

**FINAL EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT**

**REGARDING PROPOSED AMENDMENT OF THE
2007 and 2010 CALIFORNIA PLUMBING CODE (CPC) FOR THE
CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 24, PART 5**

LEGEND FOR EXPRESS TERMS

1. New California amendment or code language that was modified as part of first 45-day comment period (ending July 19): All such language appears in *italics*, modified language is *underlined*.
2. New California amendment or code language being modified as part of current 45-day comment period: All such language appears in *double underlined and in Italics*
3. Repealed text that was part of first 45-day comment period (ending July 19): All such language appears in ~~strikeout~~.
4. Repealed text that is part of the current 45-day comment period: All such language appears in ~~double strikeout~~.

The California Building Standards Code (California Code of Regulations, Title 24, Parts 1, 2, 3, 4, 5, 6, 7, 8, 10 & 12) is published in its entirety every three years and is effective to all buildings that submit an application for a building permit during its effective period. Each triennial edition of the California Building Standards Code becomes effective 180 days after its publication and is effective at the time an application for a building permit is submitted.

These proposed regulations will amend the 2007 edition of the California Plumbing Code (CPC) based on the 2006 edition of the Uniform Plumbing Code (UPC) of the International Association of Plumbing and Mechanical Officials (IAPMO) and the 2010 edition of the CPC based on the 2009 UPC for state owned buildings, including buildings constructed by the Trustees of the California State University and buildings constructed by the Regents of the University of California that are permitted under the California Plumbing Code (CPC). Further, California law makes the UPC standards adopted by the Building Standards Commission applicable to all occupancies in California.

In January 2009, the Building Standards Commission adopted "PEX regulations" that allowed the statewide use of PEX Tubing by removing the CPC's former prohibition against using PEX. The PEX regulations have been the subject of litigation. During the litigation, the court ordered that the PEX regulations must be "vacate[d] and set aside ..." pending the Commission's preparation and certification of the Second Revised Draft Environmental Impact Report (SRDEIR). In June 2010, the Building Standards Commission complied with the court's order by repealing the action taken by the Building Standards Commission in January 2009. The Commission has prepared a SRDEIR which supports the adoption of PEX regulations and, if certified by the Commission, will constitute full compliance with the California Environmental Quality Act (CEQA). In this regulatory action, the California Building Standards Commission proposes to adopt new PEX regulations and amend other regulations, as necessary, in order to allow the statewide use of PEX Tubing. The parties have reached a tentative settlement agreement that reflects the mitigation measures identified in the SRDEIR and additional conditions and restrictions on the use of PEX that address concerns raised after the release of the SRDEIR. These "Final Express Terms," if approved by the Commission, will implement the settlement agreement. Section "A" of these Final Express Terms describes the Commission's action to adopt the PEX regulations into the 2007 CPC on an emergency basis and will be effective upon filing with the Secretary of State, and Section "B" of these Final Express Terms describes the Commission's action to adopt PEX regulations into the 2010 CPC effective January 1, 2011.

Section A. The express terms for adopting PEX regulations into the 2007 CPC are presented in the following amendments to Chapter 6 of the 2007 CPC:

**CHAPTER 6
WATER SUPPLY AND DISTRIBUTION**

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TABLE 6-4^{1,2,3}

Material	Water Distribution Pipe and Fittings		Building Supply Pipe and Fittings
	Hot	Cold	
Asbestos – Cement			X
Brass	X	X	X
Copper	X	X	X
Cast Iron	X	X	X
CPVC	X	X	X
Galvanized Malleable Iron	X	X	X
Galvanized Wrought Iron	X	X	X
Galvanized Steel	X	X	X
PE			X
PE-AL-PE	X	X	X
PEX ^{1,2}	X	X	X
PEX-AL-PEX ³	X	X	X
PVC			X

¹When PEX tubing is placed in soil and is used in potable water systems intended to supply drinking water to fixtures or appliances, the tubing or piping shall be sleeved with a material approved for potable water use in soil or other material that is impermeable to solvents or petroleum products.

²PEX tubing shall meet or exceed the requirements of ASTM F 876-08 or an equivalent or more stringent standard when used in continuously recirculating hot water systems and the PEX tubing is exposed to the hot water 100% of the time.

³The use of PEX and PEX-AL-PEX in potable water supply systems is not adopted for applications under the authority of the Building Standards Commission and the Division of the State Architect and the Department of Housing and Community Development.

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604.0 Materials.

604.1 All pipe, tube, and fittings carrying water used in potable water systems intended to supply drinking water shall meet the requirements of NSF 61 as found in Table 14-1. All materials used in the water supply system except valves and similar devices, shall be of a like material, except where otherwise approved by the Authority Having Jurisdiction.

Materials for building water piping and building supply piping shall be in accordance with Table 6-4 and the standards in Table 14-1.

Exceptions:

(1) ...

~~(2) [OSHPD 1, 2, 3 & 4] Use of PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

~~(3) [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

...

604.1.2 PEX All installations of PEX pipe where it is the initial plumbing piping installed in new construction shall be flushed twice over a period of at least one week. The pipe system shall be first flushed for at least 10 minutes and then filled and allowed to stand for no less than 1 week, after which all the branches of the pipe system must be flushed long enough to fully empty the contained volume. This provision shall not apply to the installation of PEX pipe where it replaces an existing pipe system of any material.

(1) At the time of fill, each fixture shall have a removable tag applied stating:

"This new plumbing system was first filled and flushed on _____ (date) by _____ (name). The State of California requires that the system be flushed after standing at least one week after the fill date specified above. If this system is used earlier than one week after the fill date, the water must be allowed to run for at least two minutes prior to use for human consumption. This tag may not be removed prior to the completion of the required second flushing, except by the building owner or occupant."

(2) Prior to issuing a building permit to install PEX pipe, the building official shall require as part of the permitting process that the contractor, or the appropriate plumbing subcontractors, provide written certification that he or she will comply with the flushing procedures set forth in the Code.

(3) The building official shall not give final permit approval of any PEX plumbing installation unless he or she finds that the material has been installed in compliance with the requirements of the Code, including the requirements to flush and tag the systems.

(4) Any contractor or subcontractor found to have failed to comply with the PEX flushing requirements shall be subject to the penalties in Health and Safety Code, Division 13, Part 1.5, Chapter 6 (Section 17995, et seq.).

604.11 PEX ~~[Not Adopted by DSA/SS, HCD, AGR, BSC, DHS]~~ Cross-linked polyethylene (PEX) tubing shall be marked with the appropriate standard designation(s) listed in Table 14-1 for which the tubing has been approved. PEX tubing shall be installed in compliance with the provisions of this section. All PEX pipe installed in California must provide at least 30-day UV protection.

604.11.1 PEX Fittings. ~~[Not Adopted by DSA/SS, HCD, AGR, BSC, DHS]~~ Metal insert fittings, metal compression fittings, and cold expansion fittings used with PEX tubing shall be manufactured to and marked in accordance with the standards for the fittings in Table 14-1. Brass fittings used with PEX tubing shall meet or exceed NSF 14-2009 standards to prevent dezincification and stress crack corrosion.

604.11.2 Water Heater Connections. ~~[Not Adopted by DSA/SS, HCD, AGR, BSC, DHS]~~ PEX tubing shall not be installed within the first eighteen (18) inches (457mm) of piping connected to a water heater.

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604.13 PEX-AL-PEX and PE-AL-PE. Crosslinked polyethylene-aluminum- crosslinked polyethylene (PEX-AL-PEX) and polyethylene-aluminum-polyethylene (PE-AL-PE) composite pipe shall be marked with the appropriate standard designations listed in Table 14-1 for which the piping has been listed or approved. PEX-AL-PEX and PE-AL-PE piping shall be installed in compliance with the provisions of this section.

~~**Exception:** [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

604.13.1 PEX-AL-PEX and PE-AL-PE. Fittings used with PEX-AL-PEX and PE-AL-PE piping shall be manufactured to and marked in accordance with the standard for the fittings in Table 14-1.

~~**Exception:** [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

604.13.2 Water Heater Connections. PEX-AL-PEX or PE-AL-PE tubing shall not be installed within the first eighteen inches (18) (457 mm) of piping connected to a water heater.

~~**Exception:** [OSHPD 1, 2, 3 & 4] PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

Rationale: The OSHPD proposes the above-listed amendments into the 2007 Title 24, Part 5, CPC. In January 2009, CBSC adopted amendments to the 2007 CPC that included mitigation measures based on the certified CEQA EIR. The Building Standards Commission prepared a Second Revised Draft Environmental Impact Report (SRDEIR) which supports the adoption of PEX regulations and, if certified by the Commission, will constitute full compliance with CEQA .

The mitigation measures identified in the SRDEIR (Table 6-4 footnotes 2, 3, and 4) and additional restrictions on the use of PEX address concerns raised after the release of the SRDEIR (Sections 604.1.2, 604.11, and 604.11.1).

The banners have been proposed for removal from Sections 604.11, 604.11.1 and 604.11.2 to maintain consistency with the format of this code.

In addition, OSHPD is proposing deletion of the listed exception amendment language in the body of the code and adoption the table format of exception for the use of PEX and PEX-AI-PEX in the 2007 CPC for consistency with all state amending agencies.

Notation

Authority: Health & Safety § 1226, 1275, 129790, 129850; Government Code §11152.5
Reference(s): Health & Safety §129850

Section B. The express terms for adopting PEX regulations into the 2010 CPC are presented in the following express terms amendments to Chapter 6 of the 2010 CPC:.

**CHAPTER 6
WATER SUPPLY AND DISTRIBUTION**

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TABLE 6-4

Material	Building Supply Pipe and Fittings	Water Distribution Pipe and Fittings	Referenced Standard(s) Pipe	Referenced Standard(s) Fittings
Asbestos – Cement	X ¹		ASTM ...	
Brass	X	X	ASTM ...	
Copper	X	X	ASTM ...	ASME ...
CPVC	X	X	ASTM ...	ASTM ...
Ductile-Iron	X	X	AWWA...	ASME ...
Galvanized Steel	X	X	ASTM ...	
Malleable Iron	X	X		ASME ...
PE	X ¹		ASTM ...	ASTM ...

PE-AL-PE	X	X	ASTM ...	ASTM ...
PEX ^{2, 3, 4}	X	X	ASTM ...	ASTM ...
PEX-AL-PEX ^{4, 5}	X	X	ASTM ...	ASTM ...
PVC	X ¹		ASTM ...	ASTM ...
Stainless Steel	X	X	ASTM ...	

~~^{4, 5} **[For BSC, DSA/SS & HCD]** The use of PEX and PEX-AL-PEX in potable water supply systems is not adopted, for applications under the authority of the Building Standards Commission and the Division of the State Architect and the Department of Housing and Community Development.~~

~~^{2, 3} When PEX tubing is placed in soil and is used in potable water systems intended to supply drinking water to fixtures or appliances, the tubing or piping shall be sleeved with a material approved for potable water use in soil or other material that is impermeable to solvents or petroleum products.~~

~~^{3, 4} PEX tubing shall meet or exceed the requirements of NSF P171 CL-R, ASTM F 876-08 or an equivalent or more stringent standard when used in continuously recirculating hot water systems where chlorinated water is supplied to the system and the PEX tubing is exposed to the hot water 100% of the time.~~

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604.0 Materials.

604.1 All pipe, tube, and fittings carrying water used in potable water systems intended to supply drinking water shall meet the requirements of NSF 61, *Standard for Drinking Water System Components*, as found in Table 14-1. Materials used in the water supply system, except valves and similar devices, shall be of a like material, except where otherwise approved by the Authority Having Jurisdiction.

Materials for building water piping and building supply piping shall be in accordance with the applicable standards referenced in Table 6-4.

Exceptions:

...

- ~~(2) **[OSHPD 1, 2, 3 & 4]** Installation and use of PEX tubing shall be in accordance with manufacturer's installation standards. PEX piping shall not be used for any application that would result in noncompliance with any provisions of the California Building Standards Code.~~
- ~~(3) **[OSHPD 1, 2, 3 & 4]** Use of PEX AL PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~
- ~~(4) **[OSHPD 1, 2, 3 & 4]** When PEX tubing is placed in soil and is used in potable water systems intended to supply drinking water to fixtures or appliances, the tubing or piping shall be sleeved with a material approved for potable water use in soil or other material that is impermeable to solvents or petroleum products.~~
- ~~(5) **[OSHPD 1, 2, 3 & 4]** PEX tubing shall meet the requirements of NSF P171 CL-R, ASTM F 876-08, Standard for Crosslinked Polyethylene (PEX) Tubing, or an equivalent or more stringent standard when used in continuously recirculating hot water systems where chlorinated water is supplied to the system and the PEX tubing is exposed to the hot water 100% of the time.~~

...

604.1.2 PEX All installations of PEX pipe where it is the initial plumbing piping installed in new construction shall be flushed twice over a period of at least one week. The pipe system shall be first flushed for at least 10 minutes and then filled and allowed to stand for no less than 1 week, after which all the branches of the pipe system must be flushed long enough to fully empty the contained volume. This provision shall not apply to the installation of PEX pipe where it replaces an existing pipe system of any material.

- (1) At the time of fill, each fixture shall have a removable tag applied stating:

- (a) "This new plumbing system was first filled and flushed on _____ (date) by _____ (name). The State of California requires that the system be flushed after standing at least one week after the fill date specified above. If this system is used earlier than one week after the fill date, the water must be allowed to run for at least two minutes prior to use for human consumption. This tag may not be removed prior to the completion of the required second flushing, except by the building owner or occupant."
- (2) Prior to issuing a building permit to install PEX pipe, the building official shall require as part of the permitting process that the contractor, or the appropriate plumbing subcontractors, provide written certification that he or she will comply with the flushing procedures set forth in the Code.
- (3) The building official shall not give final permit approval of any PEX plumbing installation unless he or she finds that the material has been installed in compliance with the requirements of the Code, including the requirements to flush and tag the systems.
- (4) Any contractor or subcontractor found to have failed to comply with the PEX flushing requirements shall be subject to the penalties in Health and Safety Code, Division 13, Part 1.5, Chapter 6 (Section 17995, et seq.).

...

604.11 PEX. Cross-linked polyethylene (PEX) tubing conforming to ASTM F 877, *Standard for Crosslinked Polyethylene (PEX) Plastic Hot-and-Cold Water Distribution Systems*, shall be marked with the appropriate standard designation(s) for the fittings specified for use with the tubing. Such marking shall not be required for PEX tubing conforming to only ASTM F 876, *Crosslinked Polyethylene (PEX) Tubing*. PEX tubing shall be installed in compliance with the provisions of this section. ~~[OSHPD 1, 2, 3 & 4] Installation and use of PEX tubing shall be in accordance with manufacturer's standards. PEX piping shall not be used for any application that would result in noncompliance with any provisions of the California Building Standards Code.~~ All PEX pipe installed in California must provide at least 30-day UV protection.

604.11.1 PEX Fittings. Fittings used with PEX tubing shall be manufactured to and marked in accordance with the standards for the fittings referenced in Table 14-1. ~~[OSHPD 1, 2, 3 & 4] Installation and use of PEX tubing shall be in accordance with manufacturer's standards. PEX piping shall not be used for any application that would result in noncompliance with any provisions of the California Building Standards Code.~~ Brass fittings used with PEX tubing shall meet or exceed NSF 14-2009 standards to prevent dezincification and stress crack corrosion.

...

604.13 PEX-AL-PEX and PE-AL-PE. Crosslinked polyethylene-aluminum-crosslinked polyethylene (PEX-AL-PEX) and polyethylene-aluminum-polyethylene (PE-AL-PE) composite pipe shall be marked with the applicable standard referenced in Table 14-1 for which the piping has been listed or approved. PEX-AL-PEX and PE-AL-PE piping shall be installed in compliance with the provisions of this section.

~~**Exception:** [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

604.13.1 PEX-AL-PEX and PE-AL-PE. Fittings used with PEX-AL-PEX and PE-AL-PE piping shall be manufactured to and marked in accordance with the standard for the fittings referenced in Table 14-1.

~~**Exception:** [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

604.13.2 Water Heater Connections. PEX-AL-PEX or PE-AL-PE tubing shall not be installed within the first eighteen (18) inches (457 mm) of piping connected to a water heater.

~~**Exception:** [OSHPD 1, 2, 3 & 4] Use of PEX-AL-PEX piping is not permitted for applications under the authority of the Office of Statewide Health Planning and Development.~~

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Rationale: The OSHPD proposes to adopt the above-listed amended sections into the 2010 Title 24, Part 5, CPC. In January 2010, California Building Standards Commission adopted the UPC as the basis for the 2010 CPC with

amendments that included mitigation measures based on the certified CEQA EIR. The Building Standards Commission prepared a Second Revised Draft Environmental Impact Report (SRDEIR) which supports the adoption of PEX regulations, and if certified by the Building Standards Commission, will constitute full compliance with CEQA and will allow the Commission to adopt and approve PEX regulations.

The mitigation measures identified in the SRDEIR (Table 6-4 footnotes 2, 3, and 4) and additional restrictions on the use of PEX address concerns raised after the release of the SRDEIR (Sections 604.1.2, 604.11, and 604.11.1).

In addition, OSHPD is proposing deletion of the listed exception amendment language in the body of the code and adoption of the table format of exception for the use of PEX and PEX-AI-PEX in the 2010 CPC for consistency with all state amending agencies.

Notation

Authority: Health & Safety § 1226, 1275, 129790, 129850; Government Code §11152.5

Reference(s): Health & Safety §129850