TO: Joint Committee on Plastics and RV Plumbing Components

FROM: Kevin Kalakay, Chair of the Joint Committee

DATE: September 6, 2022

SUBJECT: Proposed revision to NSF/ANSI 14: *Plastics Piping System Components and Related Materials* (14i119r3)

Revision 3 of NSF/ANSI 14, issue 119 is being forwarded to the Joint Committee for consideration. Please review the proposal and **submit your ballot by September 27, 2022** via the NSF Online Workspace <www.standards.nsf.org>.

Please review all ballot materials. When adding comments, please include the section number applicable to your comment and add all comments under one comment number whenever possible. If you need additional space, please use the attached blank comment template in the reference documents and upload online via the browse function.

Purpose

The proposed revision will add requirements for pipe with a middle metal layer into Section 5.7.

Background

The issue paper was submitted to establish requirements for oxidative resistance equivalency of plastic pipe that incorporates a middle metal layer. There are already requirements for solid wall pipe and pipe that incorporate a polymeric layer.

This issue paper was presented at the 2020 Joint committee on Plastics and RV Plumbing meeting, and a motion to send language to task group was approved there. The Task Group met to review the paper, and drafted language which was then sent to straw ballot. No negative votes were received on the straw ballot, and the language was presented to the Joint Committee for consideration in an approval ballot. That ballot received 2 negative comments requesting a definition for Expected Failure Time be added to the draft. The issue proponent agreed, and the attached draft was created in response to those comments.

If you have any questions about the technical content of the ballot, you may contact me in care of:

Kevin Kalakay
Chair, Joint Committee on Plastics and RV Plumbing Components
c/o Jason Snider
Joint Committee Secretariat
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[Note – the recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by gray highlighting. Rationale statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI Standard
for Plastics —

Plastics Piping System Components and Related Materials

3 Definitions

The following terms are used in this document:

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3.X Expected Failure Time (EFT): predicted failure time calculated using the regression equation developed in Test Method F2023 for the PEX material or Test Method F2263 for the PE material.

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5 Physical and performance requirements

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5.7 Chlorine resistance – Oxidative equivalency requirements

For a material that already has a chlorine resistance classification (denoted original material), oxidative equivalency is required on pipe or material comprised of a different color from the original material or when the production site differs from that of the original material. When the pipe or material production site differs from that of the original material, a minimum of one color shall be selected from the production site being assessed.
This requirement does not apply to changes in color of an external, coextruded polymer layer which is separate and distinct from the pipe polymer matrix.

Qualified pipe shall meet the minimum requirements of Sections 5.7.1 and 5.7.2.

5.7.1 Solid wall pipe with optional inner or outer polymeric layer

— three data points at one hoop stress level at one of the temperature conditions as for the original data set;

— two data points at a second hoop stress level at least 80 psi lower than the first stress level and at the same temperature conditions as for the first stress level;

— the 95% lower prediction limit (LPL) shall be calculated for the original material data at these temperatures / stress conditions; and

— all five data points (failure times) shall meet or exceed the LPL for that condition.

5.7.2 Pipe with middle polymeric layer

— five data points at one hoop stress level at the highest temperature conditions as for the original data set;

— the 95% LPL shall be calculated for the original material data at these temperatures / stress conditions; and

— all five data points (failure times) shall meet or exceed the LPL for that condition.

The hoop stress level shall be chosen so that there are no mixed mode failures. In the occurrence of such failures, the testing shall be repeated at a lower stress that would generate brittle failures.

5.7.3 Pipe with middle metal layer

— two data points at the highest pressure/temperature conditions (for example 115 °C/60 psi) as for the solid wall data set;

— two data points at a pressure condition higher than above but at the next lower temperature condition (for example 105 °C/80 psi) as for the solid wall data set. Pressures shall be separated by at least 20 psi; and

— all four data points shall meet or exceed the expected failure time (EFT) of the inner layer at each of the conditions.