Summary of Substantive Changes
between the 2021 and 2022 (with errata) editions of
NSF/ANSI/CAN 61 "Drinking Water System Components - Health Effects"

Presented to the IAPMO Standards Review Committee on September 12, 2022

General: The changes to this standard may have an impact on currently listed products. The substantive changes are:

- Expanded the scope to include Well packing media (see Sections 7.2.18, 7.5.3.1, 7.5.5.5, and 7.7.7)
- Added six brass rod alloys to the list of acceptable materials for lead leaching (see Annex N-2)

Section 7, Process media: Expanded the scope to include Well packing media as follows:

7.2 Definitions

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7.2.18 *well packing material: Media placed in the anulus between the borehole and the screen or casing of a drinking water well. The media functions as a filter to keep fines from entering a well and improves the well hydraulic efficiency. It is typically used in wells completed in unconsolidated formations. The well packing material can also act as a formation stabilizer to maintain the integrity of the borehole for either completion or for the life of well.*

7.5 Extraction procedures

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7.5.3.1 Filtration, ~~and~~ adsorption, and well packing media

Wetted filtration, ~~or~~ adsorption, and well packing media (excluding diatomaceous earth, perlite, and PAC products, and other media of < 0.25-mm diameter) shall be placed in a conditioning chamber (a glass column with a minimum inner diameter of 2 in). The amount of media conditioned shall be sufficient to meet or exceed its specific weight per volume ratio (see Table 7.2) and to generate sufficient exposure water to complete the selected analyses. Reagent water shall be directed slowly upward through the conditioning system until the entire amount of media is flooded. The media shall then be backwashed at a flow rate that fluidizes the media or attains sufficient transport velocities to remove extraneous particulate matter; the maximum wetted media expansion rates for various process media products are indicated in Table 7.3. Filtration, ~~and~~ adsorption, and well packing media shall be subjected to the prescribed backwash for 30 ± 2 min.

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7.5.5.5 Well packing media

Immediately after completion of conditioning, the media sample shall be exposed in an appropriately sized vessel. The amount of media exposed per volume of exposure water (see Section 7.5.4.1) shall be sufficient to meet or exceed its specific weight per volume ratio found in Table 7.2 and to generate sufficient exposure water to complete the selected analyses. The contents of the vessel shall be mixed to ensure that the entire sample is in contact with the exposure water. The vessel shall be sealed with PTFE. The sample shall be exposed for three consecutive 24-h periods at 23 ± 2 °C (73 ± 4 °F), with exposure water decanted and discarded after the first and second 24-h periods, and exposure water decanted and collected for analysis after the third 24-h period. The weight-to-volume ratio shall be recorded at the time of exposure and shall represent the evaluation dose.

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7.7 Normalization

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7.7.7 Well packing material

The concentration reported by the laboratory shall be normalized with the following equation:

$$\text{normalized contaminant concentration} = \text{laboratory contaminant concentration} \times \frac{\text{media mass}_f\,(mg)}{V_F(static)} \times \frac{V_L}{\text{media mass}_L(mg)} \times \frac{V_F(static)}{V_F(flowing)}$$

where:

media mass$_F$ = mass of product under field
V_L = volume of exposure water used during laboratory exposures conditions
media mass$_L$ = mass of product exposed during laboratory exposures
V_F(static) = volume of water to which the product is exposed under static conditions
V_F(flowing) = minimum volume of water to which the product is exposed in the field under flowing conditions during a period of time equivalent to the laboratory evaluation

7.7.7.1 Assumptions for residential wells

Normalization factors for contaminants shall be calculated based on the following assumptions for residential wells (≤ 5-in diameter well casings):
— daily flow for a residential well is 681 L (180 gal) of water;
— screen and adjacent well packing material are 6.1 m (20 ft) in total linear feet, independent of total bore hole depth; and
— bore hole anulus surrounding the well casing has an average radius of 5.1 cm (2 in).

7.7.7.2 Assumptions for municipal and community wells

Normalization factors for contaminants shall be calculated based on the following assumptions for municipal
and community wells (> 5-in diameter well casings):
— minimum daily flow for a well is 204,400 L (54,000 gal) of water, based on a pumping flow of 284 LPM (75 GPM), and the pump operating 12 h/d;
— screen and adjacent well packing material are 6.1 m (20 ft) in total linear feet, independent of total bore hole depth; and
— bore hole anulus surrounding the well casing has an average radius of 7.6 cm (3 in).

Section 9, Mechanical plumbing devices: Clarified requirements as follows:

9.1 Coverage

This section covers mechanical plumbing devices, components, and materials that are typically installed within the last liter of the distribution system (endpoint devices) and are intended to dispense water for human ingestion. In-line devices are excluded from this section and are covered under Section 8. POU and POE water treatment devices are excluded.

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***9.1.2** Endpoint devices specifically exempted from the coverage of this standard are:*
— bath and shower valves, shower heads of all types, and Roman tub valves;
— all drains;
— backflow prevention devices present in the last liter of the distribution system;

— flexible plumbing connectors and flexible risers not intended for potable water applications (e.g., washing machines, dishwashers, etc.);

Section 9.5, Evaluation of normalized contaminant concentrations: Added language for clarification as follows:

9.5 Evaluation of normalized contaminant concentrations

9.5.1 Evaluation of lead

For endpoint devices other than commercial kitchen devices, supply stops, flexible plumbing connectors, and miscellaneous components, the lead test statistic Q shall not exceed 1 µg when normalized for the 1-L (0.26-gal) first draw sample. For commercial kitchen devices, the lead test statistic Q shall not exceed 5 µg when normalized for the 18.9-L (5-gal) first draw sample. For supply stops, flexible plumbing connectors, and miscellaneous components, the lead test statistic Q shall not exceed 3 µg when normalized for the 1-L (0.26-gal) first draw sample.

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 5 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 5 µg.

Materials and components not requiring lead analysis per Section 3.3 shall not require testing for the lead test statistic Q.

Normative Annex 2, Acceptable materials: Added six brass rod alloys to the list of acceptable materials for lead leaching under Annex N-2 as follows:

N-2.2.1 Acceptable materials for mechanical plumbing devices – Lead leaching only

Materials included in Table N-2.2 have been tested for compliance according to Section 9 requirements, but not for compliance under any other section of the standard or for nonlead analytes and therefore may be subject to additional testing outlined in this standard. The brass alloys included in Table N-2.2 have demonstrated compliance with the lower lead leaching criteria for Section 9 endpoint devices in Section 9.5.1.1 when used within the operating parameters defined in the table.

Table N-2.2, Acceptable materials for mechanical plumbing devices – Lead leaching only: this table was added