



**Summary of Substantive Changes
between the 2015 and the 2016 editions of
NSF/ANSI 14, “Plastics Piping System Components and Related Materials”**

Presented to the IAPMO Standards Review Committee on September 12, 2016

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

- Clarified that the out of roundness (OOR) requirements are referenced to the applicable product standard (see Section 5.4).
- Added requirement for compliance of thread sealants with PS 36 (see Section 8.4).
- A footnote allowing for alternate method of conducting burst pressure testing during QC was moved from Table 8 to Table 2 (see Tables 2 and 8).
- Clarified that the daily QC flattening resistance test is not required for DWV pipe listed to CSA B181.1 only (see Table 5).
- Added product standards, AWWA C904, for PEX and CSA B137.18, for PE-RT to clarify that pipe and tubing compliant with the applicable product standard are subject to the QC requirements of that referenced standard (see Table 10A).

Section 5.4, Critical dimensions: Clarified out-of-roundness requirements as follows:

Plastic piping system components shall comply with the critical dimensions of the applicable standards as referenced in 2 of this Standard. For pipe and spigot ends of fittings, the critical dimensions shall be the minimum wall thickness, outside diameter, and out-of-roundness. For pipe intended to be used with insert type fittings such as PE, PEX, PEX-AL-PEX or PE-AL-PE, the critical dimensions ~~are~~ shall be the minimum wall thickness, the maximum wall thickness and outside diameter. For socket or threaded fittings, the critical dimensions ~~are~~ shall be the minimum wall thickness, socket entrance diameter, bottom diameter, out-of-roundness, socket depth, threads (as measured with thread gauges), and thread length. For other fittings, critical dimensions ~~are~~ shall be those specified in the normative reference standard.

Out-of-roundness requirement shall apply at the time of manufacture (i.e., before shipment or coiling). If such requirement applies per the product standard.

Section 8.4, Thread compounds, sealants, gasket lubricants, solvent cement, and adhesives: Added requirement for compliance of thread sealants with IAPMO PS 36 as follows:

The manufacturer shall label each container with the designations and identifications required in the applicable standards as referenced in 2 of this Standard. The container shall bear an appropriate batch number identifying the day, month, and year of manufacture, as well as the formulation designation. In instances where the manufacturer has more than one plant location or produces for other suppliers or distributors, an identifying symbol shall be used.

Thread sealants shall meet the requirements of IAPMO PS-36.



Table 2, Minimum number of test specimens for a sample;

Table 8, Chlorinated poly (vinyl chloride) (CPVC) pipe test frequency;

Moved the footnote specifying the testing frequency after steady-state operation is obtained from Table 8 to Table 2. The footnote is as follows:

If one compound is continuously used in several machines or sizes, when a steady-state operation is obtained on each machine the manufacturer shall choose one of the following sampling methods:

– sample selection shall be from a different extruder each day and rotated in sequence among all machines or sizes. Refer to Table 2 for minimum sample size.

Or

– if more than three extruders are in operation, the sample shall consist of a minimum of one specimen from each extruder and shall be burst tested every 12 hours (minimum of 8 samples). This option requires additional testing than option 1 when there are more than 3 extruders.

Table 5, ABS pipe testing frequency: Clarified that the daily QC flattening resistance test is not required for DWV pipe listed to CSA B181.1 only, through applying the existing footnote 2 to the flattening resistance testing of DWV pipe in Table 5. The existing footnote 2 is as follows:

Testing not required for pipe listed only to CSA B181.1.



Table 10A, PEX, PE-RT, PE-water, PE-storm sewer pipe and tubing test frequency; Added additional product standards, AWWA C904 and CSA B137.18, revised footnote 4 and added new footnotes 8, 9 and 10 as follows:

Table 10A – PEX, PE-RT, PE-water, PE-storm sewer pipe and tubing test frequency

Test	PEX	PE-RT	PE (water)	PE (storm sewer)
dimension				
pipe OD or ID	2 h	2 h	2 h	2 h
pipe wall thickness (minimum and maximum)	2 h	2 h	2 h	2 h
burst pressure ^{1,5}	24 h ¹⁰	24 h	24 h	24 h
hydrostatic pressure	annually	annually	—	—
density	annually	annually	annually	annually
degree of crosslinking ⁶ (gel content)	weekly	—	—	—
ESCR	annually	—	annually	—
bent tube sustained pressure (hot/cold)	annually	—	—	—
elevated temperature sustained pressure 80 °C (176 °F)	—	—	semi-annually	—
sustained pressure	annually	—	—	—
excessive temperature and pressure capability of tubing and pipe ⁸	Annually ⁷	annually ⁷	—	—
stiffness	—	—	—	annually
flattening	—	—	—	annually
impact	—	—	—	weekly
product standards	ASTM F876 ASTM F877 ASTM F2788 ASTM F2929 CSA B137.5 AWWA <u>C904⁹</u>	ASTM F2623 ASTM F2769 <u>CSA B137.18⁸</u>	ASTM D2104 ASTM D2239 ASTM D2447 ASTM D2737 ASTM D3035 ASTM F714 CSA B137.14 AWWA C901 ² AWWA C906 ³	ASTM F2306
<p>¹ If one material is continuously used in several machines or sizes, then when a steady-state operation is obtained on each machine, sample selection shall be from a different extruder each day and rotated in sequence among all machines or sizes.</p> <p>² Pipe and tubing compliant to AWWA C901 shall follow the QC requirements of AWWA C901.</p> <p>³ Pipe and tubing compliant to AWWA C906 shall follow the QC requirements of AWWA C906.</p> <p>⁴ Burst pressure is not required for pipe listed to CSA B137.1 <u>and CSA B137.18</u>.</p> <p>⁵ Burst test for pipe sizes 24-63" are tested once per week.</p> <p>⁶ Degree of crosslinking samples shall be taken from normal production after the point in the process where the crosslinking reaction is nominally complete.</p> <p>⁷ Excessive temperature only applies to F2769.</p> <p>⁸ <u>Applies to ASTM F877 as reference.</u></p> <p>⁹ <u>Pipe and tubing compliant to AWWA C904 shall follow the QC requirements of AWWA C904.</u></p> <p>¹⁰ <u>Daily burst testing for PEX tubing shall be conducted for each material being extruded at either 180 °F or 200 °F depending on the temperature specified by the manufacturer.</u></p>				