

707.4.1. a.) A cleanout shall be provided in the vertical waste or soil stack, at a minimum of three feet (3') above the floor.

Exception: *In residential buildings of slab floor construction or where a stack cleanout is not accessible, the cleanout shall be installed in the building drain and shall terminate not more than five feet (5') outside the building wall.*

b.) Rain leaders and conductors connected to a building storm sewer shall have a cleanout installed three (3') feet above finished floor for each inside conductor and at the base of each outside leader or before it connects to the horizontal drain.

707.4.2 Each horizontal drainage pipe shall be provided with a cleanout at its upper terminal and each run of piping, which is more than one hundred (100') feet (30480 mm) in total developed length, shall be provided with a cleanout for each one hundred (100') feet (30480 mm), or fraction thereof, in length of such piping. **An additional cleanout shall be provided in a drainage line for each aggregate horizontal change of direction exceeding 135 degrees (2.36 rad) calculated in the direction of flow.**

Exceptions:

(1) Cleanouts may be omitted on a horizontal drain line less than five (5') feet (1524 mm) in length unless such line is serving sinks or urinals.

(2) Cleanouts may be omitted on any horizontal drainage pipe installed on a slope of seventy-two (72°) degrees (1.26 rad) or less from the vertical angle (angle of one-fifth (1/5) bend).

(3) Excepting the building drain and its horizontal branches, a cleanout shall not be required on any pipe or piping, which is above the first floor of the building.

(4) An approved type of two-way cleanout fitting, installed inside the building wall near the connection between the building drain and building sewer or installed outside of a building at the lower end of a building drain and extended to grade, may be substituted for an upper terminal cleanout in residential buildings only.

Add 709.0 to read as follows:

709.0 Gravity Drainage Required: Wherever practicable, all plumbing fixtures shall be drained to the public sewer or to a private sewage disposal system by gravity. Where gravity drainage is not practicable, approval of the authority having jurisdiction or of his representative is required.

710.0 Drainage of Fixtures Located Below the Next Upstream Manhole or Below the Main Sewer Level.

Change 710.1 through 710.3.3 to read as follows

710.1 Where a fixture is installed on a basement level or floor level that is lower than the next upstream **manhole cover** of the public or private sewer, serving such drainage piping, shall be protected from backflow of sewage by **at a minimum** installing an approved type of backwater valve or **installing, when required by The Authority Having Jurisdiction, a plumbing line supported from floor joists by approved hangers serving that basement level or floor level (strapped plumbing) receiving the discharge from an approved watertight sump or receiving tank. (see strapped plumbing drawings, Figure 3-1 and figure 3-2 in Appendix "M").** Fixtures **on floor levels** above **the upstream manhole cover such elevation shall not discharge through the backwater valve or into the lower level, approved watertight sump or receiving tank, but instead shall drain by gravity to the public sewer.**

710.1.1 **Cleanouts for drains that pass through a backwater valve shall be clearly identified with a permanent label stating "Backwater Valve Downstream".**

710.2 Drainage piping serving fixtures that are located below the crown level of the main sewer shall discharge into an approved watertight sump or receiving tank, so located as to receive the sewage or wastes by gravity. From such sump or receiving tank, the sewage or other liquid waste shall be lifted and discharged into the building drain or building sewer by approved ejectors, pumps, or other equally efficient approved mechanical devices.

NOTE: For clarification:

1) **Fixtures above the upstream manhole cover drain by gravity.**

2) **Fixtures below the upstream manhole cover and above the crown of the sewer, drain by gravity through a backwater valve, or as directed by the Authority Having Jurisdiction shall drain as indicated below in item 3 below.**

3) **Fixtures below the upstream manhole and below the crown of the sewer shall be lifted and discharged into the building drain or building sewer by means of an approved pumping system (strapped plumbing).**

710.3 A sewage ejector or sewage pump receiving the discharge of water closets or urinals:

710.3.1 Shall have a minimum discharge capacity of twenty (20) gallons (75.7 liters) per minute.

710.3.2 In single dwelling units, the ejector or pump shall be capable of passing a one and one half (1-1/2) inch (38 mm) diameter solid ball, and the discharge piping of each ejector or pump shall have a backwater valve and gate valve, and be a minimum of two (2) inches (51mm) in diameter.

710.3.3 In other than single-dwelling units, the ejector or pump shall be capable of passing a two (2) inch (51 mm) diameter solid ball, and the discharge piping of each ejector or pump shall have a backwater valve and gate valve, and be a minimum of three (3) inches (80 mm) in diameter.

Change 710.6 to read as follows:

710.6 Backwater valves, gate valves, unions, full-way ball valves, motors, compressors, air tanks, and other mechanical devices required by this section shall be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be **watertight,** enclosed in a masonry pit, or **a pit of concrete, metal, or other approved material, construction, and manufacture,** fitted with an adequately sized removable cover.

Backwater valves shall have bodies of cast iron, brass, or other materials, non-corrosive bearings, seats and self-aligning discs, and shall be so constructed as to insure a positive mechanical seal and to remain closed, except when discharging wastes. Such valves shall remain sufficiently open during periods of low flows to avoid screening of solids and shall not restrict capacities or cause excessive turbulence during peak loads. Unless otherwise listed, valve access covers shall be bolted type with gasket and each valve shall bear the manufacturer's name cast into body and cover.

Alternate design of Backwater Valves that may be adequately serviced without installation in a pit may be used with the approval of the Authority Having Jurisdiction.

710.14 At stream and channel crossings, a minimum depth of two (2') feet shall be allowed only where greater depths cannot be

achieved. Where this minimum cover cannot be achieved, Schedule 50 ductile iron pipe with restrained joints must be used unless otherwise directed by the Authority Having Jurisdiction. Stream and channel crossings must be protected with rock blanket.

711.1 Suds Venting

711.1.1 Suds Pressure Zones and Suds Relief Vents Where required. Where kitchen sinks, laundry trays, laundry washing machines, and similar fixtures in which sudsy detergents are normally used, discharge at an upper level into a soil or waste stack which also serves fixtures in other occupancy units at a lower floor level, the drainage and vent piping for such lower fixtures shall be arranged so as to avoid connection to suds pressure zones in the sanitary drainage and vent systems, or a suds relief vent, relieving to a non-pressure zone, shall be provided at each suds pressure zone where such connections are installed. In multistory buildings, with more than six (6) branch intervals of fixtures described above, separate waste and vent stacks for the lower four (4) branch intervals of fixtures shall be required. See Table 711.1

Suds Pressure Zones. Suds pressure zones shall be considered to exist at the following locations in sanitary drainage and vent systems as indicated in Table 711.2 (See figure 711.1 1103.418M Appendix M Code Illustrations #310).

Zone 1. In a soil or waste stack, which serves fixtures on two (2) or more floors and receives wastes from fixtures wherein sudsy detergents are used, a zone shall be considered to exist in the vertical portion upstream of an offset fitting in the riser to the upper section of the system, in the horizontal portion downstream of this fitting, and in the horizontal portion upstream of the offset immediately preceding the next offset fitting. See Table 711.1.

Zone 2. In a soil or waste stack, which serves fixtures on two (2) or more floors and receives wastes from fixtures wherein sudsy detergents are used, a zone shall be considered to exist at the base of the stack and extending upstream. See Table 711.2.

Zone 3. In a soil or waste system, which serves fixtures on two (2) or more floors and receives wastes from fixtures wherein sudsy detergents are used, a zone shall be considered to exist downstream in the horizontal drain from the base of the stack and both upstream and downstream of the next offset fitting downstream.

Zone 4. In a soil or waste system, which serves fixtures on two (2) or more floors and receives wastes from fixtures wherein sudsy detergents are used, a zone shall be considered to exist in the vent stack extending upstream from the point of connection to the base of the soil or waste stack.

Table 711.1
SUDS PRESSURE
RELIEF VENTS

Waste Size	Relief Vent Size
1-1/2"	2"
2"	2"
2-1/2"	2"
3"	2"
4"	3"
5"	4"
6"	5"
8"	6"

Table 711.2*
EXTENT OF SUDS PRESSURE ZONES FOR
VARIOUS SIZE SOIL AND WASTE PIPING
Extent of Zone
(Measured from Fittings)

Stack Size	"U" (Upstream)	"D" (Downstream)
1-1/2"	5'-0"	1'-6"
2"	7'-0"	1'-6"
2-1/2"	8'-0"	2'-0"
3"	10'-0"	2'-6"
4"	13'-0"	3'-6"
5"	17'-0"	4'-0"
6"	20'-0"	5'-0"

*For use with Figure 711.1

712.3 Air Test. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and, after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gage pressure of five (5) pounds per square

inch (34.5 kPa) or sufficient to balance a column of mercury ten (10") inches (254 mm) in height. The pressure shall be held without introduction of additional air for a period of at least fifteen (15) minutes. Plastic pipe and fittings, may be tested under this paragraph with the approval of the Authority Having Jurisdiction, and must conform to requirements of the manufacturer.

Part II – Building Sewers

713.0 Sewer Required

713.1 Every building in which plumbing fixtures are installed and every premises having drainage piping thereon, shall have a connection to a public or private sewer, except as provided in Sections 101.4.1.3, 713.2 and 713.4.

713.2 House/building traps (vent traps). A house/building (vent) trap shall be installed on individual and combined, sanitary and storm house sewer laterals connected to the public sewer system. (See Section 1008.0)

Exception: *Building/House traps shall be installed on individual and combined, sanitary and storm house/building laterals connected to combined sewers, and where required by the Authority Having Jurisdiction. Each building trap when installed shall be provided with a cleanout and with a relieving vent or fresh air intake on the inlet side of the trap which need not be larger than one-half (1/2) the diameter of the drain to which it connects. Such relieving vent or fresh air intake shall be carried to finish grade and terminate in a screened outlet located outside the building.*

Delete 714.1 through 714.5

715.1 The building sewer, beginning five (5') feet (1525 mm) from any building or structure, shall be of such materials as may be approved by the Authority Having Jurisdiction under the approval procedures set forth in Chapter 3 of this Code. Sewer laterals exceeding one hundred (100') feet shall include a full size cleanout, maximum size shall be eight (8") inches, to surface within ten (10') feet of anticipated location of the building foundation wall or the first (1st) story exterior wall of a slab on grade building.

717.0 Size of Building Sewers

The minimum size of any building sewer shall be determined on the basis of the total number of fixture units drained by such sewer, in accordance with Table 7-8. No building sewer shall be smaller than the building drain, but in no case less than six (6") inches (152 mm) and at a uniform minimum slope of 2 percent (2%).

718.3 No building sewer or other drainage piping or part thereof, which is constructed of materials other than those approved for use under or within a building, shall be installed under or within five (5') feet (1525 mm) of any building or structure, or part thereof, nor less than thirty (30") inches below the surface of the ground.

(1) **Exception:** Transition from building drain to building sewer at a maximum of 45?.

(2) **Exception:** Where necessary to connect to a drainage line above ground.

The provisions of this subsection include structures such as porches and steps, whether covered or uncovered, breezeways, roofed porte-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.

719.0 Cleanouts.

Change 719.6 to read as follows:

719.6 Approved manholes shall be permitted to be installed in lieu of cleanouts when first approved by the Authority Having Jurisdiction. The maximum distance between manholes shall not exceed four hundred (400') feet (121.9 m). Connections to manholes shall be by approved method.

720.0 Sewers and Water Pipes

Building sewers or drainage piping of clay or materials, which are not approved for use within a building, shall not be run or laid in the same trench as the water pipes.

Exception: *The underground water service pipe and the building sewer shall not be less than ten feet (10') apart horizontally and shall be separated by undisturbed or compacted earth.*

The water service pipe may be placed in the same trench with the outside building sewer and water piping may be placed in the same trench with the inside building drain provided approval is given by the Authority Having Jurisdiction and both the following requirements are met:

a. The bottom of the water pipe, at all points, shall be at least twelve (12") inches (305 mm) above the top of the sewer or drain line.

b. The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a minimum clear horizontal distance of at least twelve (12") inches (305 mm) from the sewer or drain line.

Water pipes crossing sewer or drainage piping constructed of clay or materials, which are not approved for use within a building, shall be laid a minimum of twelve (12") inches (305 mm) above the sewer or drainpipe.

Note: For the purpose of this section, "within the building" shall mean within the fixed limits of the building foundation.

722.0 Abandoned Sewers and Sewage Disposal Facilities

722.1 Every abandoned building (house) sewer, or part thereof, shall be plugged or capped in an approved manner at the connection to the sewer main or at a location acceptable to the Authority Having Jurisdiction.

722.2 Every cesspool, septic tank, and seepage pit which has been abandoned or has been discontinued otherwise from further use or to which no waste or soil pipe from a plumbing fixture is connected, shall have the sewage removed there from and disposed of in a manner required by law, the bottom broken out and be completely filled with compacted earth, sand, gravel, concrete, or other approved material.

Change 723.0 and Table 7-7 to read as follows:

723.0 Building Sewer Test

Building sewers shall be tested by plugging the end of the building sewer at its points of connection with the public sewer or private sewage disposal system and completely filling the building sewer with water from the lowest point to the highest point thereof, or by approved equivalent low pressure air test, or by a method approved by the Authority Having Jurisdiction. Plastic DWV piping systems shall not be tested by the air test method. The building sewer shall be watertight at all points.

Table 7-7
Minimum Horizontal Distance Required From Building Sewer

Buildings or Structures[1]	2 feet (610 mm)
Property line adjoining private property	Clear[2]
Water Supply Wells	100 feet3 (30,480 mm)
Streams	50 feet (15,240 mm)
On-site domestic water line	10 feet[4] (3048 mm)
Public Water Main	10 feet[5,6] (3048 mm)

Note:

1. Including porches and steps, whether covered or uncovered, breezeways, roofed porte-cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures and appurtenances.

2. See also Section 313.3

3. All drainage piping shall clear domestic water supply wells by at least one hundred (100') feet (30480 mm)(15240).

4. See Section 609.2

5. For parallel construction.

6. For crossings, approval by the Health Department or Authority Having Jurisdiction shall be required.

AMENDMENTS TO THE UNIFORM PLUMBING CODE 2009
SAINT LOUIS CITY CHAPTER 8 INDIRECT WASTES

Chapter 8 Amended.

Change 801.2.3 as follows:

801.2.3 Food-preparation sinks, steam kettles, potato peelers, ice cream dipper wells, **dishwashing machines, silverware washing machines,** and similar equipment shall be indirectly connected to the drainage system by means of an air gap or air break. Bins, sinks, and other equipment having drainage connections and used for the storage of unpackaged ice used for human ingestion, or used in direct contact with ready-to-eat food, shall be indirectly connected to the drainage by means of an airgap. Each indirect waste pipe from food handling fixtures or equipment shall be separately piped to the indirect waste receptor and shall not combine with other indirect waste. The piping from the equipment to the receptor shall not be smaller than the drain on the unit, **but it shall not be smaller than one (1") inch (25.4 mm).**

Change 803.0 to read as follows:

803.0 Indirect Waste Piping

Except as hereinafter provided, the size and construction of indirect waste piping shall be in accordance with other sections of this Code applicable to drainage and vent piping. No vent from indirect waste piping shall combine with any sewer-connected vent, but shall extend separately to the outside air. Indirect waste pipes exceeding five (5') feet (1524 mm), but less than fifteen (15') feet (4572 mm) in length shall be directly trapped, but such traps need not be vented.

Indirect waste pipes less than fifteen (15') feet (4572 mm) in length shall not be less than the diameter of the drain outlet or tailpiece of the fixture, appliance, or equipment served, and **in no case less than one (1") inch (25.4 mm) in size.** Angles and changes of direction in indirect waste pipes of more than fifteen (15') feet shall be provided with cleanouts so as to permit flushing and cleaning.

a. **A direct connection for a floor drain at the automatic clothes washer above ground may be discharged into the riser-pipe (standpipe) above the trap of the automatic clothes washer drain and the floor drain shall not be trapped.**

b. **A laundry sink on ground floor may discharge, un-trapped, directly into the washer standpipe above the trap with no vent required.**

807.0 Appliances

Change 807.4 to read a s follows:

807.4 **The discharge from a sink, dishwasher, and garbage disposal (food-waste-grinder) may discharge through a single one and one-half (1½") trap. The discharge from the dishwasher shall be a full-sized opening, which shall be a minimum of five-eighths inch (5/8") inside diameter in size, looped up and firmly secured to the highest point under the counter and be connected with a wye fitting between the discharge of the garbage disposal (food-waste-grinder) and the trap inlet, or to the head of the garbage disposal (food-waste-grinder). An approved dishwasher air gap fitting on the discharge side of the dishwashing machine may be used.** Listed air gaps shall be installed with the flood level (FL) marking at or above the flood level of the sink or drain board, whichever is higher. **In the installation of a double bowl kitchen sink (residential) with a garbage disposal (food-waste-grinder), the fixture trap shall be installed on the same side of the sink in which the garbage disposal is installed.**

809.0 Drinking Fountains

Drinking fountains may be installed with indirect wastes into sanitary drainage piping.

Change 811.2 and Table 8-2 to read as follows

811.0 Chemical Wastes.

811.2 Each waste pipe receiving or intended to receive the discharge of any fixture into which acid or corrosive chemical is placed, and each vent pipe connected thereto, shall be constructed of Chlorinated Polyvinyl-chloride CPVC), **Polypropylene (PP),**

Polyvinylidene Fluoride (PVDF),chemical-resistant glass, high-silicon iron pipe, or lead pipe with a wall thickness of not less than one-eight 1/8)inch (3.2 mm); an approved type of ceramic glazed or unglazed vitrified clay; or other approved corrosion resistant materials.

TABLE 8-2

Equipment Capacity In Tons of Refrigeration	(kW)	Minimum Condensate Pipe Diameter (mm)	
		Inches	(mm)
Up to 5	(Up to 70.34)	¾	(20)
More Than 5 to 40	(70.34 to 140.67)	1	(25)
More Than 40 to 90	(140.67 to 316.6)	1-1/4	(32)
More Than 90 to 125	(316.6 to 439.6)	1-1/2	(40)
More Than 125 to 250	(439.6 to 879.2)	2	(50)

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 9 Vents

Chapter 9 Amended.

904.0 Size of Vents

Change 904.3 to read as follows:

904.3 Minimum Size of Stack Vent or Vent Stack.

Any structure in which a building drain is installed shall have at least one stack vent or vent stack sized in accordance with Table 7-5 not less than four inches (4") in diameter, not less than three inches (3") in diameter for one (1) and two (2) family residential, if the building drain is less than three inches (3") in diameter the vent shall be the size of the building drain carried full size through the roof. In no case shall the aggregate cross-sectional area of all vents, in the system, be less than the cross-sectional area of the largest required common building drain serving that system.

Change 905.7 to read as follows:

905.7 All vent piping subject to back drainage shall use fittings appropriate to the sanitary waste system.

906.0 Vent Termination

Change 906.1 through 906.7 to read as follows:

906.1 Each vent pipe or stack shall extend through its flashing and shall terminate vertically not less than **twelve (12") inches (305 mm)** above the roof nor less than one (1') foot (305 mm) from any vertical surface.

906.3 Vent pipes shall be extended separately or combined, of full required size, not less than **twelve (12") inches (305 mm)** above the roof or fire wall. Flag-poling of vents shall be prohibited. All vents within ten (10') feet (3048 mm) of any part of the roof that is used for purposes other than weather protection shall extend not less than seven (7') feet (2134 mm) above such roof and shall be securely stayed.

906.7 Frost or Snow Closure.

Vent terminals shall be a minimum of two (2) inches (51 mm) in diameter but in no event smaller than the required vent pipe. The change in diameter shall be made inside the building at least **eighteen (18") inches** below the roof in an insulated space and terminate not less than **twelve (12") inches** (305 mm) above the roof, or as required by the Authority Having Jurisdiction.

907.0 Vent Stacks and Relief Vents

Change 907.1 and 907.3 to read as follows:

907.1 Each drainage stack which extends ten (10) or more waste intervals above the building drain or other horizontal drain shall be served by a parallel vent stack which shall extend undiminished in size from its upper most terminal and connect to the drainage stack at or immediately below the lowest fixture drain. Each such vent stack shall also be connected to the drainage stack at each fifth floor, counting down from the uppermost-**fixture drain line through the horizontal fixture branch connection by means of a yoke vent, the size of which shall not be less in diameter than either the drainage or the vent stack, whichever is smaller.**

907.3 In a residential structure a relief vent shall be connected to a waste stack a minimum of six (6") inches (152 mm) below the bottom of the joist at the lowest level **except when there is a plumbing vent through the roof installed from plumbing fixtures or future rough-ins below the lowest level.**

908.0 Wet Venting

Change 908.1 through 908.1.4 to read as follows:

908.1 Vertical Wet Venting

908.1.1 Except as provided for in other sections of this Code, wet venting is limited to vertical drainage piping receiving the discharge from the trap arm of one (1) and two (2) fixture unit fixtures that also serves as a vent not to exceed four (4) fixtures. All wet vented fixtures shall be within the same story; provided, further, that fixtures with a continuous vent discharging into a wet vent shall be within the same story as the wet vented fixtures. No wet vent shall exceed six (6') feet (1829 mm) in developed length.

908.1.4 See Appendix M.

Change 909.0 to read as follows:

909.0 Special Venting for Island Fixtures

Alternate approved installation is described below and depicted in Drawing 7, Appendix M.

Traps for island sinks and similar equipment shall be roughed in above the floor and may be vented by extending the vent as high as possible, and **no lower than bottom of sink /fixture** it serves and then returning it downward and connecting it to the horizontal sink drain more than five (5') feet (1524mm) downstream from the vertical fixture drain. The return vent shall be connected to the horizontal drain through a wye-branch fitting. Drainage fittings shall be used on all parts of the vent and a minimum slope of one-quarter (1/4") inch per foot (20.9 mm/m) back to the drain shall be maintained. Pipe sizing shall be as elsewhere required in this code with minimum size to be two (2") inch (51 mm). The island sink drain, upstream of the return vent, shall serve no other fixtures. An accessible cleanout shall be installed in the vertical portion of the vent.

910.0 Combination Waste and Vent Systems.

Change 910.5 to read as follows:

910.5 Unless specifically required or permitted by the Authority Having Jurisdiction, no vertical waste pipe shall be used in any such system, except the tailpiece or connection between the outlet of a plumbing fixture and the trap. Such tailpieces or connections shall be as short as possible, and in no case shall exceed two (2) feet (610 mm).

Amendments To The Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 10 - Traps and Interceptors

Chapter 10 Amended.

1001.0 Traps Required

1001.2 It is provided, however, that one (1) trap may serve a set of not more than three (3) single compartment sinks or laundry tubs of the same depth or three (3) lavatories immediately adjacent to each other and in the same room if the waste outlets are not more than thirty (30) inches (762 mm)apart.

TABLE 10-1
Horizontal Distance of Trap Arms
(Except for water closets and similar fixtures)*

TRAP ARM Inches	DISTANCE TRAP TO VENT Feet - Inches	TRAP ARM m m	DISTANCE TRAP TO VENT m m
1-1/4	3'–6"	32	1067
1-1/2	5'-0"	38	1524
2	8'-0"	51	2438
3	10'-0"	76	3048
4 & Larger	12'-0"	102 & Larger	3658

Slope one-fourth (1/4") inch per foot (20.9 mm/m)

*The developed length between the trap of a water closet or similar fixture (measured from the top of the closet ring {closet flange} to the inner edge (of the vent) and its vent shall not exceed six (6') feet (1829 m

1003.0 Traps – Described

Change 1003.2 through 1003.3 to read as follows:

1003.2 No more than one (1) approved slip joint fitting may be used on the outlet side of a trap, and no tubing trap shall be installed without a listed tubing trap adapter or a soldered or brazed joint connection. Listed plastic trap adapters shall be permitted to be used to connect listed metal tubing traps.

1003.3 The size (nominal diameter) of a trap for a given fixture shall be sufficient to drain the fixture rapidly but in no case less than nor more than one (1) pipe size larger than given in Table 7-3. The trap shall be the same size as the trap arm to which it is connected.

Exception: One (1) and Two (2) fixture unit fixtures may have trap arms one size larger than the trap size.

Change 1008.0 to read as follows:

1008.0 Building/House Traps

Building/House traps shall be installed.

Exception: *Building/House (vent) trap shall be installed on individual and combined, sanitary and storm house / building sewer laterals connected to* ***combined sewers*** *to the public sewer system. Each house / building trap shall be provided with a cleanout and with a relieving vent or fresh air intake on the inlet side of the trap which need not be larger than one-half the diameter of the drain to which it connects. Such relieving vent or fresh air intake shall be carried to above grade and terminate in a screened outlet located outside the building.*

1009.0 Industrial Interceptors (Clarifiers) and Separators

Change 1009.1 through 1009.5 to read as follows:

1009.1 When Required. Interceptors (clarifiers) (including grease, oil, and sand interceptors (clarifiers), etc.) shall be provided, in the judgment of the Authority Having Jurisdiction, when they are necessary for the proper handling of liquid wastes containing grease, flammable wastes, sand, solids, acid or alkaline substances, or other ingredients harmful to the building drainage system, the public or private sewer or to public or private sewage disposal. **Sand interceptors shall be required where a floor drain or multiple floor drains discharge (s) through an oil interceptor, or where the discharge of a floor drain may contain solids or semi-solids that would be harmful to or tend to obstruct the system. A sand interceptor shall have a vent installed in front of the gas/oil interceptor. Human waste is prohibited from entering an interceptor (s).**

1009.5 Location.

Each interceptor (clarifier) cover shall be readily accessible for servicing and maintaining the interceptor (clarifier) in working and operating condition. **Interceptors (clarifiers) shall include means for visual inspection and access from above for both the**

influent and effluent sides. Manholes (24 inches (24") in diameter, 24 inches (24") maximum in length including a roadway access cover) shall be provided for access to each compartment of an interceptor. Where depth is more than 24 inches (24"), a 36 inch (36") minimum diameter access with steps shall be provided as approved by the authority having jurisdiction. The use of ladders or the removal of bulky equipment in order to service interceptors (clarifiers) shall constitute a violation of accessibility. Location of all interceptors (clarifiers) shall be shown on the approved building plan.

1014.0 Grease Interceptors.

Change 1014.1 through 1014.1.2 to read as follows:

1014.1 Where it is determined by the Authority Having Jurisdiction that waste pretreatment is required, an approved type of grease interceptor (s)complying with the provisions of this section shall be correctly sized and properly installed in grease waste line (s)leading from sinks and drains, such as floor drains, floor sinks and other fixtures or equipment in serving establishments such as restaurants, cafes, lunch counters, sanitariums, factory or school kitchens, or other establishments where grease is introduced into the drainage or sewage system in quantities that can effect line stoppage or hinder sewage treatment or private sewage disposal. **An interior (hydromechanical) or exterior (gravity) grease interceptors or a combination of interior and exterior interceptor shall be provided in order to meet grease separation needs of the Authority Having Jurisdiction. Where space or existing physical constraints of existing buildings necessitate such installations within the building, it shall be provided as approved by the Authority Having Jurisdiction.** A grease interceptor shall not be required for individual dwelling units or for any private living quarters. Water closets, urinals, and other plumbing fixtures conveying human waste shall not drain into or through the grease interceptor.

1014.1.1 Each fixture discharging into a grease interceptor shall be individually trapped and vented in an approved manner.

1014.1.2 Grease interceptors shall be maintained in efficient operating condition by periodic removal of the accumulated grease and latent material. No such collected grease shall be introduced into any drainage piping or public or private sewer. If the Authority Having Jurisdiction determines that a grease interceptor is not being properly cleaned or maintained, the Authority Having Jurisdiction shall have the authority to mandate the installation of additional equipment or devices and to mandate a maintenance program. (See 1103.P155 for maintenance program)

Add 1014.1.3 to read as follows:

1014.1.3 Food Waste Disposal Units and Dishwashers.

Food Waste Disposal Units, rinse sinks and or Dishwashers are required to connect into a grease interceptor and they must first flow through a solids trap.

Change 1014.2 to read as follows:

1014.2 Hydromechanical Grease Inceptors.

Change 1014.2.4 to read as follows:

1014.2.4 Each grease interceptor required by this section shall have an approved rate of flow which is not less than that as determined by 1014.2.1 for sinks and Table 10-2 for the total number of connected fixtures. The total capacity in gallons (L) of fixtures discharging into any such grease interceptor shall not exceed two and one-half (2-1/2) times the certified gpm (L/s) flow rate of the grease interceptor as determined by 1014.2.

Any grease interceptors installed with the inlet more than four (4') feet (1219 mm) lower in elevation than the outlet of any fixture discharging into such grease interceptor shall have an approved rate of flow which is not less than fifty (50%) percent greater than that given in Table 10-2.

Not more than four (4) separate fixtures shall be connected to or discharged into any one (1)-grease interceptor, which is installed inside the building. Floor drains receiving incidental water are not included as a fixture for the purposes of this paragraph.

Change 1014.3.5.1 to read as follows:

1014.3 Gravity Grease Interceptors. Required gravity grease interceptors shall comply with the provisions of Sections 1014.3.1 through 1014.3.7.

1014.3.1 General.
The provisions of this section shall apply to the design, construction, installation, and testing of commercial kitchen gravity grease interceptors.

1014.3.5 Construction Requirements.

1014.3.5.1 Purpose. Gravity grease interceptors shall be designed to remove grease from effluent and shall be sized in accordance with this section. Gravity grease interceptors shall also be designed to retain grease until accumulations can be removed by pumping the interceptor. **Each gravity grease interceptor shall pass through an inspection manhole, prior to any connection to the public sewer.**

TABLE 10 - 2
Hydro-mechanical Interceptor Sizing Using Gravity Flow Rates(1)

Diameter of Grease Waste Pipe	Maximum Full Pipe Flow (gpm)(2)	Size of Grease Interceptor	
		One-Minute Drainage Period (gpm)	Two-Minute Drainage Period (gpm)
2	20	20	10
3	60	75	35
4	125	150	75
5	230	250	125
6	375	500	250

(1) **For interceptor sizing by fixture see the example below.**

(2) **1/4" (.240) slope per foot based on Manning's formula with friction factor N = .012**

EXAMPLE FOR SIZING
HYDROMECHANICAL INTERCEPTOR (S) USING FIXTURE CHART

Step 1: Determine the flow rate from each fixture.

[Length] x [Width] x [Depth] / [231] = Gallons x [.75 fill factor] / [Drain Period (1 min or 2 min)]

Step 2: Calculate the total load from all fixtures that discharge into the interceptor.

Fixtures	Compartments	Load (Gallons)	Size of Grease Interceptor	
			One-Minute Drainage Period (gpm)	Two-Minute Drainage Period (gpm)
Compartment Size				
12" x 24" x 12"	2	44.9		
Hydrant		3		
Rated Appliance		2		
		49.9	50	25

1014.7 Reserved for future use.

1014.8 Appendix H has been deleted from UPC code.

Change 1015 to read as follows:

1015. (SEE 1014.1.3)

1017.0 Oil and Flammable Liquids Interceptors

1017.1 Interceptors Required.

All parking structures, repair garages and gasoline stations with grease racks or grease pits, and all factories which have oily, flammable, or both types of wastes as a result of manufacturing, storage, maintenance, repair or testing processes, shall be provided with an oil or flammable liquid interceptor which shall be connected to all necessary floor drains. The separation or vapor compartment shall be independently vented to the outer air. If two (2) or more separation or vapor compartments are used, each shall be vented to the outer air or may connect to a header which is installed at a minimum of six (6") inches (152 mm) above the spill line of the lowest floor drain and vented independently to the outer air. The minimum size of a flammable vapor vent shall not be less than two (2") inches (51 mm), and when vented through a sidewall, the vent shall not be less than ten (10') feet (3048 mm) above the adjacent level at an approved location. The interceptor shall be vented on the sewer side and shall not connect to a flammable vapor vent. All oil and flammable interceptors shall be provided with gastight cleanout covers, which shall be readily accessible. The waste line shall not be less than three (3") inches (76 mm) in diameter with a full-size cleanout to grade. An interceptor with an overflow, shall be provided with an overflow line (not less than two (2") inches (51 mm) in diameter) to an approved exterior waste oil tank having a minimum capacity of five hundred fifty (550)gallons (2080 L) and meeting the requirements of the Authority Having Jurisdiction. The waste oil from the separator shall flow by gravity or shall be pumped to a higher elevation by an automatic pump. Pumps shall be adequately sized and accessible. Waste oil tanks shall have a two (2") inch (51 mm) minimum pump-out connection at grade and a one and one-half (1-1/2") inch (38 mm) minimum vent to atmosphere at an approved location at least ten (10') feet (3048 mm) above grade.

1017.3 Combination Oil and Sand Interceptor
A combination oil and sand interceptor may be installed when the Authority Having Jurisdiction approves the design.

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 11 Storm Drainage

Chapter 11 Amended

1101.1 General

Change 1101.1 to read as follows:

1101.1 Where Required. Storm drainage need not be sewer connected provided that the property owner, licensed Master Plumber or licensed Master Drainlayer provides construction documents detailing the alternate discharge of the storm water. The construction documents shall be prepared by a Professional Engineer licensed by the State of Missouri and shall be sealed and signed. Under no circumstance shall the alternate discharge create a nuisance. The installation of the alternate discharge shall conform to all other provisions of the Plumbing Code.

Exception: *In the case of a single one or two family dwelling, construction documents prepared, signed and sealed by a Professional Engineer will not be necessary. Storm water may be discharged on flat areas such as streets or lawns so long as the storm water shall flow away from the building, and shall not create a nuisance.*

1101.7 Areaway Drains. All open subsurface space adjacent to a building, serving as an entrance to the basement or cellar of a building, shall be provided with a drain or drains. Such areaway drains shall be three (3") inches (76 mm) minimum diameter for areaways not exceeding one hundred (100') square feet (9.3 m^2) in area, and shall be discharged in the manner provided for subsoil drains not serving continuously flowing springs or ground water (see Section 1101.5.2). Areaways in excess of one hundred (100') square feet (9.3 m^2) shall not drain into subsoil. Areaway drains for areaways exceeding one hundred (100') square feet (9.3 m^2) shall be sized according to Table 11-2.

1101.11 Roof Drainage

Change 1101.11 to read as follows:

1101.11.1 Primary Roof Drainage. Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the Authority Having Jurisdiction, roof drains, gutters, vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm rate of six (6") inches per hour of sixty (60) minutes duration and 100-year return period. **Refer to Table D-1 (in Appendix D) for 100-year, 60 minute storms at various locations.**

1101.11.2 Secondary Roof Drainage

Secondary (emergency) roof drainage shall be provided by one of the methods specified in Section 1101.2.1 0r 1101.11.2.2.

Change 1101.11.2.1 to read as follows:

1101.11.2.1 Where parapet walls or other construction extend above the roof and create areas where storm water would become trapped if the primary roof drainage system failed to provide sufficient drainage, an independent secondary roof drainage system consisting of scuppers, standpipes, or roof drains shall be provided. Discharge from secondary roof drains onto any area which maybe occupied by persons or vehicles shall not be allowed to fall more than three (3) feet above the ground. Secondary roof drainage systems shall be sized in accordance with Section 1101.11.1 as amended by this Code. Overflow drains shall be the same size as the roof drains with the inlet flow line two (2") inches (51 mm) above the low point of the roof and shall be installed independent from the roof drains.

1101.11.2.1 Roof Scuppers or Open Side

Change 1101.11.2.2.1 to read as follows:

110l.11.2.2.1 Separate Piping System

The secondary roof drainage system shall be a separate system of piping, independent of the primary roof drainage system. The discharge shall be above grade, in a location observable by the building occupants or maintenance personnel. **Discharge from secondary roof drains onto any area which may be occupied by persons or vehicles shall not be allowed to fall more than three (3) feet above the ground.** Secondary roof drain systems shall be sized in accordance with Section 1101.11.1 based on the rainfall rate for which the primary system is sized.

No part of the primary roof drainage system such as drains, scuppers, piping, gutters, or appurtenances, which is a part of the primary roof drainage system, may be used in the design or installation of the secondary roof drainage system.

Change 1101.11.3 to read as follows:

1101.11.3 When approved by the Authority Having Jurisdiction, the requirements of Sections 1101.11.1 as amended and 1101.11.2 shall not preclude the installation of an engineered roof drainage system that has sufficient capacity to prevent water from ponding on the roof in excess of that allowed in the roof structural design with a rainfall rate of at least twice a rate of six (6") inches per hour, and with a blockage in any single point in the storm drainage system.

1101.12 Cleanouts

Change 1101.12.2 to read as follows:

1101.12.2 Rain leaders and conductors connected to a building storm sewer shall have a cleanout installed at the base of the outside leader or outside conductor **and a minimum of three (3') feet and a maximum of five (5') feet above the finished floor on all inside conductors and interior downspouts,** before it connects to the horizontal drain.

1102.4 Building Storm Sewers. Building storm sewers shall be constructed of materials as specified in Table 14-1.

A. Depth and Minimum Cover.

1. Storm sewers shall have a minimum depth of thirty inches (30").

2. At stream and channel crossings, a minimum depth of two (2') feet shall be allowed only where greater depths cannot be achieved. Where this minimum cover cannot be achieved, Schedule 50 ductile iron pipe with restrained joints must be used unless otherwise by the Authority Having Jurisdiction. Stream and channel crossings must be protected with rock blanket.

1102.0 Materials

1102.1 Conductors.

Change 1102.1.1 and 1102.4 to read as follows:

1102.1.1 Conductors installed above ground in buildings shall be **in accordance with the applicable standards reference in Table 7 -1 for above ground drain, waste and vent pipe.**

1102.4 Building Storm Sewers. Building storm sewers shall be in accordance with the applicable standards referenced in Table 7-1 for building sewer pipe.

Change 1104.3 to read as follows:

1104.3 Combining Storm with Sanitary Drainage. The sanitary and storm drainage system of a building shall be entirely separate, except where a combined sewer is used, in which case the building storm drain may be connected in the same horizontal plane through single wye fittings to the combined building sewer at least ten (10') feet (3048 mm) downstream from any soil stack and **outside the building and with a connection beyond the property line.**

Change 1109.2 and 1109.2.2 to read as follows:

1109.2 Methods of Testing Storm Drainage Systems.

Except for outside leaders and perforated or open jointed drain tile, the piping of storm drain systems shall be tested upon completion of the rough piping installed by water or air; except that plastic pipe shall not be tested with air, and proved tight. The Authority Having Jurisdiction **shall be permitted to** require the removal of any cleanout plugs to ascertain whether the pressure has reached parts of the system. One (1) of the following test methods shall be used:

1109.2.2 Air Test.

1109.2.2 Exceptions: *When circumstances exist that make water tests, described in Sections 1109.2.1 above, impractical, and for minor maintenance, repairs and installations, the Authority Having Jurisdiction may perform the inspection* ***tested under conditions approved by the Authority Having Jurisdiction*** *to assure that the work has been in accordance with provisions of this Code.*

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 12 Fuel Piping

Chapter 12 Amended

Chapter 12 of the 2009 Uniform Plumbing Code ™ is not adopted and is deleted and not included in this Plumbing Code. The St. Louis City Mechanical Code shall govern installation of FUEL PIPING.

1103.413 **Amendments to the Uniform Plumbing Code ™**
Chapter 13 - Medical Gas Systems

Chapter 13 Amended

Chapter 13 of the 2009 Uniform Plumbing Code ™ is not adopted and is deleted and not included in this Plumbing Code. The St. Louis City Mechanical Code shall govern installation of Medical Gas Systems.

1103.414 **Amendments to the Uniform Plumbing Code ™**
Chapter 14 – Mandatory Referenced Standards

Chapter 14 Amended

The standards referenced in Chapter 14 2009 of the Uniform Plumbing Code ™ are accepted as recognized standards only and shall be used only to define a product for discussion and reference. The appearance of items in Chapter 14 does not imply acceptance or allow for their use.

1103.415 **Amendments To The Uniform Plumbing Code ™**
Chapter 15 – Fire-stop Protection

Chapter 15 Amended

Chapter 15 2009 of the Uniform Plumbing Code ™ is deleted. All fire-stop protection shall be done in accordance with the Building Code. Reference to these requirements in the Plumbing Code does not establish a code requirement regarding licensing of the person(s) who install fire-stop materials.

1103.416 Chapter 16 Nonpotable Water Reuse Systems – Part 1 Gray Water Systems, Part 2 Reclaimed Water Systems, Part 3 Rainwater Catchment Systems.

Chapter 16 of the 2009 Uniform Plumbing Code ™ is amended by the following provisions. Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent requirement shall apply.

Part 1 Gray Water Systems

1601.0 *Gray Water Systems - General.*

(A) The provisions of this chapter shall apply to the construction, alteration, and repair of gray water systems for underground landscape irrigation. The system shall have no connection to any potable water system and shall not result in any surfacing of the gray water. Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to gray water installation.

(B) The type of system shall be determined on the basis of location, soil type, and groundwater level, and shall be designed to accept all gray water connected to the system from the residential building. The system, except as otherwise approved, shall consist of a holding tank or tanks that discharge into subsurface irrigation/disposal fields.

(C) No gray water system or part thereof shall be located on any lot other than the lot that is the site of the building or structure that discharges the gray water, nor shall any gray water system or part thereof be located at any point having less than the minimum distances indicated in Table 16-1.

(D) No permit for any gray water system shall be issued until a plot plan, prepared by the appropriate registered design professional consistent with the professional registration laws of the State of Missouri bearing an original embossed or wet ink seal, and the date and original signature of the registered design professional. with appropriate data satisfactory to the Authority Having Jurisdiction, has been submitted and approved. When there is insufficient lot area or inappropriate soil conditions for adequate absorption of the gray water, as determined by the Authority Having Jurisdiction, no gray water system shall be permitted. No permit shall be issued for a gray water system on any property in a geologically sensitive area as determined by the Authority Having Jurisdiction.

(E) Private sewage disposal systems existing or to be constructed on the premises shall comply with Chapter 22 of this code covering Private Sewage Systems. In addition, appropriate clearances from the gray water systems shall be maintained as provided in Table 16-1. The capacity of the private sewage disposal system, including required future areas, shall not be decreased or otherwise affected by the existence or proposed installation of a gray water system servicing the premises.

Part 2 Reclaimed Water Systems

1613.0 *Reclaimed Water Systems - General.*

(A). The provisions of this chapter shall apply to the installation, construction, alteration, and repair of reclaimed water systems intended to supply water closets, urinals, and trap primers for floor drains and floor sinks. Use is limited to these fixtures that are located in nonresidential buildings. Fixtures within residential buildings are excluded from the list of approved uses. If reclaimed water is utilized on the premises, all potable water supplies shall be provided with appropriate backflow protection, as required by the Authority Having Jurisdiction.

Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to reclaimed water system installations.

(B). No permit for any reclaimed water system shall be issued until complete plumbing plans, prepared by the appropriate registered design professional consistent with the professional registration laws of the State of Missouri bearing an original embossed or wet ink seal, and the date and original signature of the registered design professional, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the reclaimed water system or the potable water system within any site containing a reclaimed water system without approval by the Authority Having Jurisdiction.

C). Before the building may be occupied, the installer shall perform the initial cross-connection test in the presence of the Authority Having Jurisdiction and authorities having jurisdiction. The test shall be ruled successful by the Authority Having Jurisdiction before final approval is granted.

1620.0 *Inspection and Testing.*

1. Reclaimed water piping shall be tested as outlined in this code for testing of potable water piping.

2. An initial and subsequent annual cross connection inspection and test shall be performed on both the potable and reclaimed water systems as follows:

(A) Visual Dual System Inspection. Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by plumbers licensed under this code possessing a current backflow tester license.

(1) Meter locations of the reclaimed water and potable water lines shall be checked to verify that no modifications were made, and that no cross-connections are visible.

(2) All pumps and equipment, equipment room signs, and exposed piping in the equipment room shall be checked.

(3) All valves shall be checked to ensure that valve lock seals are still in place and intact. All valve control door signs shall be checked to verify that no signs have been removed.

(B). Cross -Connection Test. The following procedure shall be followed by plumbers licensed under this code possessing a current backflow tester license to determine whether a cross connection occurred.

(1) The potable water system shall be activated and pressurized. The reclaimed water system shall be shut down and completely drained.

(2) The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the reclaimed water system is empty. The minimum period the reclaimed water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and reclaimed water distribution systems, but in no case shall that period be less than one (1) hour.

(3) All fixtures, potable and reclaimed, shall be tested and inspected for flow. Flow from any reclaimed water system outlet shall indicate a cross-connection. No flow from a potable water outlet would indicate that it may be connected to the reclaimed water system.

(4) The drain on the reclaimed water system shall be checked for flow during the test and at the end of the period. The potable water system shall then be completely drained.

(5) The reclaimed water system shall then be activated and pressurized.

(6) The reclaimed water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum period the potable water system is to remain depressurized shall be determined on a case-by-case basis, but in no case shall that period be less than one (1) hour.

(7) All fixtures, potable and reclaimed, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a reclaimed water outlet would indicate that it may be connected to the potable water system.

(8) The drain on the potable water system shall be checked for flow during the test and at the end of the period.

(9) If there is no flow detected in any of the fixtures that would have indicated a cross -connection, the potable water system shall be re-pressurized.

(C) In the event that a cross -connection is discovered, plumbers licensed under this code possessing a current backflow tester license, shall initiate the following procedure immediately:

(1) Reclaimed water piping to the building shall be shut down at the meter, and the reclaimed water riser shall be drained.

(2) Potable water piping to the building shall be shut down at the meter.

(3) The cross-connection shall be uncovered and disconnected.

(4) The building shall be retested following procedures listed in subsections (B)(1) and (B)(2) above.

(5) The potable water system shall be chlorinated with fifty (50) ppm chlorine for twenty-four (24) hours.

(6) The potable water system shall be flushed after twenty-four (24) hours, and a standard bacteriological test shall be performed. If test results are acceptable, the potable water system may be recharged.

3. An annual inspection of the reclaimed water system, following the procedure listed in subsection 1620.0 (B) (1), shall be required. Annual cross connection testing, following the procedures listed in subsection 1620.0 (B) (2), shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. In no event shall the test occur less often than once in four (4) years.

Alternate testing requirements may be allowed by the Authority Having Jurisdiction for institutional buildings.

Part 3 Rainwater Catchment Systems

1622.0 *Non-Potable Rainwater Catchment Systems, Interior.*

1622.1 *General.* With the approval of the Authority Having Jurisdiction, the provisions of this section shall apply to the installation, construction, alteration, and repair of rainwater catchments systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, and other uses approved by the Authority Having Jurisdiction.

Note: Additional design criteria can be found in the ARCSA/ASPE Rainwater Catchment Design and Installation Standard. Additional requirements can be found in other sections of this Code.

1622.2 *Plumbing Plan Submission.* No permit for any rainwater catchment system requiring a permit shall be issued until complete plumbing plans, with appropriate data satisfactory to the Authority Having Jurisdiction, have been submitted and approved. No changes or connections shall be made to either the rainfall catchment or the potable water system within any site containing a rainfall catchment water system without approval by the Authority Having Jurisdiction.

1622.3 *Reserved.*

1622.4 *Connections to Potable or Reclaimed (Recycled) Water Systems.* Rainwater catchment systems shall have no direct connection to any potable water supply or alternate water source system. Potable or reclaimed (recycled) water is permitted to be used as makeup water for a rainwater catchment system provided the potable or reclaimed (recycled) water supply connection is protected by a reduced-pressure principle backflow preventer complying with the plumbing code.

1622.5 *Initial Cross-Connection Test.* Where any portion of a rainwater catchment system is installed by a licensed plumber within a building, a cross-connection test is required in accordance with 1622.12.2. Before the building may be occupied, or the system is activated the installer shall perform the initial cross-connection test in the presence of a licensed plumber with a current backflow tester certification. The test shall be certified successful to the Authority Having Jurisdiction before final approval is granted.

1622.6 *Sizing.* Rainfall catchment system distribution piping for indoor applications shall be sized as outlined in this code for sizing potable water piping. The design and size of rainwater drains, gutters, conductors, and leaders shall comply with the plumbing code.

1622.7 *Reserved.*

1622.8 *Rainfall Catchment System Materials.* Rainfall catchment system materials shall comply with Section 1622.8.1 and Section 1622.8.4.

1622.8.1 *Water Supply and Distribution Materials.* Rainwater catchment water supply and distribution materials shall comply with the requirements of the plumbing code for potable water supply and distribution systems, unless otherwise provided for in this section.

1622.8.2 All materials used in rainwater catchment drainage systems, including gutters, downspouts, conductors, and leaders shall comply with the requirements of the plumbing code for storm drainage.

1622.8.3 *Storage Tanks.* Rainwater storage tanks shall comply with Section 1622.10.6.

1622.8.4 *Collections Surfaces.* The collection surface shall be constructed of a hard, impervious material.

1622.9 *Rainwater Catchment Water System Color and Marking Information.* Rainwater catchment systems shall have a colored background in accordance with the plumbing code. Rainwater catchment systems shall be marked with the words “CAUTION: NON-POTABLE RAINWATER WATER, DO NOT DRINK” in lettering in accordance with the plumbing code.

1622.10 *Design and Installation.*

1622.10.1 With the approval of the Authority Having Jurisdiction, outside hose bibbs shall be allowed on rainwater piping systems. Hose bibbs supplying rainwater shall be marked with the words “CAUTION: NON-POTABLE WATER, DO NOT DRINK”.

1622.10.2 *Deactivation and Drainage for Cross Connection Test.* The rainwater catchment system and the potable water system within the building shall be provided with the required appurtenances (valves, air/vacuum relief valves, etc.) to allow for deactivation or drainage as required for cross connection test in Section 1622.13.2.

1622.10.3 *Collection Surfaces.* Rainwater shall only be collected from roof surfaces. Rainwater catchment system shall not collect rainwater from:

1. Vehicular parking surfaces;

2. Surface water runoff; or

3. Bodies of standing water.

1622.10.3.1 *Prohibited Discharges.* Overflows and bleed-off pipes from roof-mounted equipment and appliances shall not discharge onto roof surfaces that are intended to collect rainwater.

1622.10.4 *Minimum Water Quality.* The minimum water quality for harvested rainwater shall meet the applicable water quality requirements for the intended applications as determined by the public health Authority Having Jurisdiction.

1622.10.5 *Reserved.*

1622.10.6 *Rainwater Storage Tanks.*

Rainwater storage tanks shall be constructed and installed in accordance with Sections 1622.10.6.1 through 1622.10.6.7.

1622.10.6.1 Construction. Rainwater storage shall be constructed of solid, durable materials not subject to excessive corrosion or decay and shall be watertight. Storage tanks shall be approved by the Authority Having Jurisdiction provided such tanks comply with approved applicable standards.

1622.10.6.2 *Location.* Rainwater storage tanks shall be permitted to be installed above or below grade.

1622.10.6.3 *Above Grade.* Above grade storage tanks shall be of an opaque material, approved for above-ground use in direct sunlight or shall be shielded from direct sunlight. Tanks shall be installed in an accessible location to allow for inspection and cleaning. The tank shall be installed on a foundation or platform that is constructed to accommodate all loads in accordance with the building code.

1622.10.6.4 *Below Grade.* Rainwater storage tanks installed below grade shall be structurally designed to withstand all anticipated earth or other loads. All holding tank covers shall be capable of supporting an earth load of not less than three hundred (300) pounds per square foot (1464.6 kg/m2) when the tank is designed for underground installation. Below grade rainwater tanks installed underground shall be provided with manholes. The manhole opening, large enough to provide access, shall be located a minimum of 4 inches above the surrounding grade. The surrounding grade shall be sloped away from the manhole. Underground tanks shall be ballasted, anchored, or otherwise secured, to prevent the tank from floating out of the ground when empty. The combined weight of the tank and hold down system should meet or exceed the buoyancy force of the tank.

1622.10.6.5 *Drainage and Overflow.* All rainwater storage tanks shall be provided with a means of draining and cleaning. The overflow drain shall not be equipped with a shutoff valve. The overflow outlet shall discharge as required by the plumbing code for storm drainage systems. Where discharging to the storm drainage system, the overflow drain shall be protected from backflow of the storm drainage system by a backwater valve or other approved method.

1622.10.6.5.1 *Overflow Outlet Size.* The overflow outlet shall be sized to accommodate the flow of the rainwater entering the tank and not less than the aggregate cross-sectional area of all inflow pipes.

1622.10.6.6 *Opening and Access Protection.*

1622.10.6.6.1 *Animals and Insects.* All rainwater tank openings shall be protected to prevent the entrance of insects, birds or rodents into the tank.

1622.10.6.6.2 *Human Access.* Rainwater tank access openings exceeding 12 inches (305 mm) in diameter shall be secured to prevent tampering and unintended entry by either a lockable device or other approved method.

1622.10.6.7 *Marking.* Rainwater tanks shall be permanently marked with the capacity and the language: "NON-POTABLE RAINWATER." Where openings are provided to allow a person to enter the tank, the opening shall be marked with the following language: "DANGER- CONFINED SPACE".

1622.10.7 *Pumps.* All pumps serving rainwater catchment systems shall be listed. All pumps supplying water to water closets, urinals, trap primers shall be capable of delivering a minimum (15) pounds per square inch (103.4 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in rainwater supply system within the building exceeds (80) pounds per square inch (552 kPa), a pressure reducing valve reducing the pressure to (80) pounds per square inch (552 kPa) or less to all water outlets in the building shall be installed in accordance with the plumbing code.

1622.10.8 *Roof Drains.* Primary and secondary roof drains, conductors, leaders, and gutters shall be designed and installed as required by the plumbing code.

1622.10.9 *Water Quality Devices and Equipment.* Devices and equipment used to treat rainwater to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and approved for the intended application.

1622.10.10 *Freeze Protection.* All tanks and piping installed in locations subject to freezing shall be provided with an adequate means of freeze protection.

1622.10.11 *Debris Removal.* The rainwater catchment conveyance system shall be equipped with a debris excluder or other approved

means to prevent the accumulation of leaves, needles, other debris and sediment from entering the storage tank. All devices or methods used to remove debris or sediment shall be accessible.

1622.10.12 *Required Filters.* A filter permitting the passage of particulates no larger than one-hundred (100) microns shall be provided for rainwater supplied to water closets, urinals, trap primers, and drip irrigation system.

1622.10.13 *Roof Gutters.* Gutters shall maintain a minimum slope and be sized in accordance with the plumbing code.

1622.11 *Signs.* Signs in buildings using rainwater water shall comply with Section 1622.11.1 and 1622.11.2.

1622.11.1 *Commercial, Industrial and Institutional Restroom Signs.* A sign shall be installed in all restrooms in commercial, industrial, and institutional occupancies using non-potable rainwater for water closets and/or urinals. Each sign shall contain one half (1/2) inch (12.7 mm) letters of a highly visible color on a contrasting background. The location of the sign(s) shall be such that the sign(s) shall be visible to all users. The number and location of the signs shall be approved by the Authority Having Jurisdiction and shall contain the following text:

TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS AND URINALS.

1622.11.2 *Equipment Room Signs.* Each equipment room containing non-potable rainwater equipment shall have a sign posted with the following wording in one (1) inch (25.4 mm) letters on an ORANGE background:

CAUTION NON-POTABLE RAINWATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM. NOTICE: OBTAIN A PLUMBING PERMIT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

This sign shall be posted in a location that is visible to anyone working on or near rainwater water equipment.

1622.12 *Inspection and Testing.* Rainwater catchment systems shall be inspected and tested in accordance with 1622.12.1 through 1622.12.3

1622.12.1 *Supply System Inspection and Test.* Rainwater catchment systems shall be inspected and tested in accordance with the applicable provisions of the plumbing code for testing of potable water and storm drainage systems.

1622.12.2 *Annual Cross-Connection Inspection and Testing.* An initial and subsequent annual inspection and test required by Section 1622.5 shall be performed on both the potable and rainfall catchment water systems by licensed plumbers with a current backflow tester certification. The potable and rainfall catchment water system shall be isolated from each other and independently inspected and tested to ensure there is no cross connection in accordance with 1622.12.2.1 through 1622.12.2.4.

1622.12.2.1 *Visual System Inspection.* Prior to commencing the cross-connection testing, a dual system inspection shall be conducted by the licensed plumber holding a current backflow tester certification.

1. All pumps and equipment, equipment room signs, and exposed piping in equipment room shall be checked.

1622.12.2.2 *Cross-Connection Test.* The following procedure shall be followed by licensed plumber with a current backflow tester certification to determine whether a cross connection occurred.

1. The potable water system shall be activated and pressurized. The Rainfall catchment water system shall be shut down and completely drained.

2. The potable water system shall remain pressurized for a minimum period of time specified by the Authority Having Jurisdiction while the rainfall catchment water system is empty. The minimum period the Rainfall catchment water system is to remain depressurized shall be determined on a case-by-case basis, taking into account the size and complexity of the potable and Rainfall catchment water distribution systems, but in no case shall that period be less than one (1)hour.

3. All fixtures, potable and rainwater, shall be tested and inspected for flow. Flow from any Rainfall catchment water system outlet shall indicate a cross connection. No flow from a potable water outlet would indicate that it may be connected to the rainwater water system.

4. The drain on the Rainfall catchment water system shall be checked for flow during the test and at the end of the period.

5. The potable water system shall then be completely drained.

6. The Rainfall catchment water system shall then be activated and pressurized.

7. The Rainfall catchment water system shall remain pressurized for a minimum period of time determined on a case-by-case basis, but in no case shall that period be less than one (1) hour.

8. All fixtures, potable and Rainfall catchment, shall be tested and inspected for flow. Flow from any potable water system outlet shall indicate a cross-connection. No flow from a Rainfall catchment water outlet would indicate that it may be connected to the potable water system.

9. The drain on the potable water system shall be checked for flow during the test and at the end of the period.

10. If there is no flow detected in any of the fixtures which would have indicated a cross connection, the potable water system shall be re-pressurized.

1622.12.2.3 *Discovery of Cross-Connection.* In the event that a cross-connection is discovered, the following procedure shall be activated immediately by the licensed plumber with a current backflow tester certification:

1. Rainfall catchment water piping to the building shall be shut down and the rainwater water riser shall be drained.

2. Potable water piping shall be shut down at the entrance to the building.

3. The cross-connection shall be uncovered and disconnected.

4. Rainfall catchment water piping to the building shall be shut down and the rainwater water riser shall be drained.

5. Potable water piping shall be shut down at the entrance to the building.

6. The cross-connection shall be uncovered and disconnected. Rainfall catchment water piping to the building shall be shut down and the rainwater water riser shall be drained.

7. Potable water piping shall be shut down at the entrance to the building. The cross-connection shall be uncovered and disconnected.

1622.12.2.4 *Annual Inspection.* An annual inspection of the Rainfall catchment water system, following the procedures listed in section 1622.12.2.1 shall be required. Annual cross-connection testing, following the procedures listed in section 1622.12.2.2 shall be required by the Authority Having Jurisdiction, unless site conditions do not require it. In no event shall the test occur less often than once in four (4) years. Alternate testing requirements may be allowed by the Authority Having Jurisdiction.

1623.1 *General.* With the approval of the Authority Having Jurisdiction, the provisions of section 1622.0 shall apply to the installation, construction, alteration, and repair of rainwater catchments systems intended to supply uses such as irrigation, industrial processes, water features and other uses approved by the Authority Having Jurisdiction.

Note: Additional design criteria can be found in the ARCSA/ASPE Rainwater Catchment Design and Installation Standard. Additional requirements can be found in other sections of this Code.

Amendments to the Uniform Plumbing Code 2009
Saint Louis City Ordinance Chapter 23 Dwelling Unit Fire Sprinkler Systems
Chapter 23 is a new addition to the ordinance referencing the 2009 Uniform Plumbing Code TM.

CHAPTER 23

DWELLING UNIT FIRE SPRINKLER SYSTEMS

2304.1 *General.* Where installed, residential fire sprinkler systems, or portions thereof, shall be in accordance with NFPA 13D or Section 2304, which shall be considered equivalent to NFPA 13D. Section 2304 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall provide domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and

independent from the water distribution system.

2304.1.1 *Required sprinkler locations.* Sprinklers shall be installed to protect all areas of a dwelling unit.

Exceptions:

4. **Attics, crawl spaces, and normally unoccupied concealed spaces that do not contain fuel-fired appliances do not require sprinklers. In attics, crawl spaces, and normally unoccupied concealed spaces that contain fuel-fired equipment, a sprinkler shall be provided above the equipment; however, sprinklers shall not be required in the remainder of the space.**

5. **Clothes closets, linen closets and pantries not exceeding 24 square feet in area, with the smallest dimension not greater than 3 feet and having wall and ceiling surfaces of gypsum board.**

6. **Bathrooms not greater than 55 square feet in area.**

7. **Garages; carports; exterior porches; unheated entry areas, such as mud rooms, that are adjacent to an exterior door; and similar areas.**

2304.2 *Sprinklers.* Sprinklers shall be listed residential sprinklers and shall be installed in accordance with the sprinkler manufacturer's installation instructions.

2304.2.1 *Temperature rating and separation from heat sources.* Except as provided for in Section 2304.2.2, sprinklers shall have a temperature rating of not less than 135˚F and not more than 170˚F. Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

2304.2.2 *Intermediate temperature sprinklers.* Sprinklers shall have an intermediate temperature rating not less than 175˚F and not more than 225˚F where installed in the following locations:

1. **Directly under skylights, where the sprinkler is exposed to direct sunlight.**

2. **In attics.**

3. **In concealed spaces located directly beneath a roof.**

4. **Within the distance to a heat source as specified in Table 2304.2.2 .**

Table 2304.2.2

Locations Where Intermediate Temperature Sprinklers are required

Heat Source	Range of distance from heat source within which Intermediate Temperature Sprinklers Are Required [a,b]
Fireplace, Side of Open or Recessed	12 to 36
Fireplace, Front of Recessed Fireplace	36 to 60
Coal and Wood Burning Stove	12 to 42
Kitchen Range Top	9 to 18
Oven	9 to 18
Vent Connector or Chimney Connector	9 to 18
Heating Duct, Not Insulated	9 to 18

Hot Water Pipe, Not Insulated	6 to 12
Side of Ceiling or Wall Warm Air	12 to 24
Front of Wall Mounted Warm Air	18 to 36
Water Heater, Furnace, or Boiler	3 to 6
Luminaire Up to 250 Watts	3 to 6
Luminaire 250 Watts Up to 499 Watts	6 to 12

[a] Sprinklers shall not be located at distances less than the minimum table distance unless the sprinkler listing allows a lesser distance.

[b] Distances shall be measured in a straight line from the nearest edge of the heat source to the nearest edge of the sprinkler.

2304.2.3 *Freezing Areas.* Piping shall be protected from freezing as required by Section

2603.6. Where sprinklers are required in areas that are subject to freezing, dry-sidewall or dry-pendent sprinklers extending from a non-freezing area into a freezing area shall be installed.

2304.2.4 *Sprinkler Coverage.* Sprinkler coverage requirements and sprinkler obstruction requirements shall be in accordance with Sections 2304.2.4.1 and 2304.2.4.2.

2304.2.4.1 *Coverage Area Limit.* The area of coverage of a single sprinkler shall not exceed 400 square feet and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions.

2304.2.4.2 *Obstructions to Coverage.* Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Sprinkler separation from obstructions shall comply with the minimum distances specified in the sprinkler manufacturer's instructions.

2304.2.4.2.1 *Additional Requirements for Pendent Sprinklers.* Pendent sprinklers within 3 feet of the center of a ceiling fan, surface-mounted ceiling luminaire or similar object shall be considered to be obstructed, and additional sprinklers shall be provided.

2304.2.4.2.2. *Additional Requirements for Sidewall Sprinklers.* Sidewall sprinklers within 5 feet of the center of a ceiling fan, surface-mounted ceiling luminaire or similar object shall be considered to be obstructed, and additional sprinklers shall be provided.

2304.2.5 *Sprinkler Installation on Systems Assembled with Solvent Cement.* The solvent cementing of fittings shall be completed and threaded adapters for sprinklers shall be verified as being clear of excess cement prior to the installation of sprinklers on systems assembled with solvent cement.

2304.2.6 *Sprinkler Modifications Prohibited.* Painting, caulking or modifying of sprinklers shall be prohibited. Sprinklers that have been painted, caulked, modified or damaged shall be replaced with new sprinklers.

2304.3 *Sprinkler Piping System.* Sprinkler piping shall be supported in accordance with the requirements for cold water distribution piping. Sprinkler piping shall comply with the material requirements for cold water distribution piping. For multipurpose piping systems, the sprinkler piping shall connect to and be a part of the cold water distribution piping system.

2304.3.1 *Nonmetallic Pipe and Tubing.* Nonmetallic pipe and tubing, such as CPVC and PEX, shall be listed for use in residential fire sprinkler systems.

2304.3.1.1 *Nonmetallic Pipe Protection.* Nonmetallic pipe and tubing systems shall be protected from exposure to the living space by a layer of not less than 3/8 inch thick gypsum wallboard, 1/2 inch thick plywood, or other material having a 15 minute fire rating.

Exceptions:

1. **Pipe protection shall not be required in areas that are not required to be protected with sprinklers as specified in Section 2304.1.1.**

2. **Pipe protection shall not be required where exposed piping is permitted by the pipe listing.**

2304.3.2 ***Shutoff Valves Prohibited.*** **With the exception of shutoff valves for the entire water distribution system, valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers.**

2304.3.3 ***Single Dwelling Limit.*** **Piping beyond the service valve located at the beginning of the water distribution system shall not serve more than one dwelling.**

2304.3.4 ***Drain.*** **A means to drain the sprinkler system shall be provided on the system side of the water distribution shutoff valve.**

2304.4 ***Determining System Design Flow.*** **The flow for sizing the sprinkler piping system shall be based on the flow rating of each sprinkler in accordance with Section 2304.4.1 and the calculation in accordance with Section 2304.4.2.**

2304.4.1 ***Determining Required Flow Rate for Each Sprinkler.*** **The minimum required flow for each sprinkler shall be determined using the sprinkler manufacturer's published data for the specific sprinkler model based on all of the following:**

1. **The area of coverage**

2. **The ceiling configuration**

3. **The temperature rating**

4. **Any additional conditions specified by the sprinkler manufacturer.**

2304.4.2 ***System design flow rate.*** **The design flow rate for the system shall be based on the following:**

1. **The design flow rate for a room having only one sprinkler shall be the flow rate required for that sprinkler, as determined by Section 2304.4.1.**

2. **The design flow rate for a room having two or more sprinklers a shall be determined by identifying the sprinkler in that room with the highest required flow rate, based on Section 2304.4.1, and multiplying that flow rate by 2.**

3. **Where the sprinkler manufacturer specifies different criteria for ceiling configurations that are not smooth, flat and horizontal, the required flow rate for that room shall comply with the sprinkler manufacturer's instructions.**

4. **The design flow rate for the sprinkler system shall be the flow required by the room with the largest flow rate, based on Items 1, 2 and 3.**

5. **For the purpose of this section, it shall be permissible to reduce the design flow rate for a room by subdividing the space into two or more rooms, where each room is evaluated separately with respect to the required design flow rate. Each room shall be bounded by walls and a ceiling. Openings in walls shall have a lintel not less than 8 inches in depth and each lintel shall form a solid barrier between the ceiling and the top of the opening.**

2304.5 ***Water Supply.*** **The water supply shall provide not less than the required design flow rate for sprinklers in accordance with Section 2304.4.2 at a pressure not less than that used to comply with Section 2304.6.**

2304.5.1 Water supply from individual sources. Where a dwelling unit water supply is from a tank system, a private well system, or a combination of these, the available water supply shall be based on the minimum pressure control setting for the pump.

2304.52. ***Required Capacity.*** **The water supply shall have the capacity to provide the required design flow rate for sprinklers for a period of time as follows:**

1. **7 minutes for dwelling units less than 2,000 square feet in area.**

2. **10 minutes for dwelling units equal to or greater than 2,000 square feet in area.**

Where a well system, a water supply tank system, or a combination thereof, is used, any combination of well capacity and tank storage shall be permitted to meet the capacity requirement.

2304.6 *Pipe Sizing.* The piping to sprinklers shall be sized for the flow required by Section 2304.4.2. The flow required to supply the plumbing fixtures shall not be required to be added to the sprinkler design flow.

2304.6.1 *Method of Sizing Pipe.* Piping supplying sprinklers shall be sized using the prescriptive method in Sections 2304.6.2 or by hydraulic calculation in accordance with NFPA 13D. The minimum pipe size from the water supply source to any sprinkler shall be 3/4 inch nominal. Threaded adapter fittings at the point where sprinklers are attached to the piping shall be a minimum of ½ inch nominal.

2304.6.2 *Prescriptive Pipe Sizing Method.* Pipe shall be sized by determining the available pressure to offset friction loss in piping and identifying a piping material, diameter and length using the equation in Section 2304.6.2.1 and the procedure in Section 2304.6.2.2.

2304.6.2.1 *Available Pressure Equation.* The pressure available to offset friction loss in the interior piping system (Pt) shall be determined in accordance with the Equation 23-1.

(Equation 23-1)

$$P_t = P_{sup} - PL_{svc} - PL_m - PL_d - PL_e - P_{sp}$$

Where:

P_t = **Pressure used in applying Tables 2304.6.2(4) through 2304.6.2(9).**

P_{sup} = **Pressure available from the water supply source.**

PL_{svc} = **Pressure loss in the water-service pipe.**

PL_m = **Pressure loss in the water meter.**

PL_d = **Pressure loss from devices other than the water meter.**

PL_e = **Pressure loss associated with changes in elevation.**

P_{sp} = **Maximum**

2304.6.2.2 *Calculation Procedure.* Determination of the required size for water distribution piping shall be in accordance with the following procedure:

Step 1 - Determine P_{sup}

Obtain the supply pressure that will be available from the water main from the water purveyor, or for an individual source, the available supply pressure shall be in accordance with Section 2304.5.1. The pressure shall be the residual pressure available at the flow rate used when applying Table 2304.6.2(1).

Step 2 – Determine PL_{svc}

Use Table 2304.6.2(1) to determine the pressure loss in the water service pipe based on the selected size of the water service.

Step 3 – Determine PL_m

Pressure required by a sprinkler

Use Table 2304.6.2(2) to determine the pressure loss from the water meter. based on the selected water meter size.

Step 4 – Determine PL_d

Determine the pressure loss from devices, other than the water meter, installed in the piping system supplying sprinklers, such as pressure-reducing valves, backflow preventers, water softeners or water filters. Device pressure losses shall be based on the device manufacturer's specifications. The flow rate used to determine pressure loss shall be the rate from Section 2304.4.2, except that 5 gpm shall be added where the device is installed in a water-service pipe that supplies more than one dwelling. As alternative to deducting pressure loss for a device, an automatic bypass valve shall be installed to divert flow around the device when a sprinkler activates.

Step 5 – Determine Pl_e

Use Table 2304.6.2(3) to determine the pressure loss associated with changes in elevation. The elevation used in applying the table shall be the difference between the elevation where the water source pressure was measured and the elevation of the highest sprinkler.

Step 6 – Determine P_{sp}

Determine the maximum pressure required by any individual sprinkler based on the flow rate from Section 2304.4.1. The required pressure is provided in the sprinkler manufacturer's published data for the specific sprinkler model based on the selected flow rate.

Step 7 – Calculate P_t

Using Equation 23-1, calculate the pressure available to offset friction loss in water-distribution piping between the service valve and the sprinklers.

Step 8 – Determine the maximum allowable pipe length

Use Tables 2304.6.2(4) through 2304.6.2(9) to select a material and size for water distribution piping. The piping material and size shall be acceptable if the developed length of pipe between the service valve the most remote sprinkler does not exceed the maximum allowable length specified by the applicable table. Interpolation of Pt between the tabular values shall be permitted.

The maximum allowable length of piping in Tables 2304.6.2(4) through 2304.6.2(9) incorporates an adjustment for pipe fittings, and no additional consideration of friction losses associated with pipe fittings shall be required.

2304.7 ***Instructions and Signs.*** **An owner's manual for the fire sprinkler system shall be provided to the owner. A sign or valve tag shall be installed at the main shutoff valve to the water distribution system stating the following: "Warning, the water system for this home supplies fire sprinklers that require certain flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water softeners, filtration systems, and automatic shutoff valves, shall not be added to this system without a review of the fire sprinkler system by a fire protection specialist. Do not remove this sign."**

2304.8 ***Inspections.*** **The water distribution system shall be inspected in accordance with Sections 2304.8.1 and 2304.8.2.**

2304.8.1 ***Pre-concealment Inspection.*** **The following items shall be verified prior to the concealment of any sprinkler system piping:**

1. **Sprinklers are installed in all areas as required by Section 2304.1.1.**

2. **Where sprinkler water spray patterns are obstructed by construction features, luminaires or ceiling fans, additional sprinklers are installed as required by Section 2304.2.4.2.**

3. **Sprinklers are the correct temperature rating and are installed at or beyond the required separation distances from heat sources as required by Sections 2304.2.1 and 2304.2.2.**

4. **The pipe size equals or exceeds the size used in applying Tables 2304.6.2(4) through 2304.6.2(9) or, if the piping**

system was hydraulically calculated in accordance with Section 2304.6.1, the size used in the hydraulic calculation.

5. **The pipe length does not exceed the length permitted by Tables 2304.6.2(4) through 2304.6.2(9) or, if the piping system was hydraulically calculated in accordance with Section 2304.6.1, pipe lengths and fittings do not exceed those used in the hydraulic calculation.**

6. **Non-metallic piping that conveys water to sprinklers is listed for use with fire sprinklers.**

7. **Piping is supported in accordance with the pipe manufacturer's and sprinkler manufacturer's installation instructions.**

8. **The piping system is tested in accordance with Section P2503.6**

2304.8.2 ***Final Inspection.*** **The following items shall be verified upon completion of the system:**

1. **Sprinkler are not painted, damaged or otherwise hindered from operation.**

2. **Where a pump is required to provide water to the system, the pump starts automatically upon system water demand.**

3. **Pressure reducing valves, water softeners, water filters or other impairments to water flow that were not part of the original design, have not been installed.**

4. **The sign or valve tag required by Section 2304.7 is installed and the owner's manual for the system is present.**

2304.9 ***Installer Qualifications.***

1. **A multipurpose fire sprinkler system**

   (A) **Licensed as a Plumber and certified by the Board of Plumbing Examiners. Technical and experience qualifications and examination criteria shall be determined by the Board of Plumbing Examiners**

2. **A stand-alone sprinkler system**

   (A) **Licensed as a sprinkler fitter under the St. Louis City Plumbing Code.**

Table 2304.6.2(1)

Water Service Pressure Loss (PL_{svc})[a,b]

Flow Rate[c] (gpm)	3/4" Water Service Pressure Loss (psi)				1" Water Service Pressure Los (psi)				1-1/4" Water Service Pressure Loss (psi)			
	40' or less	41' to 75'	76' to 100'	101' to 150'	40' or less	41' to 75'	76' to 100'	101' to 150'	40' or less	41' to 75'	76' to 100'	101' to 150'
8	5.1	8.7	11.8	17.4	1.5	2.5	3.4	5.1	0.6	1.0	1.3	1.9
10	7.7	13.1	17.8	26.3	2.3	3.8	5.2	7.7	0.8	1.4	2.0	2.9
12	10.8	18.4	24.9	NP	3.2	5.4	7.3	10.7	1.2	2.0	2.7	4.0
14	14.4	24.5	NP	NP	4.2	7.1	9.6	14.3	1.6	2.7	3.6	5.4
16	18.4	NP	NP	NP	5.4	9.1	12.4	18.3	2.0	3.4	4.7	6.9
18	22.9	NP	NP	NP	6.7	11.4	15.4	22.7	2.5	4.3	5.8	8.6
20	27.8	NP	NP	NP	8.1	13.8	18.7	27.6	3.1	5.2	7.0	10.4

22	NP	NP	NP	NP	9.7	16.5	22.3	NP	3.7	6.2	8.4	12.4
24	NP	NP	NP	NP	11.4	19.3	26.2	NP	4.3	7.3	9.9	14.6
26	NP	NP	NP	NP	13.2	22.4	NP	NP	5.0	8.5	11.4	16.9
28	NP	NP	NP	NP	15.1	25.7	NP	NP	5.7	9.7	13.1	19.4
30	NP	NP	NP	NP	17.2	NP	NP	NP	6.5	11.0	14.9	22.0
32	NP	NP	NP	NP	19.4	NP	NP	NP	7.3	12.4	16.8	24.8
34	NP	NP	NP	NP	21.7	NP	NP	NP	8.2	13.9	18.8	NP
36	NP	NP	NP	NP	24.1	NP	NP	NP	9.1	15.4	20.9	NP

NP - Not permitted. Pressure loss exceeds reasonable limits

a. **Values are applicable for underground piping materials listed in Table 2304.4 and are based on an SDR of 11 and a Hazen Williams C Factor of 150.**

b. **Values include the following length allowances for fittings: 25% length increase for actual lengths up to 100 feet and 15% length increase for actual lengths over 100 feet.**

c. **Flow rate from Section 2304.4.2. Add 5 gpm to the flow rate required by Section 2304.4.2 where the water-service pipe supplies more than one dwelling.**

Table 2304.6.2(2)Minimum Water Meter Pressure Loss (PL_m)[a]

Flow Rate (gpm)[b]	5/8" Meter Pressure Loss (psi)	3/4" Meter Pressure Loss (psi)	1" Meter Pressure Loss (psi)
8	2	1	1
10	3	1	1
12	4	1	1
14	5	2	1
16	7	3	1
18	9	4	1
20	11	4	2
22	NP	5	2
24	NP	5	2
26	NP	6	2
28	NP	6	2
30	NP	7	2
32	NP	7	3
34	NP	8	3

36	NP	8	3

NP - Not permitted unless the actual water meter pressure loss is known.

a. Table 2304.6.2(2) establishes conservative values for water meter pressure loss for installations where the water meter loss is unknown. Where the actual water meter pressure loss is known, Pm shall be the actual loss.

b. Flow rate from Section 2304.4.2. Add 5 gpm to the flow rate required by Section 2304.4.2 where the water-service pipe supplies more than one dwelling.

Table 2304.6.2(3)
Elevation Loss (PLe)

Elevation (feet)	Pressure Loss (psi)
5	2.2
10	4.4
15	6.5
20	8.7
25	10.9
30	13
35	15.2
40	17.4

Table 2304.6.2(4)

Allowable Pipe Length for ¾ inch Type M Copper Water Tubing

Sprinkler Flow Rate[a] (gpm)	**Water Distribution Size (inch)**	**Available Pressure - P_t (psi)**									
		15	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**
		Allowable Length of Pipe from Service Valve to Farthest Sprinkler (feet)									
8	3/4	217	289	361	434	506	578	650	723	795	867
9	3/4	174	232	291	349	407	465	523	581	639	697
10	3/4	143	191	239	287	335	383	430	478	526	574
11	3/4	120	160	200	241	281	321	361	401	441	481
12	3/4	102	137	171	205	239	273	307	341	375	410
13	3/4	88	118	147	177	206	235	265	294	324	353
14	3/4	77	103	128	154	180	205	231	257	282	308
15	3/4	68	90	113	136	158	181	203	226	248	271
16	3/4	60	80	100	120	140	160	180	200	220	241

17	3/4	54	72	90	108	125	143	161	179	197	215
18	3/4	48	64	81	97	113	129	145	161	177	193
19	3/4	44	58	73	88	102	117	131	146	160	175
20	3/4	40	53	66	80	93	106	119	133	146	159
21	3/4	36	48	61	73	85	97	109	121	133	145
22	3/4	33	44	56	67	78	89	100	111	122	133
23	3/4	31	41	51	61	72	82	92	102	113	123
24	3/4	28	38	47	57	66	76	85	95	104	114
25	3/4	26	35	44	53	61	70	79	88	97	105
26	3/4	24	33	41	49	57	65	73	82	90	98
27	3/4	23	30	38	46	53	61	69	79	84	91
28	3/4	21	28	36	43	50	57	64	71	78	85
29	3/4	20	27	33	10	47	53	60	67	73	80
30	3/4	19	25	31	38	44	50	56	63	69	75
31	3/4	18	24	29	35	41	47	43	59	65	71
32	3/4	17	22	28	33	39	44	40	56	61	67
33	3/4	16	21	26	32	37	42	47	53	58	63
34	3/4	NP	20	25	30	35	40	45	50	55	60
35	3/4	NP	19	24	28	33	38	42	47	52	57
36	3/4	NP	18	22	27	31	36	40	45	49	54
37	3/4	NP	17	21	26	30	34	38	43	47	51
38	3/4	NP	16	20	24	28	32	36	40	45	49
39	3/4	NP	15	19	23	27	31	35	39	42	46
40	3/4	NP	NP	18	22	26	29	33	37	40	44

NP - Not permitted.

a. Flow rate from Section 2304.4.2.

Table 2304.6.2(5)

Allowable Pipe Length for 1 inch Type M Copper Water Tubing

Sprinkler Flow Rate a (gpm)	Water Distribution Size (inch)	Available Pressure - P_t (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable Length of Pipe from Service Valve to Farthest Sprinkler (Feet)									
8	1	806	1075	1343	1612	1881	2194	2418	2687	2955	3224
9	1	648	864	1080	1296	1512	1728	1945	2161	2377	2593
10	1	533	711	889	1067	1245	1422	1600	1778	1956	2134
11	1	447	596	745	894	1043	1192	1341	1491	1640	1789
12	1	381	508	634	761	888	1015	1142	1269	1396	1523
13	1	328	438	547	657	766	875	985	1094	1204	1313
14	1	286	382	477	572	668	763	859	954	1049	1145
15	1	252	336	420	504	588	672	756	840	924	1008
16	1	224	298	373	447	522	596	671	745	820	894
17	1	200	266	333	400	466	533	600	666	733	799
18	1	180	240	300	360	420	479	539	599	659	719
19	1	163	217	271	325	380	434	488	542	597	651
20	1	148	197	247	296	345	395	444	493	543	592
21	1	135	180	225	270	315	360	406	451	496	541
22	1	124	165	207	248	289	331	372	413	455	496
23	1	114	152	190	228	267	305	343	381	419	457
24	1	106	141	176	211	246	282	317	352	387	422
25	1	98	131	163	196	228	261	294	326	359	392
26	1	91	121	152	182	212	243	273	304	334	364
27	1	85	113	142	170	198	226	255	283	311	340
28	1	79	106	132	159	185	212	238	265	291	318
29	1	74	99	124	149	174	198	223	248	273	298
30	1	70	93	116	140	163	186	210	233	256	280
31	1	66	88	110	132	153	175	197	219	241	263
32	1	62	83	103	124	145	165	186	207	227	248
33	1	59	78	98	117	137	156	176	195	215	234

34	1	55	74	92	111	129	148	166	185	203	222
35	1	53	70	88	105	123	140	158	175	193	210
36	1	50	66	83	100	116	133	150	166	183	199
37	1	47	63	79	95	111	126	142	158	174	190
38	1	45	60	75	90	105	120	135	150	165	181
39	1	43	57	72	86	100	115	129	143	158	172
40	1	41	55	68	82	96	109	123	137	150	164

a. Flow rate from Section 2304.4.2.

Table 2304.6.2(6)
Allowable Pipe Length for ¾ inch CPVC Pipe

Sprinkler Flow Rate[a] (gpm)	Water Distribution Size (inch)	Available Pressure - P_t (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable Length of Pipe from Service Valve to Farthest Sprinkler (feet)									
8	3/4	348	465	581	697	813	929	1045	1161	1278	1394
9	3/4	280	374	467	560	654	747	841	934	1027	1121
10	3/4	231	307	384	461	538	615	692	769	845	922
11	3/4	193	258	322	387	451	515	580	644	709	773
12	3/4	165	219	274	329	384	439	494	549	603	658
13	3/4	142	189	237	284	331	378	426	473	520	568
14	3/4	124	165	206	247	289	330	371	412	454	495
15	3/4	109	145	182	218	254	290	327	363	399	436
16	3/4	97	129	161	193	226	258	290	322	354	387
17	3/4	86	115	144	173	202	230	259	288	317	346
18	3/4	78	104	130	155	181	207	233	259	285	311
19	3/4	70	94	117	141	164	188	211	234	258	281
20	3/4	64	85	107	128	149	171	192	213	235	256
21	3/4	58	78	97	117	136	156	175	195	214	234
22	3/4	54	71	89	107	125	143	161	179	197	214
23	3/4	49	66	82	99	115	132	148	165	181	198
24	3/4	46	61	76	91	107	122	137	152	167	183
25	3/4	42	56	71	85	99	113	127	141	155	169

26	3/4	39	52	66	79	92	105	118	131	144	157
27	3/4	37	49	61	73	86	98	110	122	135	147
28	3/4	34	46	57	69	80	92	103	114	126	137
29	3/4	32	43	54	64	75	86	96	107	118	129
30	3/4	30	40	50	60	70	81	91	101	111	121
31	3/4	28	38	47	57	66	76	85	95	104	114
32	3/4	27	36	45	54	63	71	80	89	98	107
33	3/4	25	34	42	51	59	68	76	84	93	101
34	3/4	24	32	40	48	56	64	72	80	88	96
35	3/4	23	30	38	45	53	61	68	76	83	91
36	3/4	22	29	36	43	50	57	65	72	79	86
37	3/4	20	27	34	41	48	55	61	68	75	82
38	3/4	20	26	33	39	46	52	59	65	72	78
39	3/4	19	25	31	37	43	50	56	62	68	74
40	3/4	18	24	30	35	41	47	53	59	65	71

a. Flow rate from Section 2304.4.2.

Table 2304.6.2(7)
Allowable Pipe Length for 1 inch CPVC Pipe

Sprinkler Flow Rate[a] (gpm)	Water Distribution Size (inch)	Available Pressure - P_t (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable Length of Pipe from Service Valve to Farthest Sprinkler (feet)									
8	1	1049	1398	1748	2098	2447	2797	3146	3496	3845	4195
9	1	843	1125	1406	1687	1968	2249	2530	2811	3093	3374
10	1	694	925	1157	1388	1619	1851	2082	2314	2545	2776
11	1	582	776	970	1164	1358	1552	1746	1940	2133	2327
12	1	495	660	826	991	1156	1321	1486	1651	1816	1981
13	1	427	570	712	854	997	1139	1281	1424	1566	1709
14	1	372	497	621	745	869	993	1117	1241	1366	1490
15	1	328	437	546	656	765	874	983	1093	1202	1311
16	1	291	388	485	582	679	776	873	970	1067	1164
17	1	260	347	433	520	607	693	780	867	954	1040

18	1	234	312	390	468	546	624	702	780	858	936
19	1	212	282	353	423	494	565	635	706	776	847
20	1	193	257	321	385	449	513	578	642	706	770
21	1	176	235	293	352	410	469	528	586	645	704
22	1	161	215	269	323	377	430	484	538	592	646
23	1	149	198	248	297	347	396	446	496	545	595
24	1	137	183	229	275	321	366	412	458	504	550
25	1	127	170	212	255	297	340	382	425	467	510
26	1	118	158	197	237	276	316	355	395	434	474
27	1	111	147	184	221	258	295	332	368	405	442
28	1	103	138	172	207	241	275	310	344	379	413
29	1	97	129	161	194	226	258	290	323	355	387
30	1	91	121	152	182	212	242	273	303	333	364
31	1	86	114	143	171	200	228	257	285	314	342
32	1	81	108	134	161	188	215	242	269	296	323
33	1	76	102	127	152	178	203	229	254	280	305
34	1	72	96	120	144	168	192	216	240	265	289
35	1	68	91	114	137	160	182	205	228	251	273
36	1	65	87	108	130	151	173	195	216	238	260
37	1	62	82	103	123	144	165	185	206	226	247
38	1	59	78	98	117	137	157	176	196	215	235
39	1	56	75	93	112	131	149	168	187	205	224
40	1	53	71	89	107	125	142	160	178	196	214

a. Flow rate from Section 2304.4.2.

Table 2304.6.2(8)

Allowable Pipe Length for ¾ inch PEX Tubing

Sprinkler Flow Rate[a] (gpm)	Water Distribution Size (inch)	Available Pressure - P_t (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable Length of Pipe Service Valve to Farthest Sprinkler (feet)									
8	3/4	93	123	154	185	216	247	278	309	339	370
9	3/4	74	99	124	149	174	199	223	248	273	298

10	3/4	61	82	102	123	143	163	184	204	225	245
11	3/4	51	68	86	103	120	137	154	171	188	205
12	3/4	44	58	73	87	102	117	131	146	160	175
13	3/4	38	50	63	75	88	101	113	126	138	151
14	3/4	33	44	55	66	77	88	99	110	121	132
15	3/4	29	39	48	58	68	77	87	96	106	116
16	3/4	26	34	43	51	60	68	77	86	94	103
17	3/4	23	31	38	46	54	61	69	77	84	92
18	3/4	21	28	34	41	48	55	62	69	76	83
19	3/4	19	25	31	37	44	50	56	62	69	75
20	3/4	17	23	28	34	40	45	51	57	62	68
21	3/4	16	21	26	31	36	41	47	52	57	62
22	3/4	NP	19	24	28	33	38	43	47	52	57
23	3/4	NP	17	22	26	31	35	39	44	48	52
24	3/4	NP	16	20	24	28	32	36	40	44	49
25	3/4	NP	NP	19	22	26	30	34	37	41	45
26	3/4	NP	NP	17	21	24	28	31	35	38	42
27	3/4	NP	NP	16	20	23	26	29	33	36	39
28	3/4	NP	NP	15	18	21	24	27	30	33	36
29	3/4	NP	NP	NP	17	20	23	26	28	31	34
30	3/4	NP	NP	NP	16	19	21	24	27	29	32
31	3/4	NP	NP	NP	15	18	20	23	25	28	30
32	3/4	NP	NP	NP	NP	17	19	21	24	26	28
33	3/4	NP	NP	NP	NP	16	18	20	22	25	27
34	3/4	NP	NP	NP	NP	NP	17	19	21	23	25
35	3/4	NP	NP	NP	NP	NP	16	18	20	22	24
36	3/4	NP	NP	NP	NP	NP	15	17	19	21	23
37	3/4	NP	NP	NP	NP	NP	NP	16	18	20	22
38	3/4	NP	NP	NP	NP	NP	NP	16	17	19	21
39	3/4	NP	NP	NP	NP	NP	NP	NP	16	18	20
40	3/4	NP	NP	NP	NP	NP	NP	NP	16	17	19

NP - Not permitted.

a. Flow rate from Section 2304.4.2.

Table 2304.6.2(9)
Allowable Pipe Length for 1 inch PEX Tubing

Sprinkler Flow Rate[a] (gpm)	Water Distribution Size (inch)	Available Pressure - P_t (psi)									
		15	20	25	30	35	40	45	50	55	60
		Allowable Length of Pipe from Service Valve to Farthest Sprinkler (feet)									
8	1	314	418	523	628	732	837	941	1046	1151	1255
9	1	252	336	421	505	589	673	757	841	925	1009
10	1	208	277	346	415	485	554	623	692	761	831
11	1	174	232	290	348	406	464	522	580	638	696
12	1	148	198	247	296	346	395	445	494	543	593
13	1	128	170	213	256	298	341	383	426	469	511
14	1	111	149	186	223	260	297	334	371	409	446
15	1	98	131	163	196	229	262	294	327	360	392
16	1	87	116	145	174	203	232	261	290	319	348
17	1	78	104	130	156	182	208	233	259	285	311
18	1	70	93	117	140	163	187	210	233	257	280
19	1	63	84	106	127	148	169	190	211	232	253
20	1	58	77	96	115	134	154	173	192	211	230
21	1	53	70	88	105	123	140	158	175	193	211
22	1	48	64	80	97	113	129	145	161	177	193
23	1	44	59	74	89	104	119	133	148	163	178
24	1	41	55	69	82	96	110	123	137	151	164
25	1	38	51	64	76	89	102	114	127	140	152
26	1	35	47	59	71	83	95	106	118	130	42
27	1	33	44	55	66	77	88	99	110	121	132
28	1	31	41	52	62	72	82	93	103	113	124
29	1	29	39	48	58	68	77	87	97	106	116
30	1	27	36	45	54	63	73	82	91	100	109
31	1	26	34	43	51	60	68	77	85	94	102
32	1	24	32	40	48	56	64	72	80	89	97

33	1	23	30	38	46	53	61	68	76	84	91
34	1	22	29	36	43	50	58	65	72	79	86
35	1	20	27	34	41	48	55	61	68	75	82
36	1	19	26	32	39	45	52	58	65	71	78
37	1	18	25	31	37	43	49	55	62	68	74
38	1	18	23	29	35	41	47	53	59	64	70
39	1	17	22	28	33	39	45	50	56	61	67
40	1	16	21	27	32	37	43	48	53	59	64

a. Flow rate from Section 2304.4.2

Amendments to the Appendices of the Uniform Plumbing Code
2010 Saint Louis City Ordinance Appendices

APPENDIX A

Amendments to the Uniform Plumbing Code – Appendix A Recommended Rules for Sizing the Water Supply System

Appendix A of the **2009** Uniform Plumbing Code ™ is amended by the following provisions. Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

Appendix A is included in the Plumbing Code with no changes.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent requirement shall apply.

APPENDIX B

Amendments to the Uniform Plumbing Code – Appendix B –Explanatory Notes on Combination Waste and Vent

Appendix B of the **2009** Uniform Plumbing Code ™ is amended by the following provisions. Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

Appendix B is included in the Plumbing Code with no changes.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent requirement shall apply.

APPENDIX C – DELETED

Change Appendix D to read as follows:

Appendix D

Sizing Storm Water Drainage Systems - Appendix D of the **2009** Uniform Plumbing Code ™ **is amended by the following provisions.**

Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

Appendix D – Sizing Storm Water Drainage Systems

Appendix D of the **2009** Uniform Plumbing Code ™ is amended and included in the Plumbing Code with the following change:

a. In Table D-1 the Maximum Rates of Rainfall for St. Louis Missouri shall be 6.0 inches per hour and 0.063 GPM/Square Foot in lieu of the values listed.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent requirement shall apply.

Change Appendix E to read as follows:

Appendix E of the 2009Uniform Plumbing Code ™ is amended by the following provisions. Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

Appendix E is included in the Plumbing Code with the following changes:

The St. Louis City Mechanical Code shall govern installation of Part D FUEL SUPPLY.

Change Appendix G to read as follows:

Appendix G - Gray Water Systems for Single Family Dwellings.

Appendix G of the **2009** Uniform Plumbing Code ™ is amended by the following provisions.

DELETED – MOVED TO CHAPTER 16

Change Appendix H to read as follows:

Appendix H - Recommended Procedures for Design, Construction and Installation of Commercial Kitchen Grease Interceptors

Appendix H of the **2009** Uniform Plumbing Code ™ is amended by the following provisions.

DELETED

Change Appendix I to read as follows:

Appendix I - Installation Standards

Appendix I of the 2009 Uniform Plumbing Code ™ is amended by the following provisions.

Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto. The standards referenced in this Code shall be considered part of the requirements of this Code to the prescribed extent of each such reference.

The appearance of Installation Standards in this Appendix does not, by itself, authorize the use of those items unless specified elsewhere in this Code for use.

IS 8-95 PVC Cold Water Building Supply and Yard Piping

301.1.2.4.2 Primer shall not be purple.

313.4 Exposed Piping

Vertical piping may extend a maximum of twenty-four (24") inches (610mm) above grade when located on the exterior of the building or structure and protected from mechanical damage to the satisfaction of the Authority Having Jurisdiction.

IS 9-95 PVC Building Drain, Waste and Vent Pipe and Fittings

301.1.4.1 **Color Primer shall be purple underground only.**
Primer shall be clear above ground only.

313.4 Exposed Piping

Piping shall not be exposed to direct sunlight. Exception: Vent piping through roof. Adequate support shall be provided where PVC piping is exposed to wind, snow and ice loading.

316.1 Solvent Cement Joints

316.1.4 A listed primer in compliance with ASTM F 656 shall be used on all PVC DWV joints. **Primer shall not be purple.**

APPENDIX J

Change Appendix J to read as follows:

2009 Reclaimed Water Systems for Non-Residential Buildings has been moved to chapter 16 – part II

APPENDIX K - **2009** PRIVATE SEWAGE DISPOSAL SYSTEM

Change Appendix K to read as follows:

Appendix K is not adopted and is not included in the Plumbing Code. .

Amendments to the Uniform Plumbing Code TM – APPENDIX L – Alternate Plumbing Systems

Change Appendix L to read as follows:

Appendix L of the **2009** Uniform Plumbing Code™ is amended by the following provisions. Each section in the UPC that corresponds to one of the following provisions is hereby deleted where so noted or amended to read as set forth below. Each section set forth below without a corresponding provision in the UPC is added thereto.

Appendix L is accepted by the Plumbing Code as a reference only and may be used as an engineered system if approved by the Authority Having Jurisdiction.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent shall apply.

L 4.0 Fixture Unit Values for Bathroom Groups - Deleted

L 4.1 Table L-1 Deleted
L 4.1 Table L-2 Deleted
L 4.1 Table L-3 Deleted
L 4.1 Table L-4 Deleted

L 6.0 Vent System Sizing.

L6.1 Size of Vents. The size of vent piping shall be determined from the developed length and the total number of drainage fixture units connected thereto as set forth in **Table 7-5.** Vents shall not be less than one-half (1/2) the required size of the drainage pipe size served as determined by **Table 7-5** for Horizontal Fixtures and Stacks nor less than 0ne and one-quarter (1-1/4) inches (32 mm) in diameter. The drainage system shall be vented by not less than one (1) vent pipe which shall be not less than one-half (1/2) the size of the required building drain and which shall extend from the building drain or extension of building drain to the outdoors. Vents shall be installed in accordance with Chapter 9.

L 9.0 Single Stack Vent System.

L 9.2 Stack Size. Drainage stacks shall be sized according to Table 7-5. A maximum of two (2) water closets shall be permitted to discharge to a three (3) inch (80 mm) stack. Stacks shall be uniformly sized based n the total connected drainage fixture unit load, with no reductions in size.

Table L - 5 Deleted
Table L - 6 Deleted

Section Four.

Any person who shall violate a provision of this code or fail to comply with any of the requirements thereof, or who shall erect, construct, alter, expand, repair, remove, demolish, use or occupy any building, structure or premises or equipment regulated by this code in violation of an approved construction document or directive of the code official or the Board of Building Appeals, or a permit or certificate issued under the provisions of this code and shall, upon conviction thereof, be punished by a fine of not more than five hundred dollars ($500), or by imprisonment not exceeding ninety days (90), or both such fine and imprisonment. Each day that a violation continues shall constitute a separate and distinct offense.

Section Five.

That nothing in this Ordinance or in the Plumbing Code hereby adopted shall be constructed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action required or existing, under Any act or ordinance hereby repealed as cited in Section Two of this Ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this Ordinance.

Section Six.

This being an Ordinance necessary for the immediate preservation of the public safety, it is hereby declared to be an emergency measure and shall become effective immediately upon its approval by the Mayor.

Section Seven.

It is the intent of the Board of Alderman that Sections Two, Three and Four of this Ordinance be codified in the Revised Code of the City of Saint Louis.

Amendments to the Uniform Plumbing Code™ -APPENDIX M - CODE ILLUSTRATIONS

Appendix M is hereby enacted and added as an additional appendix to the 2009 Uniform Plumbing Code™

The drawings contained in Appendix M are intended to aid in the clarification of various methods, installation practices and piping configurations, which conform to the requirements of this Code. Drawings # 43, 44, 45, and 46, are new in this ordinance. Where these drawings contain differences with this Code, these drawings shall prevail if piping is installed exactly as shown on the drawings.

If any conflict of interpretations, requirements, or Ordinance sections of this Chapter occur between other similar Code provisions and other St. Louis City Ordinances the more stringent shall apply.

Approved: October 19, 2012