	2024 UPC Model Code Changes								
Summary	Do not adopt change:	Adopt change:	Adopt change with amendment:						
			May include renumbering or integration of existing amendment Last Updated: 12/23/24						

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Red text = State amendment
Blue text = Model code change
= Significant change

State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
				Chapter 1 Administration			
	Construction Documents	104.3.1	104.3.1	Example Title	Accept Change	No additional comments.	
	Example summary of the code c	hange.		L	I		
Accept Change	Accept Change with amendment	No additional comments.	104.4.5	Editorial	Accept Change		Potential Code Change Steve Hart
				isdiction shall be permitted to, in writing we the basis of incorrect information supplie			
	Definition	(N/Δ)	203.0	Chapter 2 Definitions	Accent Change		Check IEGC
				New definition to make the transition between plastic pi y in which plastic piping is installed an			
	Anodeless Riser. An assembly	of steel-cased	plastic pipe used	New definition	ping installed undergro		nstalled aboveground.
	Anodeless Riser. An assembly [NFPA 54:3.3.3] 2024 IFGC Def Definition Appliance. A device that utilizes fuel gas. This definition also sha	of steel-cased pinition: A trans 203.0 fuel or electric linclude a incl evice that utiliz	plastic pipe used sition assembly 203.0 city as an energy udes vented decrees a fuel or a result of the control	New definition d to make the transition between plastic pi y in which plastic piping is installed ar Updated definition v source to produce light, heat, power, reforative appliances and electric storage of the corative are as a fuel to produce light,	ping installed undergro dd terminated above g Accept Change rigeration, or air condit r tankless water heater	ground outside of a bui ioning, or compressed rs. 2024 IFGC	nstalled aboveground.
	Anodeless Riser. An assembly [NFPA 54:3.3.3] 2024 IFGC Def Definition Appliance. A device that utilizes fuel gas. This definition also sha Definition Any apparatus or def	of steel-cased pinition: A trans 203.0 fuel or electric linclude a incl evice that utiliz	plastic pipe used sition assembly 203.0 city as an energy udes vented decrees a fuel or a result of the control	New definition d to make the transition between plastic pi y in which plastic piping is installed ar Updated definition v source to produce light, heat, power, reforative appliances and electric storage of the corative are as a fuel to produce light,	ping installed undergro dd terminated above g Accept Change rigeration, or air condit r tankless water heater	ground outside of a bui ioning, or compressed rs. 2024 IFGC	nstalled aboveground.
	Anodeless Riser. An assembly [NFPA 54:3.3.3] 2024 IFGC Def Definition Appliance. A device that utilizes fuel-gas. This definition also sha Definition Any apparatus or deconditioning. Also, an apparat Definition	of steel-cased inition: A trans 203.0 Inition	plastic pipe used sition assembly 203.0 city as an energy udes vented decrees a fuel or a resses fuel gas 204.0	New definition to make the transition between plastic pi y in which plastic piping is installed an Updated definition / source to produce light, heat, power, reforative appliances and electric storage or aw material as a fuel to produce light, es.	ping installed undergro Id terminated above of Accept Change rigeration, or air condit r tankless water heater heat, power, refrigera	ground outside of a bui ioning, or compressed rs. 2024 IFGC	nstalled aboveground.

xisting State mendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	Bonding Conductor or Jumpe (Part I)]	er. A reliable co	nductor to ensur	e the required electrical conductivity betw	veen metal parts require	ed to be electrically conr	nected. [NFPA 70:100
	Definition	205.0	205.0	Updated definition	Accept Change		Check IFGC
	Chimney, Metal. A chimney confield-constructed chimney of			um thickness not less than 0.127 inches	(3.23 mm) (No. 10 man	ufacturer's standard gau	ige) steel sheet. A
	Definition	205.0	205.0	Updated definition	Accept Change		
				50 cubic feet per 1000 British thermal unitance and egress that is not suitable for inl			
	Definition	206.0	206.0	Updated definition	Accept Change		
	Gray Water Diverter Valve Div	erter Valve, G	ray Water. A va	ve that directs gray water to the sanitary	drainage system or a s	ubsurface irrigation syst	em.
	Definition	(N/A)	206.0	New definition	Accept Change		WAC 246.275
	<u>Diverter Valve, On-Site Treate</u> <u>direct beneficial use.</u>	-	Water. A compo	nent in the collection system to control in	flow and overflow in co	llection tanks intended for	or on-site treatment and
	Definition	(N/A)	206.0	New definition	Accept Change		
	Diverter Valve, Rainwater. A c	omponent in co	mmercial rainwa	ater catchment systems to control high int	flow and overflow volun	nes in rainwater storage	tanks.
	Definition	207.0	207.0	Updated definition	Accept Change		
		Fluid Ecconti	ally pontoxic at r	vractically nontoxic, Toxicity Rating Class	1 (reference "Clinical T	ovicelegy of Commercia	al Draducto" by
				red as safe by the Food and Drug Admini			a Froducts by
	Gosselin, Smith, Hodge, & Brad Definition	208.0	enerally recognize 208.0	eed as safe by the Food and Drug Admini Updated definition			# PTOGGOS DY
	Gosselin, Smith, Hodge, & Brad Definition Flood-Level Rim. The top edge	208.0 e of a receptor c	208.0 <u>or fixture</u> from when the second control of the second con	ed as safe by the Food and Drug Admini Updated definition hich water overflows.	Accept Change		
	Gosselin, Smith, Hodge, & Brad Definition	208.0	enerally recognize 208.0	eed as safe by the Food and Drug Admini Updated definition	istration (FDA) as food		IFGC
	Definition Flood-Level Rim. The top edge Definition Gas Piping. An installation of p (1) A portion of the service pipin	208.0 208.0 209.0 209.0 209.0 ipe, valves, or f	208.0 or fixture from where the state of th	ed as safe by the Food and Drug Admini Updated definition hich water overflows.	Accept Change Accept Change mise or in a building, b	grade. ut shall not include:	IFGC
	Definition Flood-Level Rim. The top edge Definition Gas Piping. An installation of p (1) A portion of the service pipin	208.0 208.0 209.0 209.0 209.0 ipe, valves, or f	208.0 or fixture from where the state of th	Updated definition ich water overflows. Updated definition sed to convey fuel gas, installed on a pre	Accept Change Accept Change mise or in a building, b	grade. ut shall not include:	IFGC
	Gosselin, Smith, Hodge, & Brad Definition Flood-Level Rim. The top edge Definition Gas Piping. An installation of p (1) A portion of the service pipin (2) An approved piping connection Definition Gray Water. Untreated wastew	208.0 208.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0	208.0 208.0 208.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0 209.0	Updated definition iich water overflows. Updated definition sed to convey fuel gas, installed on a pre	Accept Change Accept Change mise or in a building—b a gas appliance in the Accept Change dishwasher waste or sin	ut shall not include:	IFGC tlet. urces. Gray water

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
		tings includes s	ocket-fusion, el	some thermoplastic systems to connect to ectro-fusion, and saddle-fusion. This met tween the pipe and fitting.			
	Definition	215.0	215.0	Updated definition	Accept Change		
	Medical Air. For the purposes of free, dry nitrogen NF. [NFPA 99		dical air is air su	pplied from cylinders, bulk containers, or	medical air compresso	rs, or reconstituted from	oxygen USP and oil-
	Definition	215.0	215.0	New Definition	Accept Change		
	Mid-Story Guide. A support de	signed to keep	piping in alignm	ent, located mid-way between floors or a	floor and ceiling.		
	Definition	222.0	222.0	New Definition	Accept Change		
	Valve, Balancing. A valve that	regulates and c	ontrols the retur	n of water to the water heater in a recircu	ulating hot water piping	system.	
	Definition	222.0	222.0	Updated Definition	Accept Change		IFGC
				at connects a listed gas appliance beginn Connector, Chimney or Vent The pipe			
	Definition	222.0	222.0	New Definition	Accept Change		IFGC
	production in the vent. [NFP. Category II Vented Applian production in the vent. [NFP. Category III Vented Applian production in the vent. [NFP.	A 54:3.3.4.10.1 ICE. An appliand A 54:3.3.4.10.2 ICE. An appliand A 54:3.3.4.10.3 ICE. An appliand	ce that operates loce that operates loce that operates loce that operate	with a nonpositive vent static pressure and with a nonpositive vent static pressure as with a positive vent static pressure and s with a positive vent static pressure and	nd with a vent gas tempera	perature that can cause of ature that avoids excession	excessive condensate
<u>51-56-</u>	Definition	225.0	225.0	New Definition	Accept Change		
0200	Water Heater, Dual Purpose. A	An appliance int	ended to be a h	eat source for both space heating and do	omestic hot water applic	cations.	
<u>51-56-</u>	Definition	225.0	225.0	New Definition	Accept Change		
0200	Water Station. A designated loc	cation intended	to provide acce	ss to drinking water through a device or a	appliance.		
				Chapter 3 General Regulations			
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		·	·	

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments		
	Plastic Pipe, Plastic Pipe Fittings, and Components	301.2.3	301.2.3	Updated Reference location	Accept Change				
	301.2.3 Plastic Pipe, Plastic Pip	e Fittings, ar	Fittings, and Components. Plastic pipe, plastic pipe fittings, and components other than those for gas shall comply with NSF/ANSI 14.						
	Tall Wood (Mass Timber) Buildings	(N/A)	301.6	This segment adds building code language on expansion and contraction in mass timber buildings, ensuring design compliance.	Accept Change		Code Change Proposal		
	301.6 Tall Wood (Mass Timber)	Buildings. P	lumbing systems	s installed in tall wood (mass timber) build	dings, shall comply with	the following:			
				ed design professional in accordance wit					
	(2) Be designed to accommodate	e expansion, co	ontraction, and o	differential movement between parts of a	tall wood (mass timber) building in accordance	with Section 312.2.		
	Prohibited Location	308.0. 308.1	308.0, 308.1	Language edit	Accept Change				
	308.0 Improper Location Prohi	bited Location	ns.						
	Fittings	310.1	310.1	Removed exemption for double hub sanitary tapped tee.	Accept Change				
	310.1 Fittings. No double hub fit as a drainage fitting, except that	ting, single or a double hub s	double tee brandsanitary tapped t	ch, single or double tapped tee branch, si see shall be permitted to be used on a ver	ide inlet quarter bend, r	running thread, band, or propertion.	saddle shall be used		
	Female Plastic Connections	(N/A)	310.9	Female plastic tapered threads can't be used with male metal threads, but straight plastic threads are allowed.	Accept Change				
	310.9 Female Plastic Connection	ons. Female p	lastic tapered (N	I IPT) threaded connections shall not be al	llowed to be used wher	threaded onto a male n	netallic connection.		
	Exception: Female plastic parall	el (straight) th	readed connecti	ons shall be permitted.					
	ABS and PVC Transition Joints	(N/A)	310.10	PVC and ABS pipes can't be glued to different materials, except as allowed in Section 705.9.4.	Accept Change				
	310.10 ABS and PVC Transition	1 Joints. Exce	pt as provided i	n Section 705.9.4, PVC and ABS pipe and	d fittings shall not be so	olvent welded to dissimila	ar material.		
	Independent Systems	311.1	311.1	Adding clarifying language.	Accept Change				
				of new work installed in an existing buildi connection with a public or private sewel		nd independent from tha	t of any other building,		
				uilding on an interior lot, and no <u>public or</u> from the front building shall be permitted			d to the rear building		

State mendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	Protection of Pipping, Tubing. Materials, and Structures	312.0	312.0	Including Tubing pipe	Accept Change		
	312.0 Protection of Piping, Tub	oing, Materials	, and Structure	9s.			
	Steel Nail Plates	312.9	312.9	Clarifying language on piping and tubing and adding specification for fuel gas piping protection.	Accept Change	Striking Last Sentence	
		d the outside		ge (0.0478 inches) (1.2 mm) in thickness. pipe or tubing. <mark>Euel gas piping shall be pr</mark>			ing member not less
	Hangers, Supports, and Anchors.	313.0	313.0	Adding in reference to Anchors	Accept Change		
	313.0 Hangers, and Supports a	and Anchors.	1				
	Comorel						Manager Alam
	General	313.1	313.1	Adding in tubing and Seismic restraints.	Accept Change		Modify the language code change proposal
	313.1 General. Piping, tubing, fix	ktures, applian	ces, and appurte	5 5	e with this code, the ma	anufacturer's installation	language code change proposal
	313.1 General. Piping, tubing, fix	ktures, applian	ces, and appurte	restraints. enances shall be supported in accordance	e with this code, the ma	anufacturer's installation	language code change proposal
	313.1 General. Piping, tubing, fix accordance with the Authority Ha	ctures, applian aving Jurisdiction 313.2	ces, and appurte on. <u>Seismic rest</u> 313.2	restraints. enances shall be supported in accordanceraints shall be in accordance with the bui	e with this code, the ma		language code change proposal instructions, and in
	313.1 General. Piping, tubing, fix accordance with the Authority Hamaterial 313.2 Material. Hangers, support	ctures, applian aving Jurisdiction 313.2	ces, and appurte on. <u>Seismic rest</u> 313.2 rs shall be of suf	restraints. enances shall be supported in accordanceraints shall be in accordance with the buit Clarifying language	e with this code, the mading code. Accept Change the pipe or tubing and its		language code change proposal instructions, and in
	313.1 General. Piping, tubing, fix accordance with the Authority Hamaterial 313.2 Material. Hangers, support	ctures, applian aving Jurisdiction 313.2	ces, and appurte on. <u>Seismic rest</u> 313.2 rs shall be of suf	restraints. enances shall be supported in accordance raints shall be in accordance with the buil Clarifying language ficient strength to support the weight of the	e with this code, the mading code. Accept Change the pipe or tubing and its		language code change proposal instructions, and in
	313.1 General. Piping, tubing_fix accordance with the Authority Hamaterial 313.2 Material. Hangers_suppor from incompatible materials. Flanged Fixture Connections 402.6 Flanged Fixture Connect approved copper alloy, hard lead	atures, applianaving Jurisdiction 313.2 ts, and anchor 402.6 ions. Fixture of I, ABS, PVC, on approved ga	ces, and appurte on. Seismic rest 313.2 s shall be of suf Chapter 402.6 connections between iron flanges casket, washer, or	restraints. enances shall be supported in accordance raints shall be in accordance with the buit Clarifying language ficient strength to support the weight of the Plumbing Fixtures and Fixture Fittin Explaining flange location, and how	e with this code, the maiding code. Accept Change the pipe or tubing and its gs Accept Change oor outlet service sinks or compression gaskets	s contents. Piping or tubing or tubi	language code change proposal instructions, and in ag shall be isolated de by means of lage pipe. The
	313.1 General. Piping, tubing, fix accordance with the Authority Hamaterial 313.2 Material. Hangers, suppor from incompatible materials. Flanged Fixture Connections 402.6 Flanged Fixture Connect approved copper alloy, hard lead connection shall be bolted with a approved firm base the top of the Wall-mounted water closet fixture.	tures, applianaving Jurisdictic 313.2 ts, and anchor 402.6 tions. Fixture of approved gate finished floor, approved gate finished floor, as shall be secrier fitting and	ces, and appurted on. Seismic rest 313.2 s shall be of suf Chapter 402.6 connections between iron flanges casket, washer, or urely bolted to a	restraints. enances shall be supported in accordance raints shall be in accordance with the buil Clarifying language ficient strength to support the weight of the 4 Plumbing Fixtures and Fixture Fittin Explaining flange location, and how carriers shall be attached. veen drainage pipes and water closets, flaulked, soldered, solvent cemented; rubbil	e with this code, the maiding code. Accept Change The pipe or tubing and its Accept Change Accept Change For outlet service sinks are compression gaskets and the connection. The connection shall be second.	and urinals shall be mades; or screwed to the drain bottom of the flange shall becurely attached to the st	language code change proposal instructions, and in anguage shall be isolated be by means of large pipe. The li be set on an an arructure. The

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	lead, cast-iron, galvanized malle	able iron, ABS,	PVC, or other a	anges) for water closets or similar fixtures approved materials. Each such Closet ring present a 11/2 inch (38 mm) wide flange	g <u>s</u> (closet flange <u>s</u>) shal	I be approximately 7 inch	nes (178 mm) in
	Securing Floor-Mounted, Back-Outlet Water Closet Bowls.	402.6.3	402.6.3	Using specific language for closet flange placement.	Accept Change		
	the fixture outlet centerline. The fixtures. The fixture shall be secured to the base.	closet flange sl	hall be secured	The floor and wall shall have a flat mount to the wall mounting surface. Offset, ecce e connection and to the floor by corrosion oil pipe shall be not less than 3 inches (8	entric, or reducing close -resistant screws or bo	t flanges shall not be pe	rmitted with these
	Overflows	404.2	404.2	Updated language on Overflows and separating them in to separate parts	Accept Change		
	404.2. Overflows. Where a fixtu	re is provided v	with an overflow	, the overflow shall comply with Section 4	04.2.1 or Section 404.5	<u>2.2.</u>	
	Sinks, Lavatories, and Bathtubs.	(N/A)	404.2.1	Introducing Section 404.2.1	Accept Change		
	remain in the overflow where the	fixture is empt	ty. The overflow	so arranged that the standing water in th pipe from a fixture shall be connected on s or urinals served by them, but it shall be	the house or inlet side	of the fixture trap_, exce	pt that overflow on
	Water Closets and Urinals.	(N/A)	404.2.2	Introducing Section 404.2.2	Accept Change		
	unlawful to connect such overflo					or urinals served by then	n , but it shall be
	Miscellaneous Fixtures	405.3	405.3	Eliminating unneeded language	Accept Change		
	405.3 Miscellaneous Fixtures.	Fixed wooden,	or tile wash sin	ks for domestic use shall not be installed	in a building designed	or used for human habita	ation.
	Tileable Shower Receptors	(N/A)	408.2	Rules on Tileable shower Receptors	Accept Change		
	408.2 Tileable Shower Receptor	ors. Tileable sh	nower receptors	and shower kits shall comply with IAPMC			
	Water Consumption	408.2	408.3	Moved location and added flow rate	Accept Change with State Amendment		Code Change proposal
	408.3. Water Consumption. Sh rate of not more than 2.5 gpm			imum flow rate of not more than 2.5 gp	om at 80 psi (9.5L/m a	t 552 kPa). Body spray	s shall have a flow

ting ate ndm nt	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	Individual Shower and Tub- Shower Combination Control Valves	408.3	408.4	Moved location	Accept Change		
	pressure balance, thermostatic,	or combination	pressure balan	ntrol Valves. Showers and tub-shower control valves. Showers and tub-shower control valve type that proving the same and comply with ASSE 1016/A:	ovide scald and therma	I shock protection for the	rated flow rate of the
	Gang Showers	408.3.1	408.4.1	Moved location	Accept Change		
	408.4.1 Gang Showers. Where ASSE 1069.	gang showers	are supplied wit	th a single temperature-controlled water s	supply pipe, it shall be o	controlled by a mixing va	ve that complies wit
	Temperature Limiting.	408.3.2	408.4.2	Moved location	Accept Change		
	(2) For gang showers supplied b Temperature-Actuated, Flow- Reduction Devices for Individual	y a single wate		of is set in accordance with the manufacture mixing valve that conforms to ASSE 106 Adding New section about Flow-Reduction devices			
	fixture fittings, shall comply with	ASSE 1062. S	uch devices sha	Individual Fixture Fittings. Temperatu ill not be used alone as a substitute for the er temperature-limiting valves requirement Standard requires Free grate area of	e balanced pressure, the		
				strainer. If linear must have equivalent waterway	with code amendment		amendment
	materials specified in Section 70	1.2 for drainag	e piping. Straine	return tailpiece not less than 2 inches (50 rers serving have a waterway at least ply with ASME A112.18.2/CSAB125.2.		e tailpieces shall be cons	tructed from the
	Finished Curb or Threshold.	408.5	408.6	This adds minimum depth and time requirements for testing the installation of a watertight shower receptor.	Accept Change		
	of such receptor. In no case, sha threshold to the top of the drain.	all a dam or thre Each such rec	eshold be less the eptor shall be properties.	has a finished dam, curb, or threshold, it nan 2 inches (51 mm) or exceeding 9 incl rovided with a nailing flange either integra y not less than 1 inch (25.4 mm) above the	hes (229 mm) in depth al or field installed in ac	where measured from the cordance with the manuf	e top of the dam or

State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments					
<u>51-56-</u> <u>0400</u>	Shower Compartments	408.6	408.7	Detailed language on shower compartments.	Accept Change with code amendment		See and keep existing amendment for item 1 Code Change Proposal					
Need to update amendme nts to new numbers as this one has moved	(1) Not less than 1024 square in (2) Be capable of encompassing The minimum required area and shall be maintained to a point of soap dishes, shelves, and safety (1) Showers that are designed to (2) The minimum required area a (1524 mm) in length.	ches (0.6606 m a 30 inch (762 dimensions sh not less than 7 grab bars, or r b be in accorda	n2). mm) circle. all be measured o inches (1778) rails. Fold-down nce with ICCA1	d at a height equal to the top of the thresh mm) above the shower drain outlet with n seats in accessible shower stalls shall be 17.1. or a shower receptor having overall dimen	old and a point tangent to protrusions other that e permitted to protrude	n the fixture valve or val into the 30 inch (762 mn	ves, showerheads, n) circle. Exceptions:					
	Lining for Showers and Receptors	408.7	408.8	Moved Location	Accept Change							
	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 3 inches (76 mm) 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 watertight 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 watertight materials that extend not less than 3 inches (76mm) above horizontal surfaces of the seat or the seating area. Lining materials shall be pitched 1/4 inch per foot (20.8mm/m) to weep holes in the subdrain of a smooth and solidly formed subbase. Such lining materials shall extend upward on the rough jambs of the shower opening to a point not less than 3 inches (76 mm) above the horizontal surfaces of the seat or the 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											
	Shower receptors shall have the lined with sheet plastic, lead, or seating area that is located within extend not less than 3 inches (76 Lining materials shall be pitched upward on the rough jambs of the finished dam or threshold and shoutside face of both the permaner	subfloor and recopper, or shall not the shower efform) above how the shower open all extend outvent seat, perma	ough side of wall be lined with of nolosure, shall brizontal surface of (20.8mm/m) tring to a point noward over the topnent seating are	Ils to a height of not less than 3 inches (76 ther durable and watertight materials. Sho be first lined with sheet plastic, lead, copp is of the seat or the seating area. To weep holes in the subdrain of a smooth of less than 3 inches (76 mm) above the high of the permanent seat, permanent seating and the jambs.	owers that are provided er, or shall be lined with and solidly formed sub norizontal surfaces of the ng area, or rough thres	with a built in place, per n other durable and water obase. Such lining mater the seat or the seating are shold and be turned over	rmanent seat or ertight materials that rials shall extend ea, the top of the and fastened on the					
	Shower receptors shall have the lined with sheet plastic, lead, or seating area that is located within extend not less than 3 inches (76 Lining materials shall be pitched upward on the rough jambs of the finished dam or threshold and shoutside face of both the permanen Nonmetallic shower subpans or roofing felt. The bottom layer shall be seat to shall be shall be provided in the shall be	subfloor and recopper, or shall in the shower efficient (a) above he shower open hall extend outvent seat, permainings shall be fitted to the	ough side of wall be lined with of nolosure, shall borizontal surface of (20.8mm/m) ting to a point noward over the topenent seating are permitted to be the formed subbate.	Ills to a height of not less than 3 inches (76 ther durable and watertight materials. Sho be first lined with sheet plastic, lead, coppers of the seat or the seating area. To weep holes in the subdrain of a smooth of less than 3 inches (76 mm) above the height of the permanent seat, permanent seating area.	owers that are provided er, or shall be lined with and solidly formed sub norizontal surfaces of th ng area, or rough thres ree layers of standard of the bot-mopped to that be	with a built in place, per nother durable and water obase. Such lining mater se seat or the seating are shold and be turned over grade 15 pound (6.8 kg) below. Corners shall be ca	rmanent seat or ertight materials that rials shall extend ea, the top of the rand fastened on the asphalt impregnated					
	Shower receptors shall have the lined with sheet plastic, lead, or seating area that is located within extend not less than 3 inches (76 Lining materials shall be pitched upward on the rough jambs of the finished dam or threshold and shoutside face of both the permanen Nonmetallic shower subpans or roofing felt. The bottom layer shabe made strong and watertight be Folds, laps, and reinforcing webt producing a tensile strength of new seating same same strength of new seating same same same same same same same same	subfloor and recopper, or shall in the shower eform) above he shower open all extend outvent seat, permanings shall be fitted to the y folding or laptoning shall externot less than 50	ough side of wall be lined with of nolosure, shall be orizontal surface of (20.8mm/m) tring to a point noward over the topenent seating are permitted to be ne formed subbaping, and each of the did not less than pounds per squ	Ills to a height of not less than 3 inches (76 ther durable and watertight materials. Sho be first lined with sheet plastic, lead, coppers of the seat or the seating area. To weep holes in the subdrain of a smooth of less than 3 inches (76 mm) above the hop of the permanent seat, permanent seaties, or rough threshold and the jambs. Built up on the job site of not less than thase and each succeeding layer thoroughly	owers that are provided er, or shall be lined with and solidly formed sub- norizontal surfaces of that area, or rough thres ree layers of standard by hot-mopped to that be bebing hot-mopped in path the corner, and webbing ction. Nonmetallic show	with a built in place, per nother durable and water base. Such lining mater is seat or the seating are shold and be turned over grade 15 pound (6.8 kg) elow. Comers shall be caplace. g shall be of approved ty yer subpans or linings shall seat of the shall be captaged.	rmanent seat or ertight materials that rials shall extend ea, the top of the rand fastened on the asphalt impregnated arefully fitted and shall pe and mesh, hall be permitted to					
	Shower receptors shall have the lined with sheet plastic, lead, or seating area that is located within extend not less than 3 inches (76 Lining materials shall be pitched upward on the rough jambs of the finished dam or threshold and shoutside face of both the permanen Nonmetallic shower subpans or roofing felt. The bottom layer shabe made strong and watertight be Folds, laps, and reinforcing weblip producing a tensile strength of nuconsist of multilayers of other ap Linings shall be properly recessed a point that is less than 1 inch (2 subdrain shall be of the type that	subfloor and recopper, or shall in the shower efform) above he shower open hall extend outvent seat, permalinings shall be fitted to the yfolding or lappoing shall externot less than 50 proved equivaled and fastened 5.4 mm) above it sets flush with	ough side of wall be lined with of nolosure, shall be rizontal surface of (20.8mm/m) ting to a point no vard over the top anent seating are permitted to be no formed subbaping, and each of not less than pounds per squent materials suit to the approve the finished dat the subbase ar	Ills to a height of not less than 3 inches (76 ther durable and watertight materials. Sho be first lined with sheet plastic, lead, coppers of the seat or the seating area. To weep holes in the subdrain of a smooth of less than 3 inches (76 mm) above the highest pof the permanent seat, permanent seaties, or rough threshold and the jambs. Built up on the job site of not less than the ase and each succeeding layer thoroughly corner shall be reinforced with suitable with are foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (244 kg/m2) in either directions from the same foot (lb/ft2) (lb/ft2	owers that are provided er, or shall be lined with and solidly formed suborizontal surfaces of thing area, or rough thres aree layers of standard by hot-mopped to that be bebing hot-mopped in phet corner, and webbing tion. Nonmetallic show the job site as el required for the wall coin shall be installed with or other device to make	with a built in place, per nother durable and water boase. Such lining mater the seat or the seating are shold and be turned over grade 15 pound (6.8 kg) elow. Comers shall be caplace. If shall be of approved ty wer subpans or linings shewhere required in this evering and shall not be real a shower subpan or linite a tight connection beto	rmanent seat or ertight materials that rials shall extend ea, the top of the rand fastened on the asphalt impregnated arefully fitted and shall pe and mesh, hall be permitted to section. nailed or perforated at ing. Each such					

ng e Im	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	408.8.1 PVC Sheets. Plasticize manufacturer's installation instru		oride (PVC) shee	ts shall conform to ASTM D4551. Sheets	shall be joined by solve	ent cementing in accorda	ance with the
	Chlorinated Polyethylene	408.7.2	408.8.2	Moved Location	Accept Change		
•	408.8.2 Chlorinated Polyethyle the manufacturer's installation in		e ets. Nonplasticiz	zed chlorinated polyethylene sheets shall	conform to ASTM D400	68. The liner shall be joir	ed in accordance with
	Sheet Lead	408.7.3	408.8.3	Moved Location	Accept Change		
•				t2 (19.5 kg/m2) and shall be coated with g drain, by 15 pound (6.8 kg) asphalt felt			
	Sheet Copper	408.7.4	408.8.4	Moved Location	Accept Change		
	copper shall be joined by brazin Tests for Shower Receptors 408.8.5 Tests for Shower Rece	408.7.5 eptors. Shower	408.8.5	Moved Location also added specifications on size and time. be tested for watertightness by filling with arrier shall be temporarily constructed for	Accept Change	t less than 2 inches (51 r	nm) for not less than
		instantantha tha	at at the maint	bara it ia alamamad ta tha drain			
	sides of the subpan shall be sub Public Shower Floors	ojected to the te	est at the point w 408.9	here it is clamped to the drain. Moved Location	Accept Change		
	Public Shower Floors 408.9 Public Shower Floors. Fpass over areas occupied by ott toward drains. Drains in gutters Location of Valves and	408.8 Floors of public:	408.9 shower rooms slutters in public or	·	drained in such a mann corners for easy cleani	ng and shall be sloped n	
	Public Shower Floors 408.9 Public Shower Floors. F pass over areas occupied by ott toward drains. Drains in gutters Location of Valves and Heads 408.10 Location of Valves and	408.8 Floors of public : ther bathers. Gu shall be spaced 408.9 I Heads. Control	shower rooms slatters in public or d at a maximum 408.10	Moved Location all have a nonskid surface and shall be a gang shower rooms shall have rounded of 8 feet (2438 mm) from sidewalls nor m	drained in such a mann corners for easy cleaninore than 16 feet (4877 Accept Change all of shower compartments	ng and shall be sloped n mm) apart. ents or otherwise arrang	ot less than 2 percent
	Public Shower Floors 408.9 Public Shower Floors. F pass over areas occupied by ott toward drains. Drains in gutters Location of Valves and Heads 408.10 Location of Valves and	408.8 Floors of public : ther bathers. Gu shall be spaced 408.9 I Heads. Control	shower rooms slatters in public or d at a maximum 408.10	Moved Location all have a nonskid surface and shall be a gang shower rooms shall have rounded of 8 feet (2438 mm) from sidewalls nor make the moved Location werheads shall be located on the sidewalls and the sidewalls nor make the movement of the sidewalls nor make the sidewall nor make the sidew	drained in such a mann corners for easy cleaninore than 16 feet (4877 Accept Change all of shower compartments	ng and shall be sloped n mm) apart. ents or otherwise arrang	ot less than 2 percent
	sides of the subpan shall be sub Public Shower Floors 408.9 Public Shower Floors. F pass over areas occupied by ott toward drains. Drains in gutters Location of Valves and Heads 408.10 Location of Valves and showerhead does not discharge Water Supply Riser	408.8 Floors of public: ther bathers. Gu shall be spaced 408.9 I Heads. Control edirectly at the	shower rooms slatters in public or d at a maximum 408.10 ol valves and she entrance to the oliver and she at a she at	Moved Location nall have a nonskid surface and shall be organg shower rooms shall have rounded of 8 feet (2438 mm) from sidewalls nor management of the sidewall nor manageme	drained in such a mann corners for easy cleaninore than 16 feet (4877 Accept Change all of shower compartments the valves before step Accept Change	ng and shall be sloped n mm) apart. ents or otherwise arrangoping into the shower spi	ed so that the

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	a size and opening to permit the	e removal and r or, trap door, or c	eplacement of tl	bs shall be installed in accordance with the circulation pump. Whirlpool pump according pump shall be located above the	ess located in the craw	l space shall be located r	not more than 20 feet
	Installation and Access	(N/A)	409.6.1	Created a new Section	Accept Change		
	409.6.1 Suction Fittings. Suc	tion fittings on w	hirlpool bathtub	s shall comply with ASME A112.19.7/CS/	A B45.10.		
	Flexible PVC Hoses and Tubing	409.6.1	409.6.2	Moved location and added new standard document	Accept Change		
	409.6.2 Flexible PVC Hoses comply with IAPMO/ANSI Z10		xible PVC hose	s and tubing intended to be used on whir	lpool bathtub water circ	culation systems or pneur	matic systems <u>shall</u>
				•			
	Water Closet Seats 411 3 Water Closet Seats W	411.3	411.3	Standardizing the design and functionality of water closet seats.	Accept Change	on-absorbent material. S	eats for public use
	411.3 Water Closet Seats. W	ater closet seats	shall be proper	0 0	d shall be of smooth, n		
	411.3 Water Closet Seats. W. shall be of the elongated type seats shall comply with IAPMC Application 414.1 Application. Domestic	ater closet seats and either of the MANSI Z124.5. 414.1	shall be proper open front type 414.1	functionality of water closet seats. y sized for the water closet bowl type, an or have an automatic seat cover dispens Specific language and standards	d shall be of smooth, neer. Water closet seats	shall be provided with or	without covers. Plastic
<u>1-56-</u> 400	411.3 Water Closet Seats. W. shall be of the elongated type seats shall comply with IAPMC Application 414.1 Application. Domestic	ater closet seats and either of the MANSI Z124.5. 414.1	shall be proper open front type 414.1	functionality of water closet seats. y sized for the water closet bowl type, an or have an automatic seat cover dispens Specific language and standards added ply with UL 749. Domestic dishwashing responses.	d shall be of smooth, neer. Water closet seats	shall be provided with or	without covers. Plastic
	411.3 Water Closet Seats. W. shall be of the elongated type seats shall comply with IAPMC Application 414.1 Application. Domestic 184 and UL 749. Commercial Drainage Connection 414.3 Drainage Connection. wye branch fitting on the tailpin	atter closet seats and either of the MANSI Z124.5. 414.1 dishwashing mad dis	shall be properly open front type 414.1 chines shall companies shall compani	functionality of water closet seats. y sized for the water closet bowl type, an or have an automatic seat cover dispens Specific language and standards added ply with UL 749. Domestic dishwashing r ply with NSF/ANSI 3 and UL 921. Specifying acceptable discharge methods for both domestic and	d shall be of smooth, ner. Water closet seats: Accept Change Do not adopt gap fitting in accordance Commercial dishwashi	shall be provided with or nitation features shall con ce with Section 807.3 into	mply with NSF/ANSI See existing amendments a waste receptor, a
	411.3 Water Closet Seats. W. shall be of the elongated type seats shall comply with IAPMC Application 414.1 Application. Domestic 184 and UL 749. Commercial Drainage Connection 414.3 Drainage Connection. wye branch fitting on the tailpin	atter closet seats and either of the MANSI Z124.5. 414.1 dishwashing mad dis	shall be properly open front type 414.1 chines shall companies shall compani	functionality of water closet seats. y sized for the water closet bowl type, an or have an automatic seat cover dispens Specific language and standards added ply with UL 749. Domestic dishwashing r ply with NSF/ANSI 3 and UL 921. Specifying acceptable discharge methods for both domestic and commercial dishwashing machines shall discharge indirectly through an air her connection of a food waste disposer.	d shall be of smooth, ner. Water closet seats: Accept Change Do not adopt gap fitting in accordance Commercial dishwashi	shall be provided with or nitation features shall con ce with Section 807.3 into	mply with NSF/ANSI See existing amendments a waste receptor, a
	411.3 Water Closet Seats. We shall be of the elongated type seats shall comply with IAPMC Application 414.1 Application. Domestic 184 and UL 749. Commercial Drainage Connection 414.3 Drainage Connection. Wye branch fitting on the tailpin an air break in accordance with Lead Content	atter closet seats and either of the MANSI Z124.5. 414.1 dishwashing mad dis	shall be proper open front type 414.1 chines shall companies shall companies shall companies shall companies shall companies shing machines shink, or dishwas or by a direct companies of the shall companies shink, or dishwas or by a direct companies shall be shall companies shall comp	functionality of water closet seats. y sized for the water closet bowl type, an or have an automatic seat cover dispens Specific language and standards added ply with UL 749. Domestic dishwashing reply with NSF/ANSI 3 and UL 921. Specifying acceptable discharge methods for both domestic and commercial dishwashing machines shall discharge indirectly through an air ner connection of a food waste disposer.	d shall be of smooth, ner. Water closet seats: Accept Change Do not adopt gap fitting in accordance Commercial dishwashi	shall be provided with or nitation features shall con ce with Section 807.3 into	mply with NSF/ANSI See existing amendments a waste receptor, a

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	Applications	417.1	417.1	Update to the Standard	Accept Change		
	417.1 Application. Faucets and with the requirements of NSF/AN		shall comply with	n ASME A112.18.1/CSA B125.1. Fixture fi	ittings covered under the	ne scope of NSF/ANSI/C	AN 61 shall comply
	Low-Pressure Water Dispenser	417.6	417.6	Updated the Standard to in include new location	Accept Change		
	417.6 Low-Pressure Water Dis ASSE 1023.	 penser. Bever	age faucets sha	LII comply with ASME A112.18.1/CSA B128	5.1. Electrically heated	or cooled water dispens	ers shall comply with
	Head shampoo sink Faucets	(N/A)	417.7	Enhance safety by preventing scalding	Accept Change		Construction Cost
		crossover flow wing:	between the ho	tets shall be supplied with hot water that it and cold water supply connections. The			
	(2) A water heater conforming to (3) A temperature-actuated, flow-	ASSE 1084.					
	Footbaths and Pedicure Baths	(N/A)	417.8	New section	Accept Change		Construction Cost
				specialty plumbing fixtures, such as pedic miting device that conforms to ASSE 107			
<u>51-56-</u> <u>0400</u>	Water Consumption	420.2	420.2	Changing Language	Accept with state amendment		See existing amendment Review previsions

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments				
	420.2 Water Consumption. Sin Exceptions: (1) Clinical sinks (2) Laundry sinks (3) Service sinks	k faucets shall	have a maximu	m flow rate of not more than 2.2 gpm at 6	.0 psi (8.3 L/m at 414 k	Pa).					
51-56- 0400	Pre-Rinse Spray Valve	420.3	420.3	Update to add Table Reference	Accept Change						
	420.3 Pre-Rinse Spray Valve. Commercial food service pre-rinse spray valves shall have a maximum flow rate in accordance with Table 420.3 and shall be equipped integral automatic shutoff.										
	COMMERCIAL PRE-RINSE SPRAY VALVE MAXIMUM FLOW RATE	(N/A)	Table 420.3	Adding a New Table	Accept Change with amendment		Code Change proposal				
	COMMERCIAL PRE-RI PRODUCT CLASS BY \$ Product Class 1 (≤ 5.0 ounces Product Class 2 (> 5.0 ounces	SPRAY FORCE -force)	/ALVE MAXIMU	IM FLOW RATE MUM FLOW RATE, GPM 1.00 1.20							
	ounces-forces) Product Class 3 (> 8.0 ounces- For SI units: 1 gallon per minute	,	1 ounce-force =	1.28 = 0.278 N							
	Fixture Calculations	422.1.1	422.1.1	Updated standards for water closet based on male or female	Do Not adopt						
	information submitted indicates a occupancy load and occupancy ratios in Table 422.1 results in frounded and then rounded to the	a difference in t are determined actional numbe e next whole no nt male in acco	the distribution of I, Table 422.1 sl ers, such numbe umber. For toile ordance with Tab	Is shall be calculated at 50 percent male a of the sexes such information shall be use hall be applied to determine the minimumers shall be rounded to the next whole nur tracilities designed for use by all genders ole 422.1. Where all-gender fixtures are provided in an occupancy.	ed to determine the nun number of plumbing fix mber. For multiple occu , the minimum number	nber of fixtures for each stures required. Where a pancies, fractional number of fixtures shall be the a	sex. Once the pplying the fixture ers shall be first ggregate calculated at				
	Single Use, Family or Assisted-Use Toilet ,and Bathing Facilities	422.1.1	422.1.2	Update language on Single use toilets	Do Not adopt						

m	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
		s shall be insta	lled in accordance	ning Facilities. Where single use, family ce with those regulations. Fixtures located with Section 422.1.			
F	Separate Facilities	422.2	422.2	Update exception	Do Not adopt		
	one person at a time, shall be p (4) Separate facilities shall not be shall be located in a privacy con Single Use Facilities	occupancies with ermitted for use the period who in partment. 422.2.1	e by both sexes. ere rooms have f	nt load of 50 or less including customers ixtures designed for use by both sexes at Clarifying language In facilities, and family or assisted use to	nd the water closets ar	e installed in privacy com	partments. Urinals
	sex.		,		1	r	ug uso 2) siaisi
	Water Closet Compartment	(N/A)	422.6	New added section with specifications on water closet compartments	Do Not adopt		
	Trator Glosof Gompartment						
	422.6 Water Closet Compartm Partitions for water closets local located in all gender toilet or bat Exceptions: (1) Water closet compartments	ted in separate throoms shall o shall not be red	gender toilet or comply with the T quired in a single	Coccupy a separate compartment with wall bathrooms shall comply with the Type B stype A security requirements of IAPMO Z - occupant toilet room having a lockable er closets shall be permitted to have one	security requirements of 124.10.	of IAPMO Z124.10. Partiti	ons for water closets
	422.6 Water Closet Compartm Partitions for water closets local located in all gender toilet or bat Exceptions: (1) Water closet compartments	ted in separate throoms shall o shall not be red	gender toilet or comply with the T quired in a single	bathrooms shall comply with the Type B s ype A security requirements of IAPMO Z - occupant toilet room having a lockable of	security requirements of 124.10.	of IAPMO Z124.10. Partiti	ons for water closets

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
				Chapter 5 Water Heaters			
	Applicability	501.1	501.1	Updating time frame standards	Do Not Adopt	Do Not Adopt	Existing State Amendment
<u>51-56-</u> <u>0500</u>	heating potable water, togethe hour rating listed in Table 501. accordance with the manufact installed in accordance with th	r with chimne 1(2). A list of urer's installa ne manufactur	ys, vents, and accepted water tion instruction er's installation	overn the construction, location, and in their connectors. The minimum capac r heater appliance standards is referen ns. Unlisted water heaters shall be per n instructions. The final installation sh	ity for storage water I nced in Table 501.1(1) mitted in accordance all be approved by the	neaters shall be in acco Listed appliances sha with Section 504.3.2. We Authority Having Juri	ordance with the first- II be installed in Vater heaters shall be
	TABLE WATER HEATERS	501.1(1)	501.1(1)	Table updated	Accept Change	Accept Change	
51-56-	TYPE* Electric, Household Storage Oil-Fired Storage Tank Gas-Fired, 75 000 Btu/h or less, Storage Gas-Fired, Above 75 000 Btu/h, Storage and Instantaneous Electric, Commercial Storage Solid Fuel-Fired Electric Instantaneous For SI units: 1000 British therma * Dual purpose water heaters sho	UL CSA/ANSI UL I units per hour	in accordance v	4.3			
0500	and the manufacturer's installati	ı	T	T	T		
	Unlisted Water Heaters	504.3.2	504.3.2	Updated to include exception	Accept Change		
	504.3.2 Unlisted Water Heaters installed. Clearance for unlisted an approved manner. {NFPA 54-	water heaters s	shall be not less	ed in this code, unlisted water heaters sha than 12 inches (305 mm) on all sides. Co	all be approved by the A ombustible floors under	Authority Having Jurisdic unlisted water heaters s	tion prior to being shall be protected in
	Pressure-Limiting Devices	504.4	504.4	Adding an not an exceed limit	Accept Change		
	504.4 Pressure-Limiting Devic with the terms of its listing and the and not exceed 150 psi (1034 kF	ne manufacture	er's installation i	shall be provided with overpressure pro nstructions. Pressure relief devices shall 4.	tection using an appro have a pressure settin	ved, listed device installe g greater than the water	ed in accordance service pressure
	Lead Content	(N/A)	504.7	New Section	Accept Change		
	504.7 Lead Content. Water hea	ters shall comp	oly with the lead	content requirements of Section 604.2.			
	Engineered Installations	506.6	506.6	Updated language	Do Not Adopt		Existing State Amendment
	506.6 Engineered Installations	. Engineered c	ombustion air in	nstallations shall provide an adequate sup	ply of combustion, ven	tilation, and dilution air d	etermined using
	<u> </u>			<u> </u>	<u> </u>	<u> </u>	

Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
engineering methods. [NFI	PA 54:9.3.5]					
Drainage Pan	507.5	507.5	Added new standards	Accept Change		Code Change proposal
results from a leaking wate with the following:	er heater, a watertigh	t pan of corrosic	ic, in or on an attic ceiling assembly, flooi nn-resistant materials shall be installed be f an inch (20 mm) diameter drain to an ap	eneath the water heater	r in accordance	
readily visible.	so promaca marmo	troop triair g . G.	an mon (20 mm) diameter diam te an ap	spiered leedlein me t	on and and	p.po onali zo
(2) The drainage pan shall	be not less than 11/2	2 inches (38mm)) in depth.			
liquid being discharged.			piping shall be rated for the temperature r	ating of the water heater	er and shall be approved	I for use with the
(4) Discharge from a relief					1	
Type Gas(es).	507.7	507.7	Editor change	Do Not Adopt		Not Adopted
						:9.1.3]
Safety Shutoff Devices for Unlisted LP-Gas Appliance Used Indoors.	507.8	507.8	Language update	Do Not Adopt		Not Adopted
Unlisted LP-Gas Appliance Used Indoors. 507.8 Safety Shutoff Dev	507.8	LP-Gas Appliar	Language update nce Used Indoors. Unlisted appliances hutoff devices of the complete shutoff typ	for use with undiluted	LP-Gases and installed	Not Adopted
Unlisted LP-Gas Appliance Used Indoors. 507.8 Safety Shutoff Dev	507.8 vices for Unlisted Inent, shall be equipp	LP-Gas Appliar	nce Used Indoors. Unlisted appliances	for use with undiluted	Adopt with out State amendment	Not Adopted d indoors, except
Unlisted LP-Gas Appliance Used Indoors. 507.8 Safety Shutoff Devattended laboratory equipments of the second seco	vices for Unlisted Inent, shall be equipp 507.13 sidential Garages. A lled so that all heatin	LP-Gas Applian ed with safety s 507.13 Appliances in res g elements, swii	nce Used Indoors. Unlisted appliances hutoff devices of the complete shutoff typ	for use with undiluted be. [NFPA 54:9.1.4] Adopt with State amendment	Adopt with out State amendment	Not Adopted d indoors, except New UPC covers to state amendment language
Unlisted LP-Gas Appliance Used Indoors. 507.8 Safety Shutoff Devattended laboratory equipmed Installation in Residentia Garages. 507.13 Installation in Residentia Garages.	vices for Unlisted Inent, shall be equipp 1 507.13 sidential Garages. A lled so that all heatin mmable vapor ignition	LP-Gas Applian ed with safety s 507.13 Appliances in res g elements, swii	nce Used Indoors. Unlisted appliances hutoff devices of the complete shutoff type Addition of exception idential garages and in adjacent spaces tches, burners, and burner-ignition devices.	for use with undiluted be. [NFPA 54:9.1.4] Adopt with State amendment	Adopt with out State amendment	Not Adopted d indoors, except New UPC covers to state amendment language living space of a a bove the
Unlisted LP-Gas Appliance Used Indoors. 507.8 Safety Shutoff Devattended laboratory equipmed Installation in Residentia Garages. 507.13 Installation in Residentia Garages. Addition to Existing Systems Supplied to Existing Systems Supplied Installation Installation Installation to Existing Systems Supplied Installation	sidential Garages. A lled so that all heatin mmable vapor ignition (N/A) ng System. When a he capacity of the sys	LP-Gas Applian led with safety s 507.13 Appliances in res g elements, switch resistant (FVIII 507.18 additional appliances in s determin	Addition of exception idential garages and in adjacent spaces to hes, burners, and burner-ignition devices (NFPA 54:9.1.10.1) Updating Title, editor language update nees are being connected to a gas pipin and to be inadequate for the additional appliances.	for use with undiluted be. [NFPA 54:9.1.4] Adopt with State amendment that open to the garage are located not less to be not adopt g system, the existing g system, the existing the property of the state of the system.	Adopt with out State amendment e and are not part of the Ithan 18 inches (457 mm) Do Not adopt piping shall be checked	Not Adopted d indoors, except New UPC covers the state amendment language living space of a a bove the Not adopted in the state code to determine whether

kisting State nendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments	
	Bleed Lines for Diaphragm- Type Valves.	507.22	507.21	Section Moved	Do Not adopt	Do Not adopt	Not adopted in the state code	
	 < 507.21 Bleed Lines for Diaphragm-Type Valves. Bleed lines shall comply with the following requirements: (1) Diaphragm-type valves shall be equipped to convey bleed gas to the outdoors or into the combustion chamber adjacent to a continuous pilot. (2) In the case of bleed lines leading outdoors, means shall be employed to prevent water from entering this piping and also to prevent blockage of vents by foreign matter. (3) Bleed lines shall not terminate in the appliance flue or exhaust system. (4) In the case of bleed lines entering the combustion chamber, the bleed line shall be located so the bleed gas is readily ignited by the pilot and the heat libe does not adversely affect the normal operation of the safety shutoff system. The terminus of the bleed line shall be securely held in a fixed position relative to manufactured gas, the need for a flame arrester in the bleed line piping shall be determined. 							
				(s) from an appliance pressure regulator s-pressure-type combustion chambers. [N		Adopt Change	erminating in a	
	comply with the standards that a Installation Instructions << 507.23 Installation Instruction	pply to the indi 507.24 ons. The instal	vidual appliance 507.23 ller shall conforr	combination of appliances, equipment, at and equipment. [NFPA 54:9.1.19] << Section Moved, Language updated in to the appliance and equipment manufand maintenance instructions on the premi	Accept Change	ions in completing an ins		
	Protection of Outdoor Appliances	507.25	507.24	Section Moved, Update reference location	Accept Change			
		s listed for outo		t listed for outdoor installation but installed shall be permitted to be installed without Section Moved, Update reference				
Accessibility for Service. 507.26 507.25 Social invoved, opdate fetering Accept Change < 507.25 Accessibility for Service. All appliances shall be located with respect to building construction and other equipment so as to permit access for repair or replacement of the appliance. Clearance shall be maintained to permit removal of the appliance; cleaning of heating surfaces; the replacement of filters, blowers, motors burners, controls, and vent connections; the lubrication of moving parts where necessary; the adjustment and cleaning of burners and pilots; and the proper functionin of explosion vents, if provided. For attic installation, the passageway and servicing area adjacent to the appliance shall be in accordance with Section 508.4. (NFP. 54:9.2.1) Unless otherwise specified, clearances of not less than 30 inches (762 mm) in depth, width, and height of working space shall be maintained.<<								
	of explosion vents, if provided. If	For attic install	ation, the passa es of not less tha	ageway and servicing area adjacent to than 30 inches (762 mm) in depth, width, an	ne appliance shall be ind height of working spa	n accordance with Secti ace shall be maintained.	on 508.4. {NFPA	

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
		r property. Min	imum clearance	and their vent connectors shall be installer s between combustible walls and the bac			
	Appliances on Roofs, in Attics or Under-Floor Spaces.	(N/A)	508.0	Title of Section Change	Accept Change		
	508.0 Appliances on Roofs, in	Attics or Und	er-Floor Space	s.			
	Guards and Rails	508.2.1.1	508.2.1.1	Updated Reference Location	Accept Change		
	(2) The open end of the equipme shall be constructed so as to pre (762 mm) beyond each side of the	appliance and a ent platform is event the passa ne equipment o	a roof edge or op located more that age of a 21inch (or appliance.	pen end of an equipment platform is less an 30 inches (762 mm) above the roof, flo 533 mm) diameter ball, resist the impose all arrest anchorage connector system in	oor, or grade below. What loading conditions, a	nere guards or rails are in nd shall extend not less	
	Electrical Power	508.2.2	508.2.2	Updated Reference location	Accept Change		Confirm its all in NFPA 70
	508.2.2 Electrical Power. Applia	ances requiring	an external sou	urce of electrical power shall be installed i	n accordance with NFF	PA 70. [NFPA 54:9.4.2.3]	
	Appliances in Attics and Under-Floor Spaces	508.4	508.4	Updated language	Accept Change		
	508.4 Appliances in Attics and passage way larger than the larg	Under-Floor sest componen	Spaces. An attice tof the appliance	c or under-floor space in which an applian e, and not less than 22 inches by 30 inch	ice is installed shall be es (559 mm by 762 mr	accessible through an opn). {NFPA 54:9.5.1}	pening and
	Length of Passageway	508.4.1	508.4.1	Added Reference location	Accept Change		
	exceed 20 feet (6096 mm) meas distance from the passageway a	ured along the	centerline of the	ageway is less than 6 feet (1829 mm), the e passageway. [NFPA 54:9.5.1.1] Where it exceed 50 feet (15 240 mm) measured	the height of the passa	ngeway is 6 feet (1829 m	
	Lighting and Convenience Outlet	508.4.4	508.4.4	Update code language	Accept Change		
	508.4.4 Lighting and Convenie shall be located at the entrance to			V receptacle outlet and a luminaire shate. 9.5.3]	ll be installed near the	appliance. The switch o	ontrolling the luminaire
	Installation	509.1.1	509.1.1	Specification language added	Do Not Adopt		Not adopted by the state
	509.1.1 Installation. Listed chim	neys and vent	s shall be install	ed in accordance with Section 509.0 and	the manufacturers' ins	tallation instructions. [NF	PA 54:12.2.1]
	Direct-Vent Appliances	509.2.6	509.2.6	Title of section update	Do Not Adopt		
	509.2.6 Direct-Vent Appliances	Listed direct	vent appliances	shall be installed in accordance with the	manufacturer's installa	tion instructions. [NFPA	54:12.3.5.1]
	Through-the-Wall Vent Termination	(N/A)	509.2.6.1	Added new section	Do Not Adopt		

lm	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	509.2.6.1 Through-the-Wall Ve 54:12.3.5.2]	ent Terminatio	n. Through-the-v	wall vent terminations for listed direct-ven	t appliances shall be in	accordance with Section	509.8.1. [NFPA
	ppliances with Integral 509.2.7 509.2.7		509.2.7	Eliminated reference to no longer used section 509.8	Do Not Adopt		
	509.2.7 Appliances with Integr	ral Vents. Appl	iances incorpora	ating integral venting means shall be insta	alled in accordance with	n Section 509.8. [NFPA 5	4:12.3.6]
	Ventilating Hoods and Exhaust Systems	509.3.4	509.3.4	Addition of language on food truck	Do Not Adopt		
	exhaust system equipped with a	damper or wit	h a power mean	tomatically operated appliances, other that s of exhaust, provisions shall be made to power means of exhaust is in operation.	allow the flow of gas to		
-	Factory-Built Chimneys	509.5.1	509.5.1	Updated Reference	Do Not Adopt		
	509.5.1 Factory-Built Chimney operate at positive vent pressure			be listed in accordance with UL 103, UL ation. [NFPA 54:12.6.1.1]	959, or UL 2561. Facto	pry-built chimneys used to	vent appliances that
-	Size of Chimneys	509.5.5	509.5.5	Code requirement updates	Do not adopt		
	use with Type B vents shall be in (1) Those listed in Section 510.0	n accordance v).	vith one of the fo	nting system serving listed appliances wit illowing methods: of a venting system serving a single appli			
	flue collar or draft hood outlet or	greater than s	even times the d	Iraft hood outlet area.			
				erving two appliances with draft hoods shan seven times the smaller draft hood ou		e area of the larger draft h	nood outlet plus 50
	(4) Chimney venting systems us(5) Other engineering methods.	J		ized in accordance with engineering meth	nods.		
Ė	Cleanouts	509.5.6.2	509.5.6.2	Code language update	Do not adopt		
		s shall be exam	ined and where	they do not remain tightly closed when no	ot in use, they shall be	repaired or replaced. [NF	FPA 54:12.6.4.3]
	509.5.6.2 Cleanouts. Cleanouts						

	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments	
Ca	Category I Appliances	509.6.2.1	509.6.2.1	Code update on engineering methods	Do not adopt			
wi	509.6.2.1 Category I Appliances. The sizing of natural draft venting systems serving one or more listed appliances equipped with a draft hood or appliances listed for use with a Type B gas vent, installed in a single story of a building, shall be in accordance with one of the following: (1) The provisions of Section 510.0.							
	2) Vents serving fan-assisted coccordance with Section 510.0 o			or combinations of fan-assisted combusti	on system and draft ho	od-equipped appliances,	shall be sized in	
	For sizing an individual gas v ppliance draft hood outlet or gre			uipped appliance, the effective area of the ft hood outlet area.	vent connector and the	e gas vent shall be not le	ss than the area of the	
				t hoods, the effective area of the vent sha nan seven times the smaller draft hood ou		area of the larger draft ho	ood outlet plus 50	
(5	5) Engineering methods. [NFF	PA 54:12.7.4.1]					
Ca	Category II, Category III, and Category IV Appliances	509.6.2.3	509.6.2.3	Code update	Code update Do not adopt			
					-			
50 wi	09.6.2.3 Category II, Category	s' instructions.	The sizing of pla	ces. The sizing of gas vents for Category astic pipe specified by the appliance man actions. [NFPA 54:12.7.4.3]				
50 wi	09.6.2.3 Category II, Category	s' instructions.	The sizing of pla	astic pipe specified by the appliance man				
50 wi sh	09.6.2.3 Category II, Category ith the appliance manufacturers hall be in accordance with the a	s' instructions.	The sizing of plaufacturers' instru	astic pipe specified by the appliance man lotions. [NFPA 54:12.7.4.3]	ufacturer as a venting r	naterial for Ĉategory II, II		

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
		nting system s		loor. Where a common vent is installed in a dinstalled in accordance with engineer			
	Termination.	509.7.2	509.7.2	Reference update	Do not adopt		
	(1) Single-wall metal pipe shall to 54:12.8.3(1)] (2) Single-wall metal pipe shall e any portion of a building within a	erminate at lea xtend at least : horizontal dist	st 5 feet (1524 n 2 feet (610 mm) ance of 10 feet	shall meet the following requirements: nm) in vertical height above the highest of above the highest point where it passes of (3048 mm). [NFPA 54:12.8.3(2)] terminus of a single-wall metal pipe. [NFF	through a roof of a build		
	FIGURE	509.7.3.4(1)1	509.7.3.4(1)	Table update	Do not adopt		
	and	illed with side top edges open stalled with top to					
	Size of Single-Wall Metal Pipe.	509.7.4	509.7.4	Adding language to code	Do not adopt		

Existing State Amendm ent	Title or Subject	2021 UPC #	2024 UPC #	Summary	2024 Staff Recommendation	2024 TAG Member Recommendation	Other Comments
	(a) For a draft hood-equipped ap (b) For a venting system for a sir	wall metal pipe ppliance, in acc ngle appliance	e shall be sized in cordance with Se with a draft hook	n accordance with one of the following me	e each shall not be less		
	REDUCTION OF CLEARANCES WITH SPECIFIED FORMS OF PROTECTION1	TABLE 509.7.3.4(2	TABLE 509.7.3.4(2)	Code adoption of new notes	Do not adopt		

TYP	E OF PROTECTION APPLIED TO			WHERE THE APPLIANCE	REQUIRE VENT CO	D CLEARAN	OR SINGLE	WALL ME	TAL PIPE IS	A E	
	COVERING ALL SURFACES OF	36 (ir	iches)		ches)	12 (inches)			ches)		ches)
	BUSTIBLE MATERIAL WITHIN		ALLOWABLE CLEARANCES WITH SPECIFIED PROTECTION (inches								
	DISTANCE SPECIFIED AS THE UIRED CLEARANCE WITH NO	USE CO	USE COLUMN 1 FOR CLEARANCES ABOVE APPLIANCE OR HORIZONTAL CONNECTOR, USE COLUMN 2 FOR CLEARANCES FROM APPLIANCES, VERTICAL CONNECTOR, AND SINGLE-WALL METAL PIPE.								
PR0 509.	TECTION (SEE FIGURE 23.4(1) THROUGH FIGURE 23.4(3)]	ABOVE COLUMN 1	SIDES AND REAR COLUMN 2	ABOVE COLUMN	SIDES AND REAR COLUMN 2	ABOVE COLUMN 1	SIDES AND REAR COLUMN 2	ABOVE COLUMN 1	SIDES AND REAR COLUMN 2	ABOVE COLUMN	SIDES AND REAR COLUM
(1)	3½ inch thick masonry wall without ventilated air space		24	_	12	_	9		6	-	5
(2)	½ of an inch insulation board over 1 inch glass fiber or min- eral wool batts	24	18	12	9	9	6	6	5	4	3
(3)	0.024 inch (nominal 24 gauge) sheet metal over 1 inch glass fiber or mineral wool batts reinforced with wire on rear face with ventilated air space	18	12	9	6	6	4	5	3	3	3
(4)	3½ inch thick masonry wall with ventilated air space		12	-	6	_	6		6		6
(5)	0.024 inch (nominal 24 gauge) sheet metal with ventilated air space	18	12	9	6	6	4	5	3	3	2
(6)	½ of an inch thick insulation board with ventilated air space	18	12	9	6	6	4	5	3	3	3
(7)	0.024 inch (nominal 24 gauge) sheet metal with ventilated air space over 0.024 inch (nomi- nal 24 gauge) sheet metal with ventilated air space	18	12	9	6	6	4	5	3	3	3
(8)	1 inch glass fiber or mineral wool batts sandwiched between two sheets 0.024 inch (nominal 24 gauge) sheet metal with ventilated air space I units: 1 inch = 25.4 mm	18	12	9	6	6	4	5	3	3	3

Notes:

TABLE 509.7.3.4(2) REDUCTION OF CLEARANCES WITH SPECIFIED FORMS OF PROTECTION1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 [NFPA 54: TABLE 10.2.4]

- 1 Reduction of clearances from combustible materials shall not interfere with combustion air, draft hood clearance and relief, and accessibility of servicing.
- 2 All clearances shall be measured from the outer surface of the combustible material to the nearest point on the surface of the appliance, disregarding any intervening protection applied to the combustible material.
- 3 Spacers and ties shall be of noncombustible material. No spacer or tie shall be used directly opposite the appliance or connector.
- 4 Where all clearance reduction systems use a ventilated air space, adequate provision for air circulation shall be provided as described. [See Figure 509.7.3.4(2) and Figure 509.7.3.4(3)]
- 5 At least 1 inch (25.4 mm) shall be between clearance reduction systems and combustible walls and ceilings for reduction systems using a ventilated air space.
- 6 Where a wall protector is installed on a single flat wall away from corners, it shall have a minimum 1 inch (25.4 mm) air gap. To provide adequate air circulation, the bottom and top edges, or only the side and top edges, or all edges shall be left open.
- 7 Mineral wool batts (blanket or board) shall have a minimum density of 8 pounds per cubic foot (lb/ft3) (128 kg/m3) and a minimum melting point of 1500°F (816°C).
- 8 Insulation material used as part of a clearance reduction system shall have a thermal conductivity of 1.0 British thermal unit inch per hour square foot degree Fahrenheit [Btu•in/(h•ft2•°F)] [0.1 W/(m•K)] or less.
- 9 At least 1 inch (25.4 mm) shall be between the appliance and the protector. The clearance between the appliance and the combustible surface shall not be reduced below that allowed in this table.
- 10 All clearances and thicknesses are minimum; larger clearances and thicknesses are acceptable.
- 11 Listed single-wall connectors shall be installed in accordance with the terms of their listing and the manufacturer's installation instructions.

Through-the-Wall Vent Termination	509.8	509.8	Updating Code Section	Do not adopt		
509.8 Through-the-Wall Vent Te	ermination. Th	rough the-wall v	vent termination shall be in accordance wi	th Section 509.8.1 thro	ugh Section 509.8.3.	
Clearance for Through-the- Wall Vent Termination	(N/A)	509.8.1	New Code Section	Do not adopt		
500 0 4 Ol			ACCUSED A COLUMN OF THE PROPERTY OF THE PROPER	0.00	and the second second	



509.8.1 Clearance for Through-the-Wall Vent Termination. The clearance for through-the-wall direct and non-direct vent terminals shall be in accordance with Table 509.8.1 and Figure 509.8.1. Exception: The clearances in Table 509.8.1 shall not apply to the combustion air intake of a direct vent appliance. [NFPA4:12.9.1]

T-1011-0-101	Т					
FIGURE EXIT TERMINALS OF MECHANICAL DRAFT AND DIRECT-VENT VENTING SYSTEMS	(N/A)	509.8.1	Updated new figure	Do not adopt		
FIGURE 509.8.1 EXIT TERMINA	LS OF MEC	CHANICAL DRAFT	AND DIRECT-VENT VENTING SYSTEM	MS [NFPA 54: FIGURE	E 12.9.1]	
Condensation Drain	<u>⊗</u> =	d: Vent terminal Air supply inlet Area where terminal is	not permitted Updated to follow NFPA only	Do not adopt		
noncategorized condensing appli-	ances. [NFF	PA 54:12.10.1]	and dispose of condensate from venting s		ory II and Category IV appliances and	
Installation	(N/A)	509.1	New Code section	Do not adopt		
509.9.1 Installation. Drains for co	ondensate s	shall be installed in	accordance with the appliance and vent	manufacturers' installat	tion instructions. [NFPA 54:12.10.2]	
THROUGH-THE-WALL DIRECT-VENT TERMINATION CLEARANCES [NFPA 54: TABLE 12.9.1]	(N/A)	509.8.1	New Table added	Do not adopt		
•	•	•	•			

ABLE 509.8.1 THROUGH-THE-WALL DIRECT-VENT TERMINATION CLEARANCES [NFPA 54: TABLE 12.9.1]<<

TABLE 509.8.1 THROUGH-THE-WALL DIRECT-VENT TERMINATION CLEARANCES [NFPA 54:TABLE 12.9.1]

FIGURE CLEARANCE	CLEARANCE LOCATION	MINIMUM CLEARANCES FOR DIRECT VENT TERMINALS	MINIMUM CLEARANCES FOR NON-DIRECT VENT TERMINALS
A	Clearance above finished grade level, veranda, porch, deck, or balcony	12 inches	12 inches
В	Clearance to window or door that is openable	6 inches for appliances ≤ 10 000 Btu/hr 9 inches for appliances > 10 000 Btu/hr ≤ 50 000 Btu/hr 12 inches for appliances > 50 000 Btu/hr ≤ 150 000 Btu/hr Appliances > 150 000 Btu/hr, in accordance with the appliance manufacturer's instructions and not less than the clearances specified for non-direct vent terminals in row B	4 feet below or to side of opening or 1 foot above opening
C	Clearance to non-openable window	None unless otherwise specified by the app	liance manufacturer
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (610 mm) from the center line of the terminal	None unless otherwise specified by the app	liance manufacturer
E	Clearance to unventilated soffit	None unless otherwise specified by the app	oliance manufacture
F	Clearance to outside corner of building	None unless otherwise specified by the app	oliance manufacture
G	Clearance to inside corner of building	None unless otherwise specified by the app	oliance manufacture
Ħ	Clearance to non-mechanical air supply inlet to building and the combustion air inlet to any other appliance	Same clearance as specified fo	r row B
I	Clearance to a mechanical air supply inlet	10 feet horizontally from inlet or 3 fe	eet above inlet
ī	Clearance above paved sidewalk or paved driveway located on public property or other areas where condensate or vapor can cause a nuisance or hazard	7 feet and not located above public walky where condensate or vapor can cause a n	
K	Clearance to underside of veranda, porch, deck, or balcony	12 inches where the area beneath the veran balcony is open on not less than two sides. prohibited in this location where only of	The vent terminal is

509.10.1.4 New Code language

Medium-Heat Appliances

509.10.1.4

509.10.1.4 Medium-Heat Appliances. Vent connectors for medium-heat appliances shall be constructed of factory-built, medium-heat chimney sections or steel of a thickness not less than that specified in Table 509.10.1.4 and shall comply with the following:

Accept Change

(1) A steel vent connector for an a duty fire brick or the equivalent.	appliance with a	a vent gas temp	erature in excess of 1000°F (538°C) mea	sured at the entrance t	to the connector shall be lined with medium-
,	2 inches (64 m	m) thick for a ve	ent connector having a diameter or greate	st cross-sectional dime	ension of 18 inches(457 mm) or less.
` ,	•	,	0 0		ameter or greatest cross-sectional imension
greater than 18 inches (457 mm)					
(4) Where factory-built chimney s	sections are ins	talled, they shal	l be joined together in accordance with th	e chimney manufacture	er's instructions. [NFPA 54:12.11.2.5]
Size of Vent Connector	509.10.2	509.10.2	Clarifying code language	Do not adopt	
			iance with a single draft hood or for a Cat	egory I fan-assisted co	embustion system appliance shall be
			ering methods. [NFPA 54:12.11.3.1]		
Manifold	509.10.2.1	509.10.2.1	Clarifying code language	Do not adopt	
					nall be constructed according to the instructions with engineering methods. As an alternative
					onnectors shall have a minimum 1 foot (305mn
rise. [NFPA 54:12.11.3.2]					`
Size	509.10.2.2	509.10.2.2	Clarifying code language	Do not adopt	
		are connected	to a common vent or chimney, each vent	connector shall be size	ed in accordance with Section 510.0 or
engineering methods. [NFPA 54:	1		1		
Height	509.10.2.3	509.10.2.3	Clarifying code language	Do not adopt	
			nrough a common vent connector or vent		
[NFPA 54:12.11.3.5]	sterit with availa	able fleadroom	and clearance to compustible material an	d sized in accordance	with Section 510.0 or engineering methods.
Joints	509.10.5	509.10.5	Updating method (1) on joint methods	Do not adopt	
509.10.5 Joints. Joints between	sections of con	nector piping a	nd connections to flue collars or draft hoo	d outlets shall be faster	ned in accordance with one of the following
methods:					
			t-metal screws equally spaced around the		
` '		nbled and conn	ected to flue collars or draft hood outlets i	n accordance with the	manufacturer's instructions.
(3) Other approved means. {NFP			T.,		
Connector Junctions	(N/A)	509.10.6	New Section added to code	Do not adopt	
509.10.6 Connector Junctions.	Where vent co	nnectors are joi	ned together, the connection shall be made	de with a manufactured	I tee or wye fitting. [NFPA 54:12.11.7]
Slope	509.10.6	509.10.7	Moved section, and updated Reference	Do not adopt	
509.10.7 Slope. A vent connecto	r shall be instal	led without any	dips or sags and shall slope upward towa	ard the vent or chimney	at least 1/4 inch per foot (20.8m/m).<<
Exception: Vent connectors atta	ched to a mech	anical draft sys	tem installed in accordance with applianc	e and the draft system	manufacturers' instructions. [NFPA 54:12.11.8
Length of Vent Connector.	509.10.7	509.10.8	Moved section	Do not adopt	
509.10.8 Length of Vent Conne	ctor. The lengtl	n of vent conne	ctors shall comply with Section 509.10.8.	1 or Section 509.10.8.2	<<
Single Wall Connector	509.10.7.1	509.10.8.1	Moved section	Do not adopt	
509.10.8.1 Single Wall Connecto systems. [NFPA 54:12.11.9.1]	r. The maximun	n horizontal len	gth of a single-wall connector shall be 75	percent of the height o	f the chimney or vent, except for << engineere

		T		1	T	
Type B Double Wall Connector	509.10.7.2	509.10.8.2	Moved section	Do not adopt		
except for engineered systems. T	he maximum	length of an indiv	izontal length of a Type B double-wall cor ridual connector for a chimney or vent sys 0 percent of the height of the chimney or	stem serving multiple a	ppliances, from the applia	
Support	509.10.8	509.10.9	Moved section	Do not adopt		
509.10.9 Support. A vent connect separation of joints. [NFPA 54:12		ipported for the o	design and weight of the material employe	ed to maintain clearanc	es and prevent physical	damage and
Chimney Connection	509.10.9	509.10.10	Moved section	Do not adopt		
Where a thimble or slip joint is us	ed to facilitate	removal of the o	asonry or metal chimney, the vent connect onnector, the connector shall be firmly at to prevent the connector from entering so	tached to or inserted in	to the thimble or slip join	t to
the chimney flue. [NFPA54:12.11	.11.1 – 12.11.1	11.3]				
Inspection	509.10.10	509.10.11	Moved section	Do not adopt		
509.10.11 Inspection. The entire	length of a ve	ent connector sha	all be readily accessible for inspection, cle	eaning, and replacemer	nt. [NFPA 54:12.11.12] <<	<
Fireplaces	509.10.11	509.10.12	Moved section	Do not adopt		
509.10.12 Fireplaces. A vent cor 54:12.11.13]	nnector shall n	ot be connected	to a chimney flue serving a fireplace unle	ess the fireplace flue op	ening is permanently sea	aled.[NFPA <<
Passage Through Ceilings, Floors, or Walls.	509.10.12	509.10.13	Update to exception on vent type b and type I	Do not adopt		
509.10.13 Passage Through Ceil connector shall not pass through	0 ,	r Walls. A vent co	onnector shall not pass through a ceiling,	floor, or fire-resistance	-rated wall. A single-wall	metal pipe <<
wall. Exceptions:						
			al and serving listed appliances with draft erial shall be installed with not less than the			Type B gas vents that
(2) Vent connectors shall be pern	nitted to pass t	hrough ceilings,	floors, or walls in accordance with Sectio	n 509.7.3.1 and Section	n 509.7.3.5.	
Medium-Heat Appliances	509.10.12. 1	509.10.13.1	Moved section	Do not adopt		
» 509.10.13.1 Medium-Heat Appl [NFPA54:12.11.14.2]	iances. Vent c	onnectors for me	edium-heat appliances shall not pass thro	ough walls or partitions	constructed of combustib	ole material.
Appliances Requiring Draft Hoods.	509.12	509.12	Updated code title and exceptions	Do not adopt		
509.12 Appliances Requiring Dra	ft Hoods. Vent	ed appliances sh	nall be installed with draft hoods.		•	
	version burner	s with inputs gre	iances; fan-assisted combustion system a ater than 400 000 Btu/h (117 kW); applian ed venting, INFPA54:12.13.11			
Automatically Operated Vent Dampers	509.14	509.14	Updated code language	Do not adopt		
509.14 Automatically Operated	Vent Damper	s. An automatica	ally operated vent damper shall be listed.	[NFPA54:12.15]	ı	
Obstructions	509.15	509.15	Updated Code Exceptions	Do not adopt		
	I .	1	<u> </u>		l	

	nat retard the f	flow of vent gase	es shall not be installed in a vent conr	ector, chimney, or vent. The following	g shall not be considered as
obstructions:	ntrolo opocifio	ally listed for inc	stallation in venting eveterns and insta	lad in accordance with the manufact	uror's installation instructions
-	-	=	stallation in venting systems and insta I installed in accordance with enginee		diei s installation instructions.
, 11	•	J	npers installed in accordance with the		
•			ince with Section 510.1 or Section 510		
			installed in venting systems of appliar ice in the venting system and perform		
Additional Requirements to Single Appliance Vent.	510.1	510.1	Updated Code Section Title	Do not adopt	Existing amendment
		•	Venting Table 510.1.2(1) through Table ces with vent dampers shall be in account.		
	E 4 0 4 0	510.1.6	Updated Code Section Title	Do not adopt	Existing amendment
Corrugated Chimney Liners	510.1.6	310.1.0	opuated code dection file	Do not adopt	Existing amendment
i10.1.6 Corrugated Chimney L	iners. Listed o	corrugated meta	llic chimney liner systems in masonry	chimneys shall be sized by using Tab	ole 510.1.2(1) or Table 510.1.2(2) for
510.1.6 Corrugated Chimney L Type B vents with the maximum	iners. Listed ocapacity reduce	corrugated meta ced by 20 percer	Ilic chimney liner systems in masonry nt (0.80 x maximum capacity) and the	chimneys shall be sized by using Tal minimum capacity as shown in Table	ole 510.1.2(1) or Table 510.1.2(2) for e 510.1.2(1) or
510.1.6 Corrugated Chimney L Type B vents with the maximum Fable 510.1.2(2). Corrugated me 20 percent reduction for corrugat	iners. Listed of capacity reduct tallic liner syst	corrugated meta ced by 20 percei tems installed w	llic chimney liner systems in masonry	chimneys shall be sized by using Tal minimum capacity as shown in Table aximum capacity further reduced in a	ole 510.1.2(1) or Table 510.1.2(2) for 510.1.2(1) or ccordance with Section 10.1.2. The
510.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat NFPA54:13.1.7] Vertical Vent Upsizing Using the	iners. Listed of capacity reduct tallic liner syst	corrugated meta ced by 20 percei tems installed w	Ilic chimney liner systems in masonry nt (0.80 x maximum capacity) and the ith bends or offsets shall have their m	chimneys shall be sized by using Tal minimum capacity as shown in Table aximum capacity further reduced in a	ole 510.1.2(1) or Table 510.1.2(2) for 510.1.2(1) or ccordance with Section 10.1.2. The
S10.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugal NFPA54:13.1.7] Vertical Vent Upsizing Using the 7 Times Rule	iners. Listed c capacity reduc tallic liner syst ed metallic ch	peoprugated meta peed by 20 percei tems installed w imney liner syst	ilic chimney liner systems in masonry nt (0.80 x maximum capacity) and the ith bends or offsets shall have their mems includes an allowance for one lo	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a ng radius 90 degree (1.57 rad) turn at Do not adopt	ole 510.1.2(1) or Table 510.1.2(2) for 9 510.1.2(1) or ecordance with Section 10.1.2. The 1 the bottom of the liner.
in 10.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat NFPA54:13.1.7] Vertical Vent Upsizing Using the 2 Times Rule in 10.1.8 Vertical Vent Upsizing Veletermine the minimum vent cap	iners. Listed c capacity reduce tallic liner syst ed metallic ch 510.1.8 Using the 7 Ta acity, and the	corrugated meta ced by 20 percei dems installed w imney liner syst 510.1.8	Ilic chimney liner systems in masonry int (0.80 x maximum capacity) and the ith bends or offsets shall have their mems includes an allowance for one lost updated Code Section Title ere the vertical vent has a larger diameter shall be used to determine the material contents.	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a ng radius 90 degree (1.57 rad) turn at the properties of the prop	ole 510.1.2(1) or Table 510.1.2(2) for 9 510.1.2(1) or ccordance with Section 10.1.2. The 1 the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent
in the control of the	iners. Listed containers. Listed containers and tallic liner system metallic chemical street in the system of the	corrugated meta ced by 20 percei dems installed w imney liner syst 510.1.8	Updated Code Section Title Updated Code Section Title ere the vertical vent has a larger diam	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a ng radius 90 degree (1.57 rad) turn at the properties of the prop	ole 510.1.2(1) or Table 510.1.2(2) for 9 510.1.2(1) or ccordance with Section 10.1.2. The 1 the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent
510.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat NFPA54:13.1.7] /ertical Vent Upsizing Using the 7 Times Rule 510.1.8 Vertical Vent Upsizing determine the minimum vent cap shall not exceed seven times the	iners. Listed containers. Listed containers and tallic liner system metallic chemical street in the system of the	corrugated meta ced by 20 percei dems installed w imney liner syst 510.1.8	Ilic chimney liner systems in masonry int (0.80 x maximum capacity) and the ith bends or offsets shall have their mems includes an allowance for one lost updated Code Section Title ere the vertical vent has a larger diameter shall be used to determine the material contents.	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a ng radius 90 degree (1.57 rad) turn at the properties of the prop	ole 510.1.2(1) or Table 510.1.2(2) for 9 510.1.2(1) or ccordance with Section 10.1.2. The 1 the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent
510.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugal NFPA54:13.1.7] Vertical Vent Upsizing Using the 7 Times Rule 510.1.8 Vertical Vent Upsizing determine the minimum vent cap shall not exceed seven times the	iners. Listed containers. Listed containers and tallic liner system metallic chemical street in the system of the	corrugated meta ced by 20 percei dems installed w imney liner syst 510.1.8	Ilic chimney liner systems in masonry int (0.80 x maximum capacity) and the ith bends or offsets shall have their mems includes an allowance for one lost updated Code Section Title ere the vertical vent has a larger diameter shall be used to determine the material contents.	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a ng radius 90 degree (1.57 rad) turn at the properties of the prop	ole 510.1.2(1) or Table 510.1.2(2) for 9 510.1.2(1) or ccordance with Section 10.1.2. The 1 the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent
Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat [NFPA54:13.1.7] Vertical Vent Upsizing Using the 7 Times Rule 510.1.8 Vertical Vent Upsizing determine the minimum vent cap shall not exceed seven times the engineering methods. [NFPA 54:	iners. Listed capacity reductable liner system tallic liner system ted metallic chapacity. 510.1.8 Using the 7 Talacity, and the flow area of the flow area of the flow area. Sizes. In a sire.	seed by 20 perceivers installed with the listed appliar stalled. Whe connector diameter is stalled appliar stalled application stalled application stalled app	Updated Code Section Title Updated Code Section Title Updated Code Section Title Updated Code Section Title	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a gradius 90 degree (1.57 rad) turn at Do not adopt Do not adopt eter than the vent connector, the vert eximum vent capacity. The flow area rea, or draft hood outlet area unless Do not adopt	cole 510.1.2(1) or Table 510.1.2(2) for 510.1.2(1) or coordance with Section 10.1.2. The the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent designed in accordance with
510.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat [NFPA54:13.1.7] Vertical Vent Upsizing Using the 7 Times Rule 510.1.8 Vertical Vent Upsizing determine the minimum vent cap shall not exceed seven times the engineering methods. [NFPA 54: Multiple Vertical Vent Sizes 510.1.13 Multiple Vertical Vent	iners. Listed capacity reductable liner system tallic liner system ted metallic chapacity. 510.1.8 Using the 7 Talacity, and the flow area of the flow area of the flow area. Sizes. In a sire.	seed by 20 perceivers installed with the listed appliar stalled. Whe connector diameter is stalled appliar stalled application stalled application stalled app	Updated Code Section Title Updated Code Section Title Updated Code Section Title Updated Code Section Title	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a gradius 90 degree (1.57 rad) turn at Do not adopt Do not adopt eter than the vent connector, the vert eximum vent capacity. The flow area rea, or draft hood outlet area unless Do not adopt	ole 510.1.2(1) or Table 510.1.2(2) for a 510.1.2(1) or coordance with Section 10.1.2. The the bottom of the liner. Existing amendment ical vent diameter shall be used to of the vertical vent designed in accordance with
510.1.6 Corrugated Chimney L Type B vents with the maximum Table 510.1.2(2). Corrugated me 20 percent reduction for corrugat NFPA54:13.1.7] Vertical Vent Upsizing Using the 7 Times Rule 510.1.8 Vertical Vent Upsizing determine the minimum vent cap shall not exceed seven times the engineering methods. [NFPA 54: Multiple Vertical Vent Sizes 510.1.13 Multiple Vertical Vent types are permitted by the tables Sizing Vents	iners. Listed ccapacity reductallic liner systed metallic che steed me	corrugated meta ced by 20 perceitems installed wimney liner systems. 510.1.8 imes Rule. Whe connector diammed listed appliants to the listed appliants to the listed appliants. 510.1.13 510.1.16 s. Where a vent	Updated Code Section Title	chimneys shall be sized by using Tat minimum capacity as shown in Table aximum capacity further reduced in a gradius 90 degree (1.57 rad) turn at provide the size of the size	cordance with Section 10.1.2. The the bottom of the liner. Existing amendment designed in accordance with Existing amendment designed in accordance with

510.2 Additional Requirements to Multiple-Appliance Vent. Venting Table 510.2(1) through Table 510.2(9) shall not be used where obstructions are installed in the venting system. The installation of vents serving listed appliances with vent dampers shall be in accordance with the appliance manufacturer's instructions, or in accordance with the following: (1) The maximum capacity of the vent connector shall be determined using the NAT Max column. (2) The maximum capacity of the vertical vent or chimney shall be determined using the FAN + NAT column when the second appliance is a fan-assisted appliance, or the NAT + NAT column when the second appliance is equipped with a draft hood. (3) The minimum capacity shall be determined as if the appliance were a fan-assisted appliance, as follows: (a) The minimum capacity of the vent connector shall be determined using the FAN Min column. (b) The FAN + FAN column shall be used when the second appliance is a fan-assisted appliance, and the FAN + NAT column shall be used when the second appliance is equipped with a draft hood, to determine whether the vertical vent or chimney configuration is not permitted (NA). Where the vent configuration is NA, the vent configuration shall not be permitted and an alternative venting configuration shall be utilized. [NFPA 54:13.2.1] Vent Connector Rise 510.2.11 510.2.11 Updated Code Section Title Do not adopt **Existing amendment** 510.2.11 Vent Connector Rise. The vent connector rise (R) for each appliance shall be measured from the draft hood outlet or flue collar to the centerline where the vent gas streams come together. {NFPA 54:13.2.12} Vent Height 510.2.12 510.2.12 Updated Code Section Title Do not adopt **Existing amendment** 510.2.12 Vent Height. The available total height (H) for multiple appliances on the same floor shall be measured from the highest draft hood outlet or flue collar up to the level of the outlet of the common vent. [NFPA54:13.2.13] **Multistory Vent Height** 510.2.13 510.2.13 Updated Code Section Title Do not adopt **Existing amendment** 510.2.13 Multistory Vent Height. Where appliances are located on more than one floor, the available total height (H) for each segment of the system shall be the vertical distance between the highest draft hood outlet or flue collar entering that segment and the centerline of the next higher interconnection tee. [NFPA 54:13.2.14] **Multistory Type B Vents** 510.2.15 510.2.15 Updated Code Section Title Do not adopt **Existing amendment** Required 510.2.15 Multistory Type B Vents Required. Where used in multistory systems, vertical common vents shall be Type B double wall and shall be installed with a listed vent cap. [NFPA 54:13.2.16] **Multistory Vent Offsets and** 510.2.16 510.2.16 Updated Code Section Title Do not adopt Existing amendment Capacity

510.2.16 Multistory Vent Offsets and Capacity. Offsets in multistory common vent systems shall be limited to a single offset in each system, and systems with an offset shall comply with all of the following: (1) The offset angle shall not exceed 45 degrees (0.79 rad) from vertical. (2) The horizontal length of the offset shall not exceed 18 inches per inch (18 mm/mm) of common vent diameter of the segment in which the offset is located. (3) For the segment of the common vertical vent containing the offset, the common vent capacity listed in the common venting tables shall be reduced by 20 percent (0.80 x maximum common vent capacity). (4) A multistory common vent shall not be reduced in size above the offset. [NFPA 54:13.2.17] Vertical Vent Size Limitation 510.2.17 510.2.17 Reference section updated Do not adopt **Existing amendment** 510.2.17 Vertical Vent Size Limitation. Where two or more appliances are connected to a vertical vent or chimney, the flow area of the largest section of vertical vent or chimney shall not exceed seven times the smallest listed appliance categorized vent areas, flue collar area, or draft hood outlet area unless designed in accordance with engineering methods. [NFPA 54:13.2.18] Two-Stage/Modulating Section Title update. Maximum vent Existing 510.2.18 510.2.18 Do not adopt connector tables updated Appliances amendment 510.2.18 Two-Stage/Modulating Appliances. The minimum vent connector capacity (FAN Min) of appliances with more than one input rate shall be determined from the tables and shall be less than the lowest appliance input rating. The maximum vent connector capacity (FAN Max or NAT Max) shall be determined from the tables and shall be greater than the highest appliance input rating. [NFPA 54:13.2.19] Chapter 6 Water Supply and Distribution Approval of Devices or Existing 603.2 603.2 Updated reference section Do not adopt **Assemblies** amendment 603.2 Approval of Devices or Assemblies. Before a device or an assembly is installed for the prevention of backflow, it shall have first been approved by the Authority Having Jurisdiction. Devices or assemblies shall be tested in accordance with recognized standards or other standards acceptable to the Authority Having Jurisdiction. Backflow prevention devices and assemblies shall comply with Table 603.2, except for specific applications and provisions as stated in Section 603.5.1 through Section 603.5.22. 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. Such devices or assemblies shall be tested at the time of installation, repair, or relocation and not less than on an annual schedule thereafter, or more often where required by the Authority Having Jurisdiction. Where found to be defective or inoperative, the device or assembly shall be repaired or replaced. No device or assembly shall be removed from use or relocated or other device or assembly substituted, without the approval of the Authority Having Jurisdiction. Testing or maintenance shall be performed by a certified backflow assembly tester or repairer certified in accordance with SSE/IAPMO/ANSI Series 5000 or any other additional certification approved by the Authority Having Jurisdiction.

Added requirements carbonated

beverage

Adopt with

amendment

existing

<u>51-56-</u>

0600

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0600

BACKFLOW PREVENTION

METHODS

DEVICES, ASSEMBLIES, AND

TABLE

603.2

TABLE

603.2

TABLE 603.2 BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS

				OF HAZARD		
		POLL		CONTAM		
DEVICE, ASSEMBLY,	APPLICABLE	(LOW H	AZARD)	(HIGH H	AZARD)	INSTALLATION ^{2,3}
OR METHOD ¹	STANDARDS	BACK-	BACK-	BACK-	BACK-	INSTALLATION
		SIPHONAGE	PRESSURE	SIPHONAGE	PRESSURE	
Air gap	ASME A112.1.2	X	_	X	_	See Table 603.3.1 in this chapter.
Air gap fittings for use with plumbing fixtures, appliances, and appurte- nances	ASME A112.1.3	х	-	x	-	Air gap fitting is a device with an internal air gap, and typical installation includes plumbing fixtures, appliances, and appurtenances. The critical level shall not be installed below the flood level rim.
Antisiphon fill valve (ballcocks) for gravity water closet flush tanks and urinal tanks	ASSE 1002/ ASME A112.1002/ CSA B125.12	х	_	х	_	Installation of gravity water closet flush tank and urinal tanks with the fill valve installed with the critical level not less than 1 inch above the opening of the overflow pipe. ^{4,5}
Atmospheric vacuum breaker (consists of a body, checking member and atmospheric port)	ASSE 1001 or CSA B64.1.1	х	_	х	_	Upright position. Have outlet open to atmosphere. Minimum of 6 inches or listed distance above all downstream piping and flood level rim of receptor. 4,5
Backflow preventer for Carbonated Beverage Dispensers (two inde- pendent check valves with a vent to the atmos- phere)	ASSE 1022	х	х	х	х	Installation includes carbonated beverage machines or dispensers. These devices operate under intermittent or continuous pressure conditions.
Backflow preventer with intermediate atmos- pheric vent	ASSE 1012	х	х	_	_	Installation of potable water connections to water boilers. No high-hazard chemicals shall be introduced into the system using such devices. Designed to operate under continuous pressure conditions. May discharge water.
Backflow preventer with intermediate atmospheric vent and pressure reduc- ing valve	ASSE 1081	Х	х	_	-	Installation of potable water connections to water boilers. No high-hazard chemicals shall be introduced into the system using such devices. Designed to operate under continuous pressure conditions. May discharge water.
Chemical dispenser with integral backflow protec- tion	ANSI/CAN/ ASSE/IAPMO 1055	X	_	X	-	Shall be installed in accordance with manufacturer's installation instructions with dedicated water supply whenever possible.
Dual check backflow preventer	ASSE 1024	X	X	_	_	Installation does not include carbonated drink dispensers.
Dual check backflow preventer wall hydrants, freeze resistant	ASSE 1053	X	_	X	_	Such devices are not for use under continuous pressure conditions. ⁴
Double Check Detector Frevention Assembly (two independent check valves with a parallel detector assembly con- sisting of a water meter and a double check valve backflow prevention assembly and means for field testing)	ASSE 1048	х	x			Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12 inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.

TABLE 603.2 BACKFLOW PREVENTION DEVICES, ASSEMBLIES, AND METHODS (continued)

			DEGREE	OF HAZARD		
		POLLI		CONTAM		
DEVICE, ASSEMBLY,	APPLICABLE	(LOW H		(HIGH H		INSTALLATION ^{2,3}
OR METHOD ¹	STANDARDS	BACK- SIPHONAGE	BACK- PRESSURE	BACK- SIPHONAGE	BACK- PRESSURE	MOTALEATION
Double Check Valve		SIPHONAGE	PRESSURE	SIPHONAGE	PRESSURE	Horizontal unless otherwise listed. Access and
Backflow Prevention Assembly (two inde- pendent check valves and means of field test- ing)	ASSE 1015; AWWA C510; CSA B64.5 or CSA B64.5.1	X	x	ı	_	clearance shall be in accordance with the man- ufacturer's instructions, and not less than a 12 inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. Does not discharge water.
Freeze resistant sanitary yard hydrants	ASSE 1057	X		X	-	Such devices are not for use under continuous pressure conditions. ⁴
Hose connection back- flow preventers	ASSE 1052	X	_	X	_	Such devices are not for use under continuous pressure conditions. ^{4,6}
Hose connection vac- uum breakers	ASSE 1011	X	_	X	_	Such devices are not for use under continuous pressure conditions. No valve downstream. 4,6
Laboratory faucet back- flow preventer	ASSE 1035	X	_	X	-	Installation includes laboratory faucets. Such devices are not for use under continuous pressure conditions. No valve downstream. ⁴
Pressure Vacuum Breaker Backflow Prevention Assembly (loaded air inlet valve, internally loaded check valve and means for field testing)	ASSE 1020 or CSA B64.1.2	X	_	х	_	Upright position. May have valves down- stream. Minimum of 12 inches above all downstream piping and flood-level rim of the receptor. May discharge water.
Reduced Pressure Detec- tor Fire Protection Back- flow Prevention Assembly (two independ- ently acting loaded check valves, a differential pres- sure relief valve, with a parallel detector assembly consisting of a water meter and a reduced-pres- sure principle backflow prevention assembly, and means for field testing)	ASSE 1047	X	X	х	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufactures' instructions, and not less than a 12 inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. May discharge water. Installation includes a fire protection system and is designed to operate under continuous pressure conditions.
Reduced Pressure Princi- ple Backflow Prevention Assembly (two independ- ently acting loaded check valves, a differential pres- sure relief valve and means for field testing)	ASSE 1013; AWWA C511; CSA B64.4 or CSA B64.4.1	X	X	X	X	Horizontal unless otherwise listed. Access and clearance shall be in accordance with the manufacturer's instructions, and not less than a 12 inch clearance at the bottom for maintenance. May need platform/ladder for test and repair. May discharge water.
Spill-Resistant Pressure Vacuum Breaker (single check valve with air inlet vent and means of field testing)	ASSE 1056	X	_	X	_	Upright position. Minimum of 12 inches or listed distance above all downstream piping and flood-level rim of receptor. ⁵
Vacuum breaker wall hydrants, hose bibbs, freeze resistant, auto- matic draining type	ASSE 1019 or CSA B64.2.1.1	X	_	X	_	Installation includes wall hydrants and hose bibbs. Such devices are not for use under con- tinuous pressure conditions (means of shutoff downstream of device is prohibited). ^{4,5}

For SI units: 1 inch = 25.4 mm Notes:

Notes:

1 See the description of devices and assemblies in this chapter.

2 Installation in pit or vault requires previous approval by the Authority Having Jurisdiction.

3 Refer to the general and specific requirement for installation.

4 Not to be subjected to operating pressure for more than 12 hours in a 24-hour period.

5 For deck-mounted and equipment-mounted vacuum breaker, see Section 603.5.13.

6 Shall be installed in accordance with Section 603.5.7.

Testing	603.4.2	603.4.2	Updated reference location	Do Not Adopt	Code Change Proposal
installation, repair, or relocation	on and not less the nce with the prod	an on an annua	nall have the backflow prevention assemblal schedule thereafter, or more often when ced in ASSE/IAPMO/ANSI Series 5000 by	e required by the Authority F	
Protection from Lawn Sprinkle and Irrigation Systems	ers 603.5.6	603.5.6	Added new device requirement	Adopt with existing amendment	Revise State Amendment to model Code change
			stems. Potable water supplies to systems protected from backflow by one of the fol		ctions for pumping equipment, nd no
(1) Atmospheric vacuum brea	ker (AVB)				
` '	•	• •	PVB)		
(3) Spill-resistant pressure va	cuum breaker (S	VB)	,		
(2) Pressure vacuum breaker (3) Spill-resistant pressure vac (4) Reduced-pressure principl	cuum breaker (S e backflow preve	VB)	,		
(3) Spill-resistant pressure va (4) Reduced-pressure principl	cuum breaker (S e backflow preve	VB)	,		
(3) Spill-resistant pressure va	cuum breaker (S e backflow preve	VB)	,	Adopt with existing amendment	Review for a determination on existing amendment
(3) Spill-resistant pressure var (4) Reduced-pressure principl (5) A valve complying with IAF Beverage Dispensers 603.5.12 Beverage Dispenser ASSE 1022. For carbonated by	cuum breaker (S e backflow preve eMO PS 72 603.5.12 ers. Potable wate beverage dispens	vB) ention assembly 603.5.12 er supply to carb ers, piping mate	Updated requirements for Beverage Dispensers conated beverage dispensers shall be properial installed downstream of the backflow	existing amendment tected by an air gap or a very preventer shall not be affect	determination on
(3) Spill-resistant pressure var (4) Reduced-pressure principl (5) A valve complying with IAF Beverage Dispensers 603.5.12 Beverage Dispenser ASSE 1022. For carbonated by	cuum breaker (S e backflow preve eMO PS 72 603.5.12 ers. Potable wate beverage dispens	vB) ention assembly 603.5.12 er supply to carb ers, piping mate	Updated requirements for Beverage Dispensers conated beverage dispensers shall be properial installed downstream of the backflow	existing amendment tected by an air gap or a very preventer shall not be affect	determination on existing amendment of the determination of of t
(3) Spill-resistant pressure var (4) Reduced-pressure principl (5) A valve complying with IAF Beverage Dispensers 603.5.12 Beverage Dispenser ASSE 1022. For carbonated beverage dispensers, such as Garbage Can Washers 603.5.19 Garbage Can Wash	cuum breaker (S e backflow preve eMO PS 72 603.5.12 ers. Potable wate everage dispens i ce makers and (N/A)	vB) 603.5.12 er supply to carb ers, piping mate coffee machine 603.5.19	Updated requirements for Beverage Dispensers conated beverage dispensers shall be properial installed downstream of the backflows, shall be protected by an air gap or dual	existing amendment tected by an air gap or a very preventer shall not be affect check backflow preventer to Accept Change	determination on existing amendment inted backflow preventer that complies with sted by carbon dioxide gas. Non-carbonated hat comply with ASSE 1032 or ASSE 1024.
(3) Spill-resistant pressure var (4) Reduced-pressure principl (5) A valve complying with IAF Beverage Dispensers 603.5.12 Beverage Dispenser ASSE 1022. For carbonated beverage dispensers, such as Garbage Can Washers	cuum breaker (S e backflow preve eMO PS 72 603.5.12 ers. Potable wate everage dispens i ce makers and (N/A)	vB) 603.5.12 er supply to carb ers, piping mate coffee machine 603.5.19	Updated requirements for Beverage Dispensers Donated beverage dispensers shall be proferial installed downstream of the backflows, shall be protected by an air gap or dual New Section added	existing amendment tected by an air gap or a very preventer shall not be affect check backflow preventer to Accept Change	determination on existing amendment inted backflow preventer that complies with sted by carbon dioxide gas. Non-carbonated hat comply with ASSE 1032 or ASSE 1024.
(3) Spill-resistant pressure variation (4) Reduced-pressure principal (5) A valve complying with IAF Beverage Dispensers 603.5.12 Beverage Dispenser 603.5.12 Beverage Dispenser ASSE 1022. For carbonated beverage dispensers, such as Garbage Can Washers 603.5.19 Garbage Can Washers 603.5.19 Garbage Can Washers coordance with Table 603.2.	coum breaker (S e backflow preverence of the backflow preverence of the backflow preverence of the backflow preverage dispension of the backers and of the backflow preverage dispension of the backflow preverage dispension of the backflow preversion of the backflow	vB) ention assembly 603.5.12 er supply to carb ers, piping mate coffee machine 603.5.19 age can washe	Updated requirements for Beverage Dispensers Donated beverage dispensers shall be properial installed downstream of the backflows, shall be protected by an air gap or dual New Section added Research Section added	existing amendment tected by an air gap or a very preventer shall not be affect check backflow preventer to Accept Change y system, the connection shall be accept Change.	determination on existing amendment inted backflow preventer that complies with sted by carbon dioxide gas. Non-carbonated hat comply with ASSE 1032 or ASSE 1024. all be protected against backflow in

principle backflow preventer in accordance with the following:

(2) The potable water supply is directly connected to the unit circulation system. >>

(1) The unit is equipped with a submerged fill line.

Commented [BG1]: Reach out to DOH for guidlines

Chemical Dispensers	603.5.21	603.5.22	Section moved and new backflow requirements	Accept Change		Review with DOF backflow
(1) The chemical dispenser shall	I comply with Ald device conformated by one of the conformation of	NSI/CAN/ASSE/ ming to IAPMO I e following methal ention assembly (SVB)	(PVB)	es a water source com		n integrated vacuun
Pipe, Tube, and Fittings	604.1	604.1	Added new reference page	Accept Change		
comply with NSF/ANSI/CAN 61. systems, they shall be resistant	Where pipe fitt to dezincificatio material, excep	ings and valves n and stress cor ot where otherwi	nent, thread sealants, solders, and flux us are made from copper alloys containing r rosion cracking in compliance with NSF/A se approved by the Authority Having Juris 304.1.	nore than 15 percent zi ANSI 14. Materials used	nc by weight and are used in the water supply sys	ed in plastic piping tem, except valves
Flexible Connectors	604.5	604.5	Clarified code language.	Accept Change		
			installed in accessible locations, and who as flow shutoff device shall comply with C			ASME
	604.9	604.9	Updated reference for code	Accept Change		
Epoxy Coating						
. , .	xy coating used	on existing, und	I lerground steel building supply piping sha	III comply with NSF/AN	SI/CAN 61 and AWWA C	210.

DISTRIBUTION PIPING AND FITTINGS

TABLE 604.1

	MATERIALS FOR BU	ILDING SUPPLY AND	WATER DISTRIBUTION PIPING AN	D FITTINGS
MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Copper and Copper Alloys	x	x	ASTM B42, ASTM B43, ASTM B75, ASTM B88, ASTM B135, ASTM B251, ASTM B302, ASTM B447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26, ASME B16.50 ² , ASME B16.51, ASSE 1061, ASTM F3226, AWWA C606, CSA B242, IAPMO PS 53, IAPMO PS 117
CPVC	x	х	ASTM D2846, ASTM F441, ASTM F442, CSA B137.6	ASSE 1061, ASTM D2846, ASTM F437, ASTM F438, ASTM F439, ASTM F1970, CSA B137.6, IAPMO PS 53
CPVC-AL-CPVC	X	X	ASTM F2855	ASTM D2846
Ductile-Iron	х	х	AWWA C151	ASME B16.4, AWWA C110, AWWA C153, AWWA C606, CSA B242, IAPMO PS 53
Galvanized Steel	х	X	ASTM A53	AWWA C606, CSA B242, IAPMO PS 53
Malleable Iron	x	х	_	ASME B16.3, AWWA C606, IAPMO PS 53
PE	X ¹	_	ASTM D2239, ASTM D2737, ASTM D3035, AWWA C901, CSA B137.1	ASTM D2609, ASTM D2683, ASTM D3261, ASTM F1055, CSA B137.1
PE-AL-PE	x	X	ASTM F1282, CSA B137.9	ASTM F1282, ASTM F1974, CSA B137.9
PE-RT	х	х	ASTM F2769, CSA B137.18	ASSE 1061, ASTM D3261, ASTM F1055, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.18
PEX	х	х	ASTM F876, CSA B137.5, AWWA C904 ¹	ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F2080, ASTM F2159, ASTM F2735, ASTM F3347, ASTM F3348, CSA B137.5
PEX-AL-PEX	X	X	ASTM F1281, CSA B137.10	ASTM F1281, ASTM F1974, ASTM F2434, CSA B137.10
PP	X	X	ASTM F2389, CSA B137.11	ASTM F2389, CSA B137.11
PVC	X ¹	_	ASTM D1785, ASTM D2241, AWWA C900	ASTM D2464, ASTM D2466, ASTM D2467, ASTM F1970, AWWA C907, IAPMO PS 53
Stainless Steel	X	X	ASTM A269, ASTM A312, ASTM A554, ASTM A778	ASTM F3226, CSA B242, IAPMO PS 53, IAPMO PS 117

605.2.2

605.2.2

Notes:

socket and hold together until joint is set.

- For brazed fittings only

Solvent Cement Joints

605.2.2 Solvent Cement Joints. Solvent cement joints for CPVC pipe and fittings shall be clean from dirt and moisture. Solvent cements shall comply with ASTM F493, requiring the use of a primer shall be orange in color. The primer shall be colored and shall comply with ASTM F656. Listed solvent cement that complies with ASTM F493 and that does not require the use of primers, yellow, green, or red in color, shall be permitted for pipe and fittings that comply with ASTM D2846, 1/2 of an inch (15mm) through 2 inches (50 mm) in diameter or ASTM F442, 1/2 of an inch (15 mm) through 3 inches (80 mm) in diameter. Apply primer where required inside the fitting and to the depth of the fitting on pipe. Apply liberal coat of cement to the outside surface of pipe to depth of fitting and inside of fitting. Place pipe inside fitting to forcefully bottom the pipe in the

Accept Change

PVC Plastic Pipe and Joints 605.12 605.12 Added new exemption Accept Change

Specified code

Notes:

1 For building supply or exterior cold-water applications, not for water distribution piping.

Dielectric Unions	605.15	605.15	Change in reference location	Accept Change		
605.15 Dielectric Unions. Diele PS 66.	ctric unions wh	ere installed at	points of connection where there is a diss	similarity of metals shal	l be in accordance with ASSE 1079 or IA	PMO
Copper or Copper Alloy Pipe or Tubing to Threaded Pipe Joints	605.16.1	605.16.1	Change in reference location	Accept Change		
alloy adapter, copper alloy nipple	[minimum 6 in bing and the fit	ches (152 mm)] ting shall be a s	d Pipe Joints. Joints from copper or cop, dielectric fitting, or dielectric union in ac oldered, brazed, flared, or press-connect	cordance with ASSE 1	079 or IAPMO PS 66. The joint between t	the
Stainless Steel to Other Materials.	605.16.3	605.16.3	New reference location	Accept Change		
			ng stainless steel pipe to other types of pi 6 and designed for the specific transition			g, or
General	606.1	606.1	New reference and code update	Accept Change		
B124.14, ASMEB16.34, ASTM F	1970, ASTM F2	2389, AWWA C5	ves carrying water used in potable water 500, AWWA C504, AWWA C507, IAPMO/	ANSI Z1157, MSS SP-	67, MSS SP-70, MSS SP-71, MSS SP-7	4/CSA 2, MS
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11	1970, ASTM F2	2389, AWWA C5		ANSI Z1157, MSS SP-	vith the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7	4/CSA 2, MS
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for	2389, AWWA C5 2, or NSF/ANSI 606.5.1 water distribution	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking was New Code section added on shall conform with the applicable requirements.	ANSI Z1157, MSS SP- ater shall also comply v	vith the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN	4/CSA 2, MS 61.
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-110 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for	2389, AWWA C5 2, or NSF/ANSI 606.5.1 water distribution	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking was New Code section added on shall conform with the applicable requirements.	ANSI Z1157, MSS SP- ater shall also comply v	vith the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN	4/CS/ 2, MS 61.
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-110 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution of Leak Detection Devices	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for manifolds shall 606.9	2389, AWWA C5 2, or NSF/ANSI 3 606.5.1 water distribution be in accordance 606.9	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking was New Code section added on shall conform with the applicable required with IAPMO IGC 109.	ANSI Z1157, MSS SP- ater shall also comply v Accept Change irements for valves, pip	vith the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN less, and fittings as referenced in this code	4/CSA 2, MS 61.
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution of Leak Detection Devices 606.9 Leak Detection Devices.	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for manifolds shall 606.9	2389, AWWA C5 2, or NSF/ANSI 3 606.5.1 water distribution be in accordance 606.9	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking ware ware consistent of the supply drinking ware consistent of the supply drinking ware with IAPMO IGC 109. New reference location	ANSI Z1157, MSS SP- ater shall also comply v Accept Change irements for valves, pip	vith the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN less, and fittings as referenced in this code	4/CSA 22, MS 61. e. boiler
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution in Leak Detection Devices 606.9 Leak Detection Devices. Private Well Water Tanks	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for manifolds shall 606.9 Where leak de (N/A)	2389, AWWA C5 2, or NSF/ANSI i 606.5.1 water distribution be in accordance 606.9 tection devices	500, AWWA C504, AWWA C507, IAPMO/359. Valves intended to supply drinking w. New Code section added on shall conform with the applicable require with IAPMO IGC 109. New reference location for water supply and distribution are instal	ANSI Z1157, MSS SP- ater shall also comply v Accept Change irements for valves, pip Accept Change alled, they shall comply Accept Change	with the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN es, and fittings as referenced in this code with ANSI/CAN/IAPMO Z1349. Source state pressure code applies? Code change proport	4/CSA 22, MS 61. e. boiler
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution in Leak Detection Devices 606.9 Leak Detection Devices. Private Well Water Tanks	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds for manifolds shall 606.9 Where leak de (N/A)	2389, AWWA C5 2, or NSF/ANSI i 606.5.1 water distribution be in accordance 606.9 tection devices	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking w. New Code section added on shall conform with the applicable require with IAPMO IGC 109. New reference location for water supply and distribution are instal	ANSI Z1157, MSS SP- ater shall also comply w Accept Change irements for valves, pip Accept Change alled, they shall comply Accept Change omply with ASSE1099/	with the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN es, and fittings as referenced in this code with ANSI/CAN/IAPMO Z1349. Source state pressure code applies? Code change proport	4/CSA 22, MS 61. e. boiler e
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution of Leak Detection Devices 606.9 Leak Detection Devices. Private Well Water Tanks 607.2 Private Well Water Tanks	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds formanifolds shall 606.9 Where leak de (N/A)	2389, AWWA C5 2, or NSF/ANSI 606.5.1 water distribution be in accordance 606.9 tection devices 607.2	500, AWWA C504, AWWA C507, IAPMO/ 359. Valves intended to supply drinking w. New Code section added on shall conform with the applicable require with IAPMO IGC 109. New reference location for water supply and distribution are instance. New Code section added New Code section added New Iocation, and updated Reference	ANSI Z1157, MSS SP- ater shall also comply v Accept Change irements for valves, pip Accept Change alled, they shall comply Accept Change omply with ASSE1099/ Accept Change	with the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN les, and fittings as referenced in this code with ANSI/CAN/IAPMO Z1349. Source state pressure code applies? Code change proport WSC-PST 2000.	2, MS 61. boiler e e e e e e e e e e e e e e e e e e
B124.14, ASMEB16.34, ASTM F SP-78, MSS SP-80, MSS SP-11 Manifolds 606.5.1 Manifolds. Field installe Manufactured water distribution of Leak Detection Devices 606.9 Leak Detection Devices. Private Well Water Tanks 607.2 Private Well Water Tanks	1970, ASTM F2 0, MSS SP-122 (N/A) d manifolds formanifolds shall 606.9 Where leak de (N/A)	2389, AWWA C5 2, or NSF/ANSI 606.5.1 water distribution be in accordance 606.9 tection devices 607.2	500, AWWA C504, AWWA C507, IAPMO/359. Valves intended to supply drinking w. New Code section added on shall conform with the applicable require with IAPMO IGC 109. New reference location for water supply and distribution are instal New Code section added New Code section added New Iocation, and updated Reference location	ANSI Z1157, MSS SP- ater shall also comply v Accept Change irements for valves, pip Accept Change alled, they shall comply Accept Change omply with ASSE1099/ Accept Change	with the requirements of ASME A112.4.14 67, MSS SP-70, MSS SP-71, MSS SP-7 with the requirements of NSF/ANSI/CAN les, and fittings as referenced in this code with ANSI/CAN/IAPMO Z1349. Source state pressure code applies? Code change proport WSC-PST 2000.	boile e e e e e e e e e e e e e e e e e e e

screened with a corrosion-resista			ered and vented in accordance with the r nber 24 mesh.	nanufacturer's installati	ion instructions. Such	vent shall be <<
Overflow	607.4	607.5	New location	Accept Change		
607.5 Overflow. Tanks shall hav	e not less than	a 16 square incl	h (0.01 m2) overflow that is screened with	n a corrosion-resistant ı	material of not less th	an number 24 << mesh.
Valves	607.5	607.6	New reference and code update	Accept Change		
	ordance with Se	ction 608.5. Wh	pressure-relief valve installed in accordar ere a potable water supply tank is located ANSI Z21.22/CSA 4.4.			
Inadequate Water Pressure	608.1	608.1	Updated code language	Accept Change		
per square inch (psi) (103 kPa),	after allowing fo	or friction and oth	n the main or other source of supply will ner pressure losses, a tank and a pump o t, require a residual pressure exceeding?	or other means that will	provide said 15 psi (1	03 kPa) pressure shall be
per square inch (psi) (103 kPa), installed. Where fixtures, fixture texcessive Water Pressure	after allowing for ittings, or both 608.2	or friction and oth are installed that 608.2	ner pressure losses, a tank and a pump of t, require a residual pressure exceeding of the unit of the	or other means that will 15 psi (103 kPa), that m Accept Change	provide said 15 psi (1 ninimum residual pres	03 kPa) pressure shall be sure shall be provided.
per square inch (psi) (103 kPa), installed. Where fixtures, fixture installed. Where fixtures, fixture installed. Where fixtures, fixture installed. Water Pressure 608.2 Excessive Water Pressure 608.2 Excessive Water Pressure ASSE 1003 or AWWA C530. Preopulates in the building unless other equipped with a properly sized a removing the regulator or straine 610.4. An approved expansion to developing due to thermal expandank shall be properly sized, secondary.	after allowing for ittings, or both 608.2 re. Where static saure regulator erwise approvend sloped borear body or discount shall be inson. Expansiourely fastened the gistered designer.	or friction and other installed that are considered in the color of the structure, and professionals	ner pressure losses, a tank and a pump of the require a residual pressure exceeding of the require a residual pressure exceeding of the require a residual pressure exceeding of the requirement of the residual pressure exceeding 10.0 minutes and pressure exceeding 10.0 minutes (40 mm) shall not result the requirement of the result of the residual properties of the result of the	Accept Change si (552 kPa), an approve regulators for potable require a strainer. Such a rand strainer shall be a rand strainer shall be a rand strainer on the strainer shall be a rand shall have the strainer. Such a rand shall have the strainer shall be a rand shall have the strainer shall be a rand shall have the strainer shall be a rand shall	provide said 15 psi (1 ninimum residual pres ed-type pressure regulator (s) shall cont accessibly located able ainer readily accessible the reduced pre prevent pressure exceptible provided in the reduced pre prevent pressure exceptible provided in the reduced pre prevent pressure exceptible prevent pressure and prevent pressure and prevent pressure and prevent pressure and prevent preve	103 kPa) pressure shall be sture shall be provided. I will be provided by an items shall comply with trol the pressure to water overground or in a vault ole for cleaning without items where using Table eeding 80 psi from (CAN 61. The expansion it. Systems designed by a start of the provided in the

closed device that prevents dissip and adequately sized expansion with IAPMO/ANSI Z1088. Such e shall be sized, securely fastened equipment shall be provided with having an inside diameter of not a device in an approved location ba	pation of buildir tank or other a expansion tank to the structure an approved, I more than 3 incused on its listir	ng pressure back pproved device or other approve e, and installed in isted, adequated thes (80 mm). En grequirements	Pressure-Relief Valves. A water system k into the water main, independent of the having a similar function to control thermod device shall be installed on the building accordance with the manufacturer's in ly sized combination temperature and preach such approved combination temperature and the manufacturer's installation instruction. Exception: An expansion tank shall not	e type of water heater us nal expansion. Pre-press ng side of the check valv stallation instructions. A essure-relief valve, exce ature and pressure-relief uctions. Each such com	sed, shall be provided of surized water expansion re, backflow preventer, water system containing the properties of the provided for the provided of the provided for the provided of the prov	with an approved, listed, in tanks shall comply or other device and ing storage water heating ge instantaneous heaters do n the water-heating and pressure-relief valve
			New Reference location	Accept Change		
Vacuum Relief Valves	608.7	608.7	New Reference location			
608.7 Vacuum Relief Valves. Wi	nere a hot-wate	er storage tank o	or an indirect water heater is located at a stalled on the storage tank or heater.		xture outlets in the hot	-water system, a vacuum
608.7 Vacuum Relief Valves. Wi	nere a hot-wate	er storage tank o	or an indirect water heater is located at a		xture outlets in the hot-	-water system, a vacuum Code Change proposal
608.7 Vacuum Relief Valves. Wi elief valve that complies with AN Hot-Water Recirculating Pumps	nere a hot-wate SI Z21.22/CSA	er storage tank of 4.4 shall be ins	or an indirect water heater is located at a stalled on the storage tank or heater. New section to protect health and	Accept Change		Code Change proposal

		IABLE 610.3		
	WATER SUPPLY FIXTURE UNITS	(WSFU) AND MINIMUM FIX	CTURE BRAN	CH PIPE SIZES ³
_				

APPLIANCES, APPURTENANCES OR FIXTURES ²	MINIMUM FIXTURE BRANCH PIPE SIZE ^{1,4} (inches)	PRIVATE	PUBLIC	ASSEMBLY ⁶
Bathtub or Combination Bath/Shower (fill)	1/2	4.0	4.0	_
3/4 inch Bathtub Fill Valve	3/4	10.0	10.0	_
Bidet	1/2	1.0	_	_
Clothes Washer	1/2	4.0	4.0	_
Dental Unit, cuspidor	1/2	_	1.0	_
Dishwasher, domestic	1/2	1.5	1.5	_
Drinking Fountain or Water Cooler	1/2	0.5	0.5	0.75
Hose Bibb	1/2	2.5	2.5	_
Hose Bibb, each additional8	1/2	1.0	1.0	_
Lavatory	1/2	1.0	1.0	1.0
Lawn Sprinkler, each head ⁵	_	1.0	1.0	_
Mobile Home, each (minimum)	_	12.0		_
Sinks	_		_	_
Bar	1/2	1.0	2.0	-
Clinical Faucet	1/2	-	3.0	_
Clinical Flushometer Valve with or without faucet	1		8.0	_
Kitchen, domestic with or without dishwasher	1/2	1.5	1.5	_
Laundry	1/2	1.5	1.5	-
Service or Mop Basin	1/2	1.5	3.0	_
Washup, each set of faucets	1/2	-	2.0	_
Shower, per head	1/2	2.0	2.0	-
Urinal, 1.0 GPF Flushometer Valve	3/4	See	Footnote ⁷	_
Urinal, greater than 1.0 GPF Flushometer Valve	3/4	See	Footnote ⁷	_
Urinal, flush tank	1/2	2.0	2.0	3.0
Nonwater Urinal with Drain Cleansing Action	1/2	1.0	1.0	1.0
Wash Fountain, circular spray	3/4	_	4.0	_
Water Closet, 1.6 GPF Gravity Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	See	Footnote ⁷	_
Water Closet, greater than 1.6 GPF Gravity Tank	1/2	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	See	Footnote ⁷	_
For SI units: 1 inch = 25 mm Notes: Size of the cold branch pipe, or both the hot and cold branch pip 2 Appliances, appurtenances, or fixtures not referenced in this tal quency of use. The listed fixture unit values represent their load on the cold wa ing both hot and cold water connections shall be permitted to be 4 The listed minimum supply branch pipe sizes for individual fix For fixtures or supply connections likely to impose continuous 1 artely to the demand in gpm (Ly) for the distribution system of 4 assembly [Public Use (See Table 422.1)]. Where sizing flushometer systems, see Section 610.10.	ole shall be permitted to be si ter building supply. The separ e each taken as three-quarter of tures are the nominal (I.D.) pi flow demands, determine the	ate cold water and of the listed total verse size.	hot water fixture un alue of the fixture.	it value for fixtures h
Reduced fixture unit loading for additional hose bibbs is to be a is supplied by a segment of water distribution pipe. The fixture	ased where sizing total buildi branch to each hose bibb shal	ng demand and for I be sized on the b	r pipe sizing where r asis of 2.5 fixture ur	nore than one hose b nits.

WATER SOFTENERS4

Scale Reduction Devices	611.1.2	611.1.2	New Reference location	Accept Change		
611.1.2 Scale Reduction Device	s. Scale reduc	tion devices sha	all comply with IAPMO/ANSI Z601.		1	
Air Gap Discharge	611.2	611.2	New Reference location	Accept Change		
611.2 Air Gap Discharge. Dischardevice that complies with Table 6			nent units shall enter the drainage system PS 65.	through an air gap in a	accordance with Table 60	3.3.1 or an air gap
SIZING OF RESIDENTIAL	611.4	611.4	Updated New Note	Accept Change		

TABLE 611.4 SIZING OF RESIDENTIAL WATER SOFTENERS⁴

REQUIRED SIZE OF SOFTENER CONNECTION (inches)	NUMBER OF BATHROOM GROUPS SERVED ¹
3/4	up to 2 ²
1	up to 43

For SI units: 1 inch = 25 mm

Notes:

- 1 Installation of a kitchen sink and dishwasher, laundry sink, and automatic clothes washer permitted without additional size increase.
- 2 An additional water closet and lavatory permitted.
- 3 Over four bathroom groups, the softener size shall be engineered for the specific installation.
- 4 See also Appendix A, Recommended Rules for Sizing the Water Supply System, and Appendix C, Alternate Plumbing Systems, for alternate methods of sizing water supply systems.

				Adopt with	
Where Required	612.1	612.1	New Reference location	existing	
				amendment	

612.1 Where Required. Where residential sprinkler systems are required in one and two-family dwellings or townhouses, the systems shall be installed by personnel, installer, or both, certified in accordance with ASSE/IAPMO/ANSI Series 7000 in accordance with this section or NFPA 13D. This section shall be considered equivalent to NFPA 13D. Partial residential sprinkler systems shall be permitted to be installed in buildings not required to be equipped with a residential sprinkler system.

DRINKING WATER	TABLE	TADI E 611 1	Updated Code language	Accept Change
TREATMENT UNITS	611.1	IABLE 011.1	Opdated Code language	Accept Change

TABLE 611.1 DRINKING WATER TREATMENT UNITS

APPLICATION	RESID	RESIDENTIAL					
AFFEIGATION	POINT OF USE	POINT OF ENTRY	COMMERCIAL				
Aesthetic Contaminant Reduction (filters)	NSF/ANSI 42	NSF/ANSI 42	ASSE 1087 and NSF/ANSI 42*				
Health Related Contaminant Reduction (filters)	NSF/ANSI 53	NSF/ANSI 53	ASSE 1087 and NSF/ANSI 53*				
Water Softener		NSF/ANSI 44	ASSE 1087				
Ultraviolet Water Treatment	NSF/ANSI 55	NSF/ANSI 55	ASSE 1087				
Reverse Osmosis	NSF/ANSI 58	NSF/ANSI/CAN 61	ASSE 1087				
Distillation	NSF/ANSI 62	NSF/ANSI 62	ASSE 1087				

^{*} Required for commercial modular systems only.

Chapter 7 Sanitary Drainage

MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND VENT PIPING	TABLE 703.2	TABLE 703.2	Updated Code Language	Accept Change			
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TABLE 703.2 MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND VENT PIPING

SIZE OF PIPE (inches)	11/4	11/2	2	3	4	5	6	8	10	12
Maximum Units Drainage Piping ¹ Vertical Horizontal	1 1	2 ^{2, 7} 1 ⁷	16 ³ 8 ³	48 ⁴ 35 ⁴	256 216 ⁵	600 428 ⁵	1380 720 ⁵	3600 2640 ⁵	5600 4680 ⁵	8400 8200 ⁵
Maximum Length Drainage Piping Vertical, (feet) Horizontal (unlimited)	45	65	85	212	300	390	510	750	-	-
Vent Piping Horizontal and Vertical ⁶ Maximum Units Maximum Lengths, (feet)	1 45	8 ³ 60	24 120	84 212	256 300	600 390	1380 510	3600 750	-	-

For SI units: 1 inch = 25 mm, 1 foot = 304.8 mm

Notes:

- 1 Excluding trap arm.
- 2 Except for sinks, urinals, and dishwashers exceeding 1 fixture unit.
- 3 Except for six-unit traps or water closets.
- 4 Not to exceed six water closets or five six-unit traps.
- 5 Based on 1/4 inch per foot (20.8 mm/m) slope. For 1/8 of an inch per foot (10.4 mm/m) slope, multiply horizontal fixture units by a factor of 0.8.
- 6 The diameter of an individual vent shall be not less than 11/4 inches (32 mm) nor less than one-half the diameter of the drain to which it is connected. Fixture unit load values for drainage and vent piping shall be computed from Table 702.1 and Table 702.2. Not to exceed one-third of the total permitted length of a vent shall be permitted to be installed in a horizontal position. Where vents are increased one pipe size for their entire length, the maximum length limitations specified in this table do not apply. This table is in accordance with the requirements of Section 901.3.

7 Up to 8 public layatories are permitted to be installed on a 11/2 inch (40 mm) vertical branch or horizontal sanitary branch sloped at 1/4 inch per foot (20.8 mm/m).

Plastic Pipe to Other Materials	705.10.3	705.10.3	New Reference location in updated code language	Accept Change		
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705.10.3 Plastic Pipe to Other Materials. Where connecting plastic pipe to other types of plastic or other types of piping material; approved listed adapter or transition fittings and listed for the specific transition intended shall be used. Except as provided in Section 705.9.4, PVC and ABS pipe and fittings shall not be solvent welded to any other unlike material.

CLEANOUT MATERIALS FOR DRAIN, WASTE, AND VENT	TABLE 707.2	TABLE 707.2	New Reference location	Accept Change		
TABLE 7072	224 388 9					
Load Rated Cover	(N/A)	707.4.1	New Section added	Accept Change		
707.4.1 Load Rated Cover. Clear General	708.1	ers and top rims 708.1	meant to take loads shall be rated for the Update Code language and requirements	loading in accordance Accept Change	with ASME A112.36.2M	
slope of 1/4 inch per foot (20.8 mi per foot (10.4 mm/m) or 1 percen	m/m) or 2 perc t, when first ap	ent, building dra oproved by the A	1	iameter shall be permit		
Backwater Valves	710.9	710.6	Reference location update	Accept Change		
shall be located where they will be removable cover. Backwater valv shall have noncorrosive bearings during periods of low flows to avo covers shall be bolted type with g	e accessible for es shall compl , seats, and se id screening o asket, and eac	or inspection and by with ASME A1 elf-aligning discs of solids and shall the valve shall be	ay ball valves, unions, motors, compresso d repair and, unless continuously exposed 12.14.1 or IAPMO IGC 305, and have bo ; and shall be constructed to ensure a pos il not restrict capacities or cause excessive are the manufacturer's name cast into the	, shall be enclosed in a dies of cast-iron, plasti- sitive mechanical seal. e turbulence during pe body and the cover.	n masonry pit fitted with a c, copper alloy, or other a Such backwater valves s	an adequately sized approved materials; shall remain open
Alarm	710.9	710.9	Code Language update	Accept Change		
arranged to function alternately in	n normal use a nall have an au	nd independentl Idio and visual a	tically discharged and, wherein a "public u y. Such pumps shall be capable of runnin larm, readily accessible, that signals pum r or "starting" level of the sump.	g continuously in case	of overload or mechanic	al failure of one of the
Private	713.2	713.2	Code Language update	Do Not Adopt		
			ver intended to serve a lot or premises is a nected to a private sewage disposal syste			
Existing Sewers	715.3	715.3	Updated Section and new reference location	Do Not Adopt		
715.3 Existing Sewers. Where p be installed in accordance with Se			ng Jurisdiction, trenchless methods of reh 3.2.	abilitation of existing be	uilding sewer and buildin	g storm sewers shall

Sewer Pipe Lining	(N/A)	715.3.1	New section with specific requirements to piping lining	Do Not Adopt			
715.3.1 Sewer Pipe Lining. For accordance with ASTM F1216,			n-impregnated flexible tubing to line existin r ASTM F3240.	g building sewers and	building storm sewers ins	stallation shall be in	
Sewer Pipe Replacement.	(N/A)	715.3.2	Requirements for sewer pipe trenchless installation	Do Not Adopt			
715.3.2 Sewer Pipe Replacen sewers materials shall be in ac			of polyethylene (PE) pipe using the pipe b	oursting method to repl	ace existing building sew	ers and building storn	n
Slope	718.1	718.1	incorporates fixture unit loading limits from Table 717.1	Do Not Adopt			
arrangement of a building or to have a slope of not less th	structure, to o an 1/8 inch per	btain a slope o	diction and where it is impractical, due f 1/4 inch per foot (20.8 mm/m), piping 4/m) and piping 8 inches (200 mm) and la nit loading shall be in accordance with	l inches (100 mm) tharger shall be permit	rough 6 inches (150 mm) shall be permitted	
arrangement of a building or to have a slope of not less th	structure, to o an 1/8 inch per	btain a slope o	f 1/4 inch per foot (20.8 mm/m), piping 4 /m) and piping 8 inches (200 mm) and la	l inches (100 mm) tharger shall be permit	rough 6 inches (150 mm) shall be permitted	
arrangement of a building or to have a slope of not less th	structure, to o an 1/8 inch per	btain a slope o	f 1/4 inch per foot (20.8 mm/m), piping 4 /m) and piping 8 inches (200 mm) and la nit loading shall be in accordance with	l inches (100 mm) tharger shall be permit	rough 6 inches (150 mm) shall be permitted	
arrangement of a building or to have a slope of not less th per foot (5.2 mm/m). The max Pipe Size and Length 803.3 Pipe Size and Length. I and vent piping. No vent from i	structure, to o an 1/8 inch per cimum and min 803.3	btain a slope of foot (10.4 mm, imum fixture u 803.3 after provided, ping shall comb	f 1/4 inch per foot (20.8 mm/m), piping 4/m) and piping 8 inches (200 mm) and lanit loading shall be in accordance with Chapter 8 Indirect Wastes The update clarifies venting requirements by separating sentences for readability without	Accept Change accordance with other mindirect waste pipir	rough 6 inches (150 mm ted to have a slope of not be a slope of this code ap a shall extend separately) shall be permitted of less than 1/16 inch plicable to drainage to the outside air.	
arrangement of a building or to have a slope of not less th per foot (5.2 mm/m). The max Pipe Size and Length 803.3 Pipe Size and Length. I and vent piping. No vent from i	structure, to o an 1/8 inch per cimum and min 803.3	btain a slope of foot (10.4 mm, imum fixture u 803.3 after provided, ping shall comb	f 1/4 inch per foot (20.8 mm/m), piping 4/m) and piping 8 inches (200 mm) and lanit loading shall be in accordance with Chapter 8 Indirect Wastes The update clarifies venting requirements by separating sentences for readability without changing technical requirements. the size of indirect waste piping shall be in ine with a sewer-connected vent. Vents from the piping shall be in the with a sewer-connected vent.	Accept Change accordance with other mindirect waste pipir	rough 6 inches (150 mm ted to have a slope of not be a slope of this code ap a shall extend separately) shall be permitted of less than 1/16 inch plicable to drainage to the outside air.	
arrangement of a building or to have a slope of not less th per foot (5.2 mm/m). The maximum of the per foot (5.2 mm/m) of the per foot (5.2 mm/m). The maximum of the per foot (5.2 mm/m) of the	structure, to o an 1/8 inch per cimum and min 803.3 803.3 Except as herein indirect waste pi 5 feet (1524 min 807.1 s. Commercial of ixtures, which a	803.3 after provided, ping shall comb m), but less than 807.1 dishwashing ma re equipped wit	f 1/4 inch per foot (20.8 mm/m), piping 4/m) and piping 8 inches (200 mm) and lanit loading shall be in accordance with Chapter 8 Indirect Wastes The update clarifies venting requirements by separating sentences for readability without changing technical requirements. the size of indirect waste piping shall be in ine with a sewer-connected vent. Vents from 15 feet (4572 mm) in length shall be directed.	Accept Change accordance with other indirect waste pipir ctly trapped, but such Do not adopt other appliances, dev	er sections of this code ap g shall extend separately traps need not be vented Not adopt model code change due to conflict with state amendment rices, equipment, or other	plicable to drainage to the outside air. Existing state amendment	h

General	809.1	809.1	Updated requirements on air break	Accept Change	
809.1 General. Drinking for	intains shall be	permitted to be	installed with indirect wastes through an	air break.	
Condensate Control	814.2	814.2	Updated requirements to follow	Accept Change	
manufacturer's installation in	structions. an of corrosion-re	esistant material,	nt or appliance in the event the primary d with a separate drain line, installed bene		

TABLE 814.3 MINIMUM CONDENSATE PIPE SIZE

EQUIPMENT CAPACITY IN TONS OF REFRIGERATION	MINIMUM CONDENSATE PIPE DIAMETER (inches)
Up to 20	3/4
21 – 40	1
41 – 90	11/4
91 – 125	11/2
126 – 250	2

For SI units: 1 ton of refrigerant = 3.52 kW, 1 inch = 25 mm

The size of condensate waste pipes is for one unit or a combination of units, or as recommended by the manufacturer. The capacity of waste pipes assumes a 1/8 inch per foot (10.4 mm/m) or 1 percent slope, with the pipe running threequarters full at the following pipe conditions:

Outside A	Air – 20%	Room Air – 80%		
DB	WB	DB	WB	
90°F	73°F	75°F	62.5°F	

For SI units: °C = (°F-32)/1.8

Condensate drain sizing for other slopes or other conditions shall be approved by the Authority Having Jurisdiction. Air-conditioning waste pipes, 1¼ of an inch (32 mm) and larger in size, shall be constructed of materials specified in Chapter 7. Condensate waste piping less than 1¼ of an inch (32 mm) in size shall be permitted to be PVC, CPVC, PE, PP, copper, or other rigid materials approved by the Authority Having Jurisdiction.

Appliance Condensate Drains	814.4	814.4	Requirements for indirect waist	Do not adopt	Investigate for code change proposal
044444			francindividual condensing application of	0.1	

814.4 Appliance Condensate Drains. Condensate drain lines from individual condensing appliances shall be sized as required by the manufacturer's instructions. Condensate drain lines serving more than one appliance connecting to a common indirect waste pipe shall have the connections to the indirect waste pipe protected by a sanitary waste valve complying with ASME A112.18.8, condensate trap complying with IAPMO IGC 196, or trap with a trap primer.

oint of Discharge	814.5	814.5	Updated code language for discharge on Air condition	Accept Change		
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814.5 Point of Discharge. Air-conditioning condensate waste pipes shall connect indirectly to the drainage system through an air gap or air break to trapped and vented receptors, dry wells, mop sinks, leach pits, or the tailpiece of plumbing fixtures. An individual condensate drain shall be trapped in accordance with the appliance manufacturer's instructions or in accordance with Section 814.4.

Chapter 9 Vents									
Location of Opening	905.5	905.5	Added Exception for water closets	Accept Change					
905.5 Location of Opening. The	vent pipe oper	ning from soil or	waste pipe shall not be below the weir of	f the trap. Exception: \	Vater closets and similar	fixtures.			
Frost or Snow Closure	906.7	906.7	Updated code requirement to 3 inches	Accept Change					

not less than 3 inches (76 mm)) in diameter, but	in no event sma	likely to occur in locations having minimun aller than the required vent pipe. The chan at less than 10 inches (254 mm) above the	nge in diameter shall be	made inside the building	not less than 1 foot
Connections and Size	910.4	910.4	Updating Title, and requirement angle connection	Accept Change		
			nnect to the main line at an angle not exce ed by Chapter 7 of this code, and not less			
Circuit Vent Permitted.	911.1	911.1	Requirement for wall hung water closet update.	Adopt with existing amendment		Revise Existing state amendment
as a drain and a vent from the Exception : Back-outlet and wa	most downstream	n trap arm conn sets shall be pe unnect horizonta	orizontal branch being circuit vented in acception to the most upstream trap arm conformitted to be circuit vented provided that rally to the horizontal circuit vented drain. Chapter 10 Traps and Interceptors	nection to the horizonta	l branch.	
Where Demissed	1001.2	l e	<u>, , , , , , , , , , , , , , , , , , , </u>	Assent Change		
Where Required	1001.2	1001.2	Code language update	Accept Change	shall not apply to fixture	s with integral traps
1001.2 Where Required. Each Not more than one trap shall b separate trap. Each domestic of be permitted to receive the war in no case shall the tailpiece ex	th plumbing fixture be permitted on a to clothes washer are aste from a clothes exceed 24 inches (atories immediate	shall be separa rap arm. Food deach laundry washer set adj 610 mm) in leng ly adjacent to e	Code language update ately trapped by an approved type of liquic waste disposers installed with a set of resi sink shall be connected to a separate and jacent to it. The vertical distance between gth. One trap shall be permitted to serve a ach other and in the same room where the	d seal trap. This section taurant, commercial, or d independent trap, exc a fixture outlet and the a set of not more than t	industrial sinks shall be cept that a trap serving a trap weir shall be as sho nree single compartment	connected to a laundry sink shall also ort as practicable, but sinks or laundry sinks

TABLE 1002.2 HORIZONTAL LENGTHS OF TRAP ARMS

(EXCEPT FOR WATER CLOSETS AND SIMILAR FIXTURES)1, 2, 3

TABLE 1002.2 HORIZONTAL LENGTHS OF TRAP ARMS

(EXCEPT FOR WATER CLOSETS AND SIMILAR FIXTURES)^{1, 2, 3}

TRAP ARM PIPE DIAMETER (inches)	DISTANCE TRAP TO VENT MINIMUM (inches)	LENGTH MAXIMUM (inches)
11/4	21/2	30
11/2	3	42
2	4	60
3	6	72
4	8	120
Exceeding 4	2 x Diameter	120

For SI units: 1 inch = 25.4 mm

Notes:

- 1 Maintain 1/4 inch per foot slope (20.8 mm/m).
- 2 The developed length between the trap of a water closet or similar fixture (measured from the face of the closet flange to the inner edge of the vent) and its vent shall not exceed 6 feet (1829 mm).
- 3 Horizontally wet vented bathtubs, showers and similar fixtures shall be limited to a maximum of 6 feet (1829 mm) for 1½ inch (40 mm) fixture drains and 8 feet (2438 mm) for 2 inch (50 mm) fixture drains, maintaining ¼ inch per foot slope (20.8 mm/m).

Trap Seal Primers	1007.2	1007.2	New Requirements from ASSE	Accept Change	
Trap Coal Trimolo	1001.2	1007.2	Trow requirements from 7.002	Accopt Gliange	

1007.2 Trap Seal Primers. Potable water supply trap seal primer valves shall comply with ASSE 1018. Drainage or electronic design type trap seal primer devices shall comply with ASSE 1044 or IAPMO PS 76.

Where Required 1009.1 1009.1 Reference to new Crea	ted table Accept Change
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1009.1 Where Required. Interceptors (clarifiers) (including grease, oil, sand, solid interceptors, etc.) shall be required by the Authority Having Jurisdiction where 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. A list of acceptable interceptor standards is referenced in Table 1009.1.

APPROVED INTERCEPTORS (CLARIFIERS	(N/A)	TABLE 1009.1	New Created Table	Accept Change		
TADI E 1000 1						

TABLE 1009.1

APPROVED INTERCEPTORS (CLARIFIERS

TABLE 1009.1 APPROVED INTERCEPTORS (CLARIFIERS)

APPLICATION	STANDARD
Fats, Oil, Grease	ASME A112.14.3, ASME A112.14.4,
(FOG)	ASME A112.14.6, CSA B481,
	ANSI/CAN/IAPMO Z1001,
	PDI G-101, PDI G-102
Solid Waste	IAPMO IGC 167
Non-petroleum Oil	ASME A112.14.6, IAPMO PS 80, PDI G-102
Petroleum Oil	ASTM D6104, IAPMO IGC 183, IAPMO IGC 325

General	1014.1	1014.1	Updated Reference location for grease interceptors.	Accept Change		
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1014.1 General. Where it is determined by the Authority Having Jurisdiction that waste pretreatment is required, an approved type of grease interceptor(s) shall comply with ASME A112.14.3, ASME A112.14.4, CSA B481, ANSI/CAN/IAPMO Z1001, PDI G-101, or PDI G-102, and sized in accordance with Section 1014.2.1 or Section 1014.3.6, shall be installed in accordance with the manufacturer's installation instructions to receive the drainage from fixtures or equipment that produce grease-laden waste. Grease-laden waste fixtures shall include, but not be limited to, sinks and drains, such as floor drains, floor sinks, and other fixtures or equipment in serving establishments, such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, 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 systems. A combination of hydromechanical, gravity grease interceptors and engineered systems shall be allowed to meet this code and other applicable requirements of the Authority Having Jurisdiction where space or existing physical constraints of existing buildings necessitate such installations. A grease interceptor shall not be required for individual dwelling units or private living quarters. Water closets, urinals, and other plumbing fixtures conveying human waste shall not drain into or through the grease interceptor.

1014.3.4 Location. Each grease interceptor shall be so installed and connected that it shall be easily accessible for inspection, cleaning, and removal of the intercepted grease. A gravity grease interceptor that complies with ANSI/CAN/IAPMO Z1001 shall not be installed in a building where food is handled. Location of the grease interceptor shall meet the approval of the Authority Having Jurisdiction.

Construction Requirements	1014.3.5	1014.3.5	Updated code language	Accept Change	Ī

1014.3.5 Construction Requirements. 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. When provided, a sample box shall be located at the outlet end of gravity grease interceptors so that the Authority Having Jurisdiction can periodically sample effluent quality.

Interceptors Required	1017.1	1017.1	Updated to separate into another section.	Accept Change			
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1017.1 Interceptors Required. Repair garages and gasoline stations with grease racks or grease pits, and factories that 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. Floor drains in such locations shall be connected directly to oil and flammable liquid interceptors.

Interceptor Design Alternatives	(N/A)	1017.2	New Section	Accept Change		
1017.2 Interceptor Design Alter	natives. Oil in	terceptors shall	comply with IAPMO IGC 183 or be in acc	ordance with Section 1	017.3 through Section 10)17.4.
Interceptor Details	1017.2	1017.3	Updated Code requirements	Accept Change		

1017.3 Interceptor Details. Oil and flammable liquid interceptors shall be in accordance with the following:

- (1) The separation or vapor compartment shall be independently vented to the outer air. Where two or more separation or vapor compartments are used, each shall be vented to the outer air or shall be permitted to connect to a header that is installed at a minimum of 6 inches (152 mm) above the spill line of the lowest floor drain and vented independently to the outer air.
- (2) The minimum size of a flammable vapor vent shall be not less than 2 inches (50 mm), and, where vented through a sidewall, the vent shall be not less than 10 feet (3048 mm) above the adjacent level at an approved location.
- (3) The interceptor shall be vented on the sewer side and shall not connect to a flammable vapor vent. Oil and flammable interceptors shall be provided with gastight cleanout covers that shall be readily accessible.
- (4) The waste line shall be not less than 3 inches (80 mm) in diameter with a full-size cleanout to grade.
- (5) Where an interceptor is provided with an overflow, it shall be provided with an overflow line [not less than 2 inches (50 mm) in diameter] to an approved waste oil tank having a minimum capacity of 550 gallons (2082 L) and meeting the requirements of the Authority Having Jurisdiction.
- (a) The waste oil from the separator shall flow by gravity or shall be pumped to a higher elevation by an automatic pump.
- (b) Pumps shall be adequately sized and accessible.
- (c) Waste oil tanks shall have a 2 inch (50 mm) minimum pump-out connection at grade and an 11/2 inch (40 mm) minimum vent to atmosphere at an approved location not less than 10 feet (3048 mm) above grade.

Design of Interceptors.	1017.2	1017.4	Moved locations and updated code language	Accept Change		
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1017.4 Design of Interceptors. Each manufactured interceptor that is rated shall be stamped or labeled by the manufacturer with an indication of its full discharge rate in gpm (L/s). The following shall apply:

- (1) The full discharge rate to such an interceptor shall be determined at full flow. Each interceptor shall be rated equal to or greater than the incoming flow and shall be provided with an overflow line to an underground tank.
- (2) Interceptors not rated by the manufacturer shall have a depth of not less than 2 feet (610 mm) below the invert of the discharge drain. The outlet opening shall have not less than an 18 inch (457 mm) water seal and shall have a minimum capacity as follows:
- (a) Where not more than three motor vehicles are serviced, stored, or both, interceptors shall have a minimum capacity of 6 cubic feet (0.2 m3), and 1 cubic foot (0.03 m3) of capacity shall be added for each vehicle up to 10 vehicles.
- (b) Above 10 vehicles, the Authority Having Jurisdiction shall determine the size of the interceptor required.
- (c) Where vehicles are serviced and not stored, interceptor capacity shall be based on a net capacity of 1cubic foot (0.03 m3) for each 100 square feet (9.29m2) of the surface to be drained into the interceptor, with a minimum of 6 cubic feet (0.2 m3).

Chapter 11 Storm Drainage

Rain Leaders and C		1101.13.1	1101.13.1	Updated code language	Adopt with existing amendment		To combine UPC and state amendment				
conductor before it				conductors connected to a building sto	orm sewer snall nave a clea	anout installed at the bas	se of the leader of				
				Chapter 12 Fuel Gas Piping							
	This	Chapter is not	adopted pe	r RCW 19.27.031							
	Chapter 13 Health Care Facilities and Medical Gas and Medical Vacuum Systems										
Where Required		1301.4	1301.4	New Reference location	Accept Change						
1301.4 Where Req this chapter. {NFPA		iction and equip	ment require	ements shall be applied only to new cor	nstruction and new equipm	ent, except as modified in	n individual sections of				
Risk Categories		1302.1	1302.1	Updating to include all activities	Accept Change						
1302.1 Risk Catego detailed in this chap			systems or	equipment that are new or altered, shall	I be designed to meet Cate	egory 1 through Category	4 requirements, as				
STANDARD DESIG		TABLE	TABLE	Updated the Standard gauge	Accent Change						
PRESSURES FOR VACUUM SYSTEM		1305.1	1305.1	pressures limits.	Accept Change						
STANDARD DESIGN	GNATION COL TAE IATION COLORS AND OPER. INFPA 98	.ORS AND OPE [NF BLE 1305.1 ATING PRESSURES FOR GAS: TRIBLE 5.1.11]	1305.1 TABLE 13 ERATING PF PA 99: TAB SAND VACUUM SYSTEM	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11]							
STANDARD DESIG	GNATION COL	.ORS AND OPE [NF BLE 1905.1	TABLE 13 ERATING PF PA 99: TAB BAND VACUUM SYSTER EXT)	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11]							
STANDARD DESIGNATION OF THE PROPERTY OF THE PR	SINATION COL TAL INTRO COLORS AND OPER. INFR 98 ABBREVATED NAME Med Air CO2	ORS AND OPE [NF INF	TABLE 13 ERATING PF PA 99: TAB B AND VACUUM SYSTEM EXT) K //white	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s NOARD CAUGE RESSURE 90-55 psi 50-55 psi							
STANDARD DESIGNATION OF STANDA	GNATION COL TAE INTION COLORS AND OPER. INPA 98 ABBEEVIATE ABBEEVIATE Med Air	ORS AND OPE [NF LE 1305.1 ATINO PRESSURES FOR GAS. TABLE 5.11] GACKGROUND'I Yellow/black	TABLE 13 ERATING PF PA 99: TAB BAND VACUUM SYSTEM EXT) Vivilitie	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s REARD GAUGE RESSURE 80-55 psi							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrous oxide	AS SHATION COL TABLE IATION COLORS AND OPER. (NFPA & MARKE Med Air CO ₂ He N ₂ N ₂ O	ORS AND OPE [NF INT	1305.1 TABLE 13 ERATING PF PA 99: TAB AND VACUUM SYSTEM EXT) STA K Vwhite	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s NUMBED CAUGE PRESSURE 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi							
VACUUM SYSTEM STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nirross oxide Oxygen	AS GNATION COL TAR INTERNATION COLORS AND OPER INTERNATION COLORS AND OPER ABBREWATED ABBREWATED CO2 He Ng NgO O2	ORS AND OPE [NF NE 1905.1 NE 1905.1	TABLE 13 ERATING PF PA 99: TAB SANDVACUUM SYSTEM EXT) STA C White	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s signation dauge ressoure 50-55 psi							
STANDARD DESIGN STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrogen	AS SHATION COL TABLE IATION COLORS AND OPER. (NFPA & MARKE Med Air CO ₂ He N ₂ N ₂ O	ORS AND OPE [NF NE 1905.1 NE 1905.1	TABLE 13 ERATING PP PA 99: TAB AND VACUUM SYSTEM EXT) STA K K K K K K K K K K K K K	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s NUMBED CAUGE PRESSURE 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrous Nitrous Oxygen(arbon dioxide mixtures Medical-urgical vacuum Medical-urgical vacuum	AS SHATION COL TAR TAR TAR TAR TAR TAR TAR TA	ORS AND OPE [NF ILE 1305.1 COLORS (BACGROUND') Vellow/black Gray/black or gray Brown/whit Black/white Green/white or whit Green/white or whit	1305.1 TABLE 13 ERATING PF PA 99: TAB B. AND VACUUM SYSTER K. V/white 15 inc	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s schenessure 90-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nimogen Nitrous oxide Oxygen Oxygen Oxygen Medical-surgical vacuum	AS SHATION COL TAL TAL TAL TAL TAL TAL TAL T	ORS AND OPE [NF INF	TABLE 13 TABLE 13 ERATING PF PA 99: TAB STA k white s lsie/green 15 inc. Varies	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s WIDAPO GAUGE PRESSURE 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 10-55 p							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrous oxide Oxygenicarbon dioxide mixtures Medical-surgical vacuum Wasta anesthetic gas disposal Medical-surgical vacuum	AS SHATION COL TABLE IATION COLORS AND OPER. RIFFR & ABBREVIATED MARKE Med Air CO2 He N2 N20 O2 O2/CO2/m% (n = % of CO2 Med Vac WAGD	ORS AND OPE [NF INT	1305.1 TABLE 13 ERATING PP PA 99: TAB B AND VACUUM SYSTEM (White 7 Varies 15 incl 28 for back- 28 for back- 28 for back- 28 for back- 29 for back- 29 for back- 20 for	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s NAMED CAUGE PRESSURE S 5.1.5 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi 50-55 psi with system type							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrous oxide Oxygenicarbon dioxide mixtures Medical-surgical vacuum Wasta anothetic gas disposal Medical-surgical vacuum WAGD combination	AS GNATION COL TAT TAT TAT TAT TAT TAT TO THE ABBREVATED Med Air CO2 He N2 N2O O2 CO2 Med Vac WAGD Med-surg/WAGD	A 1305.1 ORS AND OPE [NF INF IN	1305.1 TABLE 13 ERATING PP PA 99: TAB B AND VACUUM SYSTEM (White 2 2 15 incl 15 incl 2 varies 2 varies 2 let/white 2 let/green 2 let/green 2 let/green 2 let/green 3 let/green 4 let/green 2 let/green 4 let/green 5 let/green 6 let/green 7 varies 8 let/green 8 let/green 9 let/green 9 let/green 10 let/green 11 line	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s 10DARD GAUGE RESSURE 50-55 psi 50-55 psi 50-55 psi 50-55 psi 10-50-55 psi 10-50-55 psi 10-50-56 psi 10-50 inch HgV with system type 10-30 inch HgV							
STANDARD DESIGN STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrogen Nitrous oxide Oxygen/carbon dioxide mixtures Medical-surgical vacuum Waste anesthetic gas disposal Medical-surgical vacuum WaGD combination Other mixtures	AS GNATION COL TAL TAL TAL TAL TAL TAL TAL T	ORS AND OPE [NF INT	1305.1 TABLE 13 ERATING PP PA 99: TAB SAND VACUUM SYSTEM (Nowhite 15 inc Varies 15 inc page for back- for text	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s 10DARD GAUGE RESSURE 50-55 pai 50-55 pai 50-55 pai 50-55 pai 10-50-55 pai 10-50-55 pai 10-50-50 inch HgV With system type 10-30 inch HgV None							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrous oxide Oxygen(carbon dioxide mixtures Medical-surgical vacuum Waste anestheric gas disposal Medical-surgical vacuum WAGD combination Other mixtures Nommedical air and dental air	AS GNATION COL TAT TAT TAT TAT TAT TAT TAT T	ORS AND OPE [NF INT	1305.1 TABLE 13 ERATING PP PA 99: TAB B AND VACUUM SYSTEM (White) (White) (Varies)	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s ***COMPRISANCE ***BOARD GAUGE ***PRESSURE ***Sp-15 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai **Sp-55 pai ***Sp-55 pai **Sp-55							
STANDARD DESIGN STANDARD DESIGN GAS SERVICE Medical air Carbon dioxide Helium Nitrogen Nitrous oxide Oxygen/carbon dioxide mixtures Medical-surgical vacuum Waste anestheric gas disposal Medical-surgical vacuum WACD combination Other mixtures Nonmedical air and dental air Nonmedical air and dental vacuum	AS SNATION COL TAE TAE TAE TAE TAE TAE TAE TA	ORS AND OPE INF LE 1305.1 LE 1305.1 LE 1305.1 ATINO PRESSURES FOR GAS TABLE 5.11] COLORS (MACGROUND' Vellow/black or gray Brown/white Black/white Green/white or whit White/black Violet/white White/black and vio Colors as above; major ground/minor gas Yellow and wi diagonal striperk White and black diagonal striperk	TABLE 13 ERATING PP PA 99: TAB B AND VACUUM SYSTER EXT) STA White 1 Since 1 Varies 1 Varies 1 Soft back- for text tile late triboard black rrboard black	05.1 RESSURES FOR GAS AND VACUUM LE 5.1.11] s s NOARD GAUGE RESSURE 50-55 pai 50-55 pai 50-55 pai 50-55 pai 50-55 pai 10-030 inch HgV with system type to 30 inch HgV None None							

Pressure Relief Valves	1308.2	1308.2	They added size requirement for note 5, and clarified code language on note 6	Accept Change		
1308.2 Pressure Relief Valve shall meet the following requir (1) They shall be of brass, bro	ements:		n.			
(2) They shall be designed for (3) They shall have a relief pre portion of the system being profession of the system being profession of the system being profession of the permitted to be diffused locally (5) They shall have a vent disc (6) Where two or more relief v sectional area of all relief valve (7) They shall not discharge in	the specific gas s assure setting not obtected. e outside of the bu y by means that wi charge line that is alves discharge in e vent discharge li to locations creati rge terminal turne	ervice. higher than the ilding, except th ill not restrict the not smaller than to a common ve nes served. ng potential haz d down and scr	maximum allowable working pressure (Mat relief valves for compressed air system of flow. In the size of the relief valve outlet or 3/4 NF ent line, the internal cross-sectional area of tards. Beened to prevent the entry of rain, snow, of the relief valve outlet or 3/4 NF ent line, the internal cross-sectional area of tards.	ns having less than 300 PS (20 mm), whichever of the common line sha	00 cubic feet (84 950 L) a	at STP shall be

1309.6 Supply Air Quality. The supply air to the concentrator(s) shall be of a quality to ensure the oxygen concentrator unit can produce oxygen complying with Section 1309.1 and shall not be subject to normally anticipated contamination (e.g., vehicle or other exhausts, gas leakage, discharge from vents, flooding). [NFPA 99:5.1.3.9.1.6]

lectrical Components	1309.7	1309.7	Updated Code Language	Accept Change		
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1309.7 Electrical Components. The oxygen concentrator supply unit and any associated electrical equipment shall be provided with, at a minimum, the following electrical components:

- (1) Either a disconnect switch for each major electrical component or a single disconnect that deactivates all electrical components in the concentrator unit.
- (2) Motor starting devices with overload protection for any component with an electrical motor over 2 hp (1.5 kW). [NFPA 99:5.1.3.9.1.7]

Location	1311.4	1311.4	Adding WAGD discharge to the requirement	Accept Change		
vents, vacuum and WAGD discha (2) The medical air intake shall be	located a mining rges, or areas located a mini	num of 25 feet (that can collect mum of 20 feet	7620 mm) from ventilating system exhaus vehicular exhausts or other noxious fund	es.	,	
Vacuum Filtration	1312.4	1312.4	Putting in information about ring pumps, Upgrading efficiency to .3 from .03	Accept Change		
(2) Filtration shall be located on th (3) Filters shall be efficient to 0.3 (4) Filtration shall be sized for 100 (5) It shall be permitted to group n (6) The system shall be provided opermitting the filters to be isolated (7) A means shall be available to a (8) A vacuum relief petcock shall I (9) Filter elements and canisters s	te patient side and 99.97 per percent of the nultiple filters in with isolation v without shuttinallow the user to per provided to shall be permitted or filter bundle	of the vacuum preent HEPA or peak calculate to bundles to a alves on the song off flow to the to observe any allow vacuum to ed to be constructed to be isolated.	better, per DOE-STD-3020. Ind demand while one filter or filter bundle in the tender of the tender o	is isolated. I isolation valves on the Iter replacement. the manufacturer.		
Multiple Pumps	1313.5	1313.5	Code language update	Accept Change		
1313.5 Multiple Pumps. Vacuum	exhausts from	multiple pump	s shall be permitted to be joined together	to one common exhau	st where the following co	nditions are met:
(1) The common exhaust is sized	to minimize ba	ck pressure in	accordance with the pump manufacturer's	s recommendations.		
(2) Each pump can be isolated by flow of exhaust air into the room. [flange, or tube cap to prevent open exha	ust piping when the pu	mp(s) is removed for ser	vice from consequent
Valve Types	1314.5	1314.5	Referenced updated table, and added 2 new conditions	Accept Change		

- 1314.5 Valve Types. New or replacement valves shall be permitted to be of any type as long as they meet the following conditions:

 (1) They have a minimum Cv factor in accordance with Table 1314.5(1) or Table 1314.5(2).

 (2) They use a quarter turn to off.

 (3) They are constructed of materials suitable for the service.

 (4) They are provided with copper tube extensions by the manufacturer for brazing or with corrugated medical tubing (CMT) fittings.

 (5) They indicate to the operator if the valve is open or closed.

 (6) They permit in-line serviceability.

 (7) They are cleaned for oxygen service by the manufacturer if used for any positive-pressure service.

 (8) They have threaded purge ports on the patient side and the source side.

 (9) They have a minimum working pressure equal to or greater than the relief valve protecting the piping system on which the valve is installed for any positive-pressure service. [NFPA 99:5.1.4.1.6]

POSITIVE PRESSURE GASES	TABLE 1314.5(1)	TABLE 1314.5(1)	Updated title	Accept Change	

TABLE 1314.5(1)

POSITIVE PRESSURE GASES [NFPA 99: TABLE 5.1.4.1.6(a)]

VALVE SIZE (inch)	MINIMUM Cv (full open)
1/2	17
3/4	31
1	60
11/4	110
11/2	169
2	357
21/2	390
3	912
4	1837

For SI units: 1 inch = 25.4 mm

VACUUM AND WAGD	(N/A)	TABLE 1314.5(2)	New table added	Accept Change	

TABLE 1314.5(2) VACUUM AND WAGD IFPA 99:TABLE 5.1.4.1.6(b)]

VALVE SIZE (inch)	MINIMUM Cv (full open)
1/2	17
3/4	31
1	60
11/4	110
11/2	169
2	357
21/2	196
3	302
4	600
5	1022
6	1579
8	3136

For SI units: 1 inch = 25.4 mm

Readily Accessible	1314.10.1	1314.10.1	Updated code language, and added a new requirement	Accept Change			
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1314.10.1 Readily Accessible. A zone valve in each medical gas or vacuum line shall be provided for each Category 1 space and anesthetizing location for moderate sedation, deep sedation, or general anesthesia specific for the occupancy, and shall be located as follows:

- (1) They are installed immediately outside the area controlled.
- (2) They are installed where they are visible and accessible at all times. [NFPA 99:5.1.4.6.2]

Category 1	1317.1	1317.1	Updated code language	Accept Change	

1317.1 Category 1. All master, area, and local alarm systems used for medical gas and vacuum systems shall include the following:

- (1) Separate visual indicators for each condition monitored, except as permitted in Section 1317.1.2 for local alarms that are displayed on master alarm panels.
- (2) Visual indicators that remain in alarm until the situation that has caused the alarm is resolved.
- (3) Cancelable audible indication of each alarm condition that produces a sound with a minimum level of 80 dBA at 3 feet (914 mm).
- (4) Means to indicate a lamp or LED failure and audible failure.
- (5) Visual and audible indication that the communication with an alarm-initiating device is disconnected.
- (6) Labeling of each indicator, indicating the condition monitored.
- (7) Labeling of each alarm panel for its area of surveillance.
- (8) Reinitiating of the audible signal if another alarm condition occurs while the audible alarm is silenced.
- (9) Power for master alarms, area alarms, sensors, and switches from the life safety branch of the essential electrical system as described in NFPA 99.
- (10) Power for local alarms, dew point sensors, and carbon monoxide sensors permitted to be from the same essential electrical branch as is used to power the air compressor system.
- (11) Where used for communications, wiring from switches or sensors that is supervised or protected as required by NFPA 70 for life safety and critical branches circuits in which protection is any of the following types:
- (a) Conduit
- (b) Free air
- (c) Wire
- (d) Cable tray

(e) Raceways					
• •	at do not use ele	ctrical wiring fo	r signal transmission and are supervis	sed such that failure of com	nmunication initiates an alarm.
. ,		•	ne labeling of alarms, where room nur		
` ,	,	,	conds (e.g., during generator start-up	ū	· ·
• •	•		nd accessible for service and testing.	, , ,	io or requiring mandar roots.
Medical Vacuum Systems	1320.2.1	1320.2.1	Updated to add WAGD	Accept Change	
			'		have brough connections made value
	d extruded teeb	ranch connection	ons that are formed in accordance with		o have branch connections made using estructions. Such branch connections shall be
Cut Ends	1321.7.2	1321.7.2	Updated code language	Accept Change	
1321.7.2 Cut Ends. The cut en	ds of the tube sh	all be rolled sm	nooth or deburred with a sharp, clean	deburring tool, taking care	to prevent chips from entering the tube.
[NFPA 99:5.1.10.4.2.3]			,,,,,,,,,,,	3 · · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , , , ,
On-Site Recleaning	1321.8.7	1321.8.7	Updated code language	Accept Change	
					service by the manufacturer, but that became
solution, such as sodium carbot water, and thoroughly rinsing th section, provided that they are i	nate or trisodium em with clean, h n accordance w	phosphate, us ot, potable wat th the mandato	ing a solution of 1 pound (0.5 kg) of so er. Other aqueous cleaning solutions s ry requirements of CGA G-4.1. [NFPA	odium carbonate or trisodius shall be permitted to be us 199:5.1.10.4.3.10,5.1.10.4.	urior surfaces with a clean, hot water–alkaline um phosphate to 3 gallons (11 L) of potable ed for on-site recleaning permitted in this 3.11]
Axially Swaged Fittings.	1322.4	1322.4	Updated code language	Accept Change	
					Pa) and able to withstand a temperature of inless steel tube. Axially swaged fittings shall t
			acturer's instructions. [NFPA 99:5.1.10		illiess steel tube. Axially swaged littings shall t
Qualifications of Installers	1323.10	1323.10	Updated reference location	Accept Change	
					ent technicians who are experienced in
					m piped distribution systems, all appurtenant ncluding permanently installed bulk source
			ISI 6010. [NFPA 99:5.1.10.11.10.1, 5.		ricidaling permanently installed bulk source
Pipe Labeling	1323.13.1	1323.13.1	Updated code language	Accept Change	
1323.13.1 Pipe Labeling. Pipir include the following: (1) Name of the gas or vacuum	•	, ,	,	patient medical gas, the mo	edical support gas, or the vacuum system and
(2) Gas or vacuum system colo					
Pipe Pressure Labeling	1323.13.2	1323.13.2	Updated Title and Reference location	Accept Change	
1323.13.2 Pipe Pressure Labe	1323.13.2 ling. Where pos	itive pressure g	location as piping systems operate at pressure		gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe operating pressure in addition to	1323.13.2 ling. Where pos	itive pressure g	location as piping systems operate at pressure		gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe	1323.13.2 ling. Where pos	itive pressure g	location as piping systems operate at pressure		gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe operating pressure in addition to Identification of Shutoff	1323.13.2 ling. Where pos the name of th 1323.14	itive pressure ge gas shall be la	location as piping systems operate at pressure abeled. [NFPA 99:5.1.11.1.2] Added shutoff requirements	es other than the standard	gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe operating pressure in addition to Identification of Shutoff Valves 1323.14 Identification of Shut (1) Name or chemical symbol for (2) Gas or vacuum system colo (3) Room or areas served	1323.13.2 ling. Where pose the name of the 1323.14 off Valves. Shurer the specific mer code in accord	itive pressure ge gas shall be la 1323.14 toff valves shall edical gas or value with Table	location las piping systems operate at pressure abeled. [NFPA 99:5.1.11.1.2] Added shutoff requirements be identified with the following: cuum system 1305.1	es other than the standard	gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe operating pressure in addition to Identification of Shutoff Valves 1323.14 Identification of Shut (1) Name or chemical symbol fc (2) Gas or vacuum system colo (3) Room or areas served (4) Caution to not close or open	1323.13.2 ling. Where pose the name of the 1323.14 off Valves. Shurer the specific mer code in accord	ititive pressure ge gas shall be la 1323.14 toff valves shall edical gas or va ance with Table of in emergency	location as piping systems operate at pressure abeled. [NFPA 99:5.1.11.1.2] Added shutoff requirements be identified with the following: cuum system a 1305.1 [NFPA 99:5.1.11.2.1]	Accept Change	gauge pressure in Table 1305.1, the
1323.13.2 Pipe Pressure Labe operating pressure in addition to Identification of Shutoff Valves 1323.14 Identification of Shut (1) Name or chemical symbol for (2) Gas or vacuum system colo (3) Room or areas served	1323.13.2 lling. Where poso the name of the 1323.14 off Valves. Shur or the specific mer code in accord the valve excep 1323.14.3	tin emergency 1323.14.3	location as piping systems operate at pressure abeled. [NFPA 99:5.1.11.1.2] Added shutoff requirements be identified with the following: cuum system 1305.1 [NFPA 99:5.1.11.2.1] Updated code language	es other than the standard	gauge pressure in Table 1305.1, the

Identification	1323.15	1323.15	Update to medical gas, and table requirements	Accept Change		
following:(1) Name of the gas on 2) Gas or vacuum system color shall include a warning not to us bsi (345 kPato 380 kPa) or a ga	r vacuum syster r code in accord se the outlet for luge pressure of	n or the chemic ance with Table ventilating patie f 160 psi to 185	ified as to the name or chemical symbol f al symbol in accordance with Table 1305 è 1305.1 In sleep labs, where the outlet is ents. Where medical gas systems operate psi (1103kPa to 1275 kPa) for nitrogen, t	.1 downstream of a flow at pressures other tha he station outlet identif	control device, the standard gauge	ation outlet identification
hall include the nonstandard o	perating pressur	1324.5.4.1	the name of the gas. [NFPA 99:5.1.11.3. Updated code language and reference location	1 – 5.1.11.3.2] Accept Change		
324.5.4.1 Time Frame for Testomponents. [NFPA 99:5.1.12.2		Il be conducted	after the final installation of station outlet	valve bodies, faceplate	es, and all other distri	bution system
Conclusion of Test	1324.5.4.5	1324.5.4.5	Updated length of testing	Accept Change		
1324.5.4.5 Conclusion of Test except that attributed to specific			test shall not exceed 0.5 percent of the size. [NFPA 99:5.1.12.2.6.5]		0.3 psi (2 kPa) startin	g at 60 psig (414 kPa)]
Proof of Testing	1324.5.4.7	1324.5.4.7	Updated Reference location	Accept Change		
			diction or its designee. A form indicating through Section 1324.5.11. [NFPA 99:5.] Update on reference to the standard code language		periormed and witnes	seu snail be provided to
			test shall not exceed 0.5 percent of the sabient temperature. [NFPA 99:5.1.12.2.7.		0.125 inch (0.3 mm) H	IgV starting at 25 inches
nspection Qualification	1324.5.6.2	1324.5.6.2	Update on reference location	Accept Change		
			ducted by a party technically competent a //IAPMO/ANSI 6020, or ASSE/IAPMO/AN			nd vacuum pipeline
Inspections	1324.5.6.5	1324.5.6.5	Update on reference location	Accept Change		
6030 verifier, or the Authority Hapfithe tests required in Section	aving Jurisdictio 1324.5.7 throug	n or its designe h Section 1324.	y the installing contractor shall be witness e. A form indicating that this test has bee 5.11. The presence and correctness of la . [NFPA 99:5.1.12.3.2 –5.1.12.3.2.2]	n performed and witne	ssed shall be provide	d to the verifier at the star
Approved Tester	1324.5.7.2	1324.5.7.2	Update on reference location	Accept Change		
meeting the requirements of AS	SE/IAPMO/ANS 5.1.12.4.1.5] Wh	SI 6030, except nere systems ha	party technically competent and experier as required by Section 1324.5.7.3. [NFP/ave not been installed by inhouse personr.4.1.6]	A 99:5.1.12.4.1.3] Testi	ing shall be performed	d by a party other than the
Cryogenic Fluid Testing	1324.5.7.3	1324.5.7.3	Update on reference location	Accept Change		
			fluid central supply system shall be cond		cally competent and e	experienced in the field of
cryogenic fluid systems and me	eting the require	ements of ASSE	I/IAPMO/ANSI 6035, in accordance with	the mandatory requirer	nents in CGA M-1. IN	FPA 99:5.1.12.4.1.41
cryogenic fluid systems and me General	eting the require	ments of ASSE	Update on code language	Accept Change	nents in CGA M-1. [N	FPA 99:5.1.12.4.1.4]

(1) Only moderate sedation (as d be permitted.(2) The loss of the piped gas or p	lefined in Chap	oter 2), minimal systems is likely	m requirements shall be permitted when sedation (as defined in Chapter 2); or n to cause minor injury to patients, staff, and for Category 2 patient care space as	o sedation is performed. or visitors.	Deep sedation and gen	eral anesthesia shall not
Warning Systems	1325.10	1325.10	Updated title	Accept Change		
required in Section 1317.0, excep (1) Warning systems shall be per (2) The alarm panel shall be loca	pt as follows: mitted to be a ted in an area	single alarm pa of continuous s	Category 2 systems shall provide the nanel. Surveillance while the facility is in operation the source equipment with a pressure	on.		
Category 2 Distribution	1325.11	1325.11	Updated code language	Accept Change		
1325.11 Category 2 Distribution	n. Category 2 s	systems shall c	omply with Section 1318.0 through Sect	ion 1323.12.[NFPA 99:5	.2.10]	
Performance Criteria and Testing	1325.13	1325.13	Updated to include WAGD	Accept Change		
1325.13 Performance Criteria a	nd Testing —	Gas, Medical-	Surgical Vacuum, and WAGD. Category	y 2 systems shall comply	with Section 1324.0. [N	FPA 99:5.2.12]
General	1326.1	1326.1	Update to requirement 1	Accept Change		•
			to cause injury to patients, staff, or visit Category 3 patient care rooms as defin Updated two include 8 new requirements			
1326.3 Medical Air Supply Syst (1) Gas cylinder or cryogenic liqu (2) Oxygen concentrator supply u (3) Cylinder manifolds for gas cyl (4) Manifolds for cryogenic liquid (5) Cryogenic fluid central supply (6) Medical air compressor syster (7) Proportioning air systems in at (8) Medical-surgical vacuum syst (9) Waste anesthetic gas dispose (10) Instrument air compressor systems (11) Instrument air compressor systems (12) Instrument air compressor systems (13) Instrument air compressor systems (14) Instrument air compressor systems (15) Instrument air compressor systems (16) Instrument air compressor systems (17) Instrument air compressor systems (18) Instrument air compresso	aid container he units in accorda linders in accord containers in a systems in ac ms in accordana accordance with tems in accordanal systems (WA	aders in accordance with NFP/dance with NFP/dance with NFAccordance with Ince with NFPA 99. ance with of NFAGDs) in accord	oly systems shall be permitted to consist dance with NFPA 99. A 99. PA 99. INFPA 99. NFPA 99. 99. PA 99. dance with NFPA 99.	of the following:		
Medical–Surgical Vacuum Systems	1326.4	1326.4	Update to code requirements and NFPA location	Accept Change		
1326.4 Medical-Surgical Vacuu except as follows: (1) Medical-surgical vacuum sys (2) The facility staff shall develop	tems shall be p	permitted to be plan to deal w	ems shall comply with Section 1307.3 th			ugh Section 1313.5,
Warning Systems	1326.8	1326.8	Updated to 1st requirement and new NFPA location	Accept Change		
			Hew NFFA location	-		

1326.8 Warning Systems. Warning systems associated with Category 3 systems shall provide the master, area, and local alarm functions of a Category 1 system as required in Section 1317.0. except as follows: (1) Warning systems shall be permitted to be a single alarm panel (i.e., a combination master/area alarm panel). (2) The alarm panel shall be located in an area of continuous surveillance while the facility is in operation. (3) Pressure and vacuum switches/sensors shall be mounted at the source equipment with a pressure indicator at the master alarm panel. (4) Electrical power for warning systems shall be in accordance with Section 6.6 of NFPA 99 for Category 3 and Category 4 spaces. [NFPA 99:5.3.9] **Emergency Shutoff Valves** 1327.2 1327.2 Update to include all category 2 **Accept Change** (Oxygen and Nitrous Oxide 1327.2 Emergency Shutoff Valves (Oxygen and Nitrous Oxide). (1) All Category 2 medical gas systems shall have an emergency shutoff valve accessible from all use-point locations in an emergency. (2) Where a central medical gas supply system supplies two treatment facilities, each facility shall be provided with an emergency shutoff valve located in that treatment facility so as to be accessible from all use-point locations in an emergency. (3) Emergency shutoff valves shall be labeled to indicate the gas controlled by the shutoff valve and shall shut off only the gas to the treatment facility that they serve. (4) A remotely activated shutoff valve at a gas supply manifold shall not be used for emergency shutoff. For clinical purposes, such a remote valve actuator shall not fail-close in the event of loss of electric power. Where remote actuators are the type that fail-open, it shall be mandatory that cylinder shutoff valves be closed whenever the system is not in use. [NFPA 99:15.4.2.6.1 - 15.4.2.6.4.2] **Chapter 14 Firestop Protection** State Does Not Adopt **Chapter 15 Alternative Water Sources for Nonpotable Applications** Minimum Water Quality 1501.7 1501.7 **Accept Change** Update to reference location Requirements 1501.7 Minimum Water Quality Requirements. The minimum water quality for alternate water source systems shall meet the applicable water quality requirements for the intended application as determined by the Authority Having Jurisdiction. In the absence of water quality requirements, for on-site treated nonpotable systems, the water quality requirements of IAPMO IGC 324 or NSF/ANSI 350 shall apply. Exception: Water treatment is not required for gray water used for subsurface irrigation. 1502.4 1502.4 **Accept Change** Separation Requirements Updated code language 1502.4 Separation Requirements. Underground alternate water source service piping other than gray water shall be separated from the building sewer in accordance with this code. Pipes carrying treated nonpotable water shall be permitted to be run or laid in the same trench as potable water pipes with a 12 inch (305 mm) minimum vertical and horizontal separation where both pipe materials are approved for use within a building. Where horizontal piping materials do not comply with this requirement, the minimum separation shall be increased to 60 inches (1524 mm). The potable water piping shall be installed at an elevation above the treated nonpotable water piping. New Section Water Pressure 1505.5 1505.5 Accept Change 1505.5 Water Pressure. Reclaimed (recycled) water systems supplying water to water closets, urinals, and trap primers shall be capable of delivering not less than 15 pounds-force per square inch (psi) (103 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in the reclaimed water supply system within the building exceeds 80 psi (552 kPa), a pressure reducing valve reducing the pressure to 80 psi (552 kPa) or less to water outlets in the building shall be installed. Water Pressure 1506.5 1506.5 **Accept Change** New Section 1506.5 Water Pressure. On-site treated non-potable water systems supplying water to water closets, urinals, and trap primers shall be capable of delivering not less than 15 pounds-force per square inch (psi) (103 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in the on-site treated non-potable water supply system within the building exceeds 80 psi (552 kPa), a pressure reducing valve reducing the pressure to 80 psi (552 kPa) or less to water outlets in the building shall be installed. On-Site Treated Non-potable Update to code and new Reference 1506.8 1506.8 Accept Change Water Devices and Systems location 1506.8 On-Site Treated Non-potable Water Devices and Systems. Devices or equipment used to treat on-site treated nonpotable water to maintain the minimum water quality requirements determined by the Authority Having Jurisdiction shall be listed and labeled (third-party certified) by a listing agency (accredited conformity assessment body) or approved for the intended application. Devices or equipment used to treat on-site treated nonpotable water for use in the water closet and urinal flushing, surface irrigation, and similar applications shall comply with IAPMO IGC 324, NSF/ANSI 350 or approved by the Authority Having Jurisdiction.

General	1602.1	1602.1	New Reference location	Accept Change		
floor drains and floor sinks, irr	rigation, industrial p	rocesses, wate	epair of rainwater catchments systems int r features, cooling tower makeup and oth poftops shall comply with ARCSA/ASPE/	er uses shall be approv		
Rainwater Catchment Collection Surfaces	1603.4	1603.3	Moved Location	Accept Change		
1603.3 Rainwater Catchmen	t Collection Surfa	ices. Rainwate	r shall be collected from roof surfaces or	other manmade, above	ground collection surface	es.
Other Surfaces.	1603.4.1	1603.3.1	Moved Location	Accept Change		
			urface water runoff, vehicular parking sur water systems in Section 1506.0.	faces, or manmade sui	rfaces at or below grade	shall be in acco
Prohibited Discharges	1603.4.2	1603.3.2	Moved Location	Accept Change		
Prohibited Discharges	ges. Overflows and	d bleed-off pipe	s from roof-mounted equipment and appl		rge onto roof surfaces th	at are intended
Prohibited Discharges 1603.3.2 Prohibited Dischar	ges. Overflows and	d bleed-off pipe	s from roof-mounted equipment and appl		rge onto roof surfaces th	at are intended

MINIMUM WATER	QUALITY	TABLE 1603.5	TABLE 1603.4	Moved Location	Accept Change		
MININ	TABLE 1603.4						
APPLICATION	MINIMUM TREATMENT	MINIMUM WATER QUALITY					
Car washing	Debris excluder or other approved means in accordance with Sec- tion 1603.17, and 100 microns in accordance with Section 1603.18 for drip irrigation.	N/A					
Subsurface and drip irrigation	Debris excluder or other approved means in accordance with Sec- tion 1603.17, and 100 microns in accordance with Section 1603.18 for drip irrigation.	N/A					
Spray irrigation where the maximum storage volume is less than 360 gallons	Debris excluder or other approved means in accordance with Section 1603.17, and disinfec- tion in accordance with Section 1603.15.	N/A					
Spray irrigation where the maximum storage volume is equal to or more than 360 gallons	Debris excluder or other approved means in accordance with Sec- tion 1603.17.	and Turbidity: < 10 NTU					
Urinal and water closet flushing, clothes wash- ing, and trap priming	Debris excluder or other approved means in accordance with Section 1603.17, and 100 microns in accordance with Section 1603.18.	coli: < 100 CFU/100 mL,					
Ornamental fountains and other water features	Debris excluder or other approved means in accordance with Sec- tion 1603.17.						
Cooling tower make-up water	approved means in accordance with Section 1603.17, and 100 microns in accordance with Section 1603.18.	coli: < 100 CFU/100 mL,					
For SI units: 1 micron = 1 μ		1602.6	1602.5	New Deference leasting	Assent Charter		T
Rainwater Storage		1603.6 Rainwater sto	1603.5	New Reference location all comply with IAPMO/ANSI Z1	Accept Change	nce with Section 1603.6 t	hrough Section
1603.12.	otorage ranks.		nago tarino on	an comply with the Monardor 21	502 and be instance in decordar	100 11.111 00011011 1000.01	ough occilon
Location		1603.7	1603.6	Moved Location	Accept Change		

Above Grade	1603.8	1603.7	Moved Location	Accept Change		
	essible location	to allow for ins	n opaque material, approved for aboveg pection and cleaning. The tank shall be			
Below Grade	1603.9	1603.8	Moved Location	Accept Change		
capable of supporting an earth loa ainwater tanks installed undergro I inches (102 mm) above the surr	ad of not less thound shall be prounding grade	nan 300 pounds rovided with ma . The surroundi	grade shall be structurally designed to w per square foot (lb/ft2) (1465 kg/m2) w nholes. The manhole opening shall be ng grade shall be sloped away from the round where empty. The combined weig	here the tank is designe not less than 20 inches manhole. Underground	ed for underground install (508 mm) in diameter and tanks shall be ballasted,	ation. Below grade d located not less thar anchored, or
rainage and Overflow	1603.10	1603.9	Moved Location	Accept Change		
alve. The overflow outlet shall dis	scharge in acc	ordance with thi	be provided with a means of draining ar s code for storm drainage systems. Wh ackwater valve or other approved methor	ere discharging to the s		
verflow Outlet Size	1603.10.1	1603.9.1	Moved Location	Accept Change		
603.9.1 Overflow Outlet Size. Trea of inflow pipes.	The overflow ou	ıtlet shall be siz	ed to accommodate the flow of the rain	vater entering the tank a	and not less than the agg	regate cross-sectiona
pening and Access rotection	1603.11	1603.10	Moved Location	Accept Change		
. •			nings shall be protected to prevent the eall be secured to prevent tampering and	,	*	
larking	1603.12	1603.11	Moved Location	Accept Change		
			d with the capacity and the language: "Nollowing language: "DANGER-CONFINE		ATER." Where openings a	are provided to allow a
torage Tank Venting	1603.13	1603.12	Moved Location			
hall extend from the top of the ta	nk and termina	te not less than	or overflow piping is not provided or is of 6 inches (152 mm) above grade and sl 2.4mm) mesh screen to prevent the ent	nall be not less than 11/2	2 inches (40 mm) in diam	
Pumps	1603.14	1603.13	Moved Location	Accept Change		
ot less than 15 pounds-force per	square inch (pexceeds 80 ps	osi) (103 kPa) re	shall be listed. Pumps supplying water to esidual pressure at the highest and mos ressure reducing valve reducing the pre	t remote outlet served.	Where the water pressure	e in the rainwater
Roof Drains	1603.15	1603.14	Moved Location	Accept Change		
603.14 Roof Drains. Primary an	nd secondary ro	oof drains, cond	uctors, leaders, and gutters shall be des	signed and installed in a	accordance with this code	

Equipment	1603.16	1603.15	Moved Location	Accept Change		
				ater to maintain the minimum wa (accredited conformity assessme		
Freeze Protection	1603.17	1603.16	Moved Location	Accept Change		
1603.16 Freeze Protection. Tan	nks and piping in	stalled in locat	ions subject to freezing shall be	provided with an approved mea	ns of freeze protecti	on.
Debris Removal.	1603.18	1603.17	Moved Location	Accept Change		
					roved means to prev	ent the accumulation of
eaves, needles, other debris and n accordance with manufacturer	d sediment from 's installation ins	entering the st structions.	torage tank. Devices or method	s used to remove debris or sedir		
eaves, needles, other debris and n accordance with manufacturer	d sediment from	entering the st				
1603.17 Debris Removal. The releaves, needles, other debris and in accordance with manufacturer Required Filters 1603.18 Required Filters. A filted trap primers, and drip irrigation second Gutters	d sediment from sinstallation installation i	entering the st structions.	Moved Location	s used to remove debris or sedir	nent shall be access	ible and sized and installe
eaves, needles, other debris and n accordance with manufacturer Required Filters 1603.18 Required Filters. A filter primers, and drip irrigation s	d sediment from sinstallation installation i	entering the statructions. 1603.18 passage of pa	Moved Location Moved Location Moved Location Moved Location	Accept Change Accept Change Accept Change Accept Change	nent shall be access	ible and sized and installe

Chapter 17 Referenced Standards

The following standards were **updated**:

REFERENCED STANDARDS	TABLE	TABLE	Updated Reference standard location	Accept Change	Existing WAC and
	1701.1	1701.1			state amendment

TABLE 1701.1 REFERENCED STANDARDS

TABLE 1701.1 REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ARCSA			
ARCSA/ASPE/ANSI 63- 2020	Rainwater Catchment Systems	Miscellaneous	1602.1
ASME			
ASME A112.1.2-2012 (R2017)	Air Gaps in Plumbing Systems (For Plumbing Fixtures and Water-Connected Receptors)	Fittings	Table 603.2
ASME A112.1.3-2000 (R2019)	Air Gap Fittings for Use with Plumbing Fixtures, Appliances, and Appurtenances	Fittings	Table 603.2
ASME A112.3.1-2007 (R2017)	Stainless Steel Drainage Systems for Sanitary DWV, Storm, and Vacuum Applications, Above- and Below-Ground	Piping	418.1, Table 701.2, 705.7.2, 1102.1
ASME A112.3.4-2018/CSA B45.9-2018	Macerating Toilet Systems and Waste-Pumping Systems for Plumbing Fixtures	Fixtures	710.13
ASME A112.4.1-2009 (R2019)	Water Heater Relief Valve Drain Tubes	Appliances	608.5(2)
ASME A112.4.2-2021/CSA B45.16-2021	Personal Hygiene Devices for Water Closets	Fixtures	411.4
ASME A112.4.4-2017	Plastic Push-Fit Drain, Waste, and Vent (DWV) Fittings	Fittings	Table 701.2
ASME A112.4.14- 2017/CSA B125.14-2017	Manually Operated Valves for Use in Plumbing Systems	Valves	606.1
ASME A112.6.1M-1997 (R2017)	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use	Fixtures	402.4
ASME A112.6.2-2017	Framing-Affixed Supports (Carriers) for Off-the-Floor Plumbing Fixtures	Fixtures	402.4
ASME A112.6.3-2019	Floor and Trench Drains	Fixtures	418.1
ASME A112.6.4-2003 (R2012)	Roof, Deck, and Balcony Drains	Fixtures	1102.1
ASME A112.6.7-2010 (R2019)	Sanitary Floor Sinks	Fixtures	421.1
ASME A112.6.9-2005 (R2019)	Siphonic Roof Drains	DWV Components	1106.3
ASME A112.14.1-2003 (R2017)	Backwater Valves	Valves	710.6
ASME A112.14.3-2018	Hydromechanical Grease Interceptors	Fixtures	1014.1, Table 1009.1
ASME A112.14.4-2001 (R2017)	Grease Removal Devices	Fixtures	1014.1, Table 1009.1
ASME A112.14.6-2010 (R2019)	FOG (Fats, Oils, and Greases) Disposal Systems	Fixtures	1015.2, Table 1009.1
ASME A112.18.1- 2018/CSA B125.1-2018	Plumbing Supply Fittings	Fittings	408.4, 417.1, 417.2, 417.3, 417.4, 417.6, 603.5.20

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.18.2- 2020/CSA B125.2-2020	Plumbing Waste Fittings	Fittings	404.1, 408.5
ASME A112.18.3-2002 (R2017)	Backflow Protection Devices and Systems in Plumbing Fixture Fittings	Backflow Protection	417.3, 417.4
ASME A112.18.6-2017/ CSA B125.6-2017 (R2021)	Flexible Water Connectors	Piping	604.5, 604.13
ASME A112.18.8-2020	Sanitary Waste Valves for Plumbing Drainage Systems	Sanitary Waste Valves	814.4
ASME A112.18.9-2011 (R2017)	Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixtures	Miscellaneous	403.3
ASME A112.19.1- 2018/CSA B45.2-2018	Enameled Cast Iron and Enameled Steel Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 415.1, 420.1
ASME A112.19.2- 2018/CSA B45.1-2018	Ceramic Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 410.1, 411.1, 412.1, 415.1, 420.1
ASME A112.19.3- 2017/CSA B45.4-2017	Stainless Steel Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 410.1, 411.1, 415.1, 420.1
ASME A112.19.5- 2017/CSA B45.15-2017	Flush Valves and Spuds for Water Closets, Urinals, and Tanks	Fixtures	413.3
ASME A112.19.7- 2020/CSA B45.10-2020	Hydromassage Bathtub Systems	Fixtures	409.1, 409.6.1
ASME A112.19.12-2014 (R2019)	Wall Mounted, Pedestal Mounted, Adjustable, Elevating, Tilt- ing, and Pivoting Lavatory, Sink, and Shampoo Bowl Carrier Systems and Drain Waste Systems	Fixtures	407.1, 420.1
ASME A112.19.14-2013 (R2018)	Six-Liter Water Closets Equipped with a Dual Flushing Device	Fixtures	411.2.1
ASME A112.19.15-2012 (R2017)	Bathtubs/Whirlpool Bathtubs with Pressure Sealed Doors	Fixtures	409.1
ASME A112.19.19-2016 (R2021)	Vitreous China Nonwater Urinals	Fixtures	412.1, 412.1.2
ASSE 1002-2020/ASME A112.1002-2020/CSA B125.12-2020	Anti-Siphon Fill Valves for Water Closet Tanks	Backflow Protection	413.3, Table 603.2
ASME A112.36.2M-1991 (R2017)	Cleanouts	DWV Components	Table 707.2, 707.4.1
ASSE 1016-2017/ASME A112.1016-2017/CSA B125.16-2017	Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	Valves	408.4, 408.4.2(1)
ASSE 1037-2020/ASME A112.1037-2020/CSA B125.37-2020	Pressurized Flushing Devices for Plumbing Fixtures	Backflow Protection	413.2
ASSE 1070-2020/ASME A112.1070-2020/CSA B125.70-2020	Water Temperature Limiting Devices	Valves	407.3(1), 409.4(1), 410.3(1), 417.7(1), 417.8
ASME B1.20.1-2013 (R2018)	Pipe Threads, General Purpose (Inch)	Joints	605.1.5, 605.2.3, 605.5.2, 605.12.3, 705.1.3, 705.3.4, 705.4.2, 705.6.3, 1208.5.8, 1322.5(2)
ASME B16.1-2020	Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250	Fittings	1208.5.11.1
ASME B16.3-2021	Malleable Iron Threaded Fittings: Classes 150 and 300	Fittings	Table 604.1, Table 701.2

TABLE 1701.1 (continued) REFERENCED STANDARDS			
STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME B16.4-2021	Gray Iron Threaded Fittings: Classes 125 and 250	Fittings	Table 604.1
ASME B16.5-2020	Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch	Fittings	1208.5.11.2(1)
ASME B16.12-2019	Cast Iron Threaded Drainage Fittings	Fittings	Table 701.2
ASME B16.15-2018	Cast Copper Alloy Threaded Fittings: Classes 125 and 250	Fittings	Table 604.1
ASME B16.18-2018	Cast Copper Alloy Solder Joint Pressure Fittings	Fittings	Table 604.1
ASME B16.20-2017	Metallic Gaskets for Pipe Flanges	Joints	1208.5.12.2
ASME B16.21-2021	Nonmetallic Flat Gaskets for Pipe Flanges	Joints	1208.5.12.3
ASME B16.22-2018	Wrought Copper and Copper Alloy Solder-Joint Pressure Fit- tings	Fittings	Table 604.1, 1321.1
ASME B16.23-2016	Cast Copper Alloy Solder Joint Drainage Fittings: DWV	Fittings	Table 701.2
ASME B16.24-2016	Cast Copper Alloy Pipe Flanges, Flanged Fittings, and Valves: Classes 150, 300, 600, 900, 1500, and 2500	Fittings	1208.5.11.3
ASME B16.26-2018	Cast Copper Alloy Fittings for Flared Copper Tubes	Fittings	Table 604.1
ASME B16.29-2017	Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings – DWV	Fittings	Table 701.2
ASME B16.33-2012 (R2017)	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems Up to 175 psi (Sizes NPS ½ through NPS 2)	Valves	Table 1208.13
ASME B16.34-2020	Valves-Flanged, Threaded, and Welding End	Valves	606.1
ASME B16.42-2016	Ductile Iron Pipe Flanges and Flanged Fittings: Classes 150 and 300	Fuel Gas Piping	1208.5.11.4
ASME B16.44-2012 (R2017)	Manually Operated Metallic Gas Valves for Use in Above Ground Piping Systems up to 5 psi	Valves	Table 1208.13
ASME B16.47-2020	Large Diameter Steel Flanges: NPS 26 through NPS 60 Met- ric/Inch	Fittings	1208.5.11.2(2)
ASME B16.50-2018	Wrought Copper and Copper Alloy Braze-Joint Pressure Fit- tings	Fittings	Table 604.1, 1321.1, 1321.11
ASME B16.51-2018	Copper and Copper Alloy Press-Connect Pressure Fittings	Fittings	Table 604.1
ASME B31.3-2020	Process Piping	Piping	1308.2(9)
ASME B36.10M-2018	Welded and Seamless Wrought Steel Pipe	Fuel Gas, Piping	1208.5.2.2
ASME BPVC Section VIII.1-2021	Rules for Construction of Pressure Vessels - Division 1	Miscellaneous	505.4, 1309.5(2), 1310.4(2), 1312.3(2)
ASME BPVC Section IX- 2021	Welding, Brazing, and Fusing Qualifications - Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators	Miscellaneous	1322.1.1, 1322.2.1, 1323.11
ASPE			
ASPE/ANSI 45-2018	Siphonic Roof Drainage	Storm Drainage	1106.2
ARCSA/ASPE/ANSI 63- 2020	Rainwater Catchment Systems	Miscellaneous	1602.1
ASSE	1		
ASSE 1001-2017	Atmospheric Type Vacuum Breakers	Backflow Protection	Table 603.2
ASSE 1002-2020/ASME A112.1002-2020/CSA B125.12-2020	Anti-Siphon Fill Valves for Water Closet Tanks	Backflow Protection	413.3, Table 603.2
ASSE 1003-2020 ^{e2}	Water Pressure Reducing Valves for Potable Water Distribution Systems	Valves	608.2
ASSE 1004-2017	Commercial Dishwashing Machines	Backflow Protection	414.2
ASSE 1008-2020	Plumbing Aspects of Residential Food Waste Disposer Units	Appliances	419.1
ASSE 1010-2004	Water Hammer Arresters	Appliances	609.11
ASSE 1011-2017	Hose Connection Vacuum Breakers	Backflow Protection	Table 603.2
ASSE 1012-2009	Backflow Preventers with an Intermediate Atmospheric Vent	Backflow Protection	Table 603.2

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE 1013-2021	Reduced Pressure Principle Backflow Prevention Assemblies	Backflow Protection	Table 603.2
ASSE 1014-2020	Backflow Prevention Devices for Hand-Held Showers	Backflow Protection	417.3
ASSE 1015-2021	Double Check Backflow Prevention	Backflow Protection	Table 603.2
ASSE 1016-2017/ASME A112.1016-2017/CSA B125.16-2017	Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	Valves	408.4, 408.4.2(1)
ASSE 1018-2001 (R2021)	Trap Seal Primer Valves - Potable Water Supplied	Valves	1007.2
ASSE 1019-2011 (R2016)	Wall Hydrant with Backflow Protection and Freeze Resistance	Backflow Protection	Table 603.2
ASSE 1020-2020	Pressure Vacuum Breaker Assemblies	Backflow Protection	Table 603.2
ASSE 1022-2021	Backflow Preventer for Beverage Dispensing Equipment	Backflow Protection	Table 603.2, 603.5.12
ASSE 1023-2020	Electrically Heated or Cooled Water Dispensers	Appliances	417.6
ASSE 1024-2017 (R2021)	Dual Check Backflow Preventers	Backflow Protection	Table 603.2, 603.5.12
ASSE 1032-2004 (R2021)	Dual Check Valve Type Backflow Preventers for Carbonated Beverage Dispensers, Post Mix Type	Backflow Protection	603.5.12
ASSE 1035-2020	Laboratory Faucet Backflow Preventers	Backflow Protection	Table 603.2, 603.3.11
ASSE 1037-2020/ASME A112.1037-2020/CSA B125.37-2020	Pressurized Flushing Devices for Plumbing Fixtures	Backflow Protection	413.2
ASSE 1044-2015 (R2020)	Trap Seal Primer - Drainage Types and Electric Design Types	DWV Components	1007.2
ASSE 1047-2021	Reduced Pressure Detector Backflow Prevention Assemblies	Backflow Protection	Table 603.2
ASSE 1048-2021	Double Check Detector Backflow Prevention Assemblies	Backflow Protection	Table 603.2
ASSE 1052-2016	Hose Connection Backflow Preventers	Backflow Protection	Table 603.2
ASSE 1053-2019	Dual Check Backflow Preventer Wall Hydrants – Freeze Resistant Type	Backflow Protection	Table 603.2
ANSI/CAN/ASSE/IAPMO 1055-2020	Chemical Dispensers with Integral Backflow Protection	Backflow Protection	Table 603.2, 603.5.22(1)
ASSE 1056-2013 (R2021)	Spill Resistant Vacuum Breaker Assemblies	Backflow Protection	Table 603.2
ASSE 1057-2012	Freeze Resistant Sanitary Yard Hydrants with Backflow Protection	Backflow Protection	Table 603.2
ASSE 1060-2017	Outdoor Enclosures for Fluid Conveying Components with Errata dated February 1, 2019	Miscellaneous	603.4.7
ASSE 1061-2020	Push-Fit Fittings	Fittings	Table 604.1, 605.1.3.3, 605.2.1.1, 605.3.2.1, 605.9.3
ASSE 1062-2017 (R2021)	Temperature Actuated, Flow Reduction (TAFR) Valves for Individual Supply Fittings	Valves	408.4.3, 417.7(3)
ASSE 1064-2020	Backflow Prevention Assembly Field Test Kits	Backflow Protection	603.4.2
ASSE 1069-2020	Automatic Temperature Control Mixing Valves	Valves	408.4.1, 408.4.2(2)
ASSE 1070-2020/ASME	Water Temperature Limiting Devices	Valves	407.3(1), 409.4(1),
A112.1070-2020/CSA B125.70-2020			410.3(1), 417.7(1), 417.8
ASSE 1071-2012 (R2021)	Temperature Actuated Mixing Valves for Plumbed Emergency Equipment	Valves	416.2
ASSE 1079-2012 (R2021)	Dielectric Pipe Unions	Fittings	605.15, 605.16.1, 605.16.3
ASSE 1081-2014 (R2020)	Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems	Backflow Protection	Table 603.2

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE 1084-2018 ^{e1}	Water Heaters with Temperature Limiting Capacity	Appliances	407.3(2), 409.4(2), 410.3(2), 417.7(2), 417.8
ASSE 1085-2018	Water Heaters for Emergency Equipment	Appliances	416.2
ASSE 1087-2018	Commercial and Food Service Water Treatment Equipment Utilizing Drinking Water	Water Conditioning, Water Treatment	Table 611.1
ASSE 1099-2021/WSC PST 2000-2021	Pressurized Water Storage Tanks	Valves	607.2
ASSE/IAPMO/ANSI Series 5000-2015	Cross-Connection Control Professional Qualifications Standard	Certification	603.2, 603.4.2
ASSE/IAPMO/ANSI 6010- 2021	Medical Gas Systems Installers	Certification	1323.10
ASSE/IAPMO/ANSI 6020- 2021	Medical Gas Systems Inspectors	Miscellaneous	1324.5.4.7, 1324.5.6.2, 1324.5.6.5
ASSE/IAPMO/ANSI 6030- 2021	Medical Gas Systems Verifiers	Miscellaneous	1324.5.4.7, 1324.5.6.2, 1324.5.6.5, 1324.5.7.2
ASSE/IAPMO/ANSI 6035- 2021	Bulk Medical Gas/Cryogenic Fluid Central Supply Systems Verifiers	Miscellaneous	1324.5.7.3
ASSE/IAPMO/ANSI Series 7000-2020	Residential Potable Water Fire Sprinkler System Installers & Inspectors for One- and Two-Family Dwellings	Miscellaneous	612.1
ASSE/IAPMO/ANSI 12010-2021	Environment of Care, Infection Control and Construction Risk Assessment Professional Qualification Standard	Professional Qualifications	1303.9
ASSP			
ASSP Z359.1-2020	The Fall Protection Code	Miscellaneous	508.2.1.1
ASTM			
ASTM A53/A53M-2020	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	Piping	Table 604.1, Table 701.2, 1208.5.2.2(1)
ASTM A74-2021	Standard Specification for Cast Iron Soil Pipe and Fittings	Piping	301.2.4, Table 701.2
ASTM A106/A106M-2019a	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service	Piping	1208.5.2.2(2)
ASTM A254/A254M-2012 (R2019)	Standard Specification for Copper-Brazed Steel Tubing	Piping	1208.5.3.1
ASTM A268/A268M-2020	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service	Piping	1208.5.3.2(1)
ASTM A269/A269M-2015a (R2019)	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	Piping	Table 604.1, 1208.5.3.2(2), 1319.1(2)(a)
ASTM A312/A312M-2021	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	Piping	Table 604.1, 1208.5.2.2(3), 1319.1(2)(b), 1319.1(2)(c)
ASTM A403/A403M-2020	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	Fittings	1319.1(2)(c)
ASTM A554-2021	Standard Specification for Welded Stainless Steel Mechanical Tubing	Piping	Table 604.1
ASTM A778-2016 (R2021)	Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products	Piping	Table 604.1
ASTM A861-2004 (R2017)	Standard Specification for High-Silicon Iron Pipe and Fittings	Piping	811.2
ASTM A888-2021a	Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications	Piping	301.2.4, Table 701.2, Table 707.2

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ASTM A1056-2020	Standard Specification for Cast Iron Couplings used for Joining Hubless Cast Iron Soil Pipe and Fittings	Fittings	705.2.2
ASTM B32-2020	Standard Specification for Solder Metal	Joints	605.1.4, 705.3.3
ASTM B42-2020	Standard Specification for Seamless Copper Pipe, Standard Sizes	Piping	Table 604.1
ASTM B43-2020	Standard Specification for Seamless Red Brass Pipe, Standard Sizes	Piping	Table 604.1, Table 701.2
ASTM B75/B75M-2020	Standard Specification for Seamless Copper Tube	Piping	Table 604.1, Table 701.2
ASTM B88-2020	Standard Specification for Seamless Copper Water Tube	Piping	Table 604.1, 604.4, 903.2.3, 1208.5.3.3, 1319.1(1)(a)
ASTM B135/B135M-2017	Standard Specification for Seamless Brass Tube	Piping	Table 604.1
ASTM B152/B152M-2019	Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar	Miscellaneous	408.8.4
ASTM B210/B210M-2019a	Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes	Piping	1208.5.3.4
ASTM B241/B241M-2016	Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube	Piping	1208.5.2.4, 1208.5.3.4
ASTM B251/B251M-2017	Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube	Piping	Table 604.1, Table 701.2
ASTM B280-2020	Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	Piping	1208.5.3.3, 1319.1(1)(b)
ASTM B302-2017	Standard Specification for Threadless Copper Pipe, Standard Sizes	Piping	Table 604.1, Table 701.2
ASTM B306-2020	Standard Specification for Copper Drainage Tube (DWV)	Piping	Table 701.2, 903.2.3
ASTM B447-2012a (R2021)	Standard Specification for Welded Copper Tube	Piping	Table 604.1
ASTM B813-2016	Standard Specification for Liquid and Paste Fluxes for Solder- ing of Copper and Copper Alloy Tube	Joints	605.1.4, 705.3.3
ASTM B819-2019	Standard Specification for Seamless Copper Tube for Medical Gas Systems	Piping	1318.4, 1318.5, 1319.1(1)(c), 1319.1.1
ASTM B828-2016	Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	Joints	605.1.4, 705.3.3
ASTM C4-2004 (R2018)	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile	Piping	Table 1101.4.6
ASTM C425-2021	Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings	Joints	705.8.1
ASTM C564-2020a	Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings	Joints	705.2.2
ASTM C700-2018	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	Piping	Table 701.2, Table 1101.4.6
ASTM C1053-2000 (R2015)	Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	Piping	811.2
ASTM C1173-2018	Standard Specification for Flexible Transition Couplings for Underground Piping Systems	Fittings	705.10
ASTM C1277-2020	Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	Fixtures	301.2.4, 705.2.2
ASTM C1460-2021	Standard Specification for Shielded Transition Couplings for Use With Dissimilar DWV Pipe and Fittings Above Ground	Joints	705.10
ASTM C1461-2021	Standard Specification for Mechanical Couplings Using Ther- moplastic Elastomeric (TPE) Gaskets for Joining Drain, Waste, and Vent (DWV), Sewer, Sanitary, and Storm Plumbing Sys- tems for Above and Below Ground Use	Joints	705.10

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ASTM C1540-2020	Standard Specification for Heavy-Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	Joints	705.2.2
ASTM C1563-2008 (R2021)	Standard Test Method for Gaskets for Use in Connection with Hub and Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent, and Storm Piping Applications	Joints	705.2.2
ASTM C1822-2021	Standard Specification for Insulating Covers on Accessible Lavatory Piping	Miscellaneous	403.3
ASTM D1785-2021a	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120	Piping	Table 604.1, Table 701.2
ASTM D2235-2021	Standard Specification for Solvent Cement for Acrylonitrile- Butadiene-Styrene (ABS) Plastic Pipe and Fittings	Joints	705.1.2
ASTM D2239-2021	Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter	Piping	Table 604.1
ASTM D2241-2020	Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure- Rated Pipe (SDR Series)	Piping	Table 604.1
ASTM D2464-2015	Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 604.1
ASTM D2466-2021	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	Fittings	Table 604.1
ASTM D2467-2020	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 604.1
ASTM D2513-2020	Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings	Piping	1208.5.4, 1208.5.6.2, 1208.5.10.2, 1210.1.7.1(1)
ASTM D2564-2020	Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems	Joints	605.12.2, 705.6.2
ASTM D2609-2021	Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	Fittings	Table 604.1
ASTM D2661-2021	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	Piping	Table 701.2, Table 707.2
ASTM D2665-2020	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Piping	Table 701.2, Table 707.2
ASTM D2680-2020	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping	Piping	Table 701.2
ASTM D2683-2020	Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing	Fittings	Table 604.1
ASTM D2729-2017	Standard Specification for Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Piping	Table 701.2, Table 1101.4.6
ASTM D2737-2021	Standard Specification for Polyethylene (PE) Plastic Tubing	Piping, Plastic	Table 604.1
ASTM D2846/D2846M- 2019a	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems	Piping	Table 604.1, 605.2.2, 605.3.1
ASTM D3034-2016	Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings	Piping, Plastic	Table 701.2
ASTM D3035-2021	Standard Specification for Polyethylene (PE) Plastic Pipe (DR- PR) Based on Controlled Outside Diameter	Piping	Table 604.1
ASTM D3138-2004 (R2016)	Standard Specification for Solvent Cement for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components	Joints	705.9.4
ASTM D3139-2019	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	Joints	605.12.1
ASTM D3212-2020	Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	Joints	705.1.1, 705.6.1

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ASTM D3261-2016	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	Fittings	Table 604.1
ASTM D4068-2017	Standard Specification for Chlorinated Polyethylene (CPE) Sheeting for Concealed Water-Containment Membrane	Miscellaneous	408.8.2
ASTM D4551-2017	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Flexible Concealed Water-Containment Membrane	Miscellaneous	408.8.1
ASTM D6104-1997 (R2017) ^{e1}	Standard Practice for Determining the Performance of Oil/Water Separators Subjected to Surface Run-Off	Interceptors	Table 1009.1
ASTM E84-2021a	Standard Test Method for Surface Burning Characteristics of Building Materials	Miscellaneous	701.2(2), 903.1(2), 1101.4
ASTM E119-2020	Standard Test Methods for Fire Tests of Building Construction and Materials	Miscellaneous	1404.3, 1405.3
ASTM E814-2013a (R2017)	Standard Test Method for Fire Tests of Penetration Firestop Systems	Miscellaneous	1404.3, 1405.3
ASTM F409-2017	Standard Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings	Piping, Plastic	404.1
ASTM F437-2021	Standard Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 604.1
ASTM F438-2017	Standard Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	Fittings	Table 604.1
ASTM F439-2019	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 604.1
ASTM F441/F441M-2020	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	Piping	Table 604.1
ASTM F442/F442M-2020	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	Piping	Table 604.1, 605.2.2
ASTM F493-2020	Standard Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	Joints	605.2.2, 605.3.1
ASTM F628-2012e3	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	Piping	Table 701.2
ASTM F656-2021	Standard Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	Joints	605.2.2, 605.3.1, 605.12.2, 705.6.2
ASTM F667/F667M-2016 (R2021)	Standard Specification for 3 through 24 in. Corrugated Polyeth- ylene Pipe and Fittings	Piping, Plastic	Table 1101.4.6
ASTM F714-2021a	Standard Specification for Polyethylene (PE) Plastic Pipe (DR- PR) Based on Outside Diameter	Piping	Table 701.2, 715.3.2
ASTM F794-2021	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter	Piping	Table 701.2
ASTM F876-2020b	Standard Specification for Crosslinked Polyethylene (PEX) Tubing	Piping	Table 604.1, 605.9.1
ASTM F877-2020	Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems	Piping	Table 604.1
ASTM F891-2016	Standard Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	Piping	Table 701.2
ASTM F894-2019	Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe	Piping, Plastic	Table 701.2
ASTM F1055-2016a	Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and Tubing	Fittings	Table 604.1, 705.5.1.2

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASTM F1216-2021	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube	Piping	715.3.1
ASTM F1281-2017 (R2021) ^{e1}	Standard Specification for Crosslinked Polyethylene/ Alu- minum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe	Piping	Table 604.1
ASTM F1282-2017	Standard Specification for Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe	Piping	Table 604.1
ASTM F1336-2020	Standard Specification for Poly (Vinyl Chloride) (PVC) Gas- keted Sewer Fittings	Fittings	Table 701.2
ASTM F1412-2016	Standard Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems	Piping	811.2
ASTM F1488-2014 (R2019)	Standard Specification for Coextruded Composite Pipe	Piping	Table 701.2
ASTM F1673-2010 (R2021) ^{e1}	Standard Specification for Polyvinylidene Fluoride (PVDF) Corrosive Waste Drainage Systems	Piping	811.2
ASTM F1760-2016 (R2020)	Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed Recycled Content	Piping	Table 701.2
ASTM F1807-2019b	Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps, for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F1866-2018	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Fittings	Table 701.2
ASTM F1960-2021	Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F1970-2019	Standard Specification for Special Engineered Fittings, Appurtenances or Valves for Use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems	Piping	Table 604.1, 606.1
ASTM F1973-2013 (R2018)	Standard Specification for Factory Assembled Anodeless Risers and Transition Fittings in Polyethylene (PE) and Polyamide 11 (PA11) and Polyamide 12 (PA12) Fuel Gas Distribution Systems	Fuel Gas	1210.1.7.1(2)
ASTM F1974-2009 (R2020)	Standard Specification for Metal Insert Fittings for Polyethylene/ Aluminum/Polyethylene and Crosslinked Polyethylene/ Alu- minum/Crosslinked Polyethylene Composite Pressure Pipe	Fittings	Table 604.1, 605.7.1, 605.10.1
ASTM F2080-2019	Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe and SDR9 Polyethylene of Raised Temperature (PE-RT) Pipe	Fittings	Table 604.1
ASTM F2098-2018	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) to Metal Insert and Plastic Insert Fittings	Fittings	Table 604.1
ASTM F2159-2021	Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps for SDR9 Crosslinked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F2389-2021	Standard Specification for Pressure-Rated Polypropylene (PP) Piping Systems	Piping	Table 604.1, 605.11.1, 606.1
ASTM F2434-2019	Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene/Alu- minum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing	Fittings	Table 604.1, 605.10.1

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ASTM F2509-2015 (R2019	Kits for Use on Outside Diameter Controlled Polyethylene and Polyamide-11 (PA11) Gas Distribution Pipe and Tubing	Fuel Gas	1210.1.7.1(3)
ASTM F2561-2020	Standard Practice for Rehabilitation of a Sewer Service Lateral and Its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner	Piping	715.3.1
ASTM F2599-2020	Standard Practice for the Sectional Repair of Damaged Pipe by Means of an Inverted Cured-In-Place Liner	Piping	715.3.1
ASTM F2618-2021	Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems	Piping	811.2
ASTM F2620-2020	Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings	Joints	605.6.1.1, 605.6.1.3, 705.5.1.1, 705.5.1.3
ASTM F2735-2021	Standard Specification for Plastic Insert Fittings for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F2769-2018	Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems	Piping, Fittings	Table 604.1
ASTM F2831-2019	Standard Practice for Internal Non Structural Epoxy Barrier Coating Material Used in Rehabilitation of Metallic Pressur- ized Piping Systems	Miscellaneous	320.1
ASTM F2855-2019	Standard Specification for Chlorinated Poly (Vinyl Chloride)/Aluminum/Chlorinated Poly (Vinyl Chloride) (CPVC- AL-CPVC) Composite Pressure Tubing	Piping	Table 604.1, 605.3.1
ASTM F2945-2018	Standard Specification for Polyamide 11 Gas Pressure Pipe, Tubing, and Fittings	Piping	1208.5.4, 1208.5.10.2
ASTM F3226/F3226M- 2019	Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems	Fittings	Table 604.1
ASTM F3240-2019 ^{e1}	Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long-Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines	Piping	715.3.1
ASTM F3347-2021	Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
ASTM F3348-2021a	Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 604.1
AWS			
AWS A5.8M/A5.8-2019	Filler Metals for Brazing and Braze Welding	Joints	605.1.1, 705.3.1, 1321.3
AWS A5.9/A5.9M-2017 (ISO 14343:2009 MOD)	Welding Consumables—Wire Electrodes, Strip Electrodes, Wires, and Rods for Arc Welding of Stainless and Heat Resist- ing Steels—Classification	Joints	605.13.2
AWS B2.2/B2.2M-2016	Brazing Procedure and Performance Qualification	Certification	1323.11
AWWA			
AWWA C110-2012	Ductile-Iron and Gray-Iron Fittings	Fittings	Table 604.1
AWWA C111-2017	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	Joints	605.4.1, 605.4.2
AWWA C151-2017	Ductile-Iron Pipe, Centrifugally Cast	Piping	Table 604.1
AWWA C153-2019	Ductile-Iron Compact Fittings	Fittings	Table 604.1

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AWWA C210-2015	Liquid-Epoxy Coatings and Linings for Steel Water Pipe and Fittings	Miscellaneous	604.9
AWWA C500-2019	Metal-Seated Gate Valves for Water Supply Service	Valves	606.1
AWWA C504-2015	Rubber-Seated Butterfly Valves	Valves	606.1
AWWA C507-2018	Ball Valves, 6 in. through 60 in. (150 mm through 1,500 mm)	Valves	606.1
AWWA C510-2017	Double Check-Valve Backflow Prevention Assembly	Backflow Protection	Table 603.2
AWWA C511-2017	Reduced-Pressure Principle Backflow Prevention Assembly	Backflow Protection	Table 603.2
AWWA C530-2017	Pilot-Operated Control Valves	Valves	608.2
AWWA C606-2015	Grooved and Shouldered Joints	Joints	Table 604.1
AWWA C900-2016	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100 mm through 300 mm)	Piping	Table 604.1
AWWA C901-2020	Polyethylene (PE) Pressure Pipe and Tubing, ¾ in. (19 mm) through 3 in. (76 mm), for Water Service	Piping	Table 604.1
AWWA C904-2016	Crosslinked Polyethylene (PEX) Pressure Tubing, ½ in. through 3 in. (13 mm through 76 mm), for Water Service	Piping	Table 604.1
AWWA C907-2017	Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 in. through 12 in. (100 mm through 300 mm), for Water, Wastewater, and Reclaimed Water Service	Fittings	Table 604.1
CFR			
49 CFR 192.281	Plastic Pipe	Plastic, Pipe	1208.5.6.2
49 CFR 192.283	Plastic Pipe: Qualifying Joining Procedures	Plastic, Pipe	1208.5.6.2
CGA			ı
CGA G-4.1-2018	Cleaning of Equipment for Oxygen Service	Miscellaneous	1318.2, 1321.8.7
CGA M-1-2018	Medical Gas Supply Systems at Health Care Facilities	Miscellaneous	1324.5.7.3
CGA V-5-2019	Diameter Index Safety System (Noninterchangeable Low Pressure Connections for Medical Gas Applications)	Connections	1315.5
CISPI			
CISPI 301-2021	Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications	Piping, Ferrous	301.2.4, Table 701.2 Table 707.2
CISPI 310-2020	Couplings for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications	Joints	301.2.4, 705.2.2
CSA			•
ASME A112.19.2- 2018/CSA B45.1-2018	Ceramic Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 410.1, 411.1, 412.1, 415.1, 420.1
ASME A112.19.1- 2018/CSA B45.2-2018	Enameled Cast Iron and Enameled Steel Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 415.1, 420.1
ASME A112.19.3- 2017/CSA B45.4-2017	Stainless Steel Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 410.1, 411.1, 415.1, 420.1
CSA B45.5-2017/IAPMO Z124-2017	Plastic Plumbing Fixtures (with Errata dated August 2017)	Fixtures	407.1, 408.1, 409.1, 411.1, 412.1, 420.1
CSA B45.8-2018/IAPMO Z403-2018	Terrazzo, Concrete, Composite Stone, and Natural Stone Plumbing Fixtures	Fixtures	407.1, 420.1
ASME A112.3.4-2018/CSA B45.9-2018	Macerating Toilet Systems and Waste-Pumping Systems for Plumbing Fixtures	Fixtures	710.13
ASME A112.19.7- 2020/CSA B45.10-2020	Hydromassage Bathtub Systems	Fixtures	409.1, 409.6.1

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CSA B45.11-2017/IAPMO Z401-2017 (R2021)	Glass Plumbing Fixtures	Fixtures	407.1
CSA B45.12-2013/IAPMO Z402-2013 (R2018)	Aluminum and Copper Plumbing Fixtures	Fixtures	407.1, 408.1, 409.1, 420.1
ASME A112.19.5- 2017/CSA B45.15-2017	Flush Valves and Spuds for Water Closets, Urinals, and Tanks	Fixtures	413.3
ASME A112.4.2-2021/CSA B45.16-2021	Personal Hygiene Devices for Water Closets	Fixtures	411.4
CSA B64.1.1-2021	Atmospheric Vacuum Breakers (AVB)	Backflow Protection	Table 603.2
CSA B64.1.2-2021	Pressure Vacuum Breakers (PVB)	Backflow Protection	Table 603.2
CSA B64.2.1.1-2021	Hose Connection Dual Check Vacuum Breakers (HCDVB)	Backflow Protection	Table 603.2
CSA B64.4-2021	Reduced Pressure Principle (RP) Backflow Preventers	Backflow Protection	Table 603.2
CSA B64.4.1-2021	Reduced Pressure Principle Backflow Preventers for Fire Protection Systems (RPF)	Backflow Protection	Table 603.2
CSA B64.5-2021	Double Check Valve (DCVA) Backflow Preventers	Backflow Protection	Table 603.2
CSA B64.5.1-2021	Double Check Valve Backflow Preventers for Fire Protection Systems (DCVAF)	Backflow Protection	Table 603.2
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UL 378-2006	Draft Equipment (with revisions through September 17, 2013)	Fuel Gas, Appliances	509.3.3, 509.13, 509.14.1
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JL 732-2018	Oil-Fired Storage Tank Water Heaters (with revisions through August 9, 2018)	Fuel Gas, Appliances	Table 501.1(1)
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UL 2523-2009	Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters, and Boilers (with revisions through March 16, 2018)	Fuel Gas, Appliances	Table 501.1(1)
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DOCUMENT NUMBER	I		DOCUMENT	TITLE	APP	LICATION		
AHAM	-							
AHAM FWD-1-2016	Food Wa	ste Disposers			Appliane	ces		
ARCSA	1	X X - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2			100			
ARCSA/ASPE 78-2015	Stormwat	ter Harvesting Sy	stem Design for Di	rect End-Use Applications	Miscella	neous		
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ASABE	-							
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ASHRAE	100	And the Control of th		-				
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ASME	1				-			
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ASSE 1086-2020	Reverse (Osmosis Water E	fficiency - Drinkin	g Water	Applian	ces		
ASSE/IAPMO/ANSI 5110- 2015	Backflow	Prevention Asse	embly Testers		Professio Qualific			

ASSE/LAPMO/ANSI 5120- 2015 ASSE/LAPMO/ANSI 5130- 2015 Backflow Prevention Assembly Repairers 2016 ASSE/LAPMO/ANSI 5140- 2015 Backflow Prevention Program Administrators 2016 ASSE/LAPMO/ANSI 5150- 2016 Backflow Prevention Program Administrators 2017 Backflow Prevention Program Administrators 2018 ASSE/LAPMO/ANSI 5150- 2019 Backflow Prevention Program Administrators 2019 Backflow Prevention Program Administrators 2016 Backflow Prevention Program Administrators 2016 Backflow Prevention Program Administrators 2016 Backflow Prevention Program Administrators 2017 Backflow Prevention Program Administrators 2018 Backflow Prevention Program Administrators 2019 Backflow Prevention Program Administrators 2019 ASSE/LAPMO/ANSI 6015- 2021 Medical Gas Systems Maintenance Personnel 2020 ASSE/LAPMO/ANSI 6040- 2021 Backflow Prevention Program Administrators 2020 ASSE/LAPMO/ANSI 6040- 2020 ASSE/LAPMO/ANSI 7020- Inspectors of Residential Potable Water Fire Sprinkler Systems for One- and Two- 2020 Backflow Prevention Program Professional Qualifications 2020 ASSE/LAPMO/ANSI 6040- 2021 Backflow Prevention Formation Program Professional Qualifications Standard for Water Management and Infection Control Professional Qualifications Standard for Water Management and Infection Control Professional Qualifications Standard for Plumbers Professional Qualifications Professional Qualifications Standard for Respon	DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASSE/IAPMO/ANSI 5130- 2015 ASSE/IAPMO/ANSI 5140- Fire Protection System Cross-Connection Control Tester Oqualifications ASSE/IAPMO/ANSI 5150- 2015 Backflow Prevention Program Administrators Professional Oqualifications ASSE/IAPMO/ANSI 5150- 2015 Backflow Prevention Program Administrators Professional Oqualifications ASSE/IAPMO/ANSI Series 6000-2021 Bulk Medical Gas-Cryogenic Fluid Central Supply Systems Personnel Oqualifications ASSE/IAPMO/ANSI 6015- 2021 Medical Gas-Systems Maintenance Personnel Oqualifications ASSE/IAPMO/ANSI 7010- Installers of Residential Potable Water Fire Sprinkler Systems for One- and Two- Qualifications ASSE/IAPMO/ANSI 7020- 2020 Family Dwellings ASSE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SASE/IAPMO/ANSI Series SIGNI Qualification Standard for Water Management and Infection Control Risk Assessment for Building Systems Oqualifications ASSE/IAPMO/ANSI SIGNI Qualification Standard for Construction and Maintenance Employers ASSE/IAPMO/ANSI SIGNI Qualification Standard for Construction and Maintenance Employers ASSE/IAPMO/ANSI SIGNI Qualification Standard for Construction and Maintenance Employers ASSE/IAPMO/ANSI SIGNI Qualification Standard for Construction and Maintenance Employers ASSE/IAPMO/ANSI SIGNI Qualification Standard for Construction and Maintenance Employers ASSE/IAPMO/ANSI SIGNI Qualifications Standard for Construction Standard for Plumbers Qualifications ASSE/IAPMO/ANSI SIGNI Qualifications Standard for Construction Standard for Plumbers Qualifications ASSE/IAPMO/ANSI SIGNI Qualifications Standard for Construction Standard for Plumbers Qualifications ASSE/IAPMO/ANSI SIGNI Qualifications Standard for Construction Standard for Plumbers Qualifications Qualifications ASSE/IAPMO/ANSI SIGNI Qualifications Standard for Legionella Water Safety and Management SASSE/IAPMO/ANSI SIGNI Qualifications Standard for Inspectors and Plans Examiners Qualifications Professional Qualifications ASSE/IAPMO/		Cross-Connection Control Surveyors	
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		Standard Specification for Gray Iron Castings	Piping, Ferrous

ASTM A126-2004 (R2019) ASTM A377-2018 ASTM A479/A479M-2020 ASTM A536-1984	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings Standard Index of Specifications for Ductile Iron Pressure Pipe	Piping, Ferrous Piping, Ferrous
ASTM A479/A479M-2020		Dining Farmers
	Chandral Consideration Confederation Chandral Down and Change Confederation Deliterated	riping, remous
ACTM A526 1004	Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels	Piping, Ferrous
(R2019) ^{e1}	Standard Specification for Ductile Iron Castings	Piping, Ferrous
ASTM A733-2016	Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples	Piping, Ferrous
ASTM A1045-2010 (R2021)	Standard Specification for Flexible Poly (Vinyl Chloride) (PVC) Gaskets used in Connection of Vitreous China Plumbing Fixtures to Sanitary Drainage Systems	Piping, Plastic
ASTM B29-2019	Standard Specification for Refined Lead	Joints
ASTM B370-2012 (R2019)	Standard Specification for Copper Sheet and Strip for Building Construction	Miscellaneous
ASTM B687-1999 (R2016)	Standard Specification for Brass, Copper, and Chromium-Plated Pipe Nipples	Piping, Copper Alloy
ASTM C14-2020	Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe	Piping, Non-Metalli
ASTM C412-2019	Standard Specification for Concrete Drain Tile	Piping, Non-Metalli
ASTM C443-2021	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	Joints
ASTM C444-2021	Standard Specification for Perforated Concrete Pipe	Piping, Non-Metalli
ASTM C478/C478M-2020	Standard Specification for Circular Precast Reinforced Concrete Manhole Sections	Miscellaneous
ASTM C1227-2020	Standard Specification for Precast Concrete Septic Tanks	DWV Components
ASTM C1440-2021	Standard Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems	Joints
ASTM D1784-2020	Standard Classification System and Basis for Specifications for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds	Piping, Plastic
ASTM D2321-2020	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications	Piping, Plastic
ASTM D2517-2018	Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings	Piping, Plastic
ASTM D2657-2007 (R2015)	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings	Joints
ASTM D2774-2021a	Standard Practice for Underground Installation of Thermoplastic Pressure Piping	Piping, Plastic
ASTM D2855-2020	Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets	Joints
ASTM D3122-2015	Standard Specification for Solvent Cement for Styrene-Rubber (SR) Plastic Pipe and Fittings	Joints
ASTM D3311-2017 (R2021)	Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns	Fittings
ASTM F402-2018	Standard Practice for Safe Handling of Solvent Cements, Primers, and Cleaners Used for Joining Thermoplastic Pipe and Fittings	Joints
ASTM F480-2014	Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80	Piping, Plastic
ASTM F810-2012 (R2018)	Standard Specification for Smoothwall Polyethylene (PE) Pipe for Use in Drainage and Waste Disposal Absorption Fields	Piping, Plastic
ASTM F949-2020	Standard Specification for Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings	Piping, Plastic
ASTM F1476-2007 (R2019)	Piping Applications	
ASTM F1499-2017	Standard Specification for Coextruded Composite Drain, Waste, and Vent Pipe (DWV)	Piping, Plastic

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASTM F1743-2017	Standard Practice for Rehabilitation of Existing Pipelines and Conduits by Pulled-in- Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP)	Piping, Plastic
ASTM F1924-2019	Standard Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	Fittings
ASTM F1948-2020	Standard Specification for Metallic Mechanical Fittings for Use on Outside Diameter Controlled Thermoplastic Gas Distribution Pipe and Tubing	Fittings
ASTM F2165-2019	Standard Specification for Flexible Pre-Insulated Piping	Piping, Plastic
ASTM F2206-2019	Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE)	DWV Components
ASTM F2306/F2306M- 2021	Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile- Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications	Piping, Plastic
AWS		
AWS B2.4-2012	Welding Procedure and Performance Qualification for Thermoplastics	Joints, Certification
AWWA	•	
AWWA C203-2020	Coal-Tar Protective Coatings and Linings for Steel Water Pipe	Miscellaneous
AWWA C213-2015	Fusion-Bonded Epoxy Coatings and Linings for Steel Water Pipe and Fittings	Miscellaneous
AWWA C215-2016	Extruded Polyolefin Coatings for Steel Water Pipe	Miscellaneous
CFR		
10 CFR 430	Energy Conservation Program for Consumer Products	Energy Conservation
10 CFR 431.106	Uniform Test Method for The Measurement of Energy Efficiency of Commercial Water Heating Equipment	Water Heating Equipment
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Standards	Miscellaneous
CGA		
CGA C-9-2019	Standard Color Marking of Compressed Gas Containers for Medical Use	Miscellaneous
CGA S-1.3-2020	Pressure Relief Device Standards-Part 3-Stationary Storage Containers for Compressed Gases	Fuel Gas
CGA V-1-2021	Compressed Gas Cylinder Valve Outlet and Inlet Connections	Valves
CSA		
CSA A257 Series-2019	Standards for Concrete Pipe and Manhole Sections	Piping
CSA B55.2-2020	Drain Water Heat Recovery Units	Miscellaneous
CSA B64.7-2021	Laboratory Faucet Vacuum Breakers (LFVB)	Backflow Protection
CSA B66-2021	Design, Material, and Manufacturing Requirements for Prefabricated Septic Tanks and Sewage Holding Tanks	DWV Components
CSA B128.1-2006/B128.2- 2006 (R2016)	Design and Installation of Non-Potable Water Systems/Maintenance and Field Testing of Non-Potable Water Systems	Miscellaneous
CAN/CSA B356-2010 (R2020)	Water Pressure Reducing Valves for Domestic Water Supply Systems	Valves
CAN/CSA G401-2014 (R2019)	Corrugated Steel Pipe Products	Piping, Ferrous
ANSI Z21.12b-1994 (R2020)	Draft Hoods	Fuel Gas, Appliances
CSA Z21.13-2017	Gas-Fired Low-Pressure Steam and Hot Water Boilers (same as CSA 4.9)	Fuel Gas, Appliances
ANSI Z21.81a-2007/ CSA 6.25a-2007 (R2020)	Cylinder Connection Devices	Fuel Gas
CSA Z21.86-2016	Vented Gas-Fired Space Heating Appliances (same as CSA 2.32)	Fuel Gas, Appliances

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ANSI Z83.11-2016	Gas Food Service Equipment	Fuel Gas, Appliance
(R2021)/CSA 1.8-2016 (R2021)		
CSA Z317.1-2021	Special Requirements for Plumbing Installations in Health Care Facilities	Miscellaneous
ENERGY STAR		
Energy Star-2007	Program Requirements for Commercial Ice Machines	Miscellaneous
Energy Star-2012 (version 2.0)	Program Requirements Product Specification for Commercial Dishwashers	Appliances
Energy Star-2016 (version 6.0)	Program Requirements for Residential Dishwashers	Appliances
Energy Star-2018 (version 8.0)	Program Requirements Product specification for Clothes Washers (effective February 5, 2018)	Appliances
EPA		
EPA/600/R-12/618-2012	Guidelines for Water Reuse	Miscellaneous
EPA WaterSense-2007	High-Efficiency Lavatory Faucet Specification	Fixtures
EPA WaterSense-2009	Specification for Flushing Urinals	Fixtures
EPA WaterSense-2014	Specification for Tank-Type Toilets	Fixtures
EPA WaterSense-2015	Specification for Flushometer-Valve Water Closets	Fixtures
EPA WaterSense-2017	Specification for Spray Sprinkler Bodies	Miscellaneous
EPA WaterSense-2018	Specification for Showerheads	Fixtures
EPA WaterSense-2021	Specification for Soil Moisture-Based Irrigation Controllers	Irrigation
EPA WaterSense-2021	Specification for Weather-Based Irrigation Controllers	Irrigation
IAPMO		1
ASSE/IAPMO/ANSI 5110- 2015	Backflow Prevention Assembly Testers	Professional Qualifications
ASSE/IAPMO/ANSI 5120-	Cross-Connection Control Surveyors	Professional
2015		Qualifications
ASSE/IAPMO/ANSI 5130- 2015	Backflow Prevention Assembly Repairers	Professional Oualifications
ASSE/IAPMO/ANSI 5140-	Fire Protection System Cross-Connection Control Tester	Professional
2015	The Frotesian System Cross Connection Connection Function	Qualifications
ASSE/IAPMO/ANSI 5150-	Backflow Prevention Program Administrators	Professional
2015		Qualifications
ASSE/IAPMO/ANSI 6015- 2021	Bulk Medical Gas/Cryogenic Fluid Central Supply Systems Installers	Professional Oualifications
ASSE/IAPMO/ANSI 6040-	Medical Gas Systems Maintenance Personnel	Professional
2021		Qualifications
ASSE/IAPMO/ANSI 7010-	Installers of Residential Potable Water Fire Sprinkler Systems for One- and Two-	Professional
2020	Family Dwellings Inspectors of Residential Potable Water Fire Sprinkler Systems for One- and Two-	Qualifications Professional
ASSE/IAPMO/ANSI 7020- 2020	Inspectors of Residential Potable Water Fire Sprinkler Systems for One- and Two- Family Dwellings	Oualifications
ASSE/IAPMO/ANSI Series	Professional Qualifications Standard for Water Management and Infection Control	Professional
12000-2021	Risk Assessment for Building Systems	Qualifications
ASSE/IAPMO/ANSI	Environment of Care, Infection Control and Construction Risk Assessment Profes-	Professional
12020-2021 ASSE/IAPMO/ANSI	sional Qualification Standard for Construction and Maintenance Employers	Qualifications
ASSE/IAPMO/ANSI 12060-2021	Water Quality Program Professional Qualifications Standard for Employers and Designated Representatives	Professional Qualifications
ASSE/IAPMO/ANSI	Water Quality Program Professional Qualifications Standard for Plumbers	Professional

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ASSE/IAPMO/ANSI 12062-2021	Water Quality Program Professional Qualifications Standard for Pipefitters and HVAC Technicians	Professional Qualifications
ASSE/IAPMO/ANSI	Water Quality Program Professional Qualifications Standard for Sprinkler Fitters	Professional
12063-2021		Qualifications
ASSE/IAPMO/ANSI 12080-2021	Professional Qualifications Standard for Legionella Water Safety and Management	Professional Qualifications
ASSE/IAPMO/ANSI Series	Specialist Service Plumber and Residential Mechanical Service Technician Professional Quali-	Professional
13000-2015 (R2020)	fications Standard	Qualifications
ASSE/IAPMO/ANSI	Professional Qualifications Standard for the Service Plumber	Professional
13010-2015 (R2020) ASSE/IAPMO/ANSI Series	Professional Qualifications Standard for Inspectors and Plans Examiners	Qualifications Professional
16000-2019	Professional Qualifications Standard for inspectors and Plans Examiners	Qualifications
ASSE/IAPMO/ANSI	Plumbing Inspector	Professional
16010-2019		Qualifications
ASSE/IAPMO/ANSI 16040-2019	Plumbing Plan Examiner	Professional Qualifications
ASSE/ARCSA/IAPMO/	Rainwater Catchment Systems Personnel	Professional
ANSI Series 21000-2017 ASSE/IAPMO/ANSI	Rainwater Catchment Systems Installers	Qualifications Professional
21110-2017	Main and Calcillion Systems instances	Qualifications
ASSE/IAPMO/ANSI	Rainwater Catchment Systems Designers	Professional
21120-2017		Qualifications
ASSE/IAPMO/ANSI 21130-2017	Inspectors of Rainwater and Stormwater Catchment Systems	Professional Qualifications
ANSI/CAN/IAPMO/ISO 30500-2019	Non-Sewered Sanitation Systems - Prefabricated Integrated Treatment Units - General Safety and Performance Requirements for Design and Testing	Miscellaneous
IAPMO IGC 67-2014 ^{e1}	Specialized ABS and PVC DWV Fittings	DWV Components
IAPMO IGC 193-2020	Safety Plates, Plate Straps, Notched Plates and Safety Collars	Miscellaneous
IAPMO IGC 226-2019	Drinking Water Fountains with or Without Chiller or Heater	Fixtures
IAPMO IGC 244-2021	Tub and Shower Flow-Reduction Systems	Valves
IAPMO IGC 262-2020	Corrugated Thermoplastic Tanks	DWV Components
IAPMO IGC 267-2015 ^{e1}	Hydrants Without Integral Backflow Preventers	Valves
IAPMO IGC 276-2019	Bundled Expanded Polystyrene (EPS) Synthetic Aggregate Units	DWV Components
IAPMO IGC 315-2016	Water Manifold Systems	Fittings
IAPMO IGC 327-2016	Flexible Metallic Expansion Joints for Pressure Systems	Joints
APMO IGC 330-2018	Recirculating Shower Systems	Fixtures
IAPMO IGC 332-2017a	Hydronic Radiators	Miscellaneous
IAPMO IS 26-2019 ^{e2}	Trenchless Insertion of Polyethylene (PE) Pipe for Sewer Laterals	Piping
IAPMO PS 1-2019	Tank Risers	DWV Components
IAPMO PS 23-2021	Dishwasher Drain Airgaps	Backflow Protection
IAPMO PS 25-2019	Metallic Fittings Joining Polyethylene Pipe for Water Service and Yard Piping	Joints
IAPMO PS 34-2019	Encasement Sleeves for Potable Water Pipe and Tubing	Piping
IAPMO PS 36-2014 ^{el}	Lead-Free Sealing Compounds for Threaded Joints	Joints
IAPMO PS 37-2019	Black Plastic PVC or PE Pressure Sensitive Corrosion Preventive Tape	Miscellaneous
IAPMO PS 42-2013 ^{el}	Pipe Alignment and Secondary Support Systems	Miscellaneous
IAPMO PS 50-2019	Flush Valves with Dual Flush Device for Water Closets or Water Closet Tanks with Integral Flush Valves with a Dual Flush Device	Fixtures

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
IAPMO PS 51-2021	Expansion Joints and Flexible Expansion Joints for DWV Piping Systems	Joints
IAPMO PS 52-2021	Pump/Dose, Sumps and Sewage Ejector Tanks with or without a Pump	DWV Components
IAPMO PS 54-2021a	Metallic and Plastic Utility Boxes	Miscellaneous
IAPMO PS 63-2019	Plastic Leaching Chambers	DWV Components
IAPMO PS 64-2012ae1	Roof Pipe Flashings	Miscellaneous
IAPMO PS 67-2019	Early-Closure Replacement Flappers or Early Replacement Flapper with Mechanical Assemblies	Fixtures
IAPMO PS 69-2019	Bathwaste and Overflow Assemblies with Tub Filler Spout	DWV Components
IAPMO PS 73-2015	Dental Liquid-Ring Vacuum Pumps	Miscellaneous
IAPMO PS 79-2019	Multiport Electronic Trap Primers	DWV Components
IAPMO PS 81-2019	Precast Concrete Seepage Pit Liners and Covers	DWV Components
IAPMO PS 85-2019	Tools for Mechanically Formed Tee Connections in Copper Tubing	Miscellaneous
IAPMO PS 86-2019	Rainwater Diverter Valves for Non-Roofed Area Slabs	DWV Components
IAPMO PS 91-2019	Plastic Stabilizers for Use with Plastic Closet Bends	DWV Components
IAPMO PS 92-2013 ^{e1}	Heat Exchangers and Indirect Water Heaters	Miscellaneous
IAPMO PS 94-2012 ^{e1}	Insulated Protectors for P-Traps, Supply Stops and Risers	Miscellaneous
IAPMO PS 95-2018 ^{e3}	Pipe Support Hangers and Hooks	DWV Components
IAPMO PS 101-2019	Suction Relief Valves	Valves
IAPMO PS 110-2019	PVC Cold Water Compression Fittings	Fittings
IAPMO PS 111-2019	PVC Cold Water Gripper Fittings	Fittings
IAPMO PS 112-2019	PVC Plastic Valves for Cold Water Distribution Systems Outside a Building and CPVC Plastic Valves for Hot and Cold Water Distribution Systems	Valves
IAPMO PS 115-2019	Hot Water On-Demand or Automatic Activated Hot Water Pumping Systems	Miscellaneous
IAPMO PS 119-2012ae3	Water-Powered Sump Pumps	Miscellaneous
IAPMO/ANSI Z124.7-2013 (R2018)	Prefabricated Plastic Spa Shells	Fixtures, Swimmin Pools, Spas, and Ho Tubs
IAPMO/ANSI Z124.8- 2013 ^{e2} (R2018)	Plastic Liners for Bathtubs and Shower Receptors	Fixtures
IAPMO/ANSI Z1000-2019	Prefabricated Septic Tanks	DWV Components
ICC		
ASABE/ICC 802-2014	Landscape Irrigation Sprinkler and Emitter Standard	Irrigation
ISO		
ANSI/CAN/IAPMO/ISO 30500-2019	Non-Sewered Sanitation Systems - Prefabricated Integrated Treatment Units - General Safety and Performance Requirements for Design and Testing	Miscellaneous
MSS		'
MSS SP-25-2018	Standard Marking System for Valves, Fittings, Flanges, and Unions	Miscellaneous
MSS SP-42-2013	Corrosion-Resistant Gate, Globe, Angle, and Check Valves with Flanged and Butt Weld Ends (Classes 150, 300, & 600)	Piping, Ferrous
MSS SP-44-2019	Steel Pipeline Flanges	Fittings
MSS SP-83-2018	Class 3000 and 6000 Pipe Unions, Socket Welding and Threaded (Carbon Steel, Alloy Steel, Stainless Steels, and Nickel Alloys)	Joints
MSS SP-104-2018	Wrought Copper, Solder-Joint Pressure Fittings	Fittings
MSS SP-106-2019	Cast Copper Alloy Flanges and Flanged Fittings: Class 125, 150, and 300	Fittings
MSS SP-109-2018	Weld-Fabricated, Copper Solder-Joint Pressure Fittings	Fittings

NFPA 13R-2022 Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupanicies NFPA 80-2022 Standard for Fire Doors and Other Opening Protectives NFPA 501A-2021 Standard for Fire Doors and Other Opening Protectives NFPA 501A-2022 Standard on Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities NFPA 1981-2019 Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services NFPA 1989-2019 Standard on Breathing Air Quality for Emergency Services Respiratory Protection Miscellaneous Scales and Communities NFPA 1989-2019 Standard on Breathing Air Quality for Emergency Services Respiratory Protection Miscellaneous Scales Scales and Communities NFPA 1989-2019 Standard on Breathing Air Quality for Emergency Services Respiratory Protection Miscellaneous Scales Scal	DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupanicies	MSS SP-123-2018	Non-Ferrous Threaded and Solder-Joint Unions for Use with Copper Water Tube	Joints
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NSF/ANSI 2-2019 Food Equipment NSF/ANSI 4-2020 Commercial Cooking, Rethermalization, and Powered Hot Food Holding and Transportation Equipment NSF/ANSI 5-2019 Water Heaters, Hot Water Supply Boilers, and Heat Recovery Equipment Appliances NSF/ANSI 12-2018 Automatic Ice Making Equipment NSF/ANSI 12-2020 Manual Food and Beverage Dispensing Equipment NSF/ANSI 18-2020 Detergent and Chemical Feeders for Commercial Spray-Type Dishwashing Machines NSF/ANSI 40-2020 Residential Wastewater Treatment Systems DWV Components NSF/ANSI 41-2018 Non-Liquid Saturated Treatment Systems DWV Components NSF/ANSI 46-2021 Evaluation of Components and Devices Used in Wastewater Treatment Systems NSF/ANSI/CAN 60-2021 Drinking Water Treatment Chemicals - Health Effects Water Treatment NSF/ANSI/CAN 372-2020 Special Purpose Food Equipment and Devices NSF/ANSI/CAN 372-2020 Drinking Water System Components - Lead Content Miscellaneous SAE SAE J1670-2008 Type "F" Clamps for Plumbing Applications TCNA TCNA A118.10-2014 Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation UL UL 70-2001 Septic Tanks, Bituminous-Coated Metal UL 80-2007 Steel Tanks, Bituminous-Coated Metal UL 80-2007 Steel Tanks, Bituminous-Coated Metal UL 80-2007 LP-Gas Regulators (with revisions through August 26, 2021) Fuel Gas UL 252-2017 Compressed Gas Regulators (with revisions through August 10, 2018) Fuel Gas CUL 296-2017 Oil Burners (with revisions through January 8, 2021) Fuel Gas F	NFPA 5000-2021	Building Construction and Safety Code	Miscellaneous
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UL 296-2017 Oil Burners (with revisions through January 8, 2021) Fuel Gas, Appliane UL 404-2010 Gauges, Indicating Pressure, for Compressed Gas Service (with revisions through February 11, 2015) UL 429-2013 Electrically Operated Valves (with revisions through March 19, 2021) Valves	UL 144-2021	LP-Gas Regulators (with revisions through August 26, 2021)	Fuel Gas
UL 404-2010 Gauges, Indicating Pressure, for Compressed Gas Service (with revisions through February 11, 2015) UL 429-2013 Electrically Operated Valves (with revisions through March 19, 2021) Valves	UL 252-2017	Compressed Gas Regulators (with revisions through August 10, 2018)	Fuel Gas
February 11, 2015) UL 429-2013 Electrically Operated Valves (with revisions through March 19, 2021) Valves	UL 296-2017	Oil Burners (with revisions through January 8, 2021)	Fuel Gas, Appliance
	UL 404-2010	February 11, 2015)	Fuel Gas
UL 536-2021 Flexible Metallic Hose Fuel Gas	UL 429-2013		Valves
	UL 536-2021	Flexible Metallic Hose	Fuel Gas

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
UL 563-2009	Ice Makers (with revisions through May 26, 2021)	Appliances
UL 569-2013	Pigtails and Flexible Hose Connectors for LP-Gas (with revisions through July 28, 2017)	Fuel Gas
UL 726-1995	Oil-Fired Boiler Assemblies (with revisions through October 9, 2013)	Fuel Gas, Appliances
UL 1206-2003	Electric Commercial Clothes-Washing Equipment (with revisions through June 14, 2021)	Appliances
UL 1331-2005	Station Inlets and Outlets (with revisions through February 5, 2020)	Medical Gas
UL 1795-2016	Hydromassage Bathtubs (with revisions through December 8, 2017)	Fixtures
UL 1951-2011	Electric Plumbing Accessories (with revisions through June 27, 2020)	Miscellaneous
UL 2157-2018	Electric Clothes Washing Machines and Extractors (with revisions through September 20, 2019)	Appliances
WQA		
WQA S-300-2000	Point-of-Use Low-Pressure Reverse Osmosis Drinking Water Systems	Appliances
WQA/ASPE/ANSI S-803- 2017	Sustainable Drinking Water Treatment Systems	Miscellaneous

Adopted Appendices (A, B, I and M)

			Appendix A	-	
Residual Pressure	A 104.1	A 104.1	Clarifying code language	Accept Change	

A 104.1 Residual Pressure. Decide what is the desirable minimum residual pressure that shall be maintained at the highest fixture in the supply system. The available residual pressure shall be not less than 15 pounds-force per square inch (psi) (103 kPa). Where fixtures, fixture fittings, or both are installed that require a residual pressure exceeding 15 psi (103 kPa), that minimum residual pressure shall be provided.

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APPLIANCES, APPURTENANCES, OR FIXTURES ²	MINIMUM FIXTURE BRANCH PIPE SIZE ^{1,4} (inches)	PRIVATE	PUBLIC	ASSEMBLY ⁶
Bathtub or Combination Bath/Shower (fill)	1/2	4.0	4.0	-
3/4 inch Bathtub Fill Valve	3/4	10.0	10.0	-
Bidet	1/2	1.0	-	-
Clothes Washer	1/2	4.0	4.0	-
Dental Unit, cuspidor	1/2	-	1.0	-
Dishwasher, domestic	1/2	1.5	1.5	-
Drinking Fountain or Water Cooler	1/2	0.5	0.5	0.75
Hose Bibb	1/2	2.5	2.5	-
Hose Bibb, each additional ⁷	1/2	1.0	1.0	-
Lavatory	1/2	1.0	1.0	1.0
Lawn Sprinkler, each head ⁵	-	1.0	1.0	-
Mobile Home, each (minimum)	-	12.0	-	-
Sinks	-	-	-	-
Bar	1/2	1.0	2.0	-
Clinical Faucet	1/2	-	3.0	-
Clinical Flushometer Valve with or without faucet	1	-	8.0	-
Kitchen, domestic with or without dishwasher	1/2	1.5	1.5	
Laundry	1/2	1.5	1.5	-
Service or Mop Basin	1/2	1.5	3.0	-
Washup, each set of faucets	1/2	-	2.0	-
Shower per head	1/2	2.0	2.0	-
Urinal, 1.0 GPF Flushometer Valve	3/4	3.0	4.0	5.0
Urinal, greater than 1.0 GPF Flushometer Valve	3/4	4.0	5.0	6.0
Urinal, flush tank	1/2	2.0	2.0	3.0
Wash Fountain, circular spray	3/4	-	4.0	-
Water Closet, 1.6 GPF Gravity Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	1/2	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	5.0	5.0	8.0
Water Closet, greater than 1.6 GPF Gravity Tank	1/2	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	7.0	8.0	10.0

For SI units: 1 inch = 25 mm

Notes:

Notes:

Size of the cold branch pipe, or both the hot and cold branch pipes.

Appliances, appurtenances, or fixtures not included in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency of use.

The listed fixture unit values represent their total load on the cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both cold and hot water connections shall be permitted to be three-quarters of the listed total value of the fixture.

The listed minimum supply branch pipe sizes for individual fixtures are the nominal (LD, pipe size).

For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (gpm) (L/s) and add it separately to the demand in gpm (L/s) for the distribution system or portions thereof.

Assembly [Public Use (see Table 422.1)].

Pachned fixture unit fooling for additional bose highly is to be used where string total building demand and for nine string waters more than one hose high.

Reduced fixture unit loading for additional hose bibbs is to be used where sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water distribution pipe. The fixture branch to each hose bibb shall be sized by 2.5 fixture units.

			Appendix B		
General Requirements	B 101.2	B 101.2	Update to define what amendment for combination vent systems	Accept Change	Code Change proposal

B 101.2 General Requirements. Combination waste and vent systems, (which at best are merely an expedient designed to be used in locations where it would be structurally impractical to provide continuous venting of fixtures) as outlined in Section 910.0 of this code, cover the horizontal wet venting of a series of traps using a common waste and vent pipe. Pipe sizes not less than two pipe sizes larger than those required for a conventional system are designed to maintain a wetted perimeter or flow line low enough in the waste pipe to allow adequate air movement in the upper portion, thus balancing the system. One and two unit fixtures that rough in above the floor, shall be permitted to connect to a combination waste and vent system when located as required in Section 910.7. Combination waste and vent systems are intended primarily for extensive floor or shower drain installations where separate venting is not practical, for floor sinks in markets, demonstration or work tables in school buildings, or for similar applications where the fixtures are not adjacent to walls or partitions. Due to its oversize characteristics, such a waste system is not self-scouring and, consequently, care shall be exercised as to the type of fixtures connected to it and the location of cleanouts. Given its grease-producing potential, restaurant kitchen equipment shall not be connected to a combination waste and vent system.

			Appendix C		
General	C 201.1	C 201.1	Updating language	State Does not Adopt	

C 201.1 General. For the purpose of this appendix, the following definitions shall apply: Branch Interval. A length of soil or waste stack corresponding in general to a story height, but in no case less than 8feet (2438 mm), within which the horizontal branches from one floor or story of the building are connected to the stack. Engineered Plumbing System. A system designed for a specific building project with drawings and specifications indicating plumbing materials to be installed, all as prepared by a registered design professional.

WATER SUPPLY FIXTURE UNITS (WSFU) FOR BATHROOM GROUPS1, 2	TABLE C TABLE C 303.2	Update for serving 3 or more bathrooms	State Does not Adopt		
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		TE USE OM GROUP	SERVING 3 OR MORI PRIVATE USE BATHROOM GROUPS		
	COLD	HOT ³	COLD	нот	
Bathroom Groups Having up to 1.6 GPF Gravity-Tank and Pressure Tar	nk Water Closets	•			
Half-Bath or Powder Room	3.5	0.8	2.5	0.5	
1 Bathroom Group	5.0	2.5	3.5	1.8	
1½ Bathrooms	6.0	2.5	3.0	3.0	
2 Bathrooms	7.0	3.5	3.4	3.4	
2½ Bathrooms	8.0	3.6	3.8	3.8	
3 Bathrooms	9.0	4.5	4.1	4.1	
Each Additional ½ Bath	0.5	0.1	0.4	0.4	
Each Additional Bathroom Group	1.0	0.5	0.8	0.8	
Other Groups of Fixtures	<u>'</u>				
Bathroom Group (1.6 GPF Flushometer Value)	6.0	2.5	4.0	1.7	
Kitchen Group (Sink and Dishwasher)	2.0	2.0	1.5	1.5	
Laundry Group (Sink and Clothes Washer)	5.0	5.0	3.0	3.0	

Notes:

A bathroom group, for this table, consists of one water closet, up to two lavatories, and either one bathtub or one shower.

A half-bath or powder room, for this table, consists of one water closet and one lavatory.

Multi-unit dwellings with individual water heaters use the same WSFU as for individual dwellings.

DRAINAGE FIXTURE UNIT /ALUES (DFU) FOR BATHROOM GROUPS1, 2	TABLE C 303.3	TAB 303.3		Update for ser bathrooms	rving 3 or more	State Does not Adopt	
-		,	PRIVATE USE	BATHROOM GROUP	SERVING 3 OR MORE PRIVATE USE BATHROOM GROUP		
Bathroom Groups having 1.6 GPF Gravity-	Tank Water Closets	3					
Half-Bath or Powder Room				3.0	2.0		
1 Bathroom Group				5.0	3.0		
1½ Bathrooms				6.0	3.5		
2 Bathrooms				7.0	4.5		
21/2 Bathrooms				8.0	5.0		
3 Bathrooms				9.0	5.5		
Each Additional 1/2 Bath				0.5	0.5		
Each Additional Bathroom Group				1.0	1.0		
athroom Groups having 1.6 GPF Pressure	-Tank Water Closet	ts					
Half-Bath or Powder Room				3.5	2.5		
1 Bathroom Group				5.5	3.5		
1½ Bathrooms				6.5	4.0		
2 Bathrooms				7.5	5.0		
2½ Bathrooms				8.5	5.5		
3 Bathrooms				9.5	6.0		
Each Additional 1/2 Bath				0.5	0.5		
Each Additional Bathroom Group				1.0	1.0		
athroom Groups having 3.5 GPF Gravity-	Tank Water Closets	3					
Half-Bath or Powder Room				3.0	2.0		
1 Bathroom Group				6.0	4.0		
1½ Bathrooms				8.0	5.5		
2 Bathrooms				10.0	6.5		
2½ Bathrooms				11.0	7.5		
3 Bathrooms				12.0	8.0		
Each Additional 1/2 Bath				0.5	0.5		
Each Additional Bathroom				1.0	1.0		
Bathroom Group (1.6 GPF Flushomet	er Valve)			3.0	3.0		
Bathroom Group (3.5 GPF Flushomet	or Volva)			4.0	4.0		

Where Permitted	C 601.1	C 601.1	Update to Table Location	State Does not Adopt		
as a single-stack vent system wh	nere sized and	installed in acco	ned by a registered design professional a ordance with Section C 601.2 through Se without exceeding the pressure differential	ction C 601.10. The dra	ainage stack and brancl	
Length of Vertical Piping	C 601.4.2	C 601.4.2	Code language update	State Does not Adopt		
C 601.4.2 Length of Vertical Pi distance from the stack.	ping. The leng	oth of vertical pip	ing from a fixture trap to a horizontal brai	nch shall not be conside	ered in computing the fi	ixture's horizontal
Additional Venting Required	C 601.6	C 601.6	Code language update	State Does not Adopt		
trap to the stack exceeds the lim through Section 911.5. The dry v	its in Section C	C 601.4. Where a	I be provided where more than one wate additional venting is required, the fixture(sal venting shall connect to a branch vent	s) shall be vented by or	ne of the methods desc	ribed in Sections 908.0
open air.						
Prohibited Connections Near	C 601.8	C 601.8	Code language update	State Does not Adopt		
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) of story shall not connect within 8 feets	s Near Base over two stories lownstream fro	of Stack. Where shall be permitted that the base of the	Code language update e stacks are more than 75 feet (22 860 m ed to be connected to the branch of the bre upper stack. Where stacks are less than the base of the stack. Venting for the less than the base of the stack.	m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm)	s the stack for the upper high but more than two	er stories at a point that in stories high, the lowest
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) of story shall not connect within 8 feand Section C 601.8.2.	s Near Base over two stories lownstream fro	of Stack. Where shall be permitted that the base of the	e stacks are more than 75 feet (22 860 m ed to be connected to the branch of the b se upper stack. Where stacks are less that	m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm)	s the stack for the upper high but more than two	er stories at a point that in stories high, the lowest
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) d story shall not connect within 8 feand Section C 601.8.2. Conditional Vent C 601.8.1 Conditional Vent. Ve single-stack as a conditional v	us Near Base over two stories slownstream froet (2438 mm) (N/A) nting of fixturent. The conditions are the	of Stack. Where shall be permitted the base of the downstream from C 601.8.1	e stacks are more than 75 feet (22 860 m ed to be connected to the branch of the b re upper stack. Where stacks are less that im the base of the stack. Venting for the I	Adopt m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm) owest story shall be pro State Does not Adopt ction 908.0 through S ye-fitting to prevent in	s the stack for the upper high but more than two ovided in accordance w section 911.5 and may agress of drainage interests.	er stories at a point that is a stories high, the lowest with Section C 601.8.1
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) of story shall not connect within 8 feand Section C 601.8.2. Conditional Vent C 601.8.1 Conditional Vent. Vesingle-stack as a conditional within 12 drainage fixture units	us Near Base over two stories slownstream froet (2438 mm) (N/A) nting of fixturent. The conditions are the	of Stack. Where shall be permitted the base of the downstream from C 601.8.1	stacks are more than 75 feet (22 860 med to be connected to the branch of the big upper stack. Where stacks are less that the base of the stack. Venting for the line was section. New Section st floor shall be in accordance with Sennects into the stack by means of a wind stack by means of a win	Adopt m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm) owest story shall be pro State Does not Adopt ction 908.0 through S ye-fitting to prevent in	s the stack for the upper high but more than two ovided in accordance w section 911.5 and may agress of drainage interests.	er stories at a point that is a stories high, the lowest with Section C 601.8.1
two stories. The stack for the low not less than 8 feet (2438 mm) of story shall not connect within 8 frand Section C 601.8.2. Conditional Vent C 601.8.1 Conditional Vent. Ve single-stack as a conditional vent than 12 drainage fixture units of the standard vent.	Is Near Base over two stories slownstream froeet (2438 mm) (N/A) Inting of fixturent. The cond (DFU) may be (N/A)	of Stack. Where shall be permitte m the base of the downstream from C 601.8.1 The second the lower ditional vent conconnected into C 601.8.2	e stacks are more than 75 feet (22 860 med to be connected to the branch of the big upper stack. Where stacks are less that the base of the stack. Venting for the limit the base of the stack. Venting for the limit floor shall be in accordance with Sennects into the stack by means of a weather than the stack by the stack by means of a weather	Adopt m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm) owest story shall be pro State Does not Adopt cction 908.0 through S ye-fitting to prevent ir ct not less than 8 feet State Does not Adopt	s the stack for the upper high but more than two ovided in accordance we section 911.5 and may rigress of drainage into (2438 mm) above the	er stories at a point that is a stories high, the lowest with Section C 601.8.1
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) d story shall not connect within 8 feand Section C 601.8.2. Conditional Vent C 601.8.1 Conditional Vent. Ve single-stack as a conditional vent 12 drainage fixture units of the Stack S	Is Near Base over two stories slownstream froeet (2438 mm) (N/A) Inting of fixturent. The cond (DFU) may be (N/A)	of Stack. Where shall be permitte m the base of the downstream from C 601.8.1 The second the lower ditional vent conconnected into C 601.8.2	stacks are more than 75 feet (22 860 m ed to be connected to the branch of the blue upper stack. Where stacks are less that in the base of the stack. Venting for the limit New Section St floor shall be in accordance with Sennects into the stack by means of a woothe conditional vent and shall connects. New Section	Adopt m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm) owest story shall be pro State Does not Adopt cction 908.0 through S ye-fitting to prevent ir ct not less than 8 feet State Does not Adopt	s the stack for the upper high but more than two ovided in accordance we section 911.5 and may rigress of drainage into (2438 mm) above the	er stories at a point that is a stories high, the lowest with Section C 601.8.1
Prohibited Connections Near Base of Stack C 601.8 Prohibited Connection two stories. The stack for the low not less than 8 feet (2438 mm) d story shall not connect within 8 feand Section C 601.8.2. Conditional Vent C 601.8.1 Conditional Vent. Ve single-stack as a conditional vent at 12 drainage fixture units of the C 601.8.2 Other Branch Vent. C 601.8.2 Other Branch Vent. C Parallel Vent Stacks	Is Near Base over two stories slownstream fro eet (2438 mm) (N/A) Inting of fixturent. The cond (DFU) may be (N/A) Other branch with the condition of the co	c 601.8.2 C 601.10	stacks are more than 75 feet (22 860 m ed to be connected to the branch of the bre upper stack. Where stacks are less that the base of the stack. Venting for the last look with the base of the stack. Venting for the last look stack in the base of the stack by means of a work of the conditional vent and shall connected in accordance with Section 908	Adopt m) high, a separate sta uilding drain that serve an 75 feet (22 860 mm) owest story shall be pro State Does not Adopt ction 908.0 through S ye-fitting to prevent ir ct not less than 8 feet State Does not Adopt .0 through Section 91 State Does not Adopt	s the stack for the upper high but more than two ovided in accordance where the state of the sta	er stories at a point that is a stories high, the lowest with Section C 601.8.1 Connect into the othe vent. No more stack base.

E 201.1 General. For the pur	pose of this app	endix, the fol	lowing definitions shall apply:			
Size	403.3	403.3		State Does not Adopt		
E 403.3 Size. The size of each acceptable to the Authority Ha			a shall be determined in accordance with N 4.3.5.1]	FPA 54/ANSI Z223.1 oi	by other standard engine	eering methods
Plastic Piping	E 403.7	E 403.7	Updated to CFR requirement	State Does not Adopt		
		•	erground and shall meet the requirements		M D2517, as well as the	design pressure and

Oil Supply Connections	E 403.13	E 403.13	Update to code requirements	State Does not Adopt		
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E 403.13 Oil Supply Connections. Oil supply connections at manufactured home sites, where provided from a centralized oil distribution system, shall be located and arranged to permit attachment to a manufactured home utilizing the stand. [NFPA 501A:4.3.11.1] The installation of such facilities shall comply with the following requirements:

- (1) The main distribution pipeline shall be permitted to be connected to a tank or tanks having an aggregate capacity not exceeding 20 000 gallons (75 708 L) at a point below the liquid level.
- (2) Where this piping is so connected, a readily accessible internal or external shutoff valve shall be installed in the piping as close as practicable to the tank.
- (3) If external and aboveground, the shutoff valve and its tank connections shall be made of steel.
- (4) Connections between the tank(s) and the main pipeline shall be made with double swing joints or flexible connectors, or shall otherwise be arranged to permit the tank(s) to settle without damaging the system.
- (5) If located aboveground, the connections specified in Section E 403.13(4) shall be located within the diked area.
- (6) A readily accessible and identified manual shutoff valve shall be installed either inside or outside of the structure in each branch supply pipeline that enters a building. mobile home, travel trailer, or other structure. If inside, the valve shall be located directly adjacent to the point at which the supply line enters the structure. If outside, the valve shall be protected from weather and damage.
- (7) A device shall be provided in the supply line at or ahead of the point where it enters the interior of the structure that will automatically shut off the oil supply, if the supply line between this device and the appliance is broken. This device shall be located on the appliance side of the manual shutoff valve required in Section E 403.13(6) and shall be solidly supported and protected from damage.
- (8) Means shall be provided to limit the oil pressure at the appliance inlet to a maximum gauge pressure of 3 pounds-force per square inch gauge (psig) (21 kPa). If a pressure-reducing valve is used, it shall be a type approved for the service.
- (9) A device shall be provided that will automatically shut off the oil supply to the appliance if the oil pressure at the appliance inlet exceeds a gauge pressure of 8 psiq (55 kPa). The device shall not be required under either of the following conditions:
- (a) Where the distribution system is supplied from a gravity tank and the maximum hydrostatic head of oil in the tank is such that the oil pressure at the appliance inlet will not exceed a gauge pressure of 8psig (55 kPa).
- (b) Where a means is provided to automatically shut off the oil supply if the pressure-regulating device provided in accordance with Section E 403.13(8) fails to regulate the pressure as required.
- (10) Only appliances equipped with primary safety controls specifically listed for the appliance shall be connected to a centralized oil distribution system. [NFPA 31:9.2.10 9.2.15]

General	F 201.1	F 201.1	Updated Code Language	State Does not Adopt	
F 201.1 General. For the purpose	e of this append	dix, the following	definitions shall apply		
General	H 301.1	H 301.1	Update to code and added new section	State Does not Adopt	

- H 301.1 General. The minimum effective absorption area in disposal fields in square feet (m2), and in seepage pits in square feet (m2) of sidewall, shall be predicated on the required septic tank capacity of gallons (liters), estimated waste/sewage flow rate, or whichever is greater, and shall be in accordance with Table H 201.1(2) as determined by the type of soil found in the excavation, and shall be as follows:
- (1) Where disposal fields are installed, not less than 150 square feet (13.9 m2) of trench bottom shall be provided for each system exclusive of any hard pan, rock, clay, or other impervious formations. Sidewall area more than the required 12 inches (305 mm) and not exceeding 36inches (914 mm) below the leach line shall be permitted to be added to the trench bottom area where computing absorption areas.
- (2) Where leaching beds are permitted instead of trenches, the area of each such bed shall be not less than 50 percent greater than the tabular requirements for trenches. Perimeter sidewall area more than the required 12 inches (305 mm) and not exceeding 36 inches (914 mm) below the leach line shall be permitted to be added to the trench bottom area where computing absorption areas.
- (3) No excavation for a leach line or leach bed shall be located within 5 feet (1524 mm) of the water table nor to a depth where sewage is capable of contaminating the underground water stratum that is usable for domestic purposes. Exception: In areas where the records or data indicate that the groundwaters are grossly degraded, the 5 foot (1524 mm) separation requirement shall be permitted to be reduced by the Authority Having Jurisdiction. The applicant shall supply evidence of groundwater depth to the satisfaction of the Authority Having Jurisdiction.
- (4) The minimum effective absorption area in any seepage pit shall be calculated as the excavated sidewall area below the inlet exclusive of any hardpan, rock, clay, or other impervious formations. The minimum required area of porous formation shall be provided in one or more seepage pits. No excavation shall extend within 10 feet (3048 mm) of the water table nor to a depth where sewage is capable of contaminating underground water stratum that is usable for domestic purposes. Exception: In areas where the records or data indicate that the groundwaters are grossly degraded, the 10 foot (3048 mm) separation requirement shall be permitted to be reduced by the Authority Having Jurisdiction. The applicant shall supply evidence of groundwater depth to the satisfaction of the Authority Having Jurisdiction.
- (5) Leaching chambers that comply with IAPMO PS 63 and bundled expanded polystyrene synthetic aggregate units that comply with IAPMO IGC 276 shall be sized using a 0.70 multiplier applied to the required area in Table H201.1(2).
- (6) Systems that combine treatment and disposal of sewage within a single footprint and comply with NSF 40 Class 1 shall be sized using a 0.70 multiplier applied to the required area in Table H 201.1(2) for both leach lines and leach beds. No system component for a combined treatment and disposal leach line or leach bed shall be located within 2 feet (610 mm) of the water table nor to a depth where sewage is capable of contaminating the underground water stratum that is usable for domestic purposes. Combined treatment and disposal system operation and maintenance shall be in accordance with the manufacturer's instructions. Exception: Combined treatment and disposal systems tested and certified in a bed configuration in accordance with NSF 40 Class 1 are exempted from the requirements of Section H 301.1(2).

Prefabricated Septic Tanks	H 501.14	H 501.14	Updated Reference Location	State Does not Adopt			
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H 501.14 Prefabricated Septic Tanks. Prefabricated septic tanks shall comply with the following requirements:

- (1) Manufactured or prefabricated septic tanks shall comply with IAPMO/ANSI Z1000, IAPMO IGC 262, or CSA B66 and be approved by the Authority Having Jurisdiction. Prefabricated bituminous coated septic tanks shall comply with UL 70.
- (2) Independent laboratory tests and engineering calculations certifying the tank capacity and structural stability shall be provided as required by the Authority Having Jurisdiction.

Bundled Expanded Polystyrene Synthetic Aggregate Units	H 601.1.1	H 601.1.1	New Section Added	State Does not Adopt		
			ate Units. Bundled expanded polystyren ipe that complies with IAPMO IGC 276 sl		units with an integrated dis	stribution line
Filter Material	H 601	H 601	Update to the Exception	State Does not Adopt		
depth of 1 inch (25.4 mm) and the from 34 of an inch to 21/2 inches in an approved manner. The drair building paper, straw, or similar pinspection and acceptance. Excel dispose of sewage within a single Chamber, bundled expanded poly	e loose materia (19.1 mm to 64 h lines shall the orous material ption: Listed or footprint, as d styrene synthe	I removed. Cleat 4 mm), shall be an be covered we to prevent the co- approved plasti- escribed in Section aggregate u	es in a prepared excavation, smeared or in stone, gravel, slag, or similar filter mate placed in the trench to the depth and gra ith filter material to the minimum depth re losure of voids with earth backfill. No ear c leaching chambers bundled expanded tion H 301.1(5) and Section H301.1(6), sl nit, and systems that treat and dispose o th the manufacturer's instructions.	erial acceptable to the A de required by this section, quired by this section, th backfill shall be place polystyrene synthetic a nall be permitted to be	Authority Having Jurisdictition. Drainpipe shall be pland this material covered ed over the filter material ggregate units, and systeused in lieu of pipe and fil	on, varying in size aced on filter material with untreated cover until after that treat and ter material.
Example of Combination Indoor and Outdoor Combustion Air Opening Design.	J 101.2	J 101.2	Update to the title	State Does not Adopt		
opening sizes for the following ap located in a 15 foot by 30 foot (45	pliance installa 72 mm by 914	ition example. E 4 mm) basemer	ustion Air Opening Design. Determine xample Installation: A fan-assisted furnar th with an 8 foot (2438 mm) ceiling. No actish thermal units per hour (Btu/h) (29 kW	ce and a drafthood-equiditional indoor spaces	ipped water heater with the can be used to help meet	ne following inputs are the appliance
1) Determine the total available r	oom volume. A	appliance room	volume: 15 feet by 30 feet (4572 mm by 9	9144 mm) with an 8 foo	t	
(2438 mm) ceiling = 3600 cubic fe	eet (101.94 m3)				
located in the basement is calcula	ated as follows:	100 000 Btu/h	o determine combustion air is used to cal (29 kW) + 40 000 Btu/h (11.7 kW) =140 (.83 m3/kW). Using Table J 101.2, the red	000 Btu/h (41 kW) The	standard method requires	that the required
System Design	K 101.2	K 101.2	Rainwater catchment requirement	State Does not Adopt		
	g Jurisdiction to	o perform potab	in accordance with this appendix shall be le rainwater catchment system design woode.			
Minimum Water Quality Requirements	K 101.7	K 101.7	Update to EPA requirement	State Does not Adopt		
requirements as determined by the	e Authority Ha	ving Jurisdiction	n water quality for potable rainwater catch I. In the absence of water quality requirer vise, or expand alternate water source w	ments, the guidelines E		

Filtration Devices	K 104.4.1	K 104.4.1	New Reference location	State Does not Adopt	
K 104.4.1 Filtration Devices	s. Potable water filt	ers shall compl	ly with NSF/ANSI 53 and shall be in	stalled in accordance with the	manufacturer's installation instructions.
Above Grade	K 105.3	K 105.3	Updated Code Language	State Does not Adopt	
Tanks shall be installed in an	n accessible locatio	n to allow for in	of an opaque material, approved for aspection and cleaning. The tank shapacity in accordance with the building	all be installed on a foundation	unlight, or shall be shielded from direct sunligh n or platform that is constructed to
Size	K 106.2	K 106.2	New Reference Location	State Does not Adopt	
			ater containing debris that has accurately methods of sizing roof washe		ace away from the storage tank.
L. General	L 201.1	L 201.1	Updated Code Definition	State Does not Adopt	
L 201.1 General. For the pur	rpose of this appen	dix, the following	ng definitions shall apply:		
Definitions	L 201.1	L 201.1	New Definition	State Does not Adopt	
Deminions					
Dedicated Meter. A water n	measuring device		section or end use of a water sup detection of leaks, equipment fail	ply system for any of the fo	llowing purposes: billing, water lar or abnormal use for a specific
Dedicated Meter. A water n	measuring device			ply system for any of the fo	
Dedicated Meter. A water n management, collecting an application. Also called a s Definitions	measuring device and analyzing water submeter.	L 201.1	detection of leaks, equipment fail	ply system for any of the folure, water waste, and irregularies. State Does not Adopt	
Dedicated Meter. A water n management, collecting an application. Also called a s Definitions	measuring device and analyzing water submeter.	L 201.1	detection of leaks, equipment fail	ply system for any of the folure, water waste, and irregularies. State Does not Adopt	lar or abnormal use for a specific
Dedicated Meter. A water in management, collecting an application. Also called a significant of the property o	measuring device and analyzing water submeter. L 201.1 r that flows along a	L 201.1 a surface, in a	New Definition	ply system for any of the folure, water waste, and irregularies, water waste, and irregularies and irregularies. State Does not Adopt State Does not Adopt	lar or abnormal use for a specific
Dedicated Meter. A water in management, collecting an application. Also called a significant of the property o	measuring device and analyzing water submeter. L 201.1 r that flows along a	L 201.1 a surface, in a	New Definition I channel or sub-surface including New Definition	ply system for any of the folure, water waste, and irregularies, water waste, and irregularies and irregularies. State Does not Adopt State Does not Adopt	lar or abnormal use for a specific
Dedicated Meter. A water in management, collecting an application. Also called a significant of the property o	L 201.1 L 201.1 L 201.1	L 201.1 a surface, in a L 201.1 L 201.1 L 201.1	New Definition New Definition New Definition New Definition I channel or sub-surface including New Definition I plying ETo by the appropriate plane.	ply system for any of the folure, water waste, and irregularies, water waste, and irregularies and irregularies. State Does not Adopt State Does not Adopt ant factor or coefficient. State Does not Adopt	lar or abnormal use for a specific

Kitchen and Bar Sink Fa including clinical sinks, flo				a kitchen or bar sinks in domestic or comminks are not included.	ercial installations. Su	oply fittings that discharg	e into other type sinks,
Definitions		L 201.1	L 201.1	Update to definition	State Does not Adopt		
Low Flow Emitter. Low-f	low irrigat	tion emission	device design	ed to dissipate water pressure and dischar	ge a small uniform flow	or trickle of water at a c	constant flow rate.
Definitions		L 201.1	L 201.1	New definition	State Does not Adopt		
On-Site Renewable Ener	rgy. Ener	gy generated	from renewab	le sources produced at the building site. [A	SHRAE 90.1:3.2]		
Definitions		L 201.1	L 201.1	New definition	State Does not Adopt		
Renewable Energy Reso	urces. E	nergy from so	l plar, wind, bior	mass or hydro, or extracted from hot fluid o	r steam heated within t	he earth. [ASHRAE 90.1	:3.2]
MAXIMUM FIXTURE ANI FIXTURE FITTINGS FLO RATES	w	TABLE L 402.1	TABLE L 402.1	Update to table code language and new EPA standards for notes	State Does not Adopt		
FIXTURE TYPE		FLOW RATE					_
Showerheads		.0 gpm at 80 ps					
Kitchen faucets residential ⁴		1.8 gpm at 60 ps					
Lavatory faucets residential ⁵	1	1.5 gpm at 60 ps	i				
Lavatory faucets other than residential	(0.5 gpm at 60 ps	si				
Metering faucets		.25 gallons/cyc					
Metering faucets for wash fountains		gallons/cycle f each 20 inches					
Wash fountains	One 2.2	gpm at 60 psi fi each 20 inches r	xture fit-				
Water Closets		.28 gallons/flus					
Urinals		0.5 gallons/flush					
Commercial Pre-Rinse Spray Valves	Se	ee Section L 402	2.9				
For SI units: 1 gallon per minute = 6.8947 kPa, 1 inch = 25.4 mm, Notes: 1 Shall be listed to EPA Waters multiple showerheads serving	1 gallon = 3 Sense Specif	7.785 L	erheads. For				
402.6.1. Shall be listed to EPA WaterSe Specification for Flushometer. Shall be listed to EPA WaterS	ense Specific Valve Wate iense Flushin specification	cation for Tank-Ty r Closets. ng Urinal Specifions listed in Section	reation. Non- on L 402.3.1.				
water urinals shall comply with See Section L 402.4. Shall be listed to EPA Water Specification.				Added new section	State Does not		
 See Section L 402.4. Shall be listed to EPA Water 	rain	(N/A)	402.3.2	Added New Section	Adopt		
 See Section L 402.4. Shall be listed to EPA Water Specification. Nonwater Urinals with D Cleansing Action L 402.3.2 Nonwater Urin 	als with I	Drain Cleans	ing Action. N	onwater urinals with drain cleansing acturer's installation instructions.	•	n ASME A112.19.19 and	I shall be cleaned,

Shower Valves	402.6.3	402.6.3	Updated Reference Location	State Does not Adopt	
L 402.6.3 Shower Valves. Show for the rated flow rate of the instal			temperature control performance require	ements of ASSE 1016	6/ASME A112.1016/CSA B125.16 when tes
Marking	(N/A)	L 402.6.3.1	Added New Section	State Does not Adopt	
L 402.6.3.1 Marking. Control valv	ves for showers	s and tub/showe	er combinations shall be tagged, labeled,	or marked in accorda	nce with the applicable standards.
Bath and Shower Flow- Reduction Devices	(N/A)	402.8	Added New Section	State Does not Adopt	
L 402.8 Bath and Shower Flow-	Reduction De	vices. Bath and	shower flow-reduction devices shall con	nply with IAPMO IGC	244.
Commercial Pre-Rinse Spray Valves.	L 402.8	L 402.9	Moved location and updated table location	State Does not Adopt	
COMMERCIAL PRE-RINSE SPRAY VALVE MAXIMUM FLOW RATE	TABLE L 402.9	TABLE L 402.9	New Commercial spray flow rate	State Does not Adopt	
TABLE L 402.9					
COMMERCIAL PRE-RINSE S	SPRAY VALVE				
	SPRAY VALVE RATE MAXIMUM FLOW	RATE			
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R	SPRAY VALVE	RATE			
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force)	RATE MAXIMUM FLOW (GPM)	RATE			
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force)	MAXIMUM FLOW (GPM)	RATE			
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force and ≤ 8.0 ounces-force)	MAXIMUM FLOW (GPM) 1.00 1.20				
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force and ≤ 8.0 ounces-force) Product Class 3 (> 8.0 ounces-force)	MAXIMUM FLOW (GPM) 1.00 1.20		Moved location	State Does not Adopt	
PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force) Product Class 3 (> 8.0 ounces-force) Product Class 3 (> 8.0 ounces-force) For SI units: 1 gallon per minute = 3.785 L/mi Emergency Safety Showers and Eye Wash Stations. L 402.10 Emergency Safety Sho	MAXIMUM FLOW (GPM) 1.00 1.20 1.28 in, 1 ounce-force = 0. L 402.9	278 N. L 402.10		Adopt	ns shall not be limited to their water supply
COMMERCIAL PRE-RINSE S MAXIMUM FLOW R PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force and ≤ 8.0 ounces-force) Product Class 3 (> 8.0 ounces-force) For SI units: 1 gallon per minute = 3.785 L/mi Emergency Safety Showers and Eye Wash Stations.	MAXIMUM FLOW (GPM) 1.00 1.20 1.28 in, 1 ounce-force = 0. L 402.9	278 N. L 402.10		Adopt	ns shall not be limited to their water supply
PRODUCT CLASS BY SPRAY FORCE PRODUCT CLASS BY SPRAY FORCE Product Class 1 (≤ 5.0 ounces-force) Product Class 2 (> 5.0 ounces-force and ≤ 8.0 ounces-force) Product Class 3 (> 8.0 ounces-force) For St units: 1 gallon per minute = 3.785 L/mi Emergency Safety Showers and Eye Wash Stations. L 402.10 Emergency Safety Shorates. Drinking Fountains and Bottle Filling Stations L 402.11 Drinking Fountains an	MAXIMUM FLOW (GPM) 1.00 1.20 1.28 in, 1 ounce-force = 0. L 402.9 Dwers and Eye L 402.10 d Bottle Filling	L 402.10 Wash Station L 402.11 g Stations. Bot	s. Emergency safety showers and emerg	Adopt gency eyewash station State Does not Adopt used as a substitute to	ns shall not be limited to their water supply to meet the requirements of drinking fountai

Temperature	(N/A)	L 404.5.1	New Section added	State Does not Adopt		
			d and installed to maintain a mean temper iological cultures shall not exceed 104°F (
Dipper Well Faucets	L 404.6	L 404.6	Updated code language, and removed unneeded sections	State Does not Adopt		
	on cycle of a	self-closing fixtu	nanent water supply, the faucet shall have re fitting shall not exceed the water capaci			
Pulpers and Mechanical Strainers.	L 404.7.1	L 404.7.1	Updated gpm requirement	State Does not Adopt		
L 404.7.1 Pulpers and Mechani water supply to limit the water flo		. The water use	for pulpers or mechanical strainers shall r	not exceed 2 gpm (7.6	L/m). A flow restrictor shall	be installed on the
Tempering Water	(N/A)	L 404.8	New section for 140* requirement	State Does not Adopt		
L 404.8 Tempering Water. The of tempered with potable water.	discharge was	ste from comme	rcial dishwashers, ware washers, combina	ation ovens, and food	steamers that exceeds 140	°F (60°C) shall not b
Medical and Laboratory Facilities	L 404.8	L 404.9	Moved locations	State Does not Adopt		
L 404.9 Medical and Laboratory L 404.12.	y Facilities. N	ledical and lab	oratory facilities shall comply with the	water efficiency requ	uirements in Section L 40	4.10 through Sectio
Steam Sterilizers	L 404.9	L 404.10	Moved locations	State Does not Adopt		
L 404.10 Steam Sterilizers. Cor venturi-type vacuum system sl			nit the discharge temperature of conde	ensate or water from	steam sterilizers to 140°l	(60°C) or less. A
X-Ray Film Processing Units	L 404.10	L 404.11	Moved locations	State Does not Adopt		
L 404.11 X-Ray Film Processin	g Units. Proc	essors for X-ra	y film exceeding 6 inches (152 mm) in	any dimension shall	be equipped with water r	ecycling units.
Exhaust Hood Liquid Scrubber Systems	L 404.11	L 404.12	Moved locations	State Does not Adopt		
	haust hoods	and ducts shal	crubber systems for exhaust hoods an I be equipped with a timer-controlled w after the wash down process has comp	vater recirculation sy		
	giled to diali	•				

Required	L 407.1	L 407.1	Updated model code language	State Does not Adopt		
Remote Data Transfer	L 407.3	L 407.3	Updated code section on multiple water utility's	State Does not Adopt		

	TABLE L 407.1 DEDICATED WATER METERING REQUIREMENTS
APPLICATION	REQUIREMENTS
Cooling Towers	The makeup water supply to cooling towers, evaporative condensers, and fluid coolers. Cooling towers sharing a common basin can be grouped together using one meter.
Evaporative Coolers	The makeup water supply to an evaporative cooler having an air flow exceeding 30 000 cubic feet per minute (ft ³ /min).
Fluid Coolers and Chillers – Open Systems	The makeup water supply on water-cooled fluid coolers and chillers not utilizing closed-loop recirculation.
Hydronic Cooling Systems – Closed Loop	Systems with 50 ton or greater of cooling capacity and where a make-up water supply is connected.
Hydronic Heating Systems	The makeup water supply to one or more boilers collectively exceeding 1 000 000 British thermal units per hour (Btu/h).
Industrial Processes	The water supply to an industrial water-using process where the average consumption exceeds 1000 gallons per day (gal/d). Like equipment sharing one common water supply can be grouped together using one meter. Exception: Processes using untreated water where the water is directly returned to the original source after use;
Landscape Irrigation	Landscape irrigation water where either of the following conditions exist: (1) Total accumulated landscape area with in-ground irrigation system exceeds 2500 square feet (ft³), of (2) Total accumulated landscape area using an automatic irrigation controller exceeds 1500 square feet (ft²) Exception: Where the water purveyor provides a separate water supply meter that serves only the irrigation system, an additional dedicated meter is not required.
Onsite Water Collection Systems	Potable or reclaimed water supplies for supplementing onsite alternative water collection systems.
Ornamental Water Features	Potable or reclaimed water supplies for ornamental water features where the water feature uses an automatic refill valve.
Roof Spray Systems	Roof spray systems for irrigating vegetated roofs or thermal conditioning covering an area greater than 300 square feet (ff!). Exception: Temporary above-surface spray systems connected to a hose bibb and without an automatic controller are not required to have a dedicated meter
Tenant Buildings - Common Areas	Water supplies used in common areas of a site. The dedicated meter for common area water use shall not include water supplied inside tenant space. Water supplies for sanitary fixtures and other water use in common areas can be grouped together for metering requirements, except where dedicated water meter installations are otherwise required.
Tenant Spaces - Residential	All water supplies to each residential tenant space for indoor water use. Exception: Where a water purveyor has individual meters for each tenant space, and the other meter requirements included in Table L 407.1 do not apply, no additional dedicated meter is required.
Tenant Spaces - Non-residential, car washes	All water supplies to individual non-residential tenant spaces for indoor water use where any of the following conditions exist! (1) The nominal size of a water supply pipe(s) to the individual tenant space is greater than ½ inch, or (2) Water consumption within in the tenant space is estimated or expected to average greater than 1000 gallons/day (gal/d). Where water is supplied to tenant space that is not required to have dedicated meter, the water supply pipe (s) shall be accessible to install a meter. Exception: Where a water purveyor has individual meters for each tenant space and the other meter requirements included in Table L 407.1 do not apply, no additional dedicated meter is required.

General L 409.1 L 409.1 Updated Reference Location State Does not Adopt

L 409.1 General. Sump pumps powered by potable or reclaimed (recycled) water pressure shall be used as an emergency backup pump and shall comply with IAPMO PS 119. The water-powered pump shall be equipped with a battery powered alarm having a minimum rating of 85 dBa at 10 feet (3048 mm). Water-powered pumps shall have a water efficiency factor of pumping at least 1.4 gallons (5.3 L) of water to a height of 10 feet (3048 mm) for every gallon of water used to operate the pump, measured at a water pressure of 60 psi (414 kPa). Pumps shall be labeled as to the gallons of water pumped per gallon of potable water consumed. Water-powered stormwater sump pumps shall be equipped with a reduced pressure principle backflow prevention assembly.

Water Softeners L 410.1	L 410.1	Updated Reference Location	State Does not Adopt			
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(0.0647 kg) of hardness remove Point-of-Use Reverse	ta during the se			State Does not		
Osmosis Water Treatment Systems	L 410.3	L 410.3	Update code language	Adopt		
			ystems. Reverse osmosis water treatment everse osmosis water treatment systems s			
Drinking Water Treatment Systems	L 410.4	L 410.4	New section added to code	State Does not Adopt		
L 410.4 Drinking Water Treatn	nent Systems.	Drinking water	treatment systems shall be listed to WQA/.	ASPE/ANSIS-803.		
General	L 411.1	L 411.1	Irrigation requirement to meet with new sections	State Does not Adopt		
L 411.1 General. Where landsc	ape irrigation sy	stems are insta	alled, they shall be in accordance with Sect	ion L 411.1.1 throug	h Section L 411.17.	
Installation. L 411.1.1 Irrigation Design and demonstrate competency. The state of	system shall be	designed and r	New Requirements for Irrigation installation aving Jurisdiction shall have the authority record drawings showing changes during iron, the contractor, installer, or designer shall be available.	nstallation shall be m	ade available for the ow	ner and for any required
Installation. L 411.1.1 Irrigation Design and demonstrate competency. The sinspections. Where required by Plant and Irrigation System	d Installation.	The Authority H designed and r	installation aving Jurisdiction shall have the authority to ecord drawings showing changes during in	Adopt to require landscape astallation shall be m	ade available for the ow	ner and for any required
demonstrate competency. The sinspections. Where required by Plant and Irrigation System Limitations L 411.2 Plant and Irrigation Syplants not requiring supplement principally used as an athletic fiexceptions: (1) Where average annual rainfan in-ground irrigation systems	d Installation. system shall be the Authority H (N/A) //stem Limitation irrigation and relid or public received all is less than 1 thall be allowed.	The Authority H designed and raving Jurisdiction L 411.2 Dons. Nuisance, not principally uscreation. Inground inches (305m)	aving Jurisdiction shall have the authority to record drawings showing changes during in on, the contractor, installer, or designer shall be recorded by the contractor of the	Adopt to require landscape estallation shall be mall be licensed, certification shall be mall be licensed, certification shall be licensed, certification shall be used in no land more than 40 percent materials have an a	Jurisdiction shall not be ess than 60 percent of the landscaped are annual ETc of not excee	ner and for any required uch work. used in the landscape. he landscape that is not ea. dding 15 inches (381mm),

Maximum Velocity	L 411.4	L 411.4	New section for velocity of water flow	State Does not Adopt		
L 411.4 Maximum Velocity. Velocity feet per second (2.3 m/s) for n			ceed 5 feet per second (1.5 m/s) for them	noplastic irrigation pip	es. Velocity of w	ater flow shall not exceed 7.5
Backflow Protection	L 411.5	L 411.5	Updated Backflow requirements	State Does not Adopt		
L 411.5 Backflow Protection the Authority Having Jurisdicti		and reclaimed w	ater supplies to landscape irrigation syste	ms shall be protected	from backflow ir	accordance with this code ar
			Requirement for when there is	State Does not		
Sources for Landscape	(N/A)	L 411.6	adequate alternative water to use it.	Adopt Adopt		
Sources for Landscape Irrigation L 411.6 Use of Alternate War Authority Having Jurisdiction, sources are available, the irrig potable water is used. Exception	ter Sources for alternative wate gation system sh ion: Plants grow	Landscape Irrig r source(s) shall all be designed t n for food produc	gation. Where available by pre-existing to be utilized for landscape irrigation. Where o use a minimum of 75 percent of alternation for direct human consumption.	Adopt eatment, storage, or d adequate capacity ar	d volumes of pr	e-existing alternative water
Sources for Landscape Irrigation L 411.6 Use of Alternate War Authority Having Jurisdiction, sources are available, the irrig potable water is used. Excepti	ter Sources for alternative water gation system sh	Landscape Irrig r source(s) shall all be designed t	gation. Where available by pre-existing to be utilized for landscape irrigation. Where o use a minimum of 75 percent of alternative of 75 percent of alternative for the process of the pr	Adopt eatment, storage, or deadequate capacity ar	d volumes of pr	e-existing alternative water
Sources for Landscape Irrigation L 411.6 Use of Alternate War Authority Having Jurisdiction, sources are available, the irrig potable water is used. Excepti Master Valve. L 411.6.1 Master Valve. Whe	ter Sources for alternative water gation system shion: Plants grow (N/A)	Landscape Irrig r source(s) shall all be designed t n for food produc L 411.6.1 pressurized alter	gation. Where available by pre-existing to be utilized for landscape irrigation. Where o use a minimum of 75 percent of alternation for direct human consumption.	eatment, storage, or diadequate capacity artive water for the annuing state Does not Adopt.	d volumes of pr al irrigation dem	e-existing alternative water and before supplemental
Authority Having Jurisdiction, sources are available, the irrig potable water is used. Excepti Master Valve. L 411.6.1 Master Valve. Whe	ter Sources for alternative water gation system shion: Plants grow (N/A)	Landscape Irrig r source(s) shall all be designed t n for food produc L 411.6.1 pressurized alter	it. gation. Where available by pre-existing tribe utilized for landscape irrigation. Where o use a minimum of 75 percent of alternation for direct human consumption. Requirement to have a valve nate water sources supply an existing irri	eatment, storage, or diadequate capacity artive water for the annuing state Does not Adopt.	d volumes of pr al irrigation dem	e-existing alternative water and before supplemental
Sources for Landscape Irrigation L 411.6 Use of Alternate War Authority Having Jurisdiction, sources are available, the irrig potable water is used. Exception Master Valve. L 411.6.1 Master Valve. Whe alternate water sources supply Identification L 411.6.2 Identification. Whe	ter Sources for alternative water atternative water specified in system ships on: Plants grow (N/A) tere continuously ypiping connect (N/A) tere alternate water valve, or any of	Landscape Irrig r source(s) shall all be designed to n for food produc L 411.6.1 pressurized alter ts to the existing L 411.6.2 er sources supplither components	it. gation. Where available by pre-existing to be utilized for landscape irrigation. Where o use a minimum of 75 percent of alternation for direct human consumption. Requirement to have a valve nate water sources supply an existing irrigation system downstream of the back Requirement to follow previous chapter requirements y an existing irrigation system, the existing required by the Authority Having Jurisdic	Adopt eatment, storage, or d adequate capacity ar tive water for the annu State Does not Adopt gation system, a mast low preventer where r State Does not Adopt g sprinkler heads, valv	d volumes of pral irrigation dem	e-existing alternative water and before supplemental installed at the point where the action of the point where the

Irrigation Control Systems	L 411.4	L 411.7	Updated irrigation requirements to meet up with EPA standard	State Does not Adopt			
L 411.7 Irrigation Control Sy	stems. Where in	nstalled as			•		
part of a landscape irrigatio	n system, irriga	tion control sy	stems				
shall:							
(1) Automatically adjust the WaterSense Specification for	irrigation sched or Weather-Base	dule to respond ed Irrigation Co	to plant water needs determined by we ntrollers or the EPA WaterSense Speci	eather or soil moistur fication for Soil Moist	e conditions. Shall be lure-Based Irrigation Co	listed to the EPA ontrollers.	
(2) Utilize onsite sensors or conditions.	remote weather	r data to inhibit	or to suspend irrigation when adequat	e soil moisture is pre	sent or during a rainfal	l or freezing	
(3) Utilize either one or more Specification to suspend irr	e on-site sensor igation where a	rs or a weather dequate soil m	based irrigation controller listed to the oisture is present for plant growth.	US EPA WaterSense	Weather Based Irrigati	on Controllers	
(4) Have the capability to pr flowing off of the intended i		and different ru	ın times for each irrigation zone to ena	ole cycling of water a	pplications and duration	ons to mitigate water	
., .			ving a signal or local sensor input.				
			hooting test cycle and shall automatica still positioned for manual operation.	Illy return to sensor i	nput mode within some	e period of time as	
(7) The site-specific settings the controller, shall include		n control syste	m shall be posted at the control system	location. The posted	data, where applicabl	e to the settings of	
(a) Precipitation rate for each							
(b) Plant evapotranspiration		r each zone.					
(c) Soil absorption rate for e							
` '							
(d) Rain sensor settings.							
• •							
(e) Soil moisture setting. (f) Peak demand schedule in	ncluding run tim	nes for each zo	ne and the number of cycles to mitigate	runoff and monthly	adjustments or percent	tage change from	
(e) Soil moisture setting. (f) Peak demand schedule in	ncluding run tim	nes for each zo	ne and the number of cycles to mitigate	runoff and monthly	adjustments or percent	tage change from	
(e) Soil moisture setting.	(N/A)	L 411.8	ne and the number of cycles to mitigate New section on irrigation flow senser	e runoff and monthly State Does not Adopt	adjustments or percen	tage change from	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule in peak demand schedule in Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens	(N/A)	L 411.8	New section on irrigation flow senser dscape irrigation systems, an irrigation flow	State Does not Adopt w sensing system shall	be installed that shall in	terface with the control	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f	(N/A)	L 411.8	New section on irrigation flow senser	State Does not Adopt w sensing system shall	be installed that shall in	terface with the control	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule in peak demand schedule in Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens	(N/A) sing System. On or abnormal flow	L 411.8 commercial lan conditions. If ed	New section on irrigation flow senser dscape irrigation systems, an irrigation flow	State Does not Adopt w sensing system shall tion flow sensing system	be installed that shall in	terface with the control	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f	(N/A)	L 411.8	New section on irrigation flow senser dscape irrigation systems, an irrigation flow	State Does not Adopt w sensing system shall	be installed that shall in	terface with the control	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f water.	(N/A) sing System. On or abnormal flow	L 411.8 commercial lan conditions. If ed	New section on irrigation flow senser dscape irrigation systems, an irrigation flow uipped with totalizer capabilities, the irrigation flow uipped with totalizer capabilities.	State Does not Adopt w sensing system shall tion flow sensing syste State Does not	be installed that shall in	terface with the control	
(e) Soil moisture setting. (f) Peak demand schedule in	(N/A) ing System. On or abnormal flow L 411.8	L 411.8 commercial lan conditions. If ed	New section on irrigation flow senser dscape irrigation systems, an irrigation flou uipped with totalizer capabilities, the irrigation flow uipped with totalizer capabilities.	State Does not Adopt w sensing system shall tion flow sensing syste State Does not Adopt	be installed that shall in m shall also function as	terface with the control a meter for irrigation	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f water. Low Flow Irrigation L 411.9 Low Flow Irrigation. 802 Landscape Irrigation Spri	(N/A) ing System. On or abnormal flow L 411.8 Irrigation zones nkler and Emitter	L 411.8 commercial lan conditions. If ed L 411.9 using low flow in r Standard and s	New section on irrigation flow senser dscape irrigation systems, an irrigation flow uipped with totalizer capabilities, the irrigation emitters with emitter flow rates not shall be equipped with filters sized according	State Does not Adopt w sensing system shall tion flow sensing syste State Does not Adopt of to exceed 6.3 gallong to the manufacturer	be installed that shall in m shall also function as	terface with the control a meter for irrigation omply with ASABE/ICC he specific low flow	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f water. Low Flow Irrigation L 411.9 Low Flow Irrigation. 802 Landscape Irrigation Spriemitter, and with a pressure of the sense of the	(N/A) ing System. On or abnormal flow L 411.8 Irrigation zones nkler and Emitter egulator installed	L 411.8 commercial lan conditions. If ed L 411.9 using low flow in r Standard and s	New section on irrigation flow senser dscape irrigation systems, an irrigation flou uipped with totalizer capabilities, the irrigation by the irrigation emitters [with emitter flow rates not sense]	State Does not Adopt w sensing system shall tion flow sensing syste State Does not Adopt of to exceed 6.3 gallong to the manufacturer	be installed that shall in m shall also function as	terface with the control a meter for irrigation omply with ASABE/ICC he specific low flow	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f water. Low Flow Irrigation L 411.9 Low Flow Irrigation. 802 Landscape Irrigation Spriemitter, and with a pressure of the sense of the	(N/A) ing System. On or abnormal flow L 411.8 Irrigation zones nkler and Emitter egulator installed	L 411.8 commercial lan conditions. If ed L 411.9 using low flow in r Standard and s	New section on irrigation flow senser dscape irrigation systems, an irrigation flow uipped with totalizer capabilities, the irrigation emitters with emitter flow rates not shall be equipped with filters sized according	State Does not Adopt w sensing system shall tion flow sensing syste State Does not Adopt of to exceed 6.3 gallong to the manufacturer	be installed that shall in m shall also function as	terface with the control a meter for irrigation omply with ASABE/ICC he specific low flow	
(e) Soil moisture setting. (f) Peak demand schedule in peak demand schedule Irrigation Flow Sensing System L 411.8 Irrigation Flow Sens system to suspend irrigation f water. Low Flow Irrigation L 411.9 Low Flow Irrigation. 802 Landscape Irrigation Spri	(N/A) ing System. On or abnormal flow L 411.8 Irrigation zones nkler and Emitter egulator installed	L 411.8 commercial lan conditions. If ed L 411.9 using low flow in r Standard and s	New section on irrigation flow senser dscape irrigation systems, an irrigation flow uipped with totalizer capabilities, the irrigation emitters with emitter flow rates not shall be equipped with filters sized according	State Does not Adopt w sensing system shall tion flow sensing syste State Does not Adopt of to exceed 6.3 gallong to the manufacturer	be installed that shall in m shall also function as	terface with the control a meter for irrigation omply with ASABE/ICC he specific low flow	

L 411.10 Mulched Planting Areas. Only low flow emitters with flow rates not to exceed 6.3 gallons (24 L) per hour are allowed to be installed in mulched planting areas with vegetation taller than 12 inches (305 mm).

System Performance Requirements	_ 411.7	L 411.11	Updated to add exception	State Does not Adopt		
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L 411.11 System Performance Requirements. The landscape irrigation system shall be designed and installed to:

- (1) Prevent irrigation water from runoff out of the irrigation zone.
- (2) Prevent water in the supply line drainage from draining out between irrigation events.
- (3) Not allow irrigation water to be applied onto or enter nontargeted areas including adjacent property and vegetation areas, adjacent hydrozones not requiring the irrigation water to meet its irrigation demand, non-vegetative areas, impermeable surfaces, roadways, and structures. Exception: Landscape features outside of the public right of way such as paved walkways, jogging paths, and golf cart paths, are exempted from this requirement where run off drains into the same hydrozone without puddling.

Narrow or Irregularly Shaped Landscape Areas	L 411.12	L 411.12	Flow maximum requirement	State Does not Adopt			
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L 411.12 Narrow or Irregularly Shaped Landscape Areas. Narrow or irregularly shaped landscape areas, less than 4 feet (1219 mm) in any direction across opposing boundaries, shall not be irrigated by an irrigation emission device except low flow emitters with flow rates not to exceed 6.3 gallons (24 L) per hour.

Irrigation System Inspection	(N/A)	L 411.13	Code requirements added for	State Does not	
and Performance Check	(IVA)	L 411.13	irrigation	Adopt	

- L 411.13 Irrigation System Inspection and Performance Check. The irrigation system shall be inspected to verify compliance with the irrigation design in accordance with the following:
- (1) Inspection and performance check shall be by an independent third party having credentials in accordance with the US EPA WaterSense program or the Authority Having Jurisdiction
- (2) Sprinklers shall be installed as specified with proper spacing and required nozzle.
- (3) Sprinklers shall be activated and visually inspected for covering areas without causing overspray or runoff.
- (4) Valves shall be installed as specified.
- (5) Drip irrigation systems shall be inspected to verify the proper valve, pressure regulation, filtering device, location of flush valves, and that the installed emitters comply with the irrigation plan.
- (6) Control system shall be installed as specified and listed as a US EPA Water Sense labeled controller, and all sensors shall be installed and verified for proper installation and operation.
- (7) The peak demand irrigation schedule shall be posted near the controller, or the scheduling parameters for the controller shall be listed for each station including cycle and soak times.
- (8) Record drawings of the irrigation system shall be completed and provided for the irrigation inspection.
- (9) An inspection report shall be provided to the property owner or management company identifying problems and what corrective actions are required.

Sprinkler Head Installations	411.10	L 411.14	Moved in code book	State Does not Adopt	
L 411.14 Sprinkler Head Installa	ntions. All insta	alled sprinkler he	eads shall comply with ASABE/ICC 802 o	r other approved stand	ard(s).
Sprinkler Heads in Common Irrigation Zones	L 411.10.1	L 411.14.1	Moved in code book, and code requirement for performance	State Does not Adopt	

L 411.14.1 Sprinkler Heads in Common Irrigation Zones. Sprinkler heads installed in irrigation zones served by a common valve shall be limited to applying water to plants with similar irrigation needs, and shall have matched precipitation rates (identical inches of water application per hour plus or minus 7 percent as labeled or declared in manufacturer's published performance data).

Regulation .	L 411.10.2	L 411.14.2	Moved in code book and code requirement to meet EPA standards	State Does not Adopt	
	ended operatin	g pressure for			ation system or integral to the sprinkler body) to gral pressure regulation shall be listed to the
Pop-up Type Sprinkler Heads.	(N/A)	L 411.14.3	Moved in code book	State Does not Adopt	
L 411.14.3 Pop-up Type Sprink than 4 inches (102 mm) above th				ler heads shall rise to a	a height above vegetation level and of not less
Sprinkler Head Maximum Precipitation Rate	(N/A)	L 411.14.4	New section added to code book	State Does not Adopt	
L 411.14.4 Sprinkler Head Maxi 1.75 inches (44 mm) per hour wh			ere the slope of the landscape exceeds 2	25 percent, the precipit	ation rate of sprinkler heads shall not exceed
Outside Hose Bibbs	(N/A)	L 411.15	This code allows hose bibs on alternative water piping	State Does not Adopt	
					Hose bibbs supplying water from the irrigation the symbol in Figure 1505.10 of this code.
Depth of Irrigation Pipe	L 411.12	L 411.16	Moved in code book	State Does not Adopt	
L 411.16 Depth of Irrigation Pip 411.16.2.	e. Irrigation pip	e downstream	from the backflow preventer shall be buri	ied at a minimum deptl	h according to Section L 411.16.1 and Section
	L 411.12.1	L 411.16.1	Moved in code book	State Does not Adopt	
Landscape Areas				, rach.	
and irrigation lateral lines buried	a minimum of 8	inches (203 m		shall have irrigation ma nan 10 000 square feet	in lines buried a minimum of 12 inches (305mr (929 m2) shall have irrigation main lines burie
L 411.16.1 Landscape Areas. Ir and irrigation lateral lines buried a minimum of 18 inches (457 mm	a minimum of 8	inches (203 m	m). Irrigated landscaped areas greater th	shall have irrigation ma	
L 411.16.1 Landscape Areas. Ir and irrigation lateral lines buried a minimum of 18 inches (457 mm Vehicular Surfaces L 411.16.2 Vehicular Surfaces.	a minimum of 8 n) and irrigation L 411.12.2 Irrigation pipe i	L 411.16.2	m). Irrigated landscaped areas greater the ried a minimum of 12 inches (305 mm). Moved in code book	Shall have irrigation man and 10 000 square feet State Does not Adopt Cluding landscaped fire	
L 411.16.1 Landscape Areas. Ir and irrigation lateral lines buried a minimum of 18 inches (457 mm Vehicular Surfaces L 411.16.2 Vehicular Surfaces. 1-inch pipe (25 mm) size greater	a minimum of 8 n) and irrigation L 411.12.2 Irrigation pipe i	L 411.16.2	m). Irrigated landscaped areas greater thried a minimum of 12 inches (305 mm). Moved in code book vehicular paving and pervious pavers, inc	Shall have irrigation man and 10 000 square feet State Does not Adopt Cluding landscaped fire	(929 m2) shall have irrigation main lines burie
L 411.16.1 Landscape Areas. Ir and irrigation lateral lines buried a minimum of 18 inches (457 mm) Vehicular Surfaces L 411.16.2 Vehicular Surfaces. 1-inch pipe (25 mm) size greater Backfill L 411.17 Backfill. All excavation	L 411.12.2 Irrigation pipe i than the irrigation to L 411.13 If or irrigation piconstruction de	L 411.16.2 Installed under ion pipe and but L 411.17 pe installation sibris, or other metallation sib	m). Irrigated landscaped areas greater thried a minimum of 12 inches (305 mm). Moved in code book vehicular paving and pervious pavers, incried at a minimum depth of 24 inches (61 Moved in code book shall be backfilled in thin layers to 12 inches taterials that would damage or break the	State Does not Adopt Cluding landscaped fire to mm) in all cases. State Does not Adopt State Does not Adopt State Does not Adopt State Does not Adopt State Does not Adopt	(929 m2) shall have irrigation main lines burie

Building Cavities	(N/A)	L 501.2.2	New section about sizing for cavities	State Does not Adopt		
L 501.2.2 Building Cavities. Bui			er supply and return piping shall be large oust cross.	enough to accommoda	ate the combined dia	meter of the pipe plus the
Hot Water On-Demand Pumping Systems.	(N/A)	L 501.4.1	New section to comply with IAPMO Water On-Demand water heater	State Does not Adopt		
L 501.4.1 Hot Water On-Demand comply with IAPMO PS 115.	d Pumping Sy	ystems. Hot wa	ter on-demand pumping systems manually	y actuated or automat	cally activated hot w	ater pumping systems sha
Maximum Volume and Length	L 502.7	L 502.7	Updated Code language for easier	State Does not		
of Hot Water. L 502.7 Maximum Volume and I	Length of Hot	Water. The ma	aximum volume of water contained in a hor	t water branch shall be	e in accordance with	Section L 502.7.1. The
of Hot Water.	Length of Hot	Water. The ma	aximum volume of water contained in a ho	•	in accordance with	Section L 502.7.1. The
of Hot Water. L 502.7 Maximum Volume and I maximum length per volume of pi Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of I	Length of Hot ping shall com	L 502.7.1	aximum volume of water contained in a horn L 502.7.2 Set standard for both sing and	State Does not Adopt Culated using Table L	502.7.1. The maxim	num volume of water in a
of Hot Water. L 502.7 Maximum Volume and Imaximum length per volume of pix Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of Ifixture branch between any source fitting shall be: (1) 24 oz (710 mL) where a single	Length of Hot ping shall com L 502.7.1 Hot Water in a se of hot water be branch serve	L 502.7.1 Branch. The water (water heaters, es a single fixture)	aximum volume of water contained in a hound L 502.7.2 Set standard for both sing and series branch lines water volume per foot of piping shall be carecirculation loops and electrically heat trace.	State Does not Adopt Cloulated using Table Laced pipe shall be con	502.7.1. The maxim sidered sources of h	num volume of water in a ot water) and the fixture
of Hot Water. L 502.7 Maximum Volume and I maximum length per volume of pi Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of I fixture branch between any source fitting shall be: (1) 24 oz (710 mL) where a serie (2) 40 oz (1183 mL) where a serie	L 502.7.1 Hot Water in a se of hot water se branch serve es branch inco	L 502.7.1 Branch. The way (water heaters, es a single fixture proporating one of the control of	saximum volume of water contained in a horn L 502.7.2 Set standard for both sing and series branch lines water volume per foot of piping shall be carecirculation loops and electrically heat transport of the series of the ser	State Does not Adopt Cloulated using Table Laced pipe shall be con	502.7.1. The maxim sidered sources of h	num volume of water in a ot water) and the fixture
of Hot Water. L 502.7 Maximum Volume and I maximum length per volume of pide Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of I fixture branch between any source fitting shall be: (1) 24 oz (710 mL) where a serie branch incorporating two or more Exceptions:	L 502.7.1 Hot Water in a see of hot water es branch serve es branch incomplete flow-through of the complete flow-through of the complete flow of the comple	L 502.7.1 a Branch. The extra (water heaters, es a single fixtur proporating one odesign configura	Set standard for both sing and series branch lines water volume per foot of piping shall be carecirculation loops and electrically heat trace. If more flow-through design configurations ations that serves two or more fixtures.	State Does not Adopt Clause of the state of	502.7.1. The maxim sidered sources of h re fixtures. (3) 60 oz	num volume of water in a not water) and the fixture (1774 mL) where a ring
of Hot Water. L 502.7 Maximum Volume and I maximum length per volume of pix Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of I fixture branch between any source fixture branch between any source fixture shall be: (1) 24 oz (710 mL) where a serio branch incorporating two or more branch incorporating two or more Exceptions: (1) The maximum volume of a sir	Length of Hot ping shall com L 502.7.1 Hot Water in a se of hot water be branch serve es branch inco flow-through o	L 502.7.1 L 502.7.1 a Branch. The way (water heaters, es a single fixture proporating one odesign configurations series branch by the content of the conte	aximum volume of water contained in a hound L 502.7.2 Set standard for both sing and series branch lines water volume per foot of piping shall be carecirculation loops and electrically heat trave. e. In more flow-through design configurations ations that serves two or more fixtures.	State Does not Adopt Clause of the state of	502.7.1. The maxim sidered sources of h re fixtures. (3) 60 oz	num volume of water in a not water) and the fixture (1774 mL) where a ring
Maximum Volume and I maximum Volume of pin Maximum Volume of Hot Water in a Branch L 502.7.1 Maximum Volume of I fixture branch between any source fitting shall be: (1) 24 oz (710 mL) where a serio branch incorporating two or more Exceptions: (1) The maximum volume of a sin the floor is a concrete slab shall results.	Length of Hot ping shall com L 502.7.1 Hot Water in a se of hot water be branch serve es branch inco flow-through of	L 502.7.1 L 502.7.1 L 502.7.1 Branch. The war (water heaters, proporating one or design configurations of the control of th	aximum volume of water contained in a hound L 502.7.2 Set standard for both sing and series branch lines water volume per foot of piping shall be carecirculation loops and electrically heat trave. e. In more flow-through design configurations ations that serves two or more fixtures.	State Does not Adopt State Using Table Laced pipe shall be contact that serves two or mother sink and dishwas	502.7.1. The maxim sidered sources of h re fixtures. (3) 60 oz	num volume of water in a not water) and the fixture (1774 mL) where a ring

ising T	able L	502.7	7.2(1)	throu	gh Ta		.7.2(4)	. Whe	re a fi	xture	fitting	shut	off v				e maximum length of pip xture fitting, the maximun	
Require Compli					ı	L 503.2.	1	L 503.	2.1		pdat	ed ta	ble lo	ocatio	n. Updated	State Does not Adopt		
. 503.2 ASHR				for A	All Co	omplian	ce Pat	hs. Se	ervice	wate	hea	ting s	ysten	ns an	d equipment sha	Il comply with Section	L 503.1, Section L 503.3	, and Section L 503.5.
VATER DISTRI MATER	BUTI	ON PI				TABLE L 502.7.1		TABLE 502.7.					ble lo		n, and water	State Does not Adopt		
						TABLE ME FOR DIST		PIPING N		LS [*]								
NOMINAL SIZE (inch)	COPPER	COPPER	COPPER	CPVC CTS SDR 11	CPVC SCH 40	DEV AL DEV			PEX CTS SDR 9	PE-RT SDR 9	PP SDR 6	PP SDR 7.3	PP SDR 11	CPVC				
(inch)	1.06	0.97	0.84	0.68	1.17	0.59	0.59	0.85	0.64	0.64	0.85	1.02	NA	SDR 11 1.48				
3/2 3/4	1.69 3.43	1.55 3.22	1.45 2.90	1.23 2.52	1.89 3.38	1.22 3.28	1.22 3.28	1.44 2.72	1.18 2.35	1.18 2.35	1.35 2.14	1.64 2.54	NA NA	2.33 3.68				
1	5.81	5.49	5.17	4.24	5.53	5.37	5.37	4.58	3.88	3.88	3.46	4.22	NA	5.83				
11/4	8.70	8.36	8.09	6.38	9.66	8.65	8.65	8.23	5.80	5.80	5.47	6.59	NA	9.35				
11/2	12.18 21.50	11.83	11.45	8.95 15.38	13.20 21.88	13.91 23.16	13.91 23.16	11.38	8.08 13.86	8.08 13.86	8.64 13.64	10.27	NA NA	12.27 19.19				
_	ts: 1 ounce	= 29.573 1	nL, 1 inch												l			
ENGT	H (FT		VOL	JME	((N/A)		TABL 502.7.		N	ew T	able				State Does not Adopt		
					LENG'	TABLE L	. 502.7.2(1) VOLUME (OF PIPING	G									
		co	PPERTYPE	М			COPPERTY	/PE L			СОР	PER TYP	EK					
NOMINAL SIZE (inch	24	4 oz	40 oz	60) oz	24 oz	40 oz		60 oz	24 oz		40 oz	60	0 oz				
3/8	_	2.7	37.8	_	6.7	24.9	41.4	_	62.1	28.4		47.4	_	1.1				
1/2 3/4	_	4.2 7.0	23.7		5.5 7.5	15.5 7.5	25.8 12.4		38.7 18.6	16.5 8.3		27.6 13.8	_	1.4				
1		1.1	6.9		0.3	4.4	7.3	_	10.9	4.6		7.7		1.6				
11/4		2.8	4.6		5.9	2.9	4.8		7.2	3.0		4.9	_	7.4				
1 ¹ / ₂	_	2.0	3.3	_	1.9 2.8	2.0	3.4 1.9		5.1 2.9	2.1 1.2	_	3.5 2.0	_	5.2 3.0				
			l ounce = 2				1.9		w.2	1.2		2.0		ent.				
ENGT F PIP) PER	VOL	JME	((N/A)		TABL 502.7.		N	ew T	able				State Does not Adopt		

				LENG	TABL TH (FT) P	E L 502.7 ER VOLU	(2) ME OF PIP	ING				
	CP	VC CTS SDF	R 11	CPV	C SCH 40 F	PIPE	СР	VC SCH 80 P	IPE	CPVC S	DR 11 PI	PE
NOMINAL SIZE (inch)	24 oz	40 oz	60 oz	24 oz	40 oz	60 oz	24 oz	40 oz	60 oz	24 oz	10 oz	60 oz
3/8	35.5	59.1	88.6	20.5	34.2	51.4	28.3	47.2	70.7	16.2	27.0	40.4
1/2	19.5	32.6	48.8	12.7	21.1	31.7	16.6	27.7	41.5	10.3	17.2	25.7
3/4	9.5	15.9	23.8	7.1	11.8	17.8	8.8	14.7	22.0	6.5	10.9	16.3
1	5.7	9.4	14.2	4.3	7.2	10.9	5.2	8.7	13.1	4.1	6.9	10.3
11/4	3.8	6.3	9.4	2.5	4.1	6.2	2.9	4.9	7.3	2.6	4.3	6.4
11/2	2.7	4.5	6.7	1.8	3.0	4.5	2.1	3.5	5.3	2.0	3.3	4.9
2	1.6	2.6	3.9	1.1	1.8	2.7	1.3	2.1	3.1	1.3	2.1	3.1
For SI units: 1	foot = 304.	8 mm, 1 oun	ice = 29.573	mL, 1 inch	= 25 mm							
LENGTH OF PIPI		PER V	OLUME	≣ ((N/A)	E I 500 3	TABI 502.7		New	Table		
					TABL TH (FT) P		ME OF PIP					
		PEX & P	E-RT CTS S	DR 9		PEX	-AL-PEX (DN)		PE-AL-PE	(DN)	
NOMINAL SIZ inches (DN)	ZE,	OZ	40 OZ	60 OZ	24	oz	40 OZ	60 OZ	24 OZ	40 O	Z	60 OZ
3/8 (12)	3	7.5	62.5	93.8	40	.7	67.8	101.8	40.7	67.8		101.8
1/2 (16)	2	0.4	33.9	50.9	19	.6	32.7	49.0	19.6	32.7		49.0
³ / ₄ (25)	1	0.2	17.0	25.5	7.	3	12.2	18.3	7.3	12.2		18.3
1 (32)		5.2	10.3	15.5	4.	5	7.4	11.2	4.5	7.4		11.2
11/4 (40)		4.1	6.9	10.3	2.	8	4.6	6.9	2.8	4.6		6.9
11/2 (50)		3.0	4.9	7.4	1.	7	2.9	4.3	1.7	2.9		4.3
2 (63)		1.7	2.9	4.3	1.	0	1.7	2.6	1.0	1.7		2.6
For SI units: 1 f	foot = 304.8	8 mm, 1 oun	ce = 29.573	mL, 1 inch	= 25 mm							
							T					
LENGTH OF PIPI		PER V	OLUM	- ((N/A)		TABI 502.7	LE L '.2 (4)	New	Table		
					TARI	E L 502.	1	(-/				
				LENG	TH (FT) F	PER VOLU	JMÈ OF PIE					
		PF	SDR 6 (DN)		PP	SDR 7.3 (DN)		PP SDR 11	(DN) ¹	
						07	40 OZ	60 OZ	24 OZ	40 O	2	60 OZ
NOMINAL S		24 OZ	40 OZ	60 OZ	24	UZ						
	N) ²	24 OZ 28.2	40 OZ 46.9	60 OZ 70.4		3.5	39.2	58.8	NA	NA		NA
Inches (Di	V) ²				23		39.2 24.4	58.8 36.6	NA NA	NA NA		NA NA
Inches (Df 3/8 (16)	V)) ²	28.2	46.9	70.4	23	3.5						
3/8 (16) 1/2 (20)	V)) ²	28.2 17.7	46.9 29.6	70.4 44.3	23 14 9	3.5	24.4	36.6	NA	NA		NA
3/8 (16) 1/2 (20) 3/4 (25)	v)2	28.2 17.7 11.2	46.9 29.6 18.7	70.4 44.3 28.0	23 14 9	3.5 4.7 .5	24.4 15.8	36.6 23.6	NA NA	NA NA		NA NA
3/8 (16) 1/2 (20) 3/4 (25) 1 (32)	y) ²	28.2 17.7 11.2 6.9	46.9 29.6 18.7 11.6	70.4 44.3 28.0 17.3	23 14 9 5	3.5 4.7 .5	24.4 15.8 9.5	36.6 23.6 14.2	NA NA NA	NA NA NA		NA NA NA
3/8 (16) 1/2 (20) 3/4 (25) 1 (32) 1 1/4 (40)	y) ²	28.2 17.7 11.2 6.9 4.4	46.9 29.6 18.7 11.6 7.3	70.4 44.3 28.0 17.3	23 14 9 5 3	3.5 1.7 .5 .7	24.4 15.8 9.5 6.1	36.6 23.6 14.2 9.1	NA NA NA	NA NA NA		NA NA NA
1/2 (20) 3/4 (25) 1/3 (40) 1/4 (40) 1/4 (40)))	28.2 17.7 11.2 6.9 4.4 2.8	46.9 29.6 18.7 11.6 7.3 4.6 2.9	70.4 44.3 28.0 17.3 11.0 6.9 4.4	23 14 9 5 3 2	3.5 4.7 .5 .7 .6	24.4 15.8 9.5 6.1 3.9	36.6 23.6 14.2 9.1 5.8	NA NA NA NA	NA NA NA NA		NA NA NA NA

LENGTH (FT) PER VOLUME OF PIPING	(N/A)	L 503.2.2	New section on servicing water heater	State Does not Adopt		
L 503.2.2 Additional Requireme 503.4.3. [ASHRAE 90.1:7.2.2]	nts for Service	ce Water Heatin	ng. Service water heating systems and eq	uipment shall comply w	vith Section L 503.4.1 th	rough Section L
Load Calculations	L 503.3.1	L 503.3.1	New regulation to follow manufacture guidelines	State Does not Adopt		
	uidelines or ge		esign loads for the purpose of sizing syste and engineering standards and handbooks			
Service Hot Water Piping Insulation	(N/A)	L 503.3.3	New section and refers to new table	State Does not Adopt		
L 503.3.3 Service Hot Water Pip	ing Insulation	n. Insulation of	not water and return piping shall meet the	provisions in Section L	501.2.	
Hot Water System Design		L 503.3.4	Update code language new rule to follow	State Does not Adopt		
L 503.3.4 Hot Water System Des	sign. Hot wate	er systems shall	comply with the following:			
			circulating pump(s) are capable of being t care facilities, hotels, or motels, devices the			
not in operation. Exception: For he	ealthcare facili ge tank water t	ities, long term temperature, cir		nat automatically turn of	ff the circulation pump(s	s) shall not be required.
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- L 503.4.1 Space Heating and Service Water Heating. The use of a gas-fired or oil-fired space heating boiler system, otherwise in accordance with Section L 503.0, to provide the total space heating and service water heating for a building is allowed where one of the following conditions is met:
- (1) The single space-heating boiler, or the component of a modular or multiple boiler system that is heating the service water, has a standby loss in Btu/h (kW) not exceeding (13.3 x pmd + 400)/n, where (pmd) is the probable maximum demand in gallons per hour, determined in accordance with the procedures described in generally accepted engineering standards and handbooks, and (n) is the fraction of the year where the outdoor daily mean temperature exceeds 64.9°F (18.28°C). The standby loss is to be determined for a test period of 24 hours duration while maintaining a boiler water temperature of not less than 90°F (50°C) above ambient, with an ambient temperature between 60°F (16°C) and 90°F (32°C). For a boiler with a modulating burner, this test shall be conducted at the lowest input.
- (2) It is demonstrated to the satisfaction of the Authority Having Jurisdiction that the use of a single heat source will consume less energy than separate units.
- (3) The energy input of the combined boiler and water heater system is less than 150 000 British thermal units per hour (Btu/h) (44 kW). [ASHRAE 90.1:7.5.1]

Service Water-Heating Equipment	L 503.4.2	L 503.4.2	Updated code language	State Does not Adopt		
			eating equipment used to provide the add -heating equipment. [ASHRAE 90.1:7.5.2		e heating as part of a con	nbination (integrated)
3 Large Service Water- Heating Systems	L 503.4.3	L 503.4.3	Raises efficiency standards, adds clearer definitions	State Does not Adopt		

- L 503.4.3 Large Service Water-Heating Systems. New buildings with service water-heating systems with a total installed input capacity of 1 000 000 Btu/h (293 kW) or greater, provided by high-capacity gas-fired service water-heating equipment shall meet either or both of the following requirements:
- (1) Where a single unit of high-capacity gas-fired service water-heating equipment is installed, it shall have a minimum thermal efficiency (Et) of 92 percent.
- (2) Multiple units of high-capacity gas-fired service water-heating equipment connected to the same service water-heating system shall have a total input-capacity-weighted average thermal efficiency (Et) of at least 90 percent, and a minimum of 30 percent of the input of the high-capacity gas-fired service water-heating equipment in the service water heating-system shall have a thermal efficiency (Et) of at least 92 percent.

High-capacity gas-fired service water-heating equipment comprises gas-fired instantaneous water heaters with a rated input both greater than 200 000 Btu/h (58.6 kW) and not less than 4000 British thermal units per hour per gallon [Btu/(h•gal)] (0.3097 kW/L) of stored water, and gas-fired storage water heaters with a rated input both greater han 105 000 Btu/h (30.8 kW) and less than 4000 British thermal units per hour per gallon [Btu/(h•gal)] (0.3097 kW/L) of stored water. Exceptions:

- (1) Water heaters installed in individual dwelling units.
- (2) Individual gas water heaters with input capacity not greater than 100 000 Btu/h (29.3 kW). [ASHRAE90.1:7.5.3]

Heat Recovery for Service Water Heating L 503.4.4	L 503.4.4	Updated code language	State Does not Adopt		
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- L 503.4.4 Heat Recovery for Service Water Heating. Condenser heat recovery systems shall be installed for heating or preheating of service hot water provided all of the following are true:
- (1) The facility operates 24 hours a day.
- (2) The total installed heat rejection capacity of the water-cooled systems exceeds 6 000 000 Btu/h (1758 kW) of heat rejection.
- (3) The design service water-heating load exceeds 1 000000 Btu/h (293 kW). [ASHRAE 90.1:6.5.6.2.1]

Capacity	L 503.4.5	L 503.4.5	Updated code language new code reference location	State Does not Adopt		
L 503.4.5 Capacity. The required	d heat recovery	y system shall ha	ave the capacity to provide the smaller of:			
(1) Sixty percent of the peak heat	t-rejection load	l at design condi	tions or			
(2) Preheat of the peak service ho	ot-water draw t	to 85°F (29°C).				
Exceptions:						
· '	ser heat recove	ery for space hea	ating with a heat recovery design exceedi	ing 30 percent of the pe	eak water-cooled condens	ser load at design
(1) Facilities that employ condens conditions.			ating with a heat recovery design exceeding from onsite renewable energy or sitere			· ·
(1) Facilities that employ condens conditions.						· ·

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	PERFORMANCE REQUIRED ¹	TEST PROCEDURE ^{2,3}	
Electric table-top water heaters	≤12 kW	<4000 (Btu/h)/gal ≥20 gal and ≤120 gal	For applications outside U.S., see footnote (h). For U.S., applications, see footnote (7).	Appendix E of 10 CFR 430	
	≤12 kW	<4000 (Btu/h)/gal ≥20 gal and ≤55 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7).	Appendix E of 10 CFR 430	
Electric storage water heaters	SIZAN	<4000 (Btu/h)/gal >55 gal and ≤120 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7),	Appendix E of 10 CFR 430	
	>12 kW ⁵	<4000 (Btu/h)/gal	$SL \le 0.3 + 27/V_m \% h$	10 CFR 431.106	
	≤12 kW	≥4000 (Btu/h)/gal <2 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7).	Appendix E of 10 CFR 430	
Electric instantaneous water heaters	>12 kW and ≤58.6 kW ³	≥4000 (Btu/h)/gal ≤2 gal ≤180°F	Very Small DP: UEF = 0.80 Low DP: UEF = 0.80 Medium DP: UEF = 0.80 High DP: UEF = 0.80	Appendix E of	
	<58.6 kW ³	≥4000 (Btu/h)/gal <10 gal	No requirement	10 CFR 430	
	250.00 £ 11	≥4000 (Btu/h)/gal ≥10 gal	No requirement		
	≤75 000 Btu/h	<4000 (Btu/h)/gal ≥20 gal and ≤55 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7).	Appendix E of 10 CFR 430	
		<4000 (Btu/h)/gal >55 gal and ≤100 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7),	Appendix E of 10 CFR 430	
Gas storage water heaters	>75 000 Btu/h and ≤105 000 Btu/h ⁴	<4000 (Btu/h)/gal ≤120 gal ≤180°F	Very Small DP: UEF = $0.2674 - (0.0009 \times V_f)$ Low DP: UEF = $0.5362 - (0.0012 \times V_f)$ Medium DP: UEF = $0.6002 - (0.0011 \times V_f)$ High DP: UEF = $0.6597 - (0.0009 \times V_f)$	Appendix E of 10 CFR 430	

TABLE L 503.3.2

TABLE L 503.3.2
PERFORMANCE REQUIREMENTS FOR WATER-HEATING COUPMENT MINIMUM EFFICIENCY REQUIREMENTS (continued) [ASHRAE 50.1: TABLE Z8]

	SIZE CATEGORY	SUBCATEGORY OR		
EQUIPMENT TYPE	(INPUT)	RATING CONDITION	PERFORMANCE REQUIRED ¹	TEST PROCEDURE ^{2,3}
Gas instantaneous water	>50 000 Btu/h and ≤200 000 Btu/h	≥4000 (Btu/h)/gal <2 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7).	Appendix E of 10 CFR 430
heaters	≥200 000 Btu/h	≥4000 (Btu/h)/gal <10 gal	80% E _t	10 CFR 431.106
	≥200 000 Btu/h ⁶	≥4000 (Btu/h)/gal ≥10 gal	$80\% E_t$ SL $\leq (Q/800 + \sqrt{V})$, Btu/h	10 CFR 451.100
	≤105 000 Btu/h	<4000 (Btu/h)/gal ≤50 gal	For applications outside U.S., see footnote (8). For U.S. applications, see footnote (7).	Appendix E of 10 CFR 430
Oil storage water heaters	≥105 000 Btu/h and ≤140 000 Btu/h ²	≤120 gal <4000 (Btu/h)/gal ≤180°F	Very Small DP: UEF = $0.2932 - (0.0015 \times V_T)$ Low DP: UEF = $0.5596 - (0.0018 \times V_T)$ Medium DP: UEF = $0.6194 - (0.0016 \times V_T)$ High DP: UEF = $0.6740 - (0.0013 \times V_T)$	Appendix E of 10 CFR 430
	>140 000 Btu/h	<4000 (Btu/h)/gal	$80\% E_t$ SL $\leq (Q/800 + 110\sqrt{V})$, Btu/h	10 CFR 431.106
Oil instantaneous water	≤210 000 Btu/h	≥4000 (Btu/h)/gal <2 gal	$80 \% E_t$ EF $\geq 0.59 - 0.0005 \times V$	Appendix E of 10 CFR 430 as it appeared as of 1/1/2014
heaters	>210 000 Btu/h	≥4000 (Btu/h)/gal <10 gal	80% E _t	10 CFD 421 104
	>210 000 Btu/h	≥4000 (Btu/h)/gal ≥10 gal	$78\% E_t$ SL $\leq (Q/800 + 110\sqrt{V})$, Btu/h	10 CFR 431.106
Hot-water supply boilers, gas and oil ⁶	≥300 000 Btu/h and <12 500 000 Btu/h	≥4000 (Btu/h)/gal <10 gal	80% E_t	
Hot-water supply boilers, gas ⁶	≥300 000 Btu/h and <12 500 000 Btu/h	≥4000 (Btu/h)/gal ≥10 gal	$80\% E_t$ SL $\leq (Q/800 + 110\sqrt{V})$, Btu/h	10 CFR 431.106
Hot-water supply boilers, oil	≥300 000 Btu/h and <12 500 000 Btu/h	≥4000 (Btu/h)/gal ≥10 gal	$SL \leq \frac{(Q/800 + 110\sqrt{\overline{\nu}})}{Btu/h},$	

TABLE L 503.3.2
PERFORMANCE REQUIREMENTS FOR WATER-HEATING EQUIPMENT MINIMUM EFFICIENCY REQUIREMENTS (continued)
[ASHDAE 90 1-TABLE 78]

		[ASHRAE 90.1: TABL	_E 7.8]	
EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUBCATEGORY OR RATING CONDITION	PERFORMANCE REQUIRED ¹	TEST PROCEDURE ^{2,3}
Pool heaters, gas	All	=	82% E _t for commercial pool heaters and for applications outside U.S. For U.S. applications, see footnote (7).	Appendix P of 10 CFR 430
Heat pump pool heaters	All	50°F db 44.2°F wb Outdoor air 80.0°F entering water	4.0 COP	Appendix P of 10 CFR 430
Unfired storage tanks	All		R-12.5	(none)

- For SI units: 1 gallon = 3.785 L, 1000 British thermal units per hour = 0.293 kW, "C = ("F-32)/1.8 Notes:

 1 Thermal efficiency (Ef) is a minimum requirement, while standby loss (SL) is a maximum requirement. In the SL equation, I' is the rated volume in gallons and Q is the nameplate input rate in Btuln (kW). I'm is the measured volume in the tank in gallons. Standby loss for electric water heaters is in terms of %th and denoted by the term "S," and standby loss for gas and oil water heaters is in terms of Btuln and denoted by the term "S," Draw pattern (DP) refers to the water draw profile in the Uniform Energy Factor (UEF) test. UEF and Energy Factor (EF) are minimum requirements. In the UEF standard equations, V_T^* refers to the rated volume in gallons.
- ASHRAE 9.1 contains a complete specification, including the year version, of the referenced test procedure.

 Electric instantaneous water heaters with input capacity >40 946 Btu/h (12 kW) and ≤200 000 Btu/h (58.6 kW) must comply with the requirements for the

- Electric instantaneous water heaters with input capacity >40 946 Btu h (12 kW) and ≤200 000 Btu h (58.6 kW) must comply with the requirements for the 200 000 Btu h (58.6 kW) if the water heater either:

 (a) has a storage volume >2 gallons (7.6 L);

 (b) is designed to provide outlet hot water at temperatures greater than 180°F (82°C); or

 (c) mes three phase power.

 (c) mes three phase power.

 But h (30.8 kW) if the water heater either is the storage of the phase power.

 But h (30.8 kW) if the water heater either:
- (a) has a storage volume >120 gallons (454 L); (b) is designed to provide outlet hot water at temperatures greater than 180°F (82.2°C); or

- (c) as designed by portion contact not make a surplement general main for (1.04.2.4), and (1.04.0.4) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requirements for the >140 000 Bnuh (41.0 kW) must comply with the requi
- (a) has a storage volume >120 gallons (454 L); (b) is designed to provide outlet hot water at temperatures greater than 180°F (82.2°C); or

- (b) is disgrate up provided under not water at temperature greater and instantaneous water heaters and gas hot-water supply boilers.

 Refer to Section 1.503.4.3 for additional requirements for gas storage and instantaneous water heaters and gas hot-water supply boilers.

 Water heaters or gas pool heaters in this category or subscategory are regulated as consumer products by the USDOE as defined in 10 CFR 430. Where this standard is being applied to a building outside the U.S. and Canada and water heaters in this subcategory are being installed in that building, those water heaters that the control of the control o

Applicability	N 101.1	N 101.1	reference location	Adopt		
1		,	e impact of water temperature in minimizi	0	0 1	

Updating Code language, New

occupiable commercial, institutional, multi-unit residential, and industrial building plumbing systems. This appendix shall not include single-family residential buildings. This appendix shall not be considered a risk management guidance document for scalding or Legionella. Where required by the Authority Having Jurisdiction, Legionella risk management shall be in accordance with ASHRAE 188 and ASHRAE Guideline 12. Note: There are additional factors associated with the potential for scalding and Legionella growth other than temperature. For scalding potential, other factors include, but are not limited to, user age, health, body part, length of contact time, and water source. For Legionella growth potential other factors include, but are not limited to, water source and plumbing system: size, design, circulation rate, water age, disinfectant residual, piping material and component complexity.

State Does not

General	N 102.1	N 102.1	Updating code language	State Does not Adopt	
N 102.1 General. For the purpos	se of this appe	endix, the follow	wing definitions shall apply:		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Biofilm. Microorganisms and the	slime they sec	rete that grow o	n any continually moist surface.		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	

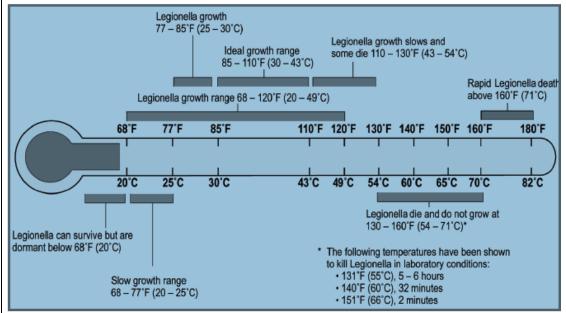
Cold Water. Water at a temp	erature less than	77°F (25°C).			
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Control. The management of	f the operating cor	nditions to main	ntain compliance with established criter	ria. {ASHRAE 188:3}	
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Disinfecting Hot Water. Wat	ter at a temperatu	re not less than	160°F (71°C).		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Disinfection. The process of	killing or inactivat	ing microorgan	ism. [ASHRAE 188:3]		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Halogenation. A chemical rewater systems.	action that involve	s the addition	of one or more halogens, including, but	t not limited to, chlorine, bromi	ine, or iodine, commonly used to disinfect
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Hazard. See Risk.					
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Hot Water. Water at a tempe	rature not less tha	n 130°F (54°C) and less than 140°F (60°C).	1	<u> </u>
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Legionella Growth Potentia	I. The likelihood th	nat Legionella b	pacteria will reproduce.		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Monitor. Observing and ched	cking the progress	or quality of (s	omething) or measuring the physical a	and chemical characteristics of	control measures.
Definition	N 102.1	N 102.1	Definition Update. Reference location update	State Does not Adopt	
Risk. The potential for harm t	to humans resultin	g from exposu	re to Legionella. [ASHRAE 188:3].		
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Scald Potential. The likelihoo	od of burning the	skin.		<u>.</u>	
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Tempered Hot Water. Water	r at a temperature	not less than 1	20°F (49°C) and less than 130°F (54°C	C).	
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt	
Tepid Cold Water. Water at	a temperature not	less than 77°F	(25°C) and less than 85°F (29°C).		,

Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt		
Tepid Water. Water at a temper	rature not less t	han 85°F (29°C)) and less than 110°F (43°C).			
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt		
Test. The measurement of the p	ohysical, chemic	al, or microbial	characteristics or quality of water.	<u>'</u>	•	
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt		
Very Hot Water. Water at a tem	perature not les	ss than 140°F (6	60°C) and less than 160°F (71°C).			
Definition	N 102.1	N 102.1	Definition Update	State Does not Adopt		
Warm Water. Water at a temper	rature not less t	han 110°F (43°	C) and less than 120°F (49°C).		<u> </u>	
Definition	N 102.1	N 400 4	Definition Undete	State Does not		
		N 102.1	Definition Update	Adopt		
Water Management Plan. A pla			· ·			
Water Management Plan. A pla Definition N 103.1 Design Documentation	N 102.1	n 102.1	lla growth and spread.	State Does not Adopt Novation, refurbishment, replacement	ent, or repurposing of a	an occupiable
Water Management Plan. A pla Definition N 103.1 Design Documentation	N 102.1	n 102.1	lla growth and spread. Definition Update Il be required for new construction, re	State Does not Adopt Novation, refurbishment, replacement	ent, or repurposing of a	an occupiable
Water Management Plan. A plate Definition N 103.1 Design Documentation building water system, including Onsite Documentation.	N 102.1 n. Construction a water manage (N/A)	N 102.1 documents sha ement plan, and N 103.2	Ila growth and spread. Definition Update Ill be required for new construction, red shall be submitted to the Authority F	State Does not Adopt novation, refurbishment, replacementary deving Jurisdiction. State Does not Adopt		an occupiable
Water Management Plan. A plate Definition N 103.1 Design Documentation building water system, including Onsite Documentation.	N 102.1 n. Construction a water manage (N/A)	N 102.1 documents sha ement plan, and N 103.2	Definition Update Ill be required for new construction, red shall be submitted to the Authority How Definition	State Does not Adopt novation, refurbishment, replacementary deving Jurisdiction. State Does not Adopt		an occupiable
Water Management Plan. A pla Definition N 103.1 Design Documentation building water system, including Onsite Documentation. N 103.2 Onsite Documentation Legionella Growth Potential N 104.1 Legionella Growth Potentia	n. Construction a water manage (N/A) n. Documentation (N/A) tential. The Au	N 102.1 documents sha ement plan, and N 103.2 on shall be main N 104.1	Illa growth and spread. Definition Update Ill be required for new construction, red shall be submitted to the Authority H New Definition Itained onsite and shall be readily acc	State Does not Adopt novation, refurbishment, replacementaring Jurisdiction. State Does not Adopt essible to the Authority Having Juristiate Does not Adopt State Does not Adopt esquire documentation to address L	sdiction.	

provided in accordance with Ch		uibullon system s	s water temperature(s) range pos	ses a scald potential in accordance	e with Table N 104.2,	protection shall be	
Disinfection Documentation	N 105.1	N 105.1	Section separated	State Does not Adopt			
N 105.1 Disinfection Documer the registered design profession				cumentation for disinfection of all	building water system	s shall be provided by	<i>y</i>
Copper-Silver Ionization	(N/A)	N 105.1.1	New Section	State Does not Adopt			
N 105 1 1 Conner-Silver Ioniza	ation Copper-	silver ionization n	nethods and procedures, shall in	•	<u> </u>		
(1) Copper and silver ionization(2) Methods and documentation	concentrations for monitoring	S.	nethods and procedures, shall in	clude the following documentatio	ייי		
(1) Copper and silver ionization(2) Methods and documentation(3) Electrode cleaning cycles an	concentrations for monitoring	S.	nethods and procedures, shall in	•	11:		
Copper and silver ionization Methods and documentation Electrode cleaning cycles an Ultraviolet Light	concentrations for monitoring ad methods. (N/A) raviolet light munits.	N 105.1.2	New Section ude the following documentation:	State Does not Adopt	1:		

N 105.2 Chemical Disinfection. Chemical biocide treatment shall be permitted to be used in accordance with the following:

- (1) Oxidizing biocides in accordance with manufacturer's quidelines, or as required by the Authority Having Jurisdiction.
- (2) Non-oxidizing biocides in accordance with manufacturer's guidelines.
- (3) Alternating the use of different types of biocides, dose, and frequency is recommended.
- (4) These treatment methods can be used for continuous, online disinfection or shock treatment online or offline.
- (5) Biocides intended for potable water applications shall listed in accordance with NSF/ANSI/CAN 60 and approved by the Authority Having Jurisdiction.



For SI units: $^{\circ}C = (^{\circ}F-32)/1.8$

^{*} Temperature ranges reported are experimentally determined in a laboratory setting in the absence of a realistic microbial community. Legionella can survive for longer periods of time at temperatures higher and lower than the growth temperature ranges indicated due to changes in their metabolic state and/or protection from thermal disinfection within biofilm or amoeba host organisms.

WATER TEMPERATURE RANGES AND SCALD POTENTIAL	(N/A)	TABLE N 104.2	New table with requirements for scalding requirements	State Does not Adopt			
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TABLE N 104.2 WATER TEMPERATURE RANGES AND SCALD POTENTIAL

WATER DESCRIPTION	TEMPERATURE (°F)	SCALD POTENTIAL*
Cold	<77	None
Tepid Cold	≥77 and <85	None
Tepid		None
	≥85 and <110	Hyperthermia is possible after long exposure in a bathtub or whirlpool tub.
Warm	≥110 and <120	Minimal At 111°F, greater than 220 minutes for second-degree burn.
Tempered Hot		Low
	≥120 and <130	At 120°F, greater than 5 minutes for second-degree burn, and 10 minutes to third-degree burn; At 124°F, 2 minutes for second-degree burn, and 4 minutes, 10 seconds for third-degree burn.
Hot	≥130 and <140	Moderate to High At 130°F, 18 seconds for second-degree burn, and 30 seconds for third-degree burn.
Very Hot	≥140 and <160	High At 140°F, 3 seconds for second-degree burn, and 5 seconds for third-degree burn; At 150°F, instant for second-degree burn, and less than 2 seconds for third-degree burn; At 158°F, instant for second-degree burn, and less than 1 second for third-degree burn.
Disinfecting Hot	≥160	Immediate

For SI units: °C = (°F-32)/1.8

* The infant, elderly, and infirmed have a higher potential for scalding at temperatures lower than listed.

LEGIONELLA REMEDIATION ACTIONS DOMESTIC WATER SYSTEMS	(N/A)	TABLE N 201.1	New table for requirements for domestic water systems	State Does not Adopt			
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< 30	Maintain environmental assessment and Legionella monitoring in accordance with the water management plan.
≥ 30	 Immediately institute short-term control measures in accordance with the direction of a qualified professional, and notify the Authority Having Jurisdiction, if required. The water system shall be re-sampled no sooner than 7 days and no later than 4 weeks after disinfection to determine the efficacy of the treatment. For persistent results, as determined by the Authority Having Jurisdiction, showing = 30 percent positive sites, long-term control measures shall be implemented in accordance with the direction of a qualified professional and the Authority Having Jurisdiction. Retreat and retest. If retest is = 30 percent positive, repeat short-term control measures. With receipt of results < 30 percent positive, resume monitoring in accordance with the water management plan. For persistent results, as determined by the Authority Having Jurisdiction, showing = 30 percent positive sites, long-term control measures shall be implemented in accordance with the direction of a qualified professional and the Authority Having Jurisdiction.

New Appendices

New Appendix O Non-Sewered Sanitation Systems

This new appendix covers the essential considerations when a nonsewered sanitation system (NSSS) is installed in a building. Designed for operation without a sewer connection and, in many cases, without a dedicated water supply, NSSSs are anticipated to meet critical public health needs in areas with limited water and wastewater infrastructure, water supply constraints, and/or unfavorable soils for traditional on-site disposal methods. Certain key protections, such as backflow prevention, proper ventilation of combustion-based units, and proper location of storage tanks external to the unit, are each specified in the new appendix

Do not adopt/conflicts with RCW 19.27.031 and local health jurisdiction

New Appendix Q Indoor Horticultural Facilities	The UPC Indoor Horticulture Facilities Task Group has captured important minimum requirements that do not conflict with Federal Regulations and will ensure that local laws and guidelines are followed for the protection of the public. It was important to identify the different categories of "horticulture facilities" as they exist in current federal laws. This will minimize confusion and make the language standard throughout the industry. Just as important also is to identify the occupancy type to determine required toilet facilities. Water sources permitted for indoor horticulture facilities were identified with provisions to protect the potable water supply. The language pertaining to water sources was based on research of existing sources such as technical research documents, standards, local laws, and Federal Regulation.	Do not adopt statewide Can be adopted locally by AHJ or proposed through petition for code change		
New Appendix R Tiny Houses	Guidance for tiny house communities to provide safe and reliable plumbing systems by requiring appropriate listed fixtures that prevent contamination to the potable water system. Tiny homes are becoming more popular, and a need exists to address plumbing provisions specific to these structures since they are not considered manufactured homes, recreational vehicles, or campgrounds.			

	Appendix S for onsite water treatment systems includes comprehensive		
New Appendix S Onsite Stormwater Treatment Systems	requirements related to the water quality, monitoring, design, construction, commissioning, alteration, repair, and operation requirements of stormwater systems for non-potable water reuse. These requirements for a properly designed system, together with appropriate construction, operation, and maintenance, will help ensure stormwater systems will be implemented safely and reliably.		