

**Excerpts from HCD 4/22/02 Final Statement of Reasons
Presented by: Robert Friedlander
Before the California Building Standards Commission 5/2/02**

#4

Presenters note: All wording outside of the [] is reproduced exactly from the HCD 4/22/02 Final Statement of Reasons

INTRODUCTION TO RESPONSE TO COMMENTS [Pg. 7]

During the adoption process for the 2001 California Plumbing Code there have been three plumbing products (CSST, PEX, and ABS/PVC for drain, waste and venting (ABS/PVC for DWV) above 2 stories) that have been the subject of extensive comments and multiple regulatory proposals [For PEX there was only one negative commenter]. In addition, because of concerns raised by the Department about the possible corrosive effect of H₂S in the natural gas supply, copper tubing was also the subject of multiple regulatory proposals. . .

[Pg. 2 re: PEX] Rationale for Necessity: The Department is proposing to remove the new building standards for Cross-linked polyethylene tubing (PEX) from this proposed adoption. Building standards for PEX are new standards in the 2000 Uniform Plumbing Code that the Department would have adopted by reference during the 2001 triennial model code adoption process. The Department received a [one] public comment which asserted that the adoption of this material would potentially trigger the California Environmental Quality Act (CEQA) because of the proposed adoption of this new building material. The Department has determined that it does not have sufficient time to evaluate all of the consequences of use of the new material PEX, including environmental factors, due to the time constraints imposed in this year's triennial adoption process.

[HCD Response to PEX supporters Pg. 28] The Department takes note of the comment concerning CEQA and assures the commenter that the Department has not stated that CEQA should apply to PEX. The Department has determined it does not have sufficient time to evaluate this claim due to the time constraints imposed in this year's triennial adoption process. Based on the fact that PEX is a new building standard listed in the 2000 UPC, the Department chooses to err on the side of caution and continue to evaluate PEX prior to proposing its inclusion within the CPC.

Balancing Considerations [Pg. 8]

When considering building products the approving agencies must always balance the potential benefits against the potential risks. When approving a product new to the California Plumbing Code, such as cross-linked polyethylene tubing (PEX), the Department has an obligation to be reasonably assured that the product does not produce an unreasonable risk to health or safety. When balancing the interests, the Department resolves close questions in favor of protecting the health and welfare of the consumers and the installers. Certainly there is an economic consequence to the manufacturers and distributors of these products, as well as a potential loss of choice to the consumers, but history has shown that caution is appropriate.

The Significant Decisions [Pg. 8]

As noted earlier three products were the subjects of significant comments with strong objections voiced against the use of these products [**only one commenter against PEX, suggesting there must be a CEQA review**], and strong defenses offered by the manufacturers, academia, and others of the products [**thirty-two commenters supporting PEX**]. In each case, the Department was presented with conflicting and, in many cases, mutually exclusive information. In brief summary, the Department has concluded:

2. Based on the fact that PEX is a new product for approval in the California Plumbing Code, the Department chooses to be cautious and continue its review of the efficacy of PEX before including it in the California Plumbing Code. This action is not a prohibition on the use of PEX in California. Local building officials remain authorized to approve PEX pursuant to the State Housing Law on a case-by-case basis through the alternate approval provision, or by ordinance upon an expressed finding that it is reasonably necessary because of local climatic, geological, or topographical conditions.

[HCD Response Comment C-11(d): Pg. 50] . . . the Department believes it is imperative to be safe prior to the introduction of new products into the 2002 CPC, particularly where concerns regarding safety and performance have been raised.

[The Only Concern Submitted Regarding the Performance of PEX Systems]

[BSC, Monograph Of Public Comments, September 2001, to HCD, Comment 3-13, Thomas Reid Assoc. attachment to the 7/23/01 CPTC Letter, Pg. 56

HCD needs to consider the mechanical reliability of the PEX systems that may be used in California. The different crosslinking mechanisms, PEX-A, B, and C, vary in the degree of crosslinking from 40 percent to 90 percent, with corresponding differences in mechanical stability. Although all of the pipe resins may pass ASTM when freshly manufactured, it is possible that different resin systems will react differently to antioxidant depletion and hence behave differently in actual use.

The PB experience is relevant here. Although PEX is not PB, the chemical similarities are enough that HCD should demand more than just marketing literature to assure that mechanical reliability will be adequate. PEX manufacturers apparently claim a 50-year product life, but offer no more than a ten-year warranty on the product.]

[Comment submitted 11/29/01, Robert Friedlander, Chairman, Flexible Polyolefin Hot and Cold Systems Product Line Committee Plastic Pipe and Fittings Association

Manufacturing Methods: *All cross-linked polyethylene piping products manufactured for potable water use in the U.S. are independently tested and certified to the same ASTM performance standards (ASTM F 877) no matter how they are manufactured. In addition, those products are independently tested and certified to the requirements of ANSI/NSF-61, requirements that are more encompassing than the mandates of the Federal Safe Drinking Water Act.*

Mr. Reid's assertion that the degree of cross-linking varies from 40 percent to 90 percent is erroneous. The attached ASTM F 876 cites the minimum range of cross-linking is 65% to 70%.

Mechanical Performance: Cross-linked polyethylene is subjected to new and rigorous testing requirements. Cross-linked polyethylene regularly undergoes performance testing by recognized third-party certifying agencies. In contrast, the California State Legislature has declared, "the deterioration of copper piping has become a serious problem in various communities in the state." (Health and Safety Code § 17921.9(a)(1).) Cross-linked polyethylene undergoes performance testing such as stabilizer functionality, environmental stress crack resistance and now the new ANSI/ASTM Standard F 2023 "Standard Test Method for Evaluating the Oxidative Resistance of Cross-linked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water". These tests demonstrate that the antioxidants protect the pipe from premature mechanical failure. The superb mechanical performance of cross-linked polyethylene has been verified by years of successful use in plumbing applications both in Europe and the U.S.]

HCD Response: [Pg. 15] The record shows that PB is a semicrystalline thermoplastic formed by polymerization of 1-butene, which creates a significantly different material than PEX and cannot be chemically compared with PEX, which is a family of thermoplastic resins obtained by polymerizing ethylene. The record also reflects that PE material (polyethylene, the material base for cross-linked polyethylene) is currently used in water storage tanks, flexible food packaging such as "Saran Wrap," and liquid food packaging such as milk cartons sold in grocery stores.

HCD Response: Comment C-11(i): Pg. 51] At this point in time, the Department feels obligated to give both the positive and negative comments equal credibility. It is unable at this time to conclude that the negative comments concerning leachable products and permeation are unfounded.

HCD Response: [Pg. 15] PEX is currently approved statewide for use outside residential structures under the authority of the California Water Works Standards in Title 22 of the California Code of Regulations. (See approval of plastic pipe for use as connections to residential structures under section 64644 of Title 22.) This section provides for the approval of any plastic pipe material that has been tested and certified as suitable for use in potable water piping systems by the National Sanitation Foundation Testing Laboratory (NSF International). NSF International has certified PEX, copper and other materials for use in potable water piping. PEX has also been an approved material in manufactured housing since 1996 under the Department's Manufactured Housing Program.

B-39. [Pg. 40] Robert Friedlander, Chairman, Flexible Polyolefin Hot and Cold Systems Product Line Committee Plastic Pipe and Fittings Association

Leaching is not an issue. All PEX piping is tested and independently certified to ANSI/NSF 61. [ANSI/NSF 61, and subsequent product certification against it, has replaced the USEPA Additives Advisory Program for drinking water system components. USEPA terminated its advisory role in April 1990. For more information with regard to USEPA's actions, refer to the July 7, 1988 Federal Register (53FR25586)] (forward ANSI/NSF 61). ANSI/NSF Standard 61 is a health effects standard for products conveying potable water with coverage far exceeding the criteria of the Federal and State safe drinking water acts. The standard evaluates products for all extractants that the product may convey (leach) into drinking water and is not limited to only those 84 substances covered by the Federal Safe Drinking Water Act.] ANSI/NSF 61 is a health effects standard for products conveying potable water.

[Mr. Reid states, "the potential environmental impact from chemical leaching or mechanical failure is obvious." As we have shown in this response there are none.]

Comment from the California Pipes Trades Council [CPTC, Pg 13]

The California Pipe Trades Council has raised issues concerning the applicability of CEQA to the adoption of CSST, PEX and ABS/PVC for DWV for the following reasons:

[Comment from CPTC, Pg. 13] 1. *The proposed adoption of CSST would be a discretionary decision by the Department subject to CEQA.*

[Comment from CPTC, Pg. 13] 2. *The approval of PEX and/or ABS/PVC for DWV above the 2nd story would constitute an unprecedented expansion in the approved use of plastic plumbing material in California for both water service and for drain, waste, and vent (DWV) installation.*

[Comment from CPTC, Pg. 13] 5. *The Department is proposing to repeal its almost 20-year old restriction on the use of acrylonitrile-butadiene-styrene ("ABS") and polyvinyl chloride ("PVC") for use as drain, waste, and vent pipe.*

HCD Response: [Pg. 15] In the case of the proposal to allow the use of ABS/PVC for DWV above 2-stories, the Department believes because there are similar factual circumstances surrounding the expanded use of these materials to those involved with CPVC that a CEQA review may be necessary before approving the expanded use of ABS/PVC for DWV.

[Comment from CPTC, Pg. 13] 3. *The 1997 court ruling concerning the CPVC adoption process required compliance with CEQA for all future plastic pipe adoptions, regardless of the material composition of the plastic.*

HCD Response: [Pg. 14] The court decision referred to by several **[one]** of the commenters was issued on January 21, 1997 by San Francisco Superior Court Judge William Cahill. In that case, Judge Cahill noted that the Department had 1) Excluded certain types of plastic pipe **[CPVC]** from use in California for over 14 years, and 2) that the Department had concluded that there were sufficient health and safety issues to have determined that an Environmental Impact Report was necessary prior to approving those products **[CPVC]**.

The Department believes that the decision was fact specific and required CEQA compliance based on the procedural decision-making involved in that case rather than an entire class of products. The court ruled that a reversal of policy was a discretionary decision under Public Resources Code section 21080(a).

The Department does not believe that the procedural facts relating to the adoption of CPVC and subsequent litigation are analogous to the procedural facts surrounding the proposal for adopting PEX into the 2001 California Plumbing Code because there has been no decision that the risks warrant an environmental review nor has there been an extended practice of excluding the product based on those concerns.

HCD Response: [Pg. 15] The Department does not believe that the comment that PEX is merely another form of plastic pipe subject to all of the same health and an environmental concerns is an appropriate analysis. Many products have different chemical compositions and many products use different mechanisms for connections.

HCD Response: [Pg. 16] The Department also does not agree with a commenter's suggestion that the Department's past Environmental Impact Report and Mitigated Negative Declaration for CPVC are applicable to the adoption of PEX. PEX was not part of the analysis of these documents, much of the prior review was centered on issues related to glues and solvents (not applicable to PEX) and the material composition including additives between PEX and CPVC are different.

[Comment from CPTC, Pg. 14] 4. *Because cross-linked polyethylene (hereinafter referred as "PEX") has never before been approved for use inside or outside residential structures by any California state agency.*

HCD Response: [Pg. 15] One commenter stated that the Department's proposal would authorize for the first time the use of PEX plumbing pipe for use inside and outside residential structures in California the Department adopted the use of PEX. While the Department agrees with this comment as to a statewide approval of PEX for the interior distribution of water, it believes that this is factually inaccurate as to the use of PEX outside of structures and in other contexts.

PEX is currently approved statewide for use outside residential structures under the authority of the California Water Works Standards in Title 22 of the California Code of Regulations. (See approval of plastic pipe for use as connections to residential structures under section 64644 of Title 22.) This section provides for the approval of any plastic pipe material that has been tested and certified as suitable for use in potable water piping systems by the National Sanitation Foundation Testing Laboratory (NSF International). NSF International has certified PEX, copper and other materials for use in potable water piping. PEX has also been an approved material in manufactured housing since 1996 under the Departments Manufactured Housing Program.

In addition, PEX has also been approved in a number of jurisdictions on a case-by-case basis under the alternate approvals authority of HSC section 17951(d)(2). Currently for example, the City of Los Angeles has given PEX a general approval since February 12, 1999. There are many local jurisdictions that have approved the use of PEX within residential structures under the alternative approval methods provided in the State Housing Law.

[Comment from CPTC, Pg. 13] 6. Previous environmental review demonstrates that expanded plastic pipe uses may cause significant impacts on public and worker health and the environment, which required CEQA.

HCD Response: [Pg. 15] The Department does not believe that the comment that PEX is merely another form of plastic pipe subject to all of the same health and an environmental concerns is an appropriate analysis. Many products have different chemical compositions and many products use different mechanisms for connections.

[Comment from CPTC, Pg. 13] 7. The record suggests potential public and worker health and environmental effects.

HCD Response: [Pg. 15] Unlike previous proposals for the use of plastic pipe that included solvents and glues for joining sections, PEX tubing is installed with mechanical fittings. The Department is unaware of any worker safety or other health hazards associated with exposures to: (1) glues and solvents as required with some currently approved plastic pipe materials, or (2) with fumes generated from the soldered connections for copper pipe installation, or other currently approved material.

[Comment from CPTC, Pg. 13] 8. The proposals clearly constitute a discretionary project subject to CEQA review for PEX and all uses of ABS/PVC for DWV.

[Comment from CPTC, Pg. 13] 10. The proposed approval of PEX is a "Project" within the meaning of CEQA and the Department should find that there will be a significant environmental effect.

[Comment from CPTC, Pg. 13] 11. Any decision to adopt PEX is discretionary and is subject to CEQA, and an initial study is required.

HCD Response: [Pg. 14] The Department believes that the decision was fact specific and required CEQA compliance based on the procedural decision-making involved in that case rather than an entire class of products [CPVC]. The court ruled that a reversal of policy was a discretionary decision under Public Resources Code section 21080(a).

HCD Response: [Pg. 15] In the case of the proposal to allow the use of ABS/PVC for DWV above 2-stories, the Department believes because there are similar factual circumstances surrounding the expanded use of these materials to those involved with CPVC that a CEQA review may be necessary before approving the expanded use of ABS/PVC for DWV.

HCD Response: [Pg. 15] As to PEX, while the Department disagrees with the suggestion that CEQA applies to the adoption of a new model code product . . . [etc]

GENERAL COMMENTS ISSUES

C-12. Robert Friedlander

Comment C-12(a): *Preferential and unfair treatment has been given to the manufacturers of copper tubing materials and the California Pipe Trades Council.*

HCD Response: The Department believes that the crux of this comment is related to the fact that both copper tubing (for the transmission of fuel gas) and PEX (for the distribution of potable water) are new products added to the national codes in 2000. Yet, the Department is approving the use of copper tubing while denying the approval, at this time, of PEX.

Both products have been reviewed, tested and listed by the national testing agencies and included in the national codes. For the purpose of this rulemaking package, however, there is one fundamental and critical distinction.

In the case of copper tubing, no negative comments were received. No party has raised health, safety or performance concerns to the Department for consideration. Some issues were raised within the Department regarding the possible corrosive nature of some fuel gases due to H₂S contamination leading to a proposal to exclude copper tubing, and those comments led to the exclusion of copper tubing during one public notice comment period. The Department has subsequently learned that all fuel gas used in California is scrubbed to remove most of the H₂S contamination to levels that meet the applicable national [Pg 52] safety standard. Upon learning of this fact, the Department has proposed to include copper tubing in the 2001 CPC.

On the other hand, PEX has been the subject of several [one] comments concerning its safety and performance reliability. The Department is obligated by law to address those concerns before proceeding in the adoption of PEX and does not feel that it has had adequate time to do so.

Comment C-12(b): *Freedom of choice of material should not have to be approved by the California Pipe Trades Council and constitutes an improper delegation of authority by the department. [This is in comparison to the unreasonable, unfair, arbitrary and capricious manner that the Cross-linked Polyethylene manufacturers and the 30 plus commentors who made submissions including documentation in support of the option for Californians to exercise their right of freedom of choice for water distribution materials. This country was founded on the concept of freedom of choice, but in the case of water distribution and fuel gas materials in the State of California it is apparent that the freedom to choose materials must first be approved by the California Pipe Trades Council.]*

HCD Response: The Department has not delegated authority to the Pipe Trades Council or any other party. Substantive issues have been raised and the Department is obligated to resolve those issues to its satisfaction. It has not yet been able to do so for PEX.

Comment C-12 (c): PEX is listed as a mandatory reference standard in the 2000 Uniform Plumbing Code.

HCD Response: The Department agrees, PEX will be listed in Chapter 14, Mandatory Reference Standards of the 2001 California Plumbing Code.

Comment C-12(d): *[The "Third 45 Day Written Comment Period Modified Text" published 1/24/02 and the "Modified Text" published on 9/28/01 by HCD regarding the adoption of the 2000 UPC by reference and the effect those documents have had on copper tubing for fuel gas and PEX for water distribution, and what has transpired to date for these two products gives me cause for concern about the choices this department makes.] The Department stated it did not have sufficient time to perform an environmental evaluation of [the new new building materials] copper alloy tubing [for fuel gas distribution], and PEX [for water distribution due to the time constraints imposed by this years triennial adoption process], it has been over 6 months since the unfounded CEQA claims were made about PEX, [and] the department has not published any evaluation on this issue, however did find the time to change the decisions on copper tubing issues in less than 2 months.*

HCD Response: The Department recognizes that in light of the length of time it has taken to complete this regulatory process, the frustration represented in this comment is understandable. However, the decision that further study was needed was made at a time when it was believed that the process would be concluding sooner. In addition, this process has, to the extent possible, been a winnowing process with the Department attempting to make appropriate decisions and reducing the contentious issues while recognizing that some parties may remain dissatisfied. Resources that might have been available to begin the review of the issues associated with PEX have been redirected to attempting to complete the 2001 California Plumbing Code. The Department simply has not had the resources to examine these issues while trying to bring this rulemaking process to a conclusion.

As to the different conclusion regarding Copper Tubing, please see the response comment # 11 above.

Comment C-12(e): *The department has stated that they have no verified complaints and are unaware of any scientific corroborated reports that copper is a defective material. The commenter states that the same is true of PEX.*

HCD Response: [Pg. 53] This may be true, however, issues have been raised concerning PEX, and as stated previously, the Department did not have sufficient time to perform an evaluation of all the issues raised.

Comment C-12(f): *The department stated that it has determined that Copper Tubing for fuel gas is not a new material, but the department did not say that PEX is not a new material either.*

HCD Response: The Department agrees with this comment. PEX is an approved material in the 2000 Uniform Plumbing Code and International Residential Code. It has been certified for use for drinking water pipes by NSF International. PEX has been approved by many local jurisdictions since 1996 under their alternate approval authority and has been an approved potable water pipe material in manufactured homes since 1996. The Department is also aware that PEX is an allowed material for use in residential and commercial water distributions from the meter to the structure in California.

Comment C-12(g): *Copper tubing for fuel gas and PEX for water distribution are already approved materials in the present HCD plumbing code.*

HCD Response: This comment appears to be related to a provision in the State Housing Law, Health and Safety Code Section 17922 (b), which states in part that "in the absence of adoption by regulation, the most recent editions of the uniform codes referred to in this section shall be considered to be adopted one year after the date of publication of the uniform codes." The commenter has stated that this section by application of law has resulted in the Uniform Plumbing Code (UPC) becoming the California Plumbing Code because the Department has failed to adopt regulations within one year of the publication date of the UPC. Thus, by application of law, PEX was adopted in October 2001 which is the one year time period of HSC section 17922(b). It is the

Department's view that the position taken in this comment is not reconcilable with the decision reached by the court in *International Association of Plumbing and Mechanical Officials v. California Building Standards Commission* (1997) 55 Cal.App.4th 245) that held that the Legislature cannot constitutionally delegate the obligation to adopt laws to private parties.

C-11. John Messick P.E.

Comment C-11(b): [Pg. 49] *In some areas copper would not be an acceptable material to be used because of the corrosion potential of the ground, water, or concrete.*

HCD Response: The Department agrees with this comment, but is uncertain as to its relevance in this rulemaking process. In those areas where soil or water conditions may lead to a premature failure of metallic pipe, an alternate building material (CPVC) is currently an approved material in the California Plumbing Code. In addition, current law allows for the approval of PEX: (1) on a case-by-case basis under the alternate approvals authority for HCD or local governments in the State Housing Law, or (2) pursuant to local ordinances adopted pursuant to the statutory authority for modifications to the California building Standards Code because of local climatic, topographical, or geological conditions under the State Housing Law.

Comment C-11 (c): [Pg. 50] *PEX has a cost savings to the California consumer, and would help promote affordable housing.*

HCD Response: The Department believes that this statement is accurate, but cost savings are not the sole consideration. While cost-savings are an important consideration, it would not, in and of itself, present an adequate reason to approve a product that might be deemed to present unacceptable health or performance risk.

Comment C-11(g): [Pg. 50] *Use of copper piping can contribute to pollution of water supply, as referenced by a previous study done by the Regional Water Quality Control Plant of Palo Alto.*

HCD Response: The Department has investigated this assertion in the past and there appears to be some evidence to support it. However, even if true, it becomes an argument in support of new non-metallic products but only when the Department can conclude that the new products will perform adequately and do not present an unreasonable level of risk to the safety of the users and installers.

Comment C-11(h): [Pg. 50] *The National Association of Plumbing, Heating, and Cooling Contractors, Mechanical Contractors Association of America, American Society of Sanitary Engineers, United Association of Journeyman Apprentices and Plumbing and Pipefitting Industry, Western Fire Chiefs [Pg 51] Association, and the National Fire Protection Association are all members of IAPMO and have studied and considered the issues related to PEX and have chosen to adopt PEX in the Uniform Plumbing Code.*

HCD Response: The Department accepts this comment. The Department is also aware that PEX is an approved material in the International Residential Code, has been certified for use in potable water pipes by NSF International, but for the reasons previously expressed, it is not proposed to approve PEX in light of the concerns raised.

Comment C-11(i): [Pg. 51] *Negative comments regarding PEX are unfounded and why would the commission not accept something to make housing more affordable or energy efficient.*

HCD Response: At this point in time, the Department feels obligated to give both the positive and negative comments equal credibility. It is unable at this time to conclude that the negative comments concerning leachable products and permeation are unfounded.

GENERAL COMMENTS ISSUES

Comment: [Pg. 28] This group of twenty-eight commenters sent nearly identical documents to the California Building Standards Commission (CBSC) regarding the use of PEX in the California Plumbing Code.

These commenters state that PEX is a proven solution to water distribution issues with a demonstrated ability to withstand harsh environments and soil conditions. The commenters believe that alternate plumbing materials, such as PEX, are essential to assure that California improves its ability to deliver clean water to all residents. They further state that PEX tubing systems are recognized in all national plumbing and mechanical codes, as well as many counties and major cities. The commenters say that their respective companies are well trained in the proper installation and use of PEX and that PEX is inherently safer as it does not require the use of cement, solvents or open flames for installation purposes.

Comment B-33(b): [Pg. 33] [Bob Raymer, CBIA

- Homebuilders have been using cross-linked polyethylene tubing extensively for many years. The CBIA has never received a single complaint about this product, which has been installed in thousands of homes.
- The CBIA feels that a "building standard" should not be viewed as being a project for the purposes of applying CEQA. With the release of each new edition of national codes, there is always the national recognition of many new materials and methods.

B-35 (a) [Pg. 36] Richard W. Church, Executive Director, Plastic Pipe and Fittings Association

- If California adopts Chapter 14 of the 2000 UPC, Standard 61 compliance will become mandatory under the California Plumbing Code. Standard 61 requires that extracts from plumbing products be evaluated against Maximum Allowable Levels (MAL) to protect public health.

C-1. [Pg. 43] Sacramento Valley Chapter ICBO, Submitted by Thomas L. Trimmerger on behalf of the membership

Comment: (Written Comment of 3/12/2002)

- PEX has been used in the rest of the country and the rest of the world and has been proven acceptable.
- PEX has passed the rigid critique of the model code process and is approved by ICBO, BOCA, SBCCI, and IAPMO.
- PEX is an approved material for potable water by the National Sanitation Foundation (NSF International).

HCD Response: The Department acknowledges the commenter's statements regarding the advantages of PEX as a viable alternative material for use in potable water systems; however, the Department is proposing to remove the new building standards for cross-linked polyethylene tubing (PEX) from this proposed adoption. Building standards for PEX are new standards included in the 2000 Uniform Plumbing Code that the Department would have adopted by reference during the 2001 triennial model code adoption process. The Department received a public comment, which asserted that the adoption of this material would potentially trigger the California Environmental Quality Act (CEQA). The Department takes note of the comment concerning CEQA and assures the commenter that the Department has not stated that CEQA should apply to PEX. The Department has determined it does not have sufficient time to evaluate this claim due to the time constraints imposed in this year's triennial adoption process. Based on the fact that PEX is a new building standard listed in the 2000 UPC, the Department chooses to err on the side of caution and continue to evaluate PEX prior to proposing its inclusion within the CPC.

[HCD Response: Comment C-11(a) Pg. 49] . . . It is, however, the Department's responsibility to ensure products or methods of construction approved for use inside and outside residential structures in California are, in fact, as safe as a reasonable analysis of the available data will allow.

HCD Response: [Pg. 15] PEX is currently approved statewide for use outside residential structures under the authority of the California Water Works Standards in Title 22 of the California Code of Regulations. (See approval of plastic pipe for use as connections to residential structures under section 64644 of Title 22.) This section provides for the approval of any plastic pipe material that has been tested and certified as suitable for use in potable water piping systems by the National Sanitation Foundation Testing Laboratory (NSF International). NSF International has certified PEX, copper and other materials for use in potable water piping. PEX has also been an approved material in manufactured housing since 1996 under the Departments Manufactured Housing Program.

[HCD Express Terms 3/12/01, Pg. 30]

~~**604.1a 604.1.1 [For HCD 1 & HCD 2]** Water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, or other approved materials. Asbestos-cement, CPVC, PE or PVC water pipe manufactured to recognized standards may be used for cold water distribution systems outside a building. 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 Administrative Authority.~~

Water distribution pipe, building supply water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, or other approved materials. Asbestos-cement, CPVC, PE, PVC, or PEX water pipe manufactured to recognized standards may be used for cold water distribution systems outside a building except as provided for CPVC use pursuant to section 604.1.2. PEX water pipe, tubing, and fittings, manufactured to recognized standards, may be used for hot and cold-water distribution systems within a building. 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 Administrative Authority.

[HCD Proposed Final Express Terms 4/15/02, Pg. 33]

~~**604.1a 604.1.1 [For HCD 1 & HCD 2]** Water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, or other approved materials. Asbestos-cement, CPVC, PE or PVC water pipe manufactured to recognized standards may be used for cold water distribution systems outside a building. 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 Administrative Authority.~~

Water distribution pipe, building supply water pipe and fittings shall be of brass, copper, cast iron, galvanized malleable iron, galvanized wrought iron, galvanized steel, or other approved materials. Asbestos-cement, CPVC, PE, or PVC water pipe manufactured to recognized standards may be used for cold water distribution systems outside a building except as provided for CPVC use pursuant to section 604.1.2. 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 Administrative Authority.

[Comment from CPTC, Pg. 9 re: CSST] 2. *The statutory authority for adoption of model codes by the Department relies on the model codes to evaluate and approve material and the Department does not have the technical expertise to do this.*

B-34. [Pg. 17 re: CSST] Daniel Cardozo of Adams, Broadwell, Joseph and Cardozo
The commenter states that the code adoption process is not the proper forum for a product manufacturer to advocate the approval of a building material that is not authorized in a model code. The statutory scheme for adoption of model codes relies on the model codes to evaluate and approve material and the state agencies do not have the technical expertise to do this.

A-1. [Pg. 17 re: CSST] Donald E. Dockary, Southern California Gas Co. Manager State & National Codes

HCD Response: In addition, because CSST was not included as a permitted use in the IAPMO Plumbing Code, and because California does not independently test products for approval and relies on national testing and listing agencies, HCD is not equipped to independently determine the safety and effectiveness of this product in the limited time imposed in this year's triennial adoption process.

[The Significant Decisions, re: CSST Pg. 8] . . . This action does not represent a conclusive finding that the safety issues raised by those opposed to the use of CSST are without merit, but recognizes that at this time the safety issues brought up during this rulemaking were opinions without substantial supporting evidence.

B-45. [Pg. 42] Andrew G Kireta: Copper Development Association Inc.

HCD Response: The Department acknowledges the comments. The Department previously stated that it believed that additional studies were necessary before it could recommend adoption of copper alloy tubing. The Department received no verified complaints regarding the safety of this product and was unaware of any scientific corroborated reports that establish it as a defective product. . . .

[Balancing Considerations, Pg. 8 re: CSST] On the other hand, when contemplating actions that will cause the elimination of an already available product, or an interruption in the availability of a product, such as corrugated stainless steel tubing (CSST), other factors must be weighed when balancing the interests. One such factor is the negative effects of causing a market disruption. **This is particularly true where there are only allegations, but no confirmed reports, regarding potential risks. There are many indicators that the product may be a cost effective alternative material that can contribute to housing preservation and affordability.** One consequence of a market disruption is the very real economic impact on the manufacturers, retailers and installers of the product. But, equally significant are the implications of eliminating the product for those consumers that have homes in which the product has been used. **The mere appearance that California has determined that the product warrants elimination from the code when, in fact, it has made no such determination, could result in a loss of market value of these homes (must these families disclose the presence of this product upon sale?) and the fear for some homeowners that the product may result in a catastrophic failure.** The Department must consider the possibility that at least some homeowners may choose the costly path of replacing the material while others may sue the builders of the homes. Such actions cannot, and should not, be taken lightly. **In this balancing of interests, the Department must be circumspect before removing a product from usage unless there is reasonably compelling evidence that such an action is appropriate. [emphasis added by presenter]**