

Second Revised Final Environmental Impact Report
**Adoption of Statewide Regulations
Allowing the Use of PEX Tubing**



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ACRONYMS AND ABBREVIATIONS

BSC	California Building Standards Commission
CEQA	California Environmental Quality Act
CPC	California Plumbing Code
CPVC	chlorinated polyvinyl chloride
DEIR	Draft Environmental Impact Report
DFA	Department of Food and Agriculture
DPH	California Department of Public Health
DSA	Division of the State Architect
EIR	Environmental Impact Report
HCD	California Department of Housing and Community Development
NOD	Notice of Determination
OSHPD	Office of Statewide Health Planning and Development
PEX	cross-linked polyethylene
RDEIR	Recirculated Draft EIR
SRDEIR	Second Revised Draft EIR
UPC	Uniform Plumbing Code

1 ENVIRONMENTAL IMPACT ANALYSIS SUMMARY

This Second Revised Final Environmental Impact Report for the adoption of regulations allowing the use of cross-linked polyethylene (PEX) Tubing (proposed project) has been prepared on behalf of the California Building Standards Commission (BSC), the lead agency, in accordance with the requirements of the California Environmental Quality Act (CEQA) and State CEQA Guidelines. Implementation of the proposed project requires approval by the BSC as the lead agency.

The BSC proposes to adopt new state plumbing code regulations that would remove the prohibition against the use of PEX tubing, a type of plastic pipe, from the California Plumbing Code. Implementation of the proposed project would allow the statewide use of PEX for hot and cold water (including potable water) distribution applications under the jurisdiction of the BSC and the five responsible agencies that adopt regulations based on environmental information and conclusions in the EIR. This includes applications such as drinking water, irrigation, and wastewater. The proposed PEX tubing regulations would apply to all occupancies, including commercial, residential, and institutional building construction, rehabilitation, and repair under the jurisdiction of BSC and the Responsible Agencies in all areas of the state. Currently, PEX is authorized for use in radiant heating systems, manufactured homes, certain approved institutional uses, and for hot and cold water distribution, including potable water uses, in some local jurisdictions.

1.1 SECOND FINAL ENVIRONMENTAL IMPACT REPORT BACKGROUND

In May 2008 the BSC published the Draft EIR (DEIR) for the proposed project. The DEIR was circulated for public review and comment for a period of 45 days that ended on June 23, 2008. The comment letters raised issues that resulted in the addition of significant new information to the EIR related to: 1) the leaching of chemicals from PEX tubing, 2) the thresholds of significance for water quality, and 3) the determination that certain chemicals are no longer considered constituents of concern because they are not used in PEX, or are not present in a form that poses a threat to human health. Because significant new information was added to the EIR after public notice of availability of the DEIR, a revised EIR was prepared addressing the new information and circulated for public review on October 16, 2008. Comments were received on the Recirculated Draft EIR (RDEIR), evaluated by BSC, and responses to all comments received on the DEIR and RDEIR were prepared and included in the Final EIR. The Final EIR was certified and the regulations adopted on January 22, 2009.

A lawsuit challenging the adequacy of the PEX EIR was filed by the Center for Environmental Health, et al. on February 19, 2009. In a ruling entered by the Alameda County Superior Court on December 30, 2009, the BSC was directed to remedy specific issues in the EIR, including its analysis of: non-cancer health risks from leaching of constituents from PEX pipe; genotoxic cancer health risks; taste and odor impacts; and property damage impacts from premature failure from use in continuously recirculating hot water systems. The Second Revised Draft EIR (SRDEIR) addresses those issues as well as minor revisions to reflect updated regulatory standards applicable to fittings that may be used with PEX.

The superior court ruling was appealed by the Plastic Pipe and Fittings Association, which was a party to the lawsuit, and a cross appeal was filed by the Center for Environmental Health, et al. Pursuant to the superior court's order, BSC rescinded its approval of the PEX regulations effective July 1, 2010, and partially decertified the PEX EIR that was the subject of the litigation.

BSC released the SRDEIR for public review and comment on May 17, 2010, for public review for a period of 45 days. The 45-day public comment period was subsequently extended to July 19, 2010, at the request of the Center for Environmental Health, et al. Pursuant to procedures set forth in Sections 15087 and 15088.5(d) of the State CEQA Guidelines, the BSC sent a notice of availability to all those individuals and organizations who submitted comments on the DEIR and RDEIR, to all organizations and members of the public who were on the distribution

list for the DEIR, and to any additional persons or organizations that have requested information about the EIR since the publication of the DEIR.

In June and July 2010, settlement discussions occurred between the petitioners, the Plastic Pipe and Fittings Association, and the BSC, culminating in a tentative agreement to settle any and all disputes regarding the adequacy of the findings and mitigation measures contained in the SRDEIR and to settle outstanding claims and appeals in the related lawsuit (“2010 Settlement Agreement”) by adding certain additional restrictions to the use of PEX, as further described below in Section 1.2.3, in the form of amendments to the proposed regulations.

The PEX EIR will be considered anew by the BSC to determine whether it should be certified as having been prepared in compliance with CEQA. Following certification of the EIR, the BSC will evaluate the action it will take with regard to the PEX regulations, which could include readopting the regulations with modifications to reflect changes identified as a result of this additional round of CEQA review and additional modifications pursuant to the 2010 Settlement Agreement.

1.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

1.2.1 PROJECT LOCATION

The proposed adoption of regulations related to PEX tubing is a statewide regulatory change. As such, the project area is the State of California.

1.2.2 PROJECT OBJECTIVE

BSC proposes adoption of new state plumbing code regulations that would authorize the statewide use of PEX tubing for various cold and hot water (including potable water) plumbing applications in residential, commercial, and institutional buildings. Responsible Agencies, each of which will rely on this EIR for its own adoption of regulations, include the California Department of Housing and Community Development (HCD), Division of the State Architect (DSA), Office of Statewide Health Planning and Development (OSHPD), Department of Public Health (DPH, previously known as the Department of Health Services, or DHS), and the Department of Food and Agriculture (DFA). Individual cities and counties would not be responsible agencies because they would not have any authority to approve or deny the project or add requirements or restrictions relating to the use of PEX within their jurisdictions after it is approved by BSC, unless they make express findings for such additions or deletions based on climatic, topographical, or geological conditions (California Plumbing Code [CPC] Section 101.8.1). BSC’s objective in proposing these regulations is to provide an alternative plastic hot and cold water plumbing material for use in California.

1.2.3 PROPOSED REGULATIONS

California Health and Safety Code Sections 18928, 18938, 17922, and 19990 direct BSC and the Responsible Agencies to adopt building standards that are reasonably consistent with recognized and accepted standards contained in the most recent editions of the Uniform Plumbing Code (UPC). California adopts the UPC on a triennial basis with modifications in strikeout for deletions and italics and underline for additions. This revised code becomes the CPC; no finalized version (i.e., without changes shown in strikeout and underlined italics) is prepared. BSC selected the 2006 UPC published by IAPMO as the model code for this code adoption cycle. The project is a change to Part 5, Title 24, CCR (hereinafter referred to as CPC), which is applicable to buildings under the jurisdiction of BSC, DFA, DPH, DSA, HCD, and OSHPD. PEX is currently authorized for use in radiant heating systems, manufactured homes, certain approved institutional uses, and for hot and cold water distribution, including potable water uses in some local jurisdictions (as discussed in Section 3.4.4 below). However, PEX was specifically not adopted (i.e., it was deleted) in the 2007 CPC for uses under the jurisdiction of BSC and the Responsible Agencies.

The modifications to the existing plumbing code entail the following changes. Table 6-4, “UPC” and the following text are excerpted from “The Express Terms for the Building Standards of the Building Standards Commission Regarding the Adoption of Amendments into the 2007 California Plumbing Code, California Code of Regulations,” Title 24, Part 5. The changes to the regulations involve deletion of exceptions to the adoption of PEX in the CPC and adding notes reflecting the requirements of the August 2010 Second Revised Final EIR. In addition, per the terms of the tentative 2010 Settlement Agreement, certain additional notes and restrictions have been proposed to be added to the PEX regulations, as shown in italics. These notes and restrictions are proposed to be added voluntarily by BSC and the responsible agencies, in consideration for settlement of the pending CEQA litigation, not as mitigation under CEQA for any identified significant impacts, because in the view of BSC, there is no substantial evidence supporting a finding of significant impacts requiring the consideration of mitigation, except as were identified in the 2009 Final EIR for the use of PEX in recirculating hot water systems and for the sleeving of PEX when placed in soil.

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

¹ 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.

² PEX 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 ~~where chlorinated water is supplied to the system~~ and the PEX tubing is exposed to the hot water 100% of the time.

³ [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 California Building Standards Commission, the Division of State Architect and the Department of Housing and Community Development.~~

604.1

Exceptions:

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.).

~~(2) [For 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.~~

~~(4) [For BSC] Use of PEX piping is not adopted for applications under the authority of the Department of Health Services and the Department of Food and Agriculture.~~

604.11 PEX. ~~[Not Adopted by BSC, HCD, DSA/SS, DHS, AGR & OSHPD 1, 2, 3 & 4]~~ Crosslinked polyethylene (PEX) tubing shall be marked with the appropriate standard designation(s) listed in Table 14-1 for which the tubing has been listed or 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 BSC, HCD, DSA/SS, DHS, AGR & OSHPD 1, 2, 3 & 4]~~ 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 BSC, HCD, DSA/SS, DHS, AGR & OSHPD 1, 2, 3 & 4]~~ PEX tubing shall not be installed within the first eighteen (18) inches (457mm) of piping connected to a water heater.

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

~~(4) [For AGR, DHS] Use of PEX piping is not adopted for applications under the authority of the Department of Health Services and the Department of Food and Agriculture.~~

1.2.4 SUMMARY OF ALTERNATIVES TO THE PROPOSED PROJECT

The EIR evaluates the following alternatives to the project:

- ▶ No Project Alternative (Alternative A)
- ▶ Mitigated Design Alternative (Alternative B)

The No Project Alternative is defined as the current pipe usage in California plus the reasonably foreseeable future pipe usage for approved plumbing materials if the regulation is not adopted and the prohibition against the use of PEX for hot and cold water distribution (including potable water uses) is not removed. Overall, the No Project Alternative would be similar to the proposed project.

Under the Mitigated Design Alternative, PEX would only be used above the slab (i.e., out of bare soil) unless the PEX is sleeved by a metal pipe or other proven impermeable barrier. Also, for all continuously recirculating hot water systems in jurisdictions where chlorination is used for disinfection of water, PEX tubing must be certified using the NSF P171-CL-R standard or yet-to-be-adopted comparable standard.

The Mitigated Design Alternative would be environmentally superior to the project with respect to public health and hazards, water quality, and air quality. It would be similar to the project with respect to solid waste. Overall, this alternative is environmentally superior to the proposed project. The objective of the proposed project is to provide another plastic piping alternative for use in California and this alternative would attain that objective. The Mitigated Design Alternative is the overall environmentally superior alternative of all the alternatives evaluated.

1.3 PURPOSE OF THE FINAL EIR

CEQA requires a lead agency that has completed an EIR to consult with and obtain comments from public agencies that have legal jurisdiction with respect to the proposed action, and to provide the general public with opportunities to comment on the EIR. This Second Revised Final EIR has been prepared to respond to comments received on the DEIR, RDEIR, and SRDEIR for the proposed project. No comments were received on the SRDEIR.

1.4 CEQA REQUIREMENTS FOR RESPONDING TO COMMENTS

The State CEQA Guidelines state that written responses to comments received on the SRDEIR must describe the disposition of significant environmental issues. In particular, the major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed. Responses are not required on comments regarding the merits of the project or on issues not related to the environmental impacts of the project.

No comments were received during the public comment period for the SRDEIR that raise environmental issues of the proposed project.

1.5 REQUIREMENTS FOR EIR CERTIFICATION AND FUTURE STEPS IN PROJECT APPROVAL

The EIR is intended to be used by the BSC when considering approval of the proposed project or an alternative to the proposed project.

In accordance with CEQA, the DEIR was circulated for public and agency review and comment on May 9, 2008. The 45-day public comment period closed on June 23, 2008. Comments were received from companies, organizations, local agencies, and individuals. Public hearings to receive public input on the SRDEIR were held during the review period on June 3, June 4, and June 6, 2008.

BSC released the RDEIR for public and agency review and comment on October 16, 2008. The State Clearinghouse approved a 30-day shortened review period in accordance with Appendix K of the CEQA Guidelines, and the 30-day public comment period closed on November 14, 2008. Three letters were received on the RDEIR during the public comment period.

The SRDEIR was circulated for public and agency review and comment on May 17, 2010. The 45-day public comment period closed on July 19, 2010. No comments were received.

Following completion of the SRDEIR and preparation of the Second Revised Final EIR, the BSC will consider certification of the Final EIR and decide whether or not to approve the project or an alternative. Written findings of fact for each significant environmental impact identified in the EIR and a Mitigation Monitoring and Reporting Program shall be prepared and adopted by BSC. A Notice of Determination (NOD) would then be filed.

1.6 ORGANIZATION OF THE SECOND FINAL EIR

No comments were received on the SRDEIR. Thus, this document is organized as follows:

- ▶ **Chapter 1, “Introduction,”** describes the purpose and content of the SRDEIR, provides an overview of the environmental review process, and presents a summary of the proposed project and alternatives.
- ▶ **Chapter 2, “Report Preparation,”** lists the individuals who assisted in the preparation of this Second Revised Final EIR.

2 REPORT PREPARATION

2.1 LEAD AGENCY

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