



2021 Building-related Codes Training

International Plumbing Code (IPC) & International Fuel and Gas Code (IFGC)

Greater San Antonio Builders Association (GSABA)

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Presented by:

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2021

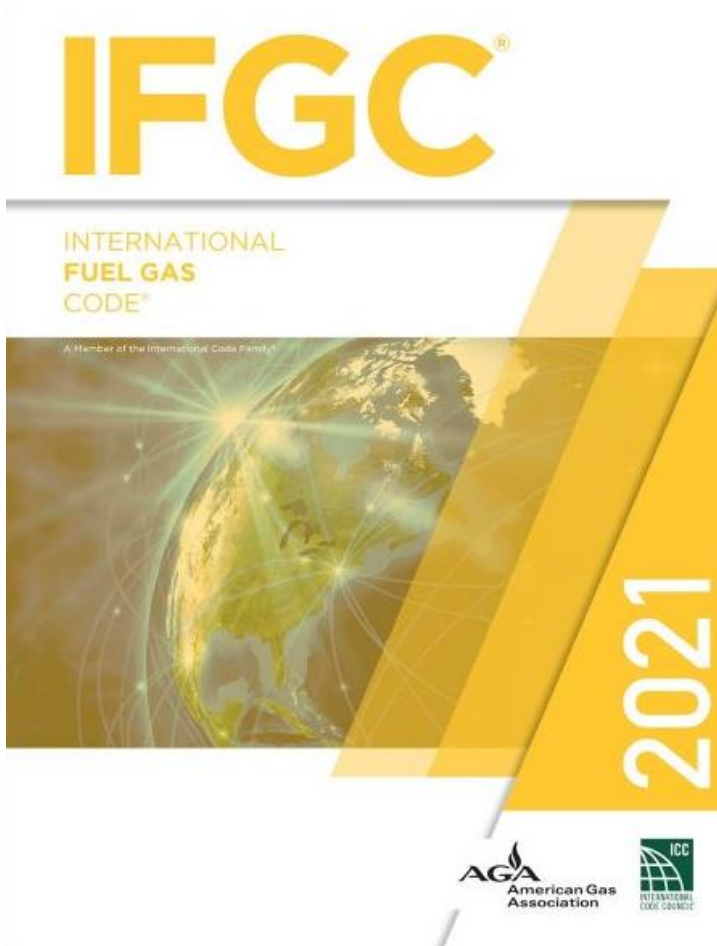
2021 BUILDING
RELATED CODES

CODE UPDATES

DEVELOPMENT SERVICES
DEPARTMENT



2021 SIGNIFICANT CHANGES



Chapter 10
Building –
Related Codes

2021
International
Fuel Gas Code

2021
International
Plumbing Code

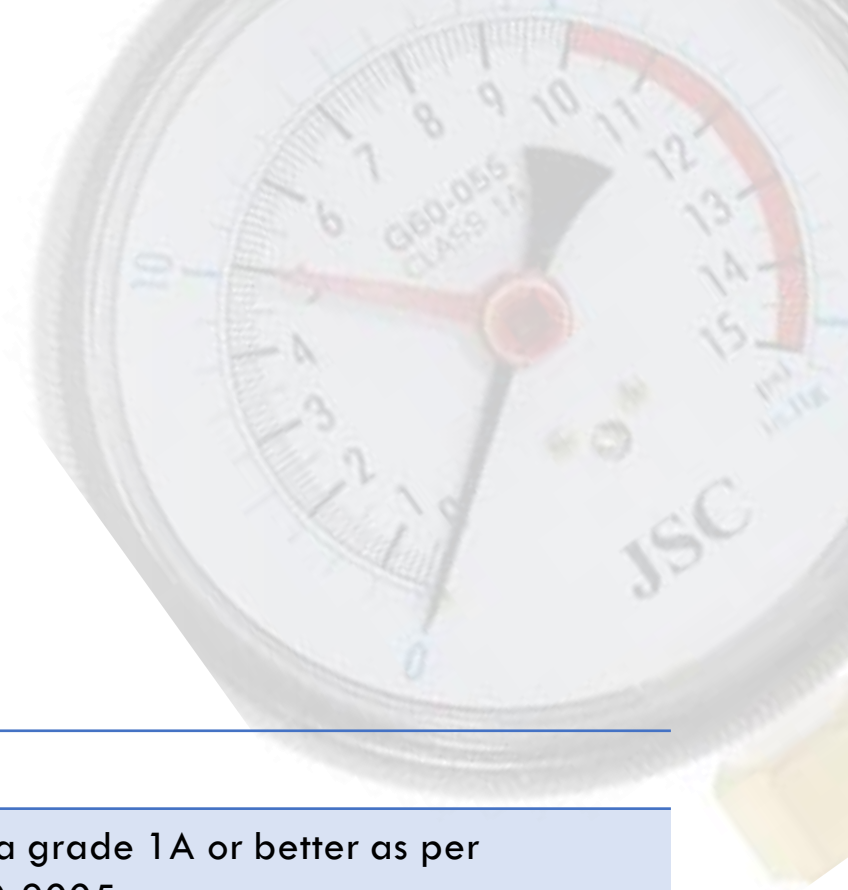
CHAPTER 10 BUILDING – RELATED CODES

SECTION	TITLE	PROPOSED
Sec. 10-72	Amendments to the adopted chapters and appendices of the <i>International Fuel Gas Code</i> (2021)	301.16 Separation from electrical lines in a ditch When outside footprint of building, no plumbing, gas, sewer, or water piping shall be installed in same ditch with electric lines unless a separation of 36" (914 mm) horizontally is maintained
Sec. 404.2	CSST	404.2.1 Meter Loop CSST is prohibited in the meter loop 404.2.2 Exterior Walls CSST is prohibited in exterior walls

TEST PRESSURE

SECTION	TITLE	PROPOSED
Sec. 406.4.1	Test pressure	• Rough-in piping inspection shall include testing by closing all openings and subjecting pipes to an air pressure that will support a column of mercury 15" (381 mm) in height or a 10 psi air test • For gas systems with pressures in excess of 14" of water column, test pressure shall not be less than 1.5 times operating pressure for system and shall hold this pressure for a minimum of 30 min. • Final inspection shall include a column of mercury 6" (152 mm) in height or of a 5 psi air test with appliance shut-off valves attached thereto. For gas systems with pressures in excess of 14" of water column, test pressure shall not be less than 1.5 times the operating pressure for system and shall hold this pressure for a minimum of 30 minutes.

TEST GAUGES



SECTION	TITLE	PROPOSED
Sec. 406.4.3	Test Gauges.	• Test gauges shall be a grade 1A or better as per ANSI/ASME B40.100-2005.
Sec. 409.5	Appliance shutoff valve	• Each appliance shall be provided with a shutoff valve in accordance with Sec. 409.5 or 409.5.3 • Exception: Outdoor appliances shall have a shutoff valve at the piping connection to the gas piping system.



AMENDMENTS TO ADOPTED CHAPTERS & APPENDICES

SECTION	TITLE	PROPOSED
Sec. 301.8	Accessible openings	When accessible openings are required by this code, they shall be a minimum of 12" x 12" (305mm x 305 mm) in dimension unless otherwise approved by code official
Sec. 301.9	Separation from electrical lines in a ditch	When outside footprint of building, no plumbing, gas, sewer, or water piping shall be installed in same ditch with electric lines unless a separation of 36" (914mm) horizontally is maintained.



DRAINAGE AND VENT WATER TEST

SECTION	TITLE	PROPOSED
Sec. 312.2	Drainage and vent water test	• Prior to any concealment, a water test and subsequent inspection shall be applied to drainage system either in its entirety or in sections. • If applied to entire system, all openings in piping shall be tightly closed, except highest opening, and system shall be filled with water to the point of overflow. • If tested in sections, each opening shall be tightly plugged except highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 3.5-foot (1067 mm) head of water.

SECTION	TITLE	PROPOSED
Sec. 10-11	Drainage and vent water test	(a) General. Construction or work for which a permit is required is subject to inspection by the Building Official and such construction work shall remain accessible and exposed for inspection purposes until approved. Approval following an inspection is not an approval of a violation of the provisions of this chapter or of other ordinances of the city. Inspections presuming to give authority to violate or cancel the provisions of this chapter or of other ordinances of the jurisdiction are not valid. It is the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the Building Official nor the city are liable for expense entailed in the removal or replacement of any material required to allow inspection. (c) Required inspections and tests. The Building Official, upon notification, shall make the inspections and tests set forth in paragraphs (1) through (15). (3) Concrete slab and under-floor inspections. Concrete slab and under-floor inspections shall be made after in-slab or under-floor reinforcing steel and building service equipment, conduit, piping accessories and other ancillary equipment items are in place, but before any concrete is placed or floor sheathing installed, including the subfloor.

INSPECTIONS AND TESTING

WATER HEATERS IN ATTICS

SECTION	TITLE	PROPOSED
Sec. 502.3	Water heaters installed in attics	• Storage type water heaters shall not be installed in an attic unless accessible from a door opening on the same floor level in one-and two-family residential occupancies and townhomes. • Attics with water heater shall be provided with an opening and unobstructed passageway large enough to allow removal of water heater. The passageway shall not be less than 30" (762 mm) high and 22" (559 mm) wide and not more than 20' (6096 mm) in length when measured along centerline of passageway from opening to water heater. • Passageway shall have continuous solid flooring not less than 24" (610 mm) wide. • A level service space at least 30" (762 mm) deep and 30" (762 mm) wide shall be present at front or service side of water heater. • Clear access opening dimensions shall be a minimum of 20" by 30" (508 mm by 762 mm) where such dimensions are large enough to allow removal of water heater.

WATER HEATERS IN GARAGES



SECTION	TITLE	PROPOSED
Sec. 502.7	Electric water heaters installed in garage	Electric water heaters shall be elevated not less than 18 inches (457 mm) above the garage floor.
Sec. 504.6	Requirements for discharge piping	15. Union or flex connector on temperature pressure relief valve shall be placed within 6" (1522 mm) of the valve for removal and replacement.

CONDENSATE RECHARGE



SECTION	TITLE	PROPOSED
Sec. [M] 314.2.1.1	Condensate recharge	• Condensate drains shall not: • directly connect to any plumbing drain, waste or vent pipe • discharge into a plumbing fixture other than a floor sink, floor drain, trench drain, mop sink, hub drain, standpipe, utility sink or laundry sink • Condensate drain connections to a lavatory wye branch tailpiece or to a bathtub overflow pipe shall not be considered as discharging to a plumbing fixture. • Except where [discharging to grade outdoors] installed per Ch. 34, Sec. 34-274, point of discharge of condensate drains shall be located within same occupancy, tenant space or dwelling unit as source of condensate

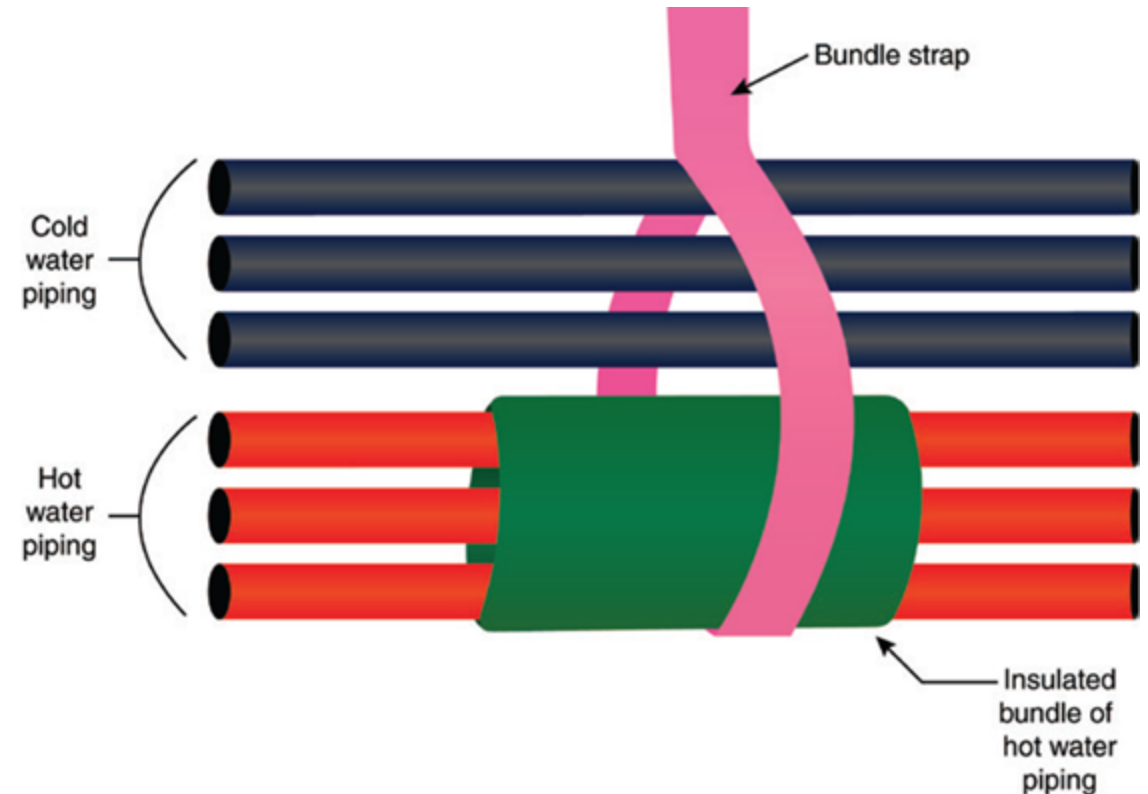


BUNDLED HOT WATER PIPING INSULATION

SECTION	TITLE	PROPOSED
Sec. 308.9	Bundled hot water piping insulation	• Piping bundles for manifold systems shall be supported in accordance with Table 308.5. • Support at changes in direction shall be in accordance with the manufacturer's instructions. • Where hot water piping is bundled with cold or hot water piping, each hot water pipe piping shall be insulated in accordance with Sec. 607.5

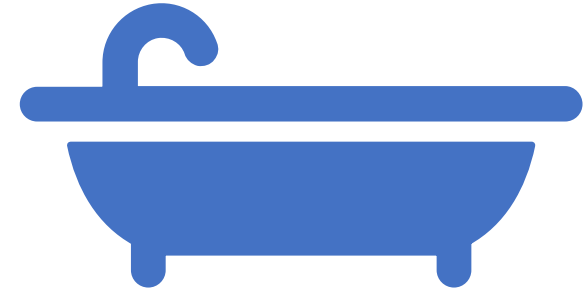
BUNDLED HOT WATER PIPING INSULATION

- **CHANGE SUMMARY:** Where hot water piping for a manifold system is in a bundle with cold water piping, hot water piping is required to be insulated but not necessarily individually insulated
- **CHANGE SIGNIFICANCE:** bundling of piping from manifold systems is often required very near the manifold. Individually insulating each hot water pipe (tube) in these bundles results in very large openings needed in framing members for bundles to pass through. In those situations, the bundle of hot water piping can be insulated. The reference to Sec. 607.5 directs code user to requirements for pipe insulation.



Hot water piping bundled with cold water piping

BATHTUBS OVERFLOW OUTLETS



SECTION	TITLE	PROPOSED
Sec. 407.2	Bathtub waste outlets and overflows	Bathtubs shall be equipped with a waste outlet that is not less than 1 ½ inches (38 mm) in diameter. The waste outlet shall be equipped with a watertight stopper. Where an overflow is installed, the overflow shall be not less than 1 ½” (38 mm) in diameter.

- **CHANGE SUMMARY:** A bathtub **does not** require an overflow outlet
- **CHANGE SIGNIFICANCE:** Bathtub overflow outlets are not designed to prevent overflows of a bathtub. The flow from a tub filler faucet can easily be more flow than a typical overflow outlet can drain out of the tub. Even though an overflow outlet does allow for excess water to drain out of a tub when someone immerses themselves in a full tub (i.e., at the level of the overflow), the excess water does not instantly drain away. Protecting a tub from overflow is the bather's responsibility.

INDIVIDUAL TENANT WATER SHUT-OFF VALVE

SECTION	TITLE	PROPOSED
Sec. 606.1	Location of full-open valves.	• Full-open valves shall be installed in the following locations: • 1. On the building water service pipe from the public water supply near the curb. • 2. On the water distribution supply pipe at the entrance into the structure. • 2.1. In multiple-tenant buildings, where a common water supply piping system is installed to supply other than one- and two- family dwellings, a main shutoff valve shall be provided for each tenant. • (3. through 8, remain unchanged)

INTERNATIONAL FUEL GAS CODE (IFGC)

2021



TREADED JOINT SEALING

SECTION	TITLE	PROPOSED
Sec. 403.8.3	Threaded joint compounds sealing	• Threaded joints shall be made using a thread joint sealing material • Thread joint sealing materials shall be nonhardening and shall be resistant in the chemical constituents of gases to be conducted through piping • Thread joint sealing materials shall be compatible with pipe and fitting materials on which the sealing materials are used

TREADED JOINT SEALING

- **CHANGE SUMMARY:** Revised to require use of thread joint sealants (joint compounds, pipe dope, pipe tape)
- **CHANGE SIGNIFICANCE:** Code addressed pipe thread sealants but did not require their use. Thread sealants act primarily as lubricant to allow threads to make up tight seal to form a metal-to-metal seal.
- Imperfections or voids in threads are filled in by the thread sealant
 - Most used are pastes made with PTFE (Teflon) and Teflon tape
 - Sealing compounds must not be hardening so that pipe joints can be disassembled, when necessary, shrinkage of the sealant is minimized, and material can be resilient to vibration and movement
- LP-gas can react with some sealants, and this might also be the case for other gases
 - Change requires sealant be compatible with whatever is conveyed in the piping
 - The thread sealant used must be suitable for the pipe and fitting materials used
 - Thread sealant container labels will state what pipe and fitting materials are suitable or not suitable for use with sealant



FITTINGS IN CONCEALED LOCATIONS



SECTION	TITLE	PROPOSED
Sec. 404.5	Fittings in concealed locations.	Fittings installed in concealed locations shall be limited to the following types: • 1. Threaded elbows, tees, couplings, plugs and caps • 2. Brazed fittings. • 3. Welded fittings. • 4. Fittings listed to ANSI LC-1/CSA 6.26 or ANSI LC-4/CSA 6.32

- **CHANGE SUMMARY:** Change addresses an omission of threaded fittings that were intended to be allowed in concealed locations, yet not specifically mentioned in text
- **CHANGE SIGNIFICANCE:** Threaded (screwed) fittings, such as those used with steel piping, are allowed to be concealed, except for unions
 - Item 1 of this section lists threaded fittings allowed to be concealed
 - Unions are not in list and are, therefore, prohibited in concealed locations
 - No reason to exclude threaded plugs and threaded caps, so omission was corrected
 - Left/right couplings can be viewed as a type of union; however, they are nonetheless threaded couplings and are not prohibited

COMMERCIAL COOKING APPLIANCES

SECTION	TITLE	PROPOSED
Sec. 623.2	Prohibited location	• Cooking appliances designed, tested, listed and labeled for use in commercial occupancies shall not be installed within dwelling units or within any area where domestic cooking operations occur. • <u>Exception:</u> • 1. Appliances that are also listed as domestic cooking appliances



COMMERCIAL COOKING APPLIANCES



- **CHANGE SUMMARY:** Unnecessary exception for commercial cooking appliances in dwelling units deleted
- **CHANGE SIGNIFICANCE:** Created because consumers demanding commercial cooking appliances in homes
- Currently offer dual listed commercial-style appliances for both commercial and household appliances
 - Addressed in exception 1
 - Exception 2 permitted cooking appliances listed only for commercial applications to be installed if licensed professional engineer designed kitchen installation and followed the manufacturer's installation instructions
 - Contradictory because manufacturer's instructions generally prohibit installation of commercial appliances in dwellings; thus, engineer could not design an installation complying with appliance manufacturer's instructions
 - Contradicts Sec. 301.3
 - Commercial ranges not listed for domestic use is a code violation
 - Violation of the manufacturers instructions as well as Sec. 301.3
 - Unsafe in residential because require large clearances to combustibles, may need:
 - Higher input ratings and surface temperatures
 - Non-combustible floors
 - Lack some safety features
- Conflicted exception is not needed because of allowance of Exception 1 and allowance in Ch. 1 for code official to grant alternative approval for installations meeting spirit and intent of the code and deemed equivalent to what code specifies.

CONTACT US

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