NSF 61 and how it integrates to the CSA standards referenced in plumbing code.

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Preamble

NSF 61:Drinking Water System Components – Health Effects is referenced in just about every potable water plumbing standard in Canada.

How did this standard become a cornerstone of our Canadian standards?

and

What does it mean to us as we evaluate materials that go into the plumbing applications and systems in buildings?

It is updated often

Adopted by The NSF Board of Directors June 1988

Revised October 1988 Revised May 1990 Revised May 1991 Revised May 1992 Revised September 1994 Revised January 1995 Revised July 1996 Revised September 1996 Revised September 1996 Revised March 1997 Revised March 1997 Revised July 1997 Revised November 1998 Revised January 1999 Revised November 1999 Revised September 2000 Revised February 2001 Addendum September 2001 Revised July 2002 Addendum August 2002 Editorial Revision February 2002 Revised September 2003 Editorial Revision October 2003 Revised November 2004 Addendum March 2005 Revised October 2005 Revised March 2007 Revised July 2007

Addendum October 2007 Revised December 2008 Revised August 2009 **Revised February 2010** Revised October 2010 Revised June 2011 Addendum March 2012 Revised July 2012 Addendum March 2013 **Revised January 2014** Revised September 2014 **Revised February 2015** Revised October 2015 Revised July 2016 There is at least another 20 more editions but I ran out of room

Links to the EPA and Health Canada

- Our own France Lemieux from Health Canada chairs the committee
- The guideline embedded in 61 directly lines up with federal regulation

1.1 Purpose

This Standard establishes minimum health effects requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components, and materials used in drinking water systems. This Standard does not establish performance, taste and odor, or microbial growth support requirements for drinking water system products, components, or materials.

Agenda

- NSF 61- scope
- Testing temperatures: CHot/DHot and Cold
- Details matter
- Integration into the CSA Standards
- Draw the map
- · different versions of NSF 61 in the CSA Standards
 - getting better
- gaps
 - stainless and copper
- Codification
 - what are we doing in the 2025-30 codes
- what is coming and how do you manage application liability/ inspectors inspect application and use the listings and the certifications to support them... If the foundational NSF listing does not support, then the whole house of cards falls leaving you liable.

What is NSF 61?

- History
- Scope
- Application in Canada
 - Health Canada and David Green circa the early 2000s
 - Bill C-14
 - Outcomes
 - Impacts
 - US impact and embedding in code

Scope

- NSF/ANSI 61: Drinking Water System Components Health Effects is an American National Standard that establishes minimum healtheffects requirements for the chemical contaminants and impurities that are indirectly imparted to drinking water from products, components and materials used in drinking water systems. This standard does not establish performance, taste and odor, or microbial growth support requirements for drinking water system products, components or materials.
- The standard is routinely monitored and updated by a joint committee comprised of equal parts public health experts, end users and industry members.

Products

NSF/ANSI 61 is intended to cover specific materials or products that come into contact with drinking water, drinking water treatment chemicals or both. The products and materials covered by the scope of this standard include but aren't limited to:

- Protective barrier materials (cements, paints, coatings)
- Joining and sealing materials (gaskets, adhesives, lubricants)
- Mechanical devices, including treatment products (water meters, valves, filters)
- Pipes and related products (pipes, hoses, fittings)
- Plumbing devices (faucets, drinking fountains)
- Process media (filter media, ion exchange resins)
- Nonmetallic potable water materials

Canada

- Application in Canada
 - Health Canada and David Green circa the early 2000s
 - Bill C-14
 - Outcomes
 - C-14 didn't pass muster but the political impacts were felt through the community/industry
 - Impacts

CSA MAP from the harmonization work

Nationwide Provincial Infrastructure to Ensure Safe Drinking Water Supply Systems



Embedded Testing Temperatures

- Levels of extraction must be met
- Optional Operational Temperatures

Optional Operational Temperatures	Max Temperatures (oF)	Anticipated Application
COLD	73oF	Potable Cold Water Waterworks
Residential Hot	140oF	Residential hot applications Part 9 type applications
Commercial Hot	180oF	Commercial hot applications Part 3 Type Applications

Embedded Testing Temperatures

4.2 Definitions

4.2.1 cold water application: A product application that is intended to result in continuous exposure to water of ambient temperature. Products are tested for an end-use temperature of $23 \pm 2 \degree C (73 \pm 4 \degree F)$.

4.2.2 commercial hot water application: A product application that is intended to result in continuous or intermittent exposure to water that has been raised from ambient temperature. Intermittent exposure is defined as any hot water contact that is not continuous. Products are tested for an end-use temperature of 82 ± 2 °C (180 ± 4 °F).

4.2.3 domestic hot water application: A product application that is intended to result in continuous or intermittent exposure to water that has been raised from ambient temperature. Intermittent exposure is defined as any hot water contact that is not continuous. Products are tested for an end-use temperature of $60 \pm 2 \degree C (140 \pm 4 \degree F)$.

Details Matter

- Certification temperatures and system/operation temperatures
- Exceed = risk of premature failure and safety

Integration into Plumbing Standards in Canada

- CSA Plumbing Standards
- NSF
- ASTM- Copper and Brasses
- BNQ

Challenge

- Integration into standards creates a situation where different versions of NSF 61 can be referenced in Canda
- Identified the issue in 2016
- Since then CSA and NSF have been working on updating the reference diligently plus a CCR to codify a static version in the 2025 codes.

WE ARE GETTING BETTER AT THIS

FUTURE CODE- CODIFYING NSF 61 IN NPC

2053	Orton, David, NSF	2023-06-29	Received 2023-07-05 CBHCC: Triaged — Forward to national model codes committee — NMCC on Referenced Documents 2025-03-07	NPC Division B 2.2.3.2., NPC Division B A-2.2.3.2.(3), NPC Division B 1.3.1.2.	-
2054	Orton, David, NSF	2023-06-29	Received 2023-07-05 CBHCC: Triaged — Forward to national model codes committee — NMCC on Referenced Documents 2024-09-12	NPC Division B 2.2.10.3., NPC Division B 1.3.1.2.	-

GAPS IN CODES AND REFERENCES

- ASTM STANDARDS FOR STAINLESS
- ASTM STANDARDS FOR COPPER
- Model US CODES SOLVED IN HARD REFERENCING NSF 61

Markings



More Marks



How to Understand the Certification mark





HOW DOES A CODE OFFICIAL USE NSF 61

 what is coming and how do you manage application liability/ inspectors inspect application and use the listings and the certifications to support them... If the foundational NSF listing does not support, then the whole house of cards falls leaving you liable.

Details matter, not just the mark