Item No.DWA-2007-4
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Joint Committee Issue Document

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Submit to:

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Signature of Submitter * ***Richard Sykes*** Date _____

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Please insert a check (X) in the appropriate place to indicate if you wish the item to be considered as an action item or as an information item.

Action ____X_____ Information _____

NSF Standard(s) Impacted**: NSF/ANSI 61**

Issue Statement:

Provide a concise statement of the issue, which reference as appropriate any specific section(s) of the standard(s) that are related to the issue.

It is recommended that NSF/ANSI 61 Sections 3, 4, 8, and 9 be amended to allow manufacturers the option of being certified for a no-lead content standard such as California's new reduced lead content standard, which applies to any pipe, pipe or plumbing fitting, or fixture intended to convey or dispense water for human consumption through drinking or cooking. Under this new standard, the wetted surfaces of pipes and pipe fittings, plumbing fittings, and fixtures are required to have a weighted average lead content of not more than 0.25% as calculated by the proposed addition to NSF/ANSI Standard 61 (Annex G). Note: The California standard applies to plumbing that is put into commerce in the state after January 1, 2010.

Background:

Provide a brief background statement indicating the cause and nature of concern, the impacts identified relevant to public health, public understanding, etc, and any other reason why the issue should be considered by the Committee.

In September 2006, California adopted a new standard for lead in plumbing, which includes any pipe, pipe or plumbing fitting, or fixture intended to convey or dispense water for human consumption. The purpose of the new California law is to reduce lead exposure in California's drinking water. Under this new standard, after January 1, 2010, the wetted surfaces of pipes and pipe fittings, plumbing fittings, and fixtures are required to have a weighted average lead content of not more than 0.25%. Currently, there is no NSF standard in place to ensure conformance with the new California law or similar laws that may be enacted in other states. It would be beneficial to manufacturers, utilities, regulators, and consumers if NSF/ANSI 61 were revised to address the new California standard. Drinking water plumbing devices put into commerce in California would be certified to meet the California standard. Information that is already required for NSF certification under NSF/ANSI 61 Section 3 (General requirements) could be used to certify drinking water plumbing put into commerce in California. Attachment 1 contains the relevant section of the California Health & Safety Code (Section 116875); Attachment 2 contains additional background information on the how to comply with the new California lead standard.

The new lead standard applies to pipes and pipe fittings, plumbing fittings, and fixtures that are intended to convey or dispense water for human consumption through drinking or cooking. This includes kitchen faucets, bathroom faucets, and any other end-use devices intended to convey or dispense water for human consumption. The new standard applies to plumbing components used in permanent structures, but not to plumbing components used in recreational vehicles, boats, airplanes, etc. Temperature limiting devices or hot water dispensers that are intended to convey or dispense water for human consumption are included; however, since hot water is considered to be used primarily for washing, hot water heaters were not intended to be covered by the new standard. Further, tub or shower components, fixtures such as sinks, showers, tubs, bidets, and toilets are not included since they are not intended to convey or dispense water for human consumption. The new standard also does not cover service saddles, backflow preventers for nonpotable services such as irrigation and industrial, and water distribution main valves (e.g., gate valves and butterfly valves) that are two inches in diameter and above are excluded. The standard does not apply to temporary bypasses for water mains or temporary water supplies, such as fire hydrants.

Recommendation:

If action by the Joint Committee is being requested, clearly state what action is needed: e.g., recommended changes to the standard(s) including the current text of the relevant section(s) indicating deletions by use of ~~strike-out~~ and additions by highlighting or underlining; e.g., reference of the issue to a Task Force for detailed consideration; etc. If recommended text changes are more than a half page, please attach a separate document.

Recommend the joint committee accept the changes to NSF/ANSI 61, Sections 3, 4, 8, and 9 as written in Attachment 3.

Supplementary Materials (photographs, diagrams, reports, etc.): See attachments. *If not provided electronically, the submitter will be responsible to have sufficient copies to distribute to committee members.*

Submitter _Richard Sykes_____ Date _____

ATTACHMENT 1 – BACKGROUND: CALIFORNIA HEALTH & SAFETY CODE SECTION 116875

The following text is taken from California Health and Safety Code Section 116875 as amended by Assembly Bill 1953 and signed into law by Governor Arnold Schwarzenegger on September 30, 2006:

116875. (a) No person shall use any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not lead free in the installation or repair of any public water system or any plumbing in a facility providing water for human consumption, except when necessary for the repair of leaded joints of cast iron pipes.

(b) (1) No person shall introduce into commerce any pipe, pipe or plumbing fitting, or fixture intended to convey or dispense water for human consumption through drinking or cooking that is not lead free, as defined in subdivision (e). This includes kitchen faucets, bathroom faucets, and any other end-use devices intended to convey or dispense water for human consumption through drinking or cooking, but excludes service saddles, backflow preventers for nonpotable services such as irrigation and industrial, and water distribution main gate valves that are two inches in diameter and above.

(2) Pipes, pipe or plumbing fittings, or fixtures that are used in manufacturing, industrial processing, for irrigation purposes, and any other uses where the water is not intended for human consumption through drinking or cooking are not subject to the requirements of paragraph (1).

(3) For all purposes other than manufacturing, industrial processing, or to convey or dispense water for human consumption, "lead free" is defined in subdivision (f).

(c) No person engaged in the business of selling plumbing supplies, except manufacturers, shall sell solder or flux that is not lead free.

(d) No person shall introduce into commerce any solder or flux that is not lead free unless the solder or flux bears a prominent label stating that it is illegal to use the solder or flux in the installation or repair of any plumbing providing water for human consumption.

(e) For the purposes of this section, "lead free" means not more than 0.2 percent lead when used with respect to solder and flux and not more than a weighted average of 0.25 percent when used with respect to the wetted surfaces of pipes and pipe fittings, plumbing fittings, and fixtures. The weighted average lead content of a pipe and pipe fitting, plumbing fitting, and fixture shall be calculated by using the following formula: The percentage of lead content within each component that comes into contact with water shall be multiplied by the percent of the total wetted surface of the entire pipe and pipe fitting, plumbing fitting, or fixture represented in each component containing lead. These percentages shall be added and the sum shall constitute the weighted average lead content of the pipe and pipe fitting, plumbing fitting, or fixture.

(f) For the purposes of paragraph (3) of subdivision (b), "lead free," consistent with the requirements of federal law, means not more than 0.2 percent lead when used with respect to solder and flux and not more than 8 percent when used with respect to pipes and pipe fittings. With respect to plumbing fittings and fixtures, "lead free" means not more than 4 percent by dry weight after August 6, 2002, unless the department has adopted a standard, based on health effects, for the leaching of lead.

(g) This section shall become operative on January 1, 2010.

ATTACHMENT 2 – BACKGROUND: HOW TO COMPLY

The new California lead standard for drinking water plumbing becomes effective January 1, 2010 (Health and Safety (H&S) Code Section 116875(e)).

The New Lead Standard

The sentence in H&S Code Section 16875 (e) (effective January 1, 2010) that specifically addresses fixtures with multiple components reads as follows: "The percentage of lead content within each component that comes into contact with water shall be multiplied by the percent of the total wetted surface of the entire pipe and pipe fitting, plumbing fitting, or fixture represented in each component containing lead. These percentages shall be added and the sum shall constitute the weighted average lead content of the pipe and pipe fitting, plumbing fitting, or fixture."

As stated in the statute, only components with wetted surfaces (those that are in the flow path of water during normal operation) are affected by the standard. Throughout the remainder of this document, the term "wetted components" is used to identify components with wetted surfaces, and the term "fixture" is used to mean *pipe and pipe fittings, plumbing fitting, or fixture.* The intent of the standard was to cover devices meant to convey or dispense water for drinking or consumption, therefore the term "fixture" refers to drinking water faucets, not to sinks, showers, tubs, etc.

Scope of Products Covered

The new lead standard applies to pipes and pipe fittings, plumbing fittings, and fixtures that are intended to convey or dispense water for human consumption through drinking or cooking. This includes kitchen faucets, bathroom faucets, and any other end-use devices intended to convey or dispense water for human consumption. The new standard applies to plumbing components used in permanent structures, but not to plumbing components used in recreational vehicles, boats, airplanes, etc. Temperature limiting devices or hot water dispensers that are intended to convey or dispense water for human consumption are included; however, since hot water is considered to be used primarily for washing, hot water heaters were not intended to be covered by the new standard. Further, tub or shower components, fixtures such as sinks, showers, tubs, bidets, and toilets are not included since they are not intended to convey or dispense water for human consumption. The new standard also does not cover service saddles, backflow preventers for nonpotable services such as irrigation and industrial, and water distribution main valves (e.g., gate valves and butterfly valves) that are two inches in diameter and above are excluded. The standard does not apply to temporary bypasses for water mains or temporary water supplies, such as fire hydrants.

Wetted Surfaces

Wetted surfaces are defined as those surfaces that are in contact with water.

How to Comply

All Components ≤0.25% - If all wetted components of a fixture have a lead content of not more than 0.25%, then that fixture meets the new standard and the following evaluation is not required.

Some Components ≥ 0.25% - If some wetted components of a fixture contain more than 0.25% lead, then the leaded components can be replaced with non-lead components in order to meet the standard; or

The manufacturer may calculate the *weighted average lead content* of the wetted components of a fixture to determine if the fixture meets the standard. All of the wetted surfaces are included in the *weighted average lead content* calculation, not just those surfaces that contain lead. If the *weighted average lead content* of the wetted surfaces is greater than 0.25%, the manufacturer can replace wetted components containing lead with non-lead materials until the *weighted average lead content* is less than or equal to 0.25%. Using a *weighted average lead content* allows the fixture manufacturer to use some components that contain more than 0.25% lead, so long as the *weighted average lead content* is less than 0.25%.

The *weighted average lead content* of the wetted component of a fixture can be calculated using information that is already required by NSF International (NSF) under NSF/ANSI 61 Section 3 (General requirements). Specifically, under NSF/ANSI 61, Section 3.2 (Information and formulation requirements) the following required information can be used to determine the *weighted average lead content* of the wetted surfaces:

- "…for assembled products or components, a list of all components and materials and their corresponding surface areas that come into direct contact with water….
- complete formulation information for each water contact material as applicable….
- when available, a list of the known or suspected impurities within the product or material and the maximum percent or parts by weight of each impurity…."

Determination of Lead Content

The lead content of the wetted surfaces is to be based on the average lead content of each individual component, and is based on the material formulation.

Treated Surfaces

Fixtures with permanent internal coatings that can be expected to reliably last for the useful life of the product can be considered wetted surfaces. If a coating is not expected to reliably last for the useful life of a product, then the coating substrate is considered as the wetted surface. Surfaces that are chemically treated to remove lead from the surface are considered "wetted surfaces" for the purpose of determining the *weighted average lead content*.

An example of how this *weighted average lead content* determination is made using a Chicago Faucets Model 1100 faucet is shown below. The example is for an "unmodified" faucet, which does not meet the new lead standard, and for a "modified" faucet, where some leaded brass components were replaced with non-lead (stainless steel) components in an effort to meet the new lead standard.

Example for the *Weighted Average Lead Content* Determination Using
Chicago Faucets Model 1100 Faucet

1. Identify those components of the faucet that water flows through during the normal operation (wetted components). Figure 1 identifies the wetted components for the Chicago Faucets Model 1100.

2. Obtain the **percentage of lead content within each component** from the component manufacturer. Table 1 provides the lead content for each of the wetted components (columns 4 and 6). The Plumbing Manufacturers Institute provided the lead content for the subject faucet.

3. Determine the **percent of total wetted surface area represented in each component** using the part specifications.

    a. The *wetted surface area* of each component that comes into direct contact with water is required under NSF/ANSI 61 Section 3.2 (to be provided by the manufacturer). Table 1 - column 2 shows the *wetted surface area* of the subject faucet.

    b. Add the areas of the wetted surface for each component together: this is the *total wetted surface area of the faucet*.

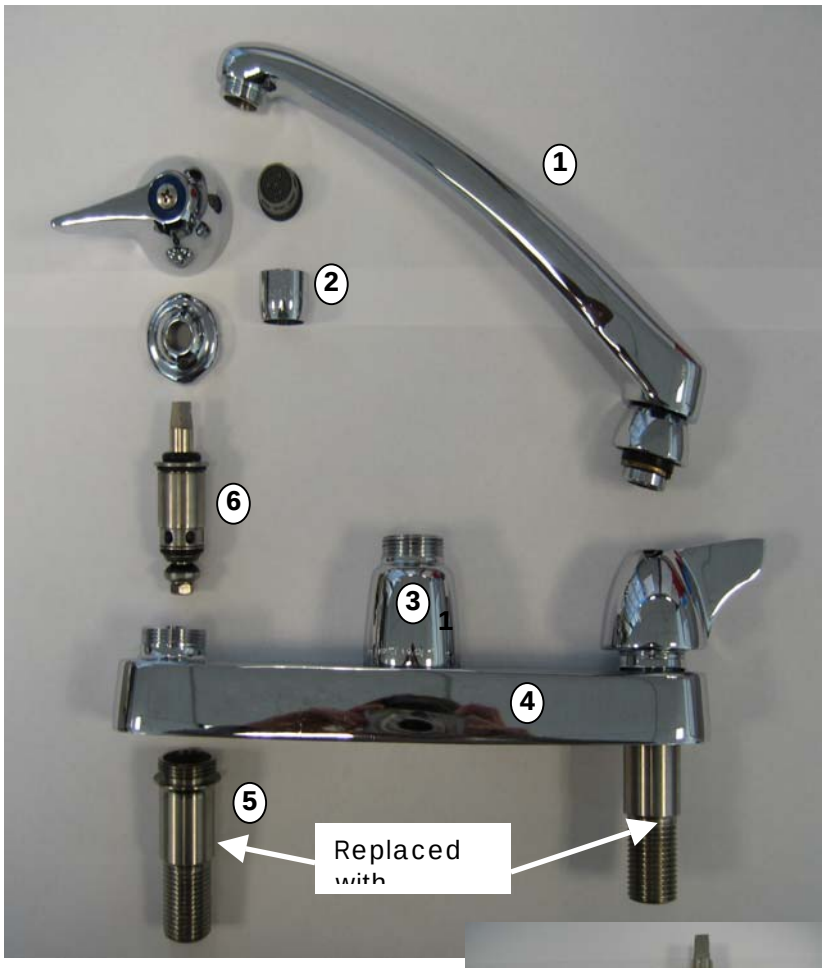
    c. For each component, divide the *area of its wetted surface* by the *total wetted surface area of the faucet*: this is the **percent of total wetted surface area of each component** (see Table 1 – column 3).

$$\text{Percent wetted surface area} = \frac{\text{Wetted surface area of component}}{\text{Total wetted surface area}}$$

4. For each component, multiply the **percentage of lead content** by the **percent of total wetted surface area of that component:** this is the *contributing percent lead for each component* (see Table 1 – columns 5 and 7).

   Contributing percent lead = Percent wetted surface area x Percent lead content

5. Calculate the **weighted average lead content** of the faucet by totaling the *contributing percent lead for the components that make up the wetted surface* of the faucet (Table 1 – columns 5 and 7). For the faucet to be in compliance with the new lead standard, this total must be no more than 0.25%.



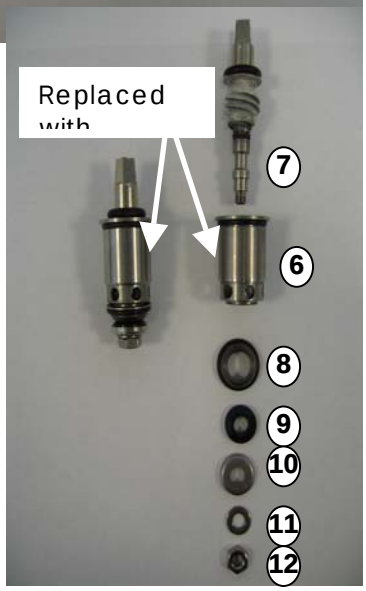


Table 1. Example of weighted average lead content calculations for the Chicago Faucets Model 1100.

1	2	3	4	5	6	7
			Unmodified faucet		**Modified faucet**	
Component No.	**Wetted surface area[1,2] (total = 61.94 in^2)**	**% wetted surface area (total = 100%)**	**% lead content[3]**	**Contributing % lead[2]**	**% lead content[3]**	**Contributing % lead[2]**
1	17.31	27.95	0.05	0.01	0.05	0.01
2	1.15	1.85	2.86	0.05	2.86	0.05
3	4.99	8.05	0.23	0.02	0.23	0.02
4	18.25	29.46	0.05	0.01	0.05	0.01
5	11.14	17.98	2.75	0.49	0 [4]	0.00
6	4.02	6.49	2.54	0.16	0 [4]	0.00
7	1.09	1.75	1.30	0.02	1.30	0.02
8a [5,6]	0.54	0.87	0	0.00	0	0.00
8b [5]	0.91	1.48	2.54	0.04	2.54	0.04
9 [5,6]	0.76	1.23	0	0.00	0	0.00
10 [5]	1.02	1.64	2.54	0.04	2.54	0.04
11 [5]	0.35	0.56	2.54	0.01	2.54	0.01
12 [5]	0.43	0.69	2.54	0.02	2.54	0.02
		Weighted average lead content =		**0.89%** **(not in compliance)**		**0.23%** **(in compliance)**

Table 1 notes:

1. The wetted surface area is based on measurements performed by East Bay Municipal Utility District (EBMUD) staff.
2. The total differs to the second decimal place due to rounding.
3. The lead content was provided to EBMUD by the Plumbing Manufacturers Institute (PMI).
4. Components 5 and 6 (the tailpipes and valve cartridge housings) were replaced with components made of stainless steel (no lead content).
5. PMI did not provide the metal content for components 8-12; however, these are all part of component #6, therefore, the same metal content that was in the unmodified component 6 was assumed for components 8-12. Components 8-12 were not modified with non-lead components.
6. Components 8a and 9 are rubber gaskets (no lead content).

ATTACHMENT 3 – RECOMMENDATION

The following are recommended changes to NSF/ANSI 61. Additions are indicated by hightlighting.

NSF/ANSI 61 – SECTION 3

3.2 Information and formulation requirements

The following information shall be reviewed to determine the appropriate analytical testing and to ensure that the potential health effects of products and materials are accurately and adequately identified:

– the product section(s) under which the product, component, or material is covered and the intended function or end use of the product or the material;

– for assembled products or components, a list of all of components and materials and their corresponding surface areas that come into direct contact with water;

– when appropriate, the total volume of water that the product can hold when filled to capacity;

– the expected service life of the product;

– the anticipated minimum, maximum, and average volumes of water that come into contact with the product, component, or material during a 24-h period;

– complete formulation information for each water contact material as applicable'

NOTE – The complete formulation information may be omitted for a component material if the generic material type is contained in Table 3.1 and its diluted surface area in the application is less than or equal to 0.001 or 0.0001 for static or flowing conditions respectively. If the product is to be considered compliant to a no lead content standard , the lead content (percent by weight) and wetted surface area of each component that comes into contact with the direct flow of water under the normal operation of the product is required. Complete documentation shall be submitted in accordance with the annex G.

– the composition of the formulation (e. g., percent or parts by weight for each chemical in the formulation or reference to a standardized material specification);

– a chemical abstract number (CAS no.), name, trade designation, and supplier for each chemical present in the formulation and a Material Safety Data Sheet (MSDS), when available; and

– an indication as to whether the chemical is an ingredient, reactant, or processing aid.

– the maximum temperature to which the product, component, or material is exposed during its intended end use;

– a description/classification of the manner in which the product or material is manufactured (including any process parameters that affect product surface areas in direct contact with water), handled, and packaged. The manufacturing process variability shall be verified by the manufacturer as to its effect on contaminant leachate levels, and the manufacturer shall establish and demonstrate appropriate ongoing process controls to ensure ongoing product conformance with this Standard;

NOTE – The methods used to alter the water contact surfaces of product components during manufacturing, either mechanically (e. g., metal cutting, molding, stamping) or chemically (e. g., washing, coating, plating, brite-dip cleaning), may have a significant effect upon contaminant leachate performance.

– when available, a list of the known or suspected impurities within the product or material and the maximum percent or parts by weight of each impurity;

– when available, the solubility, hydrolysis products, and extraction rates of chemicals within the product or material; and

– when available, a list of published and unpublished toxicological studies relevant to the chemicals and impurities present in the product, component, or material.

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NSF/ANSI 61 – SECTION 4

4.8 Evaluation of contaminant concentrations

4.8.1 Contaminants measured in a single time point extraction

For pipe and fitting products, normalized static contaminant concentrations shall be no greater than their respective MCLs or TACs, and normalized flowing contaminant concentrations shall be no greater than their respective SPACs calculated in accordance with annex A.

4.8.2 Contaminants measured in a multiple time point extraction

Normalized Day 1 contaminant concentrations shall not exceed the short-term exposure level (STEL) as defined in annex A, section A.5.

Normalized extrapolated or directly measured Day 90 contaminant concentrations shall not exceed the limits defined in 4.8.1.

4.8.3 Residual vinyl chloride monomer (RVCM)

The average RVCM concentration shall be less than or equal to 3.2 mg/kg as evaluated in the product wall.

4.9 Evaluation of pipes and related products for lead content

The information required in 3.2 and the evaluation in annex G shall be used to determine compliance with a lead content standard for pipes and pipe fittings intended to convey or dispense water for human consumption through drinking or cooking.

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NSF/ANSI 61 – SECTION 8

8.6 Other mechanical devices, components, and materials

Samples for the testing of all other mechanical devices, components, and materials shall be selected according to the requirements of annex B, sections B.2.3 and B.4.1. Extraction waters shall be selected according to annex B, section B.2.5. Other mechanical product samples shall be conditioned as indicated in annex B, section B.4.3. After conditioning, the samples shall be exposed as indicated in annex B, section B.4.4.3 and table B9. Normalization shall be as specified in annex B, sections B.8.3, B.8.4, and B.8.6, as applicable.

8.7 Evaluation of mechanical devices for lead content

The information required in 3.2 and the evaluation in annex G shall be used to determine compliance with a lead content standard for mechanical devices intended to convey or dispense water for human consumption through drinking or cooking.

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NSF/ANSI 61 – SECTION 9

9.5 Evaluation of normalized contaminant concentrations

9.5.1 Evaluation of lead

For endpoint devices other than commercial kitchen devices, the lead test statistic Q shall not exceed 11µg when normalized for the 1 L (0.26 gal) first draw sample. For commercial kitchen devices, the lead test statistic Q shall not exceed 11 µg when normalized for the 18.9 L (5 gal) first draw sample.

NOTE – The limit of 11 µg for lead is based on a limit of 15 µg total lead, including lead contributed from the device interior as well as from sources other than the device, which is assumed to be 4 µg.

For kitchen faucets that have been exposed simultaneously with the side spray component, the lead test statistic Q value for the entire assembly shall not exceed 11 µg. When the kitchen faucet and the side spray component have been exposed separately, the lead test statistic Q value for the faucet and side spray shall be added and shall not exceed 11 µg.

9.5.2 Evaluation of non-lead contaminants

For endpoint devices other than commercial kitchen devices, the normalized concentration of a nonlead contaminant shall not exceed its SPAC (calculated in accordance with annex A) when normalized for the 1 L (0.26 gal) first draw sample. For commercial kitchen devices, the normalized concentration of a nonlead contaminant shall not exceed its SPAC when normalized for the 18.9 L (5 gal) first draw sample.

For kitchen faucets that have been exposed simultaneously with the side spray component, the normalized concentration of a non-lead metal contaminant for the entire assembly shall not exceed its SPAC. When the kitchen faucet and the side spray component have been exposed separately, the normalized concentration of a non-lead metal contaminant for the faucet and side spray shall be added and shall not exceed its SPAC.

9.6 Evaluation of fixtures, faucets, and fittings for lead content

The information required in 3.2 and the evaluation in annex G shall be used to determine compliance with a lead content standard for endpoint devices intended to convey or dispense water for human consumption through drinking or cooking.

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ANNEX G

Protocol for the evaluation of pipe, fixtures, faucets, and fittings for compliance with a maximum lead content standard of 0.25%

G.1 General

This is an option for manufacturers who intend to sell products in states where there is a 0.25% maximum lead content standard such as in California, or who otherwise would like to obtain product certification so their products can be considered in compliance with requirements such as those in states such California.

G.2 Scope

This section applies to pipes and pipe fittings, plumbing fittings, and fixtures used to convey or dispense water for human consumption (drinking or cooking). This includes kitchen faucets, bathroom faucets, and any other end-use devices intended to convey or dispense water for human consumption. This section applies to plumbing components used in permanent structures, but not to plumbing components used in recreational vehicles, boats, airplanes, etc. Temperature limiting devices or hot water dispensers that are intended to convey or dispense water for human consumption are included; however, since hot water is considered to be used primarily for washing, hot water heaters were not intended to be covered by this section. Further, tub or shower components, fixtures such as sinks, showers, tubs, bidets, and toilets are not included since they are not intended to convey or dispense water for human consumption. This section also does not cover service saddles, backflow preventers for nonpotable services such as irrigation and industrial, and water distribution main valves (e.g., gate valves and butterfly valves) that are two inches in diameter and above are excluded. This section does not apply to temporary bypasses for water mains or temporary water supplies, such as fire hydrants. For final determination of exemptions and application, manufacturers should review applicable state and local codes and regulations.

The following protocol is used to determine if the product meets the 00.25 % maximum lead content standard, which is that the weighted average lead content of the wetted surfaces shall not be more than 0.25 percent.

G.3 General Evaluation Protocol

G.3.1 All Components ≤0.25%

If each fixture component that has a wetted surface has a verifiable lead content of not more than 0.25%, then that fixture is considered in compliance with the requirements of the 0.25% maximum lead content statndard and no further evaluation is required.

G.3.2 Some Components ≥ 0.25%

If some wetted components of a fixture contain more than 0.25% lead, then the leaded components can be replaced with non-lead components in order to meet the standard; or the manufacturer should calculate the weighted average lead content of the wetted components of a fixture according to G.3.3 to determine if the fixture meets the criteria.

G.3.3 All of the wetted surfaces are included in the *weighted average lead* content calculation, not just those surfaces that contain lead. If the *weighted average lead content* of the wetted surfaces is greater than 0.25%, the manufacturer can replace wetted components containing lead with non-lead materials until the *weighted average lead content* is less than or equal to 0.25%. Using a *weighted average lead content* allows the fixture manufacturer to use some components that contain more than 0.25% lead, so long as the *weighted average lead content* is not more than 0.25%. The certifying agency will verify the accuracy of the calculation and check to ensure the unit passes the reduced lead definition.

The *weighted average lead content* of the wetted component of a fixture can be calculated using information that is provided as part of the manufacturer's submittal under Section 3.2.

G.3.4 The following is an example of how this *weighted average lead content calculation is conducted:*

1. Identify those components of the faucet that water flows through and comes into contact with during the normal operation (wetted components).

2. Use the **percentage of lead content within each component** (supplied by the component manufacturer or supplier). Table G1 – column 4 provides the lead content for each of the wetted components.

3. Determine the **percent of total wetted surface area represented in each component** using the part specifications.

   a. The *wetted surface area* of each component that comes into direct contact with water is required under 3.2 (to be provided by the manufacturer). Table G1 - column 2 shows the *wetted surface area* of the subject faucet.

   b. Add the areas of the wetted surface for each component together: this is the *total wetted surface area of the faucet*.

   c. For each component, divide the *area of its wetted surface* by the *total wetted surface area of the faucet (times 100)*: this is the **percent of total wetted surface area of each component** (see Table G1 – column 3).

$$\text{Percent wetted surface area} = \frac{\text{Wetted surface area of component}}{\text{Total wetted surface area}} * 100$$

4. For each component, multiply the **percentage of lead content** by the **percent of total wetted surface area of that component:** this is the *contributing percent lead for each component* (see Table G1 – column 5).

   Contributing percent lead = Percent wetted surface area x Percent lead content

5. Calculate the **weighted average lead content** of the faucet by totaling the *contributing percent lead for the components that make up the wetted surface* of the faucet (Table G1 – column 5). For the faucet to be in compliance with the new lead standard, this total must be no more than 0.25%.

Table G1. Example of weighted average lead content calculations.

1	2	3	4	5
Component No.	**Wetted surface area[1] (total = 61.94 in^2)**	**% wetted surface area (total = 100%)**	**% lead content**	**Contributing % lead**
1	17.31	27.95	0.05	0.01
2	1.15	1.85	2.86	0.05
3	4.99	8.05	0.23	0.02
4	18.25	29.46	0.05	0.01
5	11.14	17.98	0	0.00
6	4.02	6.49	0	0.00
7	1.09	1.75	1.30	0.02
8	0.54	0.87	0	0.00
9	0.91	1.48	2.54	0.04
10	0.76	1.23	0	0.00
11	1.02	1.64	2.54	0.04
12	0.35	0.56	2.54	0.01
13	0.43	0.69	2.54	0.02
			Weighted average lead content =	**0.23%** **(in compliance)**