



Chan Bill (AB1953)
California SB1334 & SB1395
NSF Standard 61, Annex G

January 15, 2009



California AB1953

Effective January 1, 2010...“lead free” means:

- Not more than 0.2% lead for solder and flux
- Not more than a weighted average of 0.25% lead when used with respect to the wetted surfaces of pipes and pipe fittings, plumbing fittings, and fixtures.

Products Covered

This includes:

- kitchen faucets
- bathroom faucets
- any other end-use devices intended to convey or dispense water for human consumption through drinking or cooking

Exclusions

Excludes:

- Service saddles
- Backflow preventers for non-potable services
- Water distribution main gate valves that are two inches in diameter and above
- Any pipes, pipe or plumbing fittings, or fixtures where the water is not intended for human consumption through drinking or cooking

Additional California Legislation

Passed in 2008:

- SB1334 (Calderon)
- SB1396 (Corbett)

SB1334 (Calderon)

Effective January 1, 2010

- All pipe, pipe or plumbing fittings or fixtures, solder, or flux shall be certified by an independent American National Standard Institute (ANSI) accredited third party, including, but not limited to, NSF International
- Certification...shall, at a minimum, include testing of materials in accordance with the protocols used by the DTSC...

SB1395 (Corbett)

Effective January 1, 2010

- California Department of Toxic Substance Control (DTSC) is authorized to take up to 75 samples of water faucets, plumbing fittings and fixtures to determine compliance (subject to availability of resources)
- Samples will be taken at places readily available to the public – retail and wholesale outlets
- DTSC exercises judgment for samples

SB1395 (Corbett)

- DTSC will determine test methods, protocols, and sample preparation procedures
- DTSC intends to post results on the internet and DTSC will provide results to California DPH
(Corey Yep & Bruce Labelle - CMC Meeting 11/13/08)

NSF/ANSI 61 Annex F

On July 1, 2012

- for all section 9 devices other than supply stops, flexible plumbing connectors, and miscellaneous components, reduce the Q (&R) Statistic criteria from 11 to 5
- supply stops, flexible plumbing connectors, and miscellaneous components reduce the Q (&R) Statistic criteria from 11 to 3 for.
- Section 8 devices: reduce acceptance criteria from 15 ug/L to 5 ug/L

NSF/ANSI 61 Annex G

Process

- EBMUD requested that Drinking Water Additives Joint Committee (DWA JC) amend Std 61 to allow manufacturers the option of being certified to a no-lead standard.
- Recommendation was modeled to match the requirements of California's AB1953.
- Development responsibility assigned to NSF Lead Task Group

NSF/ANSI 61 Annex G

Lead Task Group (~30 participants)

Regulators:

US EPA

Health Canada

California Dept of Health

Water Utilities:

LA Dept. Water & Power

EBMUD

Product Certifiers:

5 certifiers

Associations:

AWWA

CDA

PMI

CIPH

CWQA

Manufacturers:

10 manufacturers

NSF/ANSI 61 Annex G

- Optional annex under NSF/ANSI 61
- Also requires full compliance with NSF/ANSI 61
- Does not reference CA, could apply to any jurisdiction (Vermont)
- Compliance determined by calculations involving the percent lead content of the materials used and wetted surface areas

Linings and Coatings

- G.4.1 Use of liners: When lead-bearing surfaces have been excluded from water contact by use of a rigid liner (e.g. plastic sleeve) sealed with a permanent barrier, the lead content of the liner shall be used.
- G.4.2 Use of coatings: When coatings are used, the lead content of the coated substrate shall be used in the calculation of weighted average lead content.

Acid Washing

- G.4.3 Use of lead removal technologies: For components where the wetted surface areas have been treated with a lead removal technology, the percent lead composition shall be based on the material used to manufacture the component prior to application of the surface treatment.

Determining Compliance

- All components have a lead content $\leq 0.25\%$
- Calculate Weighted Lead Content (WLC):
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

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$$WLC = \sum_{c=1}^n \left(LC_c \times \left[\frac{WSA_c}{WSA} \right] \right)$$

Where:

WLC = weighted average lead content of product

LC_c = percentage lead content of component

WSA_c = wetted surface area of component

WSA_t = total wetted surface area of all components

n = number of wetted components in product

Determining Percent Lead

Lead content of components:

- Testing
- Physical property sheet (using the highest value in the range or “maximum allowable”)

Sample Calculations

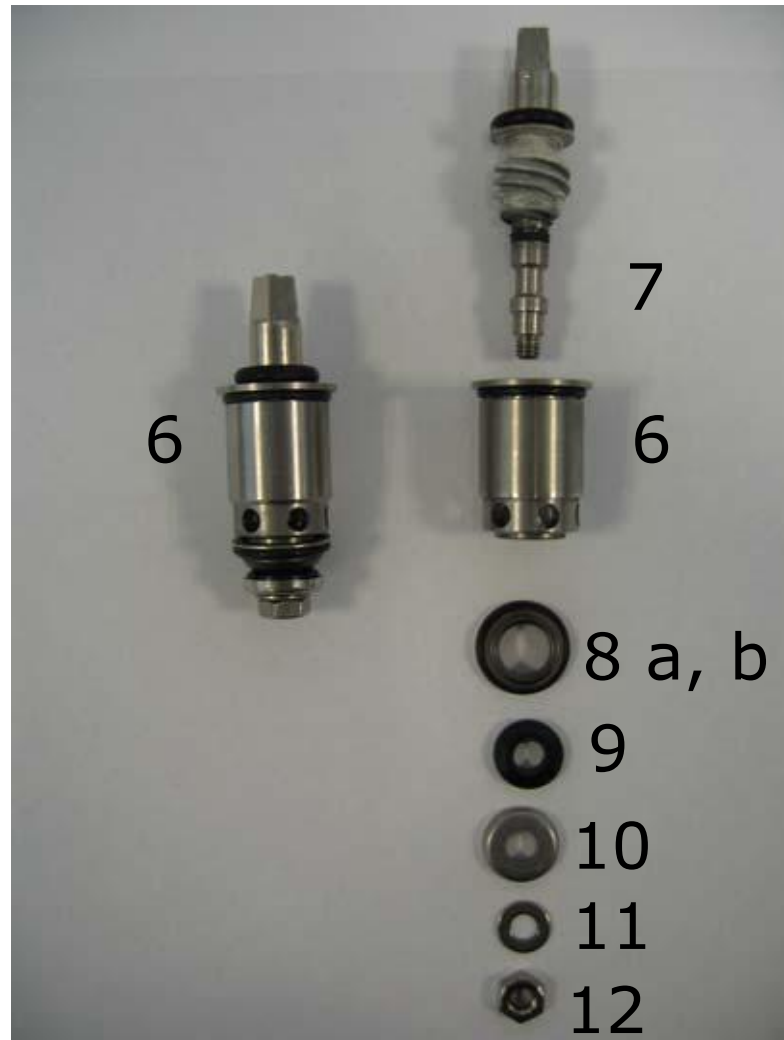
For each component in the faucet:

- Wetted surface area
- % Wetted surface area
- % lead content
- Contributing % lead

Sample Faucet



Sample Faucet – Valve Components



Sample Calculations

<u>Component Number</u>	<u>Wetted Surface Area (total = 61.94 in²)</u>	<u>% Wetted Surface Area (total = 100%)</u>	<u>% Lead Content</u>	<u>Contributing % Lead</u>
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 a	0.54	0.87	0	0.00
8 b	0.91	1.48	2.54	0.04
9	0.76	1.23	0	0.00
10	1.02	1.64	2.54	0.04
11	0.35	0.56	2.54	0.01
12	0.43	0.69	2.54	<u>0.02</u>

Weighted average lead content = **0.23%**
(in compliance)

Thank You!

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