



BUILDING & PLUMBING OFFICIALS

Bulletin

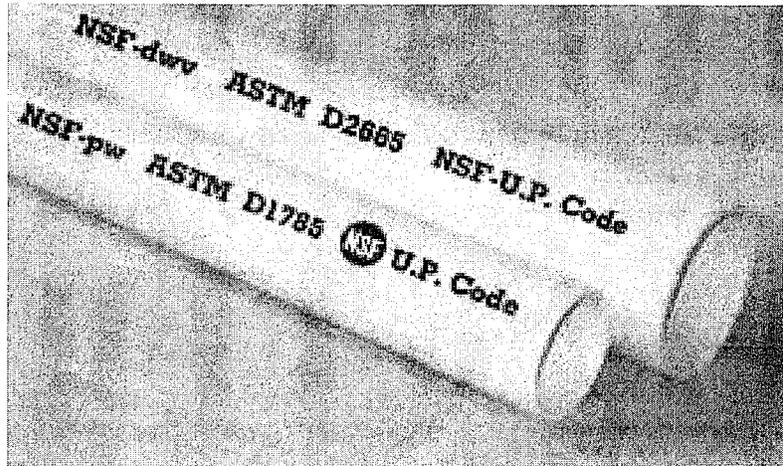
NSF Certifies Products to Uniform Plumbing Code™

NSF INTERNATIONAL now certifies products to the requirements of the Uniform Plumbing Code™.

For more than 40 years, NSF has enjoyed the status of being an approved listing organization for plumbing products in jurisdictions across North America.

NSF Listings have been based on the certification of plumbing products to applicable product standards, which, in turn, are referenced in the various model plumbing codes.

In response to numerous requests, NSF has expanded its services to include a new program that specifically certifies plumbing products to the requirements of the Uniform Plumbing Code™. Products bearing either of the two markings below meet the requirements:



Products bearing the markings U.P. Code or NSF-U.P. Code meet the requirements of the Uniform Plumbing Code.

Products covered under this listing program include:

- Plastic pipe and fittings
- Metal pipe and fittings
- Valves
- Backflow preventors
- Faucets and flexible connectors
- Bathtubs, toilets and sinks
- Gas piping and gas flexible connectors
- Solders, fluxes, solvent cements and primers
- Storage tanks and water closets
- Whirlpool bathtubs and piping systems
- Showers, shower drains and liners
- Vacuum breakers

... and many more plumbing products.

NSF regulatory staff constantly monitor changes to the codes to ensure that products bearing this mark remain in compliance with all code requirements.

The U.P. Code is one of a number of NSF Marks that regulatory officials and plumbing inspectors can easily recognize and be assured that plumbing products meet their local requirements. These include:

Compliance with the Uniform Plumbing Code: **NSF-U.P. Code**

Acceptance in the Canadian market: **cNSF**

Compliance with the International Plumbing Code: **NSF-<end-use>**

NSF regulatory hotline staff are available to assist clients and regulatory officials with inquiries about the acceptance of this marking. Call toll-free: 1-877-867-3435.

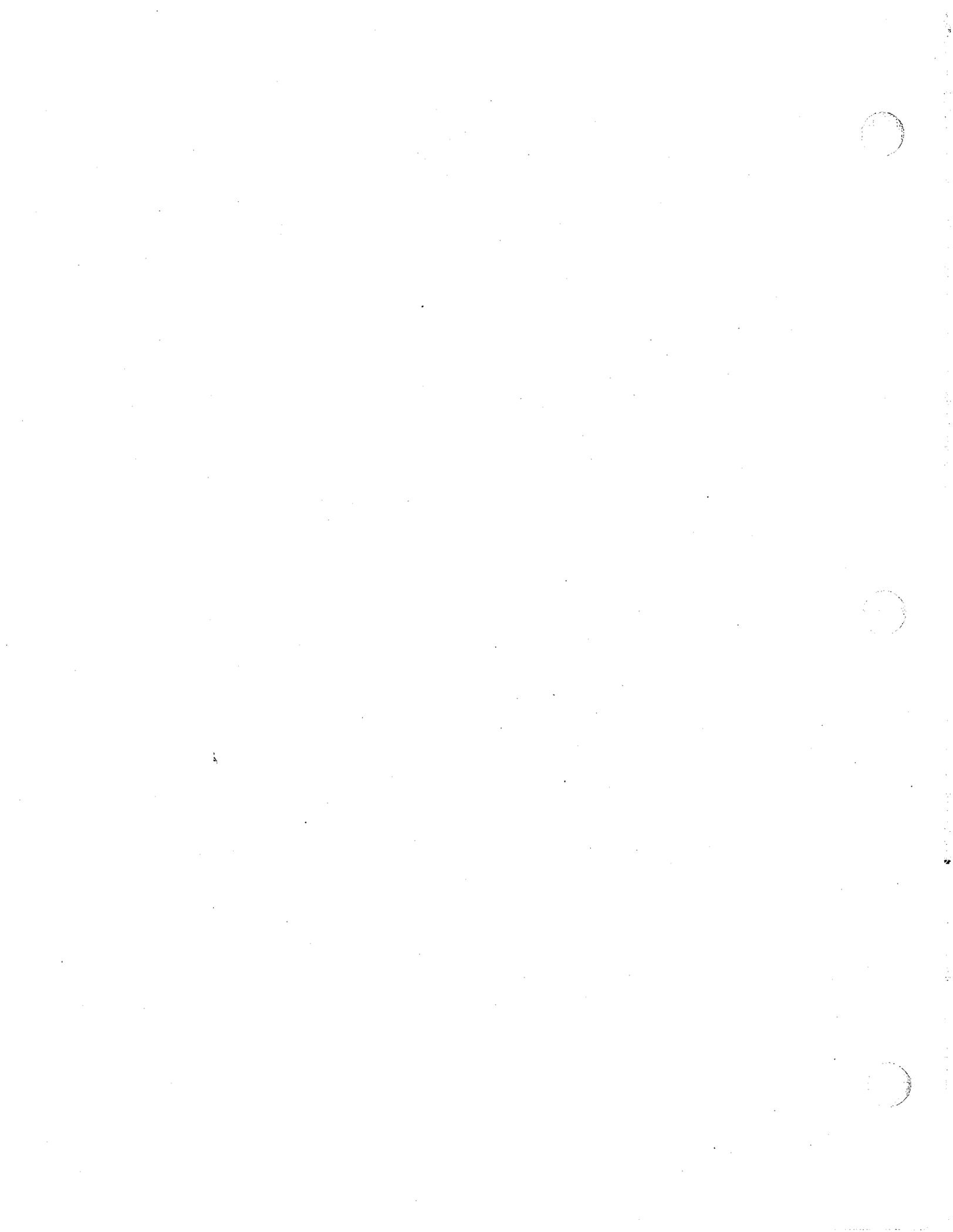
To verify whether a product has met the Uniform Plumbing Code™ requirements, visit www.nsf.org and locate the products. Products are identified with a footnote to indicate compliance with the Uniform Plumbing Code™.

For more information about this listing program, contact Nasrin Kashefi, Operations Manager, Water Distribution System at (734) 913-5743 or Kashefi@nsf.org.



U.P. Code

NSF-U.P. Code



New Requirements for PEX Pipe

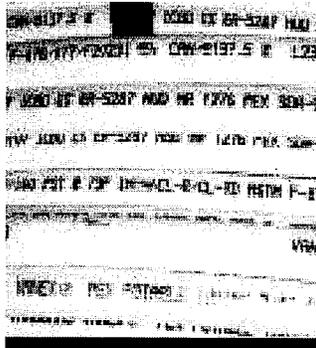
ASTM F876, STANDARD

Specification for Crosslinked Polyethylene (PEX) Tubing, has recently been updated (ASTM F876-02) to include a requirement for the Oxidative Stability in Potable Chlorinated Water Applications under Section 7.11 of the standard.

Test method F2023-03, *Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water*, lists the requirements and test methods for evaluating PEX tubing in long-term contact with chlorinated water.

The newly revised standard requires all PEX pipes used in potable water to be evaluated against the ASTM F2023 test method and have a minimum extrapolated test lifetime of 50 years at the end-use conditions of 25 percent of the time at 140°F and 75 percent at 23°F with 80 psig constant internal gauge pressure.

The conditions described in Test Method F2023, Section 13.3, apply only to the intermittent service (traditional domestic). Currently, this method does not validate the use of PEX tubing in continuous recirculation applications. Manufacturers of PEX tubing should be very cautious about applying marking such as "ASTM F876 and F2023-CL-R" marks until the continuous



Pipe products certified to Chlorine Resistance Protocol P171 are authorized to bear the NSF designation NSF-pw CI-R/CL-TD.

recirculation application is incorporated into the F2023 test method.

This addition to ASTM F876 mandates that all current and proposed PEX tubing for the NSF/ANSI Standard 14 Potable Water Listing must conform to this new requirement.

To verify whether a PEX Pipe meets this requirement, visit www.nsf.org. Products are identified with a footnote indicating compliance with the chlorine resistance requirements of ASTM F876, meeting the 50-year lifetime requirements when tested according to F2023 test method. NSF offers an optional "ASTM F876/ F2023" mark for such products.

These changes to ASTM F876 are a part of a growing trend in the plumbing industry to demonstrate that products can meet ever-increasing

performance requirements. In October 1999, NSF released *NSF P171—Protocol for Chlorine Resistance of Plastic Piping Materials*. With strong industry support, NSF began testing PEX tubing against requirements for both traditional domestic and recirculating end uses.

Products tested by NSF and shown to meet the requirements of P171 are added to the NSF Listing with the appropriate end use. Along with NSF-pw, these products are authorized to bear one of the following Marks, depending upon the product authorization and listing:

CI-TD

Products that meet the requirements of NSF Protocol P171 for the chlorine resistance traditional domestic category. These products have a minimum extrapolated test lifetime of 80 years, the end-use conditions of 25 percent of the time at 140°F and 75 percent at 23°F with 80 psig constant internal gauge pressure.

CI-R

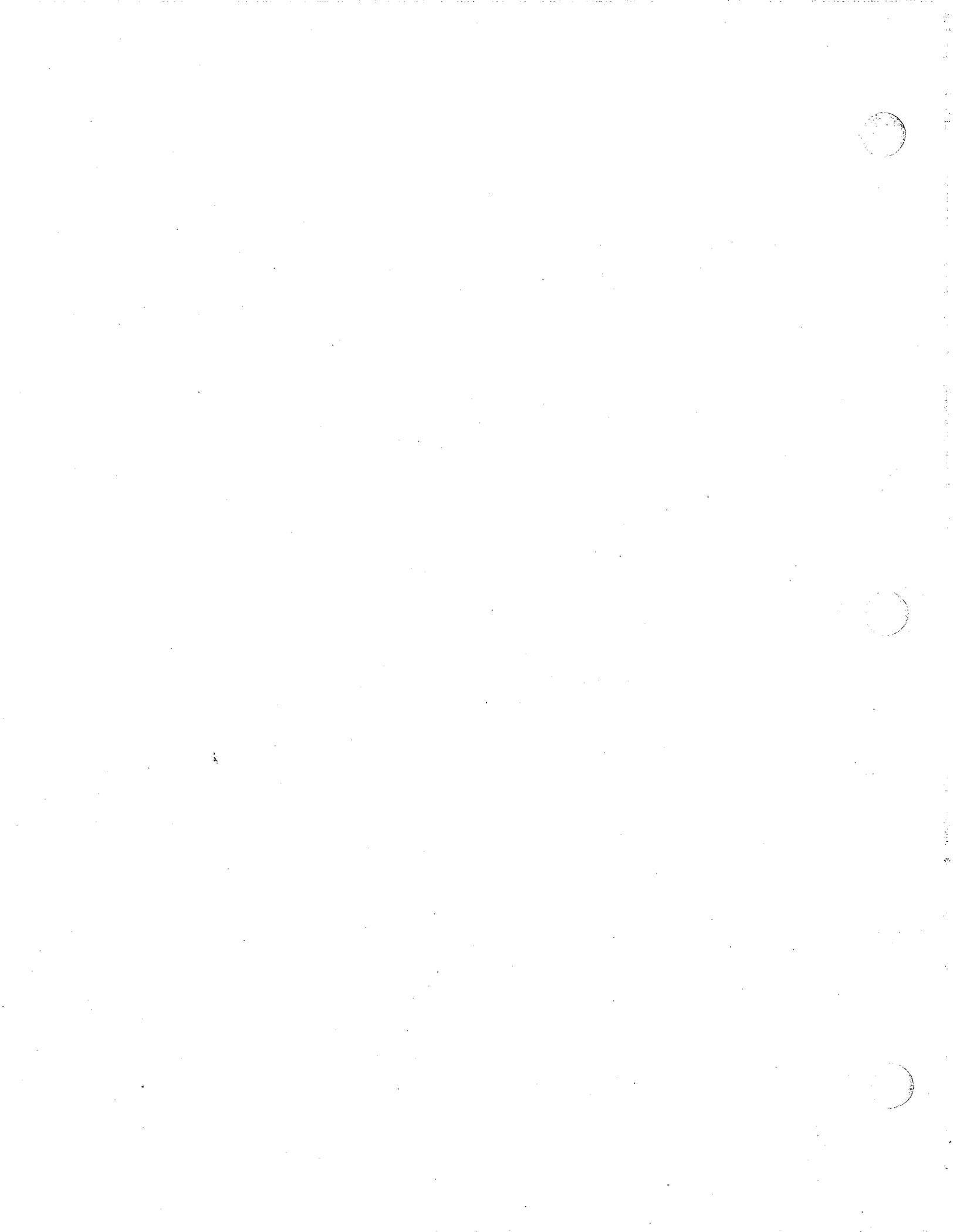
Products that meet the requirements of NSF Protocol P171 for the chlorine resistance domestic recirculation category. These products have a minimum extrapolated test lifetime of 80 years at the end-use conditions of 100 percent of the time at 140°F with 80 psig constant internal gauge pressure.

PEX pipe with a listing to P171 for either the traditional domestic or continuous recirculation category automatically meets the ASTM F876-02 requirements of a minimum extrapolated time-to-failure of 50 years per ASTM F2023.

NSF also offers a policy on the qualification of dependent transfer formulations for pipe, as well as minor formulation changes. The NSF Plastics Program Policies, *Dependent Transfer Listing and Minor Formulation Changes—Colorants, Catalysts and Carrier Resins*, are being used to test and evaluate PEX pipe according to the NSF P171 Protocol or ASTM F2023 test method.

Under this policy, pipe manufacturers that use a PEX material listed to either ASTM F876 or NSF P171 for chlorine resistance can have reduced chlorine testing on their products. Refer to the official NSF Listings for products authorized to bear NSF Marks at www.nsf.org. For a copy of NSF P171, visit <http://www.techstreet.com>.

For more information on the chlorine resistance requirements, contact Nasrin Kashefi, Operations Manager at (734) 913-5743 or Kashefi@nsf.org.



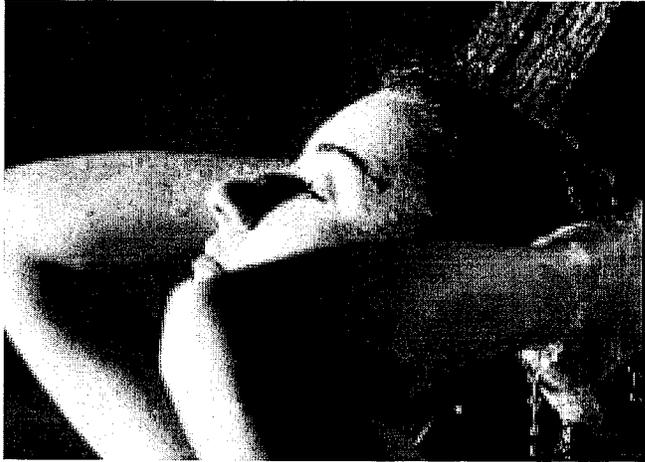
Water-conserving Plumbing Fixtures

AS THE COST TO deliver water to consumers rises and the threat of regional drought persists, so does the interest in water-conserving plumbing fixtures. In addition to reducing consumer consumption and cost, water-conserving fixtures also lower utilities' costs for system development, maintenance and upgrades.

There are many types of water-conserving fixtures, including showers, toilets, faucets, aerators, washers, and water heaters.

In the average home, toilets and showers are the largest water users. The National Energy Policy Act of 1992 mandated the introduction of 1.6 gallon-per-flush toilets and reduced maximum allowable flow rates for showerheads in the United States. However, higher-consumption showers and toilets are still in use.

Many municipalities have instituted programs designed to encourage the use of water-conserving showers, toilets and other devices. These programs range from discounted or free water conserving flow controllers and fixtures to discounts or rebate programs to encourage replace-



Water-conserving fixtures save money for utilities and consumers. As a result, some municipalities are offering incentives for consumers to replace older, less water-efficient fixtures.

ment of existing fixtures.

Cities such as Los Angeles, San Diego, Tempe, Melbourne, Virginia Beach and Toronto offer rebates or vouchers to customers who replace their old 3.5 gallon per flush toilets with new, ultra-low flush toilets with a maximum 1.6 gallons per flush.

The City of Toronto estimates that its toilet replacement program could save \$113 million in expansion costs, based on water utility forecasted demand through 2011. (For more information, visit www.city.toronto.on.ca/watereff/pdf/chap5.pdf.)

NSF International's nationally

recognized and accredited laboratories and certification programs offer manufacturers and regulators a trusted source for product testing and certification to existing or newly established requirements.

NSF is interested in learning if more municipalities are considering establishing requirements for low flow programs. If your municipality is considering establishing requirements for low flow programs, please contact Jeremy Brown at brown@nsf.org to find out how NSF can help.

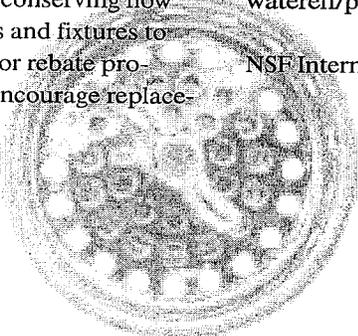
NSF Regulatory and Consumer Affairs Hotline

Environmental health specialists, sanitarians, building and plumbing inspectors, and water utility operators face continuing challenges to protect the public health and safety of citizens in their communities.

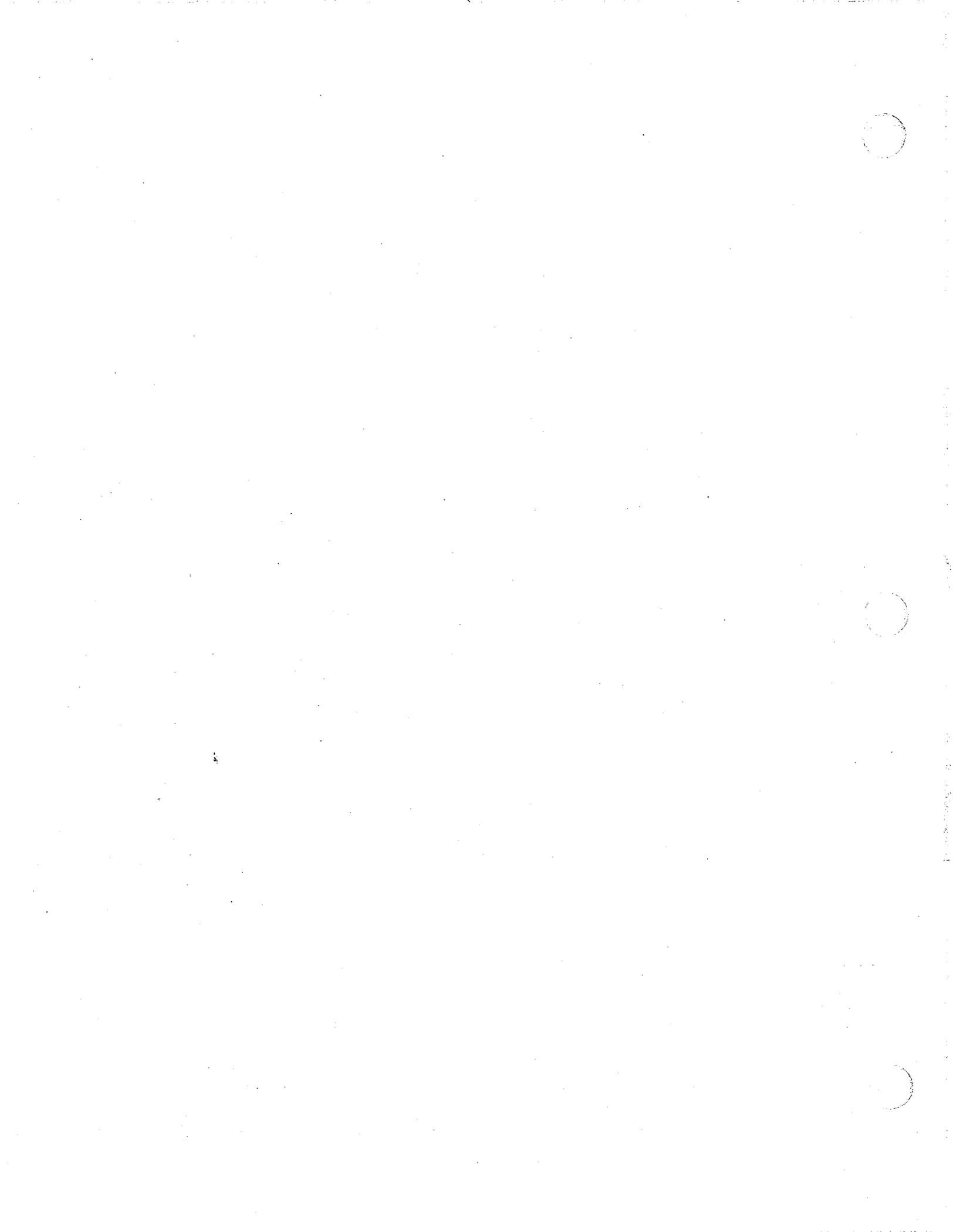
NSF offers programs and services to augment and support the work of regulatory officials. This includes the development of public health standards, certification of products to those standards, and education and training in all areas of environmental health, including air, water, and food safety.

The NSF Regulatory and Consumer Affairs Hotline is a great resource for these health professionals, consumers and manufacturers. The hotline also serves as a contact for plumbing officials, inspectors, and others who may have questions about product certification. The hotline also informs consumers and manufacturers on what NSF Certification means and understand the different NSF Marks in use.

For information about NSF services, certification programs or certified products, call the NSF Regulatory and Consumer Affairs Hotline (877) 8NSF-HELP (1-877-867-3435). You can also e-mail questions or comments to the NSF Consumer Specialist at info@nsf.org.



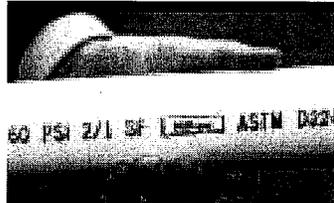
1-877-867-3435



How Does Certification to NSF/ANSI 61 Compare to NSF/ANSI 14?

WHICH CERTIFICATION marking covers the criteria that you are looking for? Just review the marks and their explanations below:

NSF/ANSI-61 is used on products certified to NSF/ANSI-Standard 61. This standard outlines the health effects testing criteria for all products used in a drinking water system. While these products may or may not have applicable performance standards associated with them, the NSF/ANSI-61 mark does not reference any such standards.



NSF <end use> marks products certified under NSF/ANSI-Standard 14. Products bearing this mark meet the requirements of NSF/ANSI-61 (for potable water end-use) as well as the appropriate performance reference standard(s) in NSF/ANSI Standard 14.

NSF first published *Standard 14-Plastics Piping System Components and Related Materials* in October 1965.

NSF/ANSI-14 establishes minimum physical, performance, health effects, quality assurance, marking, and recordkeeping requirements for plastic piping components.

Here's a guide to the most common NSF <end use > marks:

NSF-pw

Products that meet all applicable performance standards for pressure rated potable water applications as required by NSF/ANSI Standard 14, including NSF/ANSI Standard 61 for health effects.

NSF-wc

Products that meet all applicable performance standards for well casing as required by NSF/ANSI Standard 14, including NSF/ANSI Standard 61 for health effects.

continued on next page

STANDARD 61

Products Bearing the NSF/ANSI-61 Mark

- Hot and cold water dispensers
- Chemical generators
- Ductile iron pipe
- Water meters • Filter media
- Copper pipe • Coatings
- Tanks • Faucets • Supply stops
- Drinking fountains

Products Bearing the NSF-pw, NSF-CI-TD, NSF-GI-R, NSF-wc Marks

(Certified to NSF/ANSI 61 and applicable performance standards)

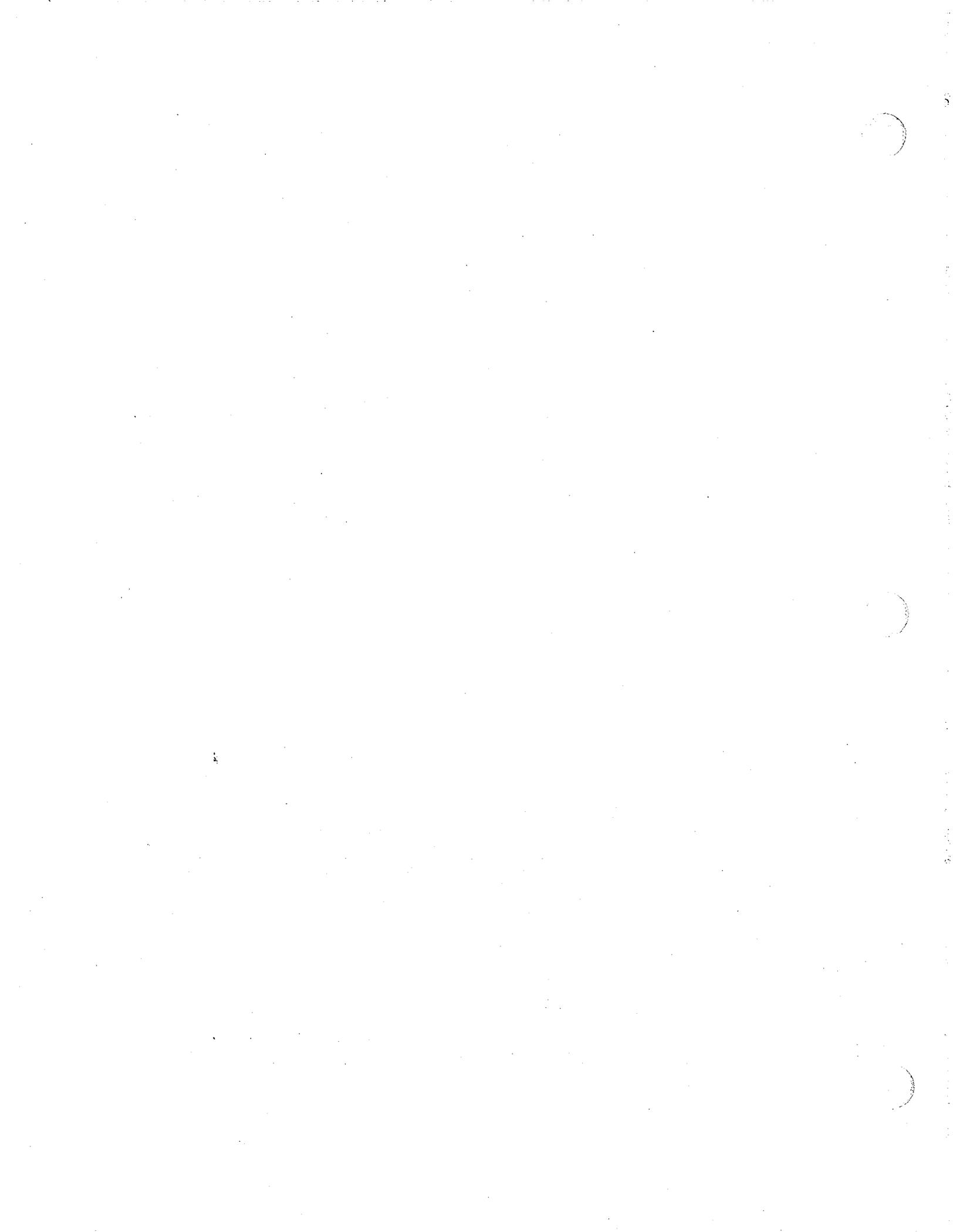
Plastic piping systems and components intended for potable water applications

STANDARD 14

Products Bearing Non-Potable Water Marks

(Certified to applicable performance standards ONLY. No health effects).

- Continuous waste (NSF-tubular)
- Corrosive water (NSF-cw)
- Drain, waste and vent (NSF-dwv)
- Radiant floor heating (NSF-rfh)
- Reclaimed water (NSF-rw)
- Sewer (NSF-sewer)
- Gas (NSF-gas)



NSF/ANSI 61 and NSF/ANSI 14 Compared, continued

NSF-dwv

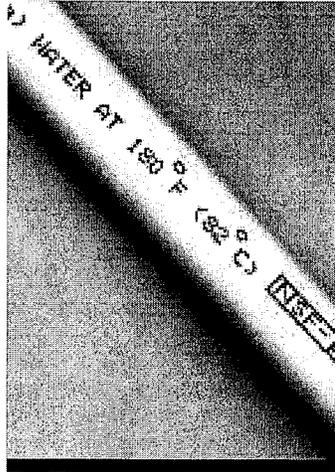
Products that meet all applicable performance standards for drain, waste and vent applications as required by NSF/ANSI Standard 14. No health effects evaluation is required.

NSF-rfh

Products that meet all applicable performance standards for a pressure rated in-floor heating application as required by NSF/ANSI Standard 14. No health effects evaluation is required.

NSF-sewer

Products that meet all applicable performance standards for sewer applications as required by NSF/ANSI Standard 14. No health effects evaluation is required.



NSF-rw

Products that meet all applicable performance standards for reclaimed water applications as required by NSF/ANSI Standard 14. No health effects evaluation is required.

NSF/ANSI Standard 14—Plastic Piping System Components and Related Materials, covers any material used in a plastic piping system, including PVC, CPVC, PE, PEX, PB, ABS, AC, NP, PP as well as brass, copper and other components.

NSF-CI-TD

Products that meet the requirements of NSF Protocol P171 for the chlorine resistance traditional domestic category and comply with NSF/ANSI Standard 61 for health effects. Products also comply with ASTM F876-02/2023.

NSF-CI-R

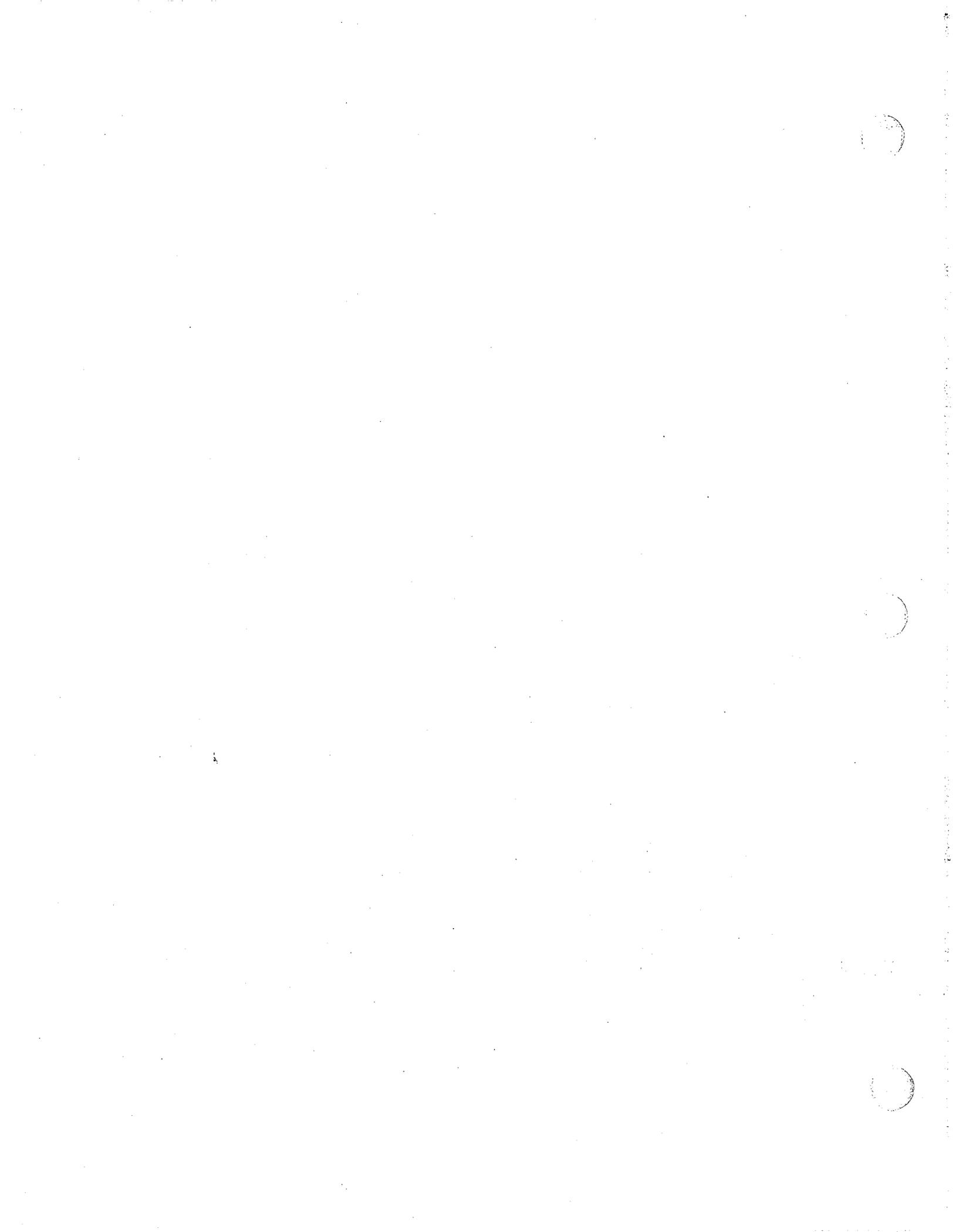
Products that meet the requirements of NSF Protocol P171 for the chlo-

rine resistance domestic recirculation category and comply with NSF/ANSI Standard 61 for health effects. Products also comply with ASTM F876-02/2023.

NSF-U.P. Code

Products that meet the requirements of the Uniform Plumbing Code™.





ISF Offers Certification to Canadian Plumbing Standards

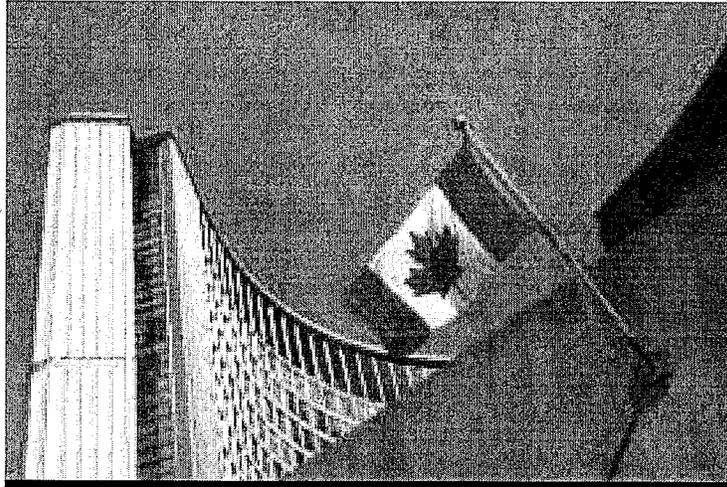
AS PART OF ITS

ongoing pursuit to provide convenient and comprehensive one-stop-shopping certification services to its plumbing industry customers, NSF now offers testing and certification against standards specified in the Canadian plumbing codes.

This enables NSF customers to work through a single third-party certification agency to obtain all approvals necessary to market their products throughout North America. It also expands NSF's role as the source for wide-ranging public health and safety risk management solutions.

Products that have been evaluated by NSF against Canadian requirements including standards such as those of the Canadian Standards Association or ASTM, bear one of the following marks:

The cNSF Mark documents conformance to Canadian National Plumbing Code requirements:



The cNSFus Mark attests that a product has been certified to both Canadian and U.S. requirements:



The Standards Council of Canada has accredited NSF's certification program as meeting the stringent third-party requirements that demonstrate NSF's ability to certify products for compliance to applicable Canadian standards. Both Marks have received widespread recognition and approval in all Canadian provinces and major cities.

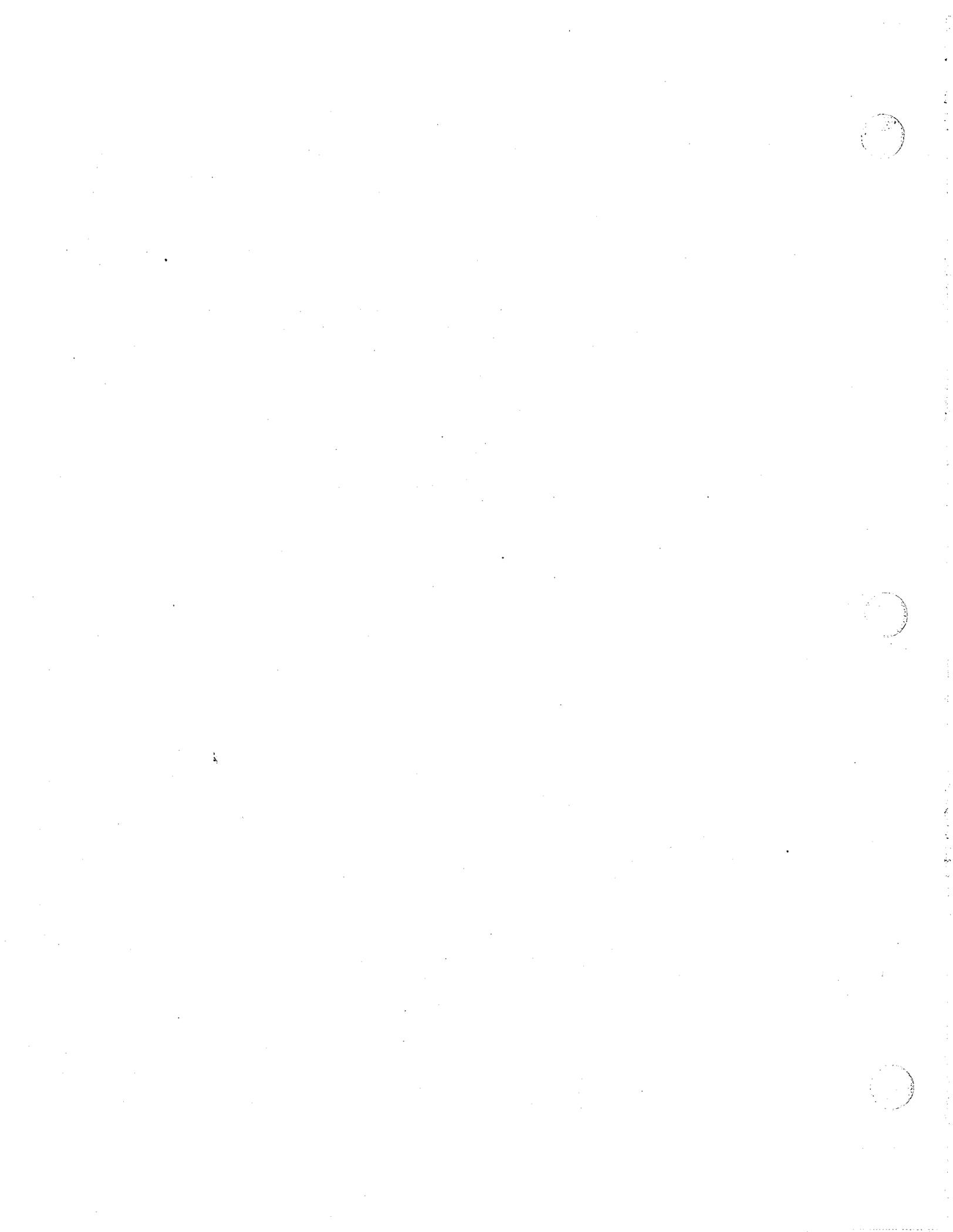
More than 15 manufacturers are currently taking advantage of the cNSFus Mark, allowing them to sell products in both the United States and Canada with a single certification Mark.

NSF also provides thorough regulatory support to all its Listed customers, regardless of whether their target market is in the United States, Canada or both. Any jurisdictional issues about the acceptance of NSF Marks by local authorities receives prompt attention and resolution by NSF's specialized regulatory staff.

When you have a certification question, call NSF's toll-free customer and regulatory hotline at 1-877-867-3435.



The Standards Council of Canada has accredited NSF's certification program as meeting stringent third-party requirements.



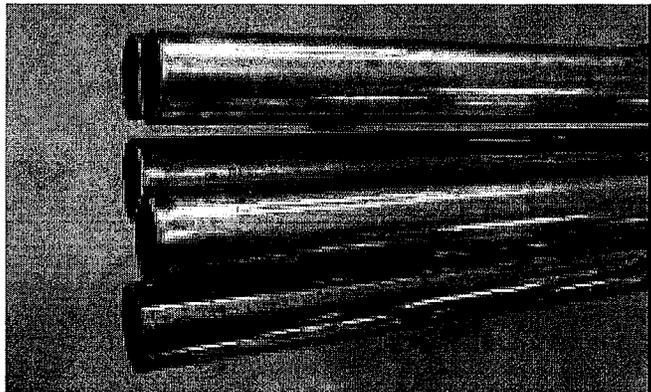
NSF Certification of Copper Tubing

TO DATE, NSF HAS certified 20 manufacturers of seamless copper tube Certified under *NSF/ANSI Standard 61-Drinking Water System Components-Health Effects*. In addition to this testing and certification, NSF also can test and certify to *ASTM B 306: Standard Specification for Copper Drainage Tube (DWV)*, and *ASTM B 88: Standard Specification for Seamless Copper Water Tube*.

Health Effects

Under NSF Standard 61, copper tubing is exposed to pH 6.5 and pH 10 waters for metals analysis. This differs from the test conditions of pH 5 and pH 10 used for the metals analysis of all other product types tested under NSF/ANSI Standard 61.

Because of this, all copper and copper alloy pipes, tubing and fittings tested using pH 6.5 exposure water must place this limitation statement on the manufacturer's use instructions or product literature: "*Copper Tube (Alloy C 12200) has been evaluated by NSF International to NSF/ANSI Standard 61 for use in drinking water supplies of pH 6.5 and above. Drinking water supplies that are less than pH 6.5 may require corrosion control to limit leaching of copper into the drinking water.*"



Copper or copper alloy fittings intended for use with copper pipe and tubing will be exposed to either pH 5 or pH 6.5 exposure waters, at the discretion of the manufacturer, and to pH 10 exposure water. Upon successful completion of all test parameters and compliance to all certification policies, the copper tube, pipe or fittings are eligible for Listing under NSF/ANSI Standard 61.

Performance

ASTM B 306 sets the requirements for seamless copper tube made from Copper UNS No. C 12200 intended for sanitary drainage, waste and vent piping (DWV). The standard requires certain chemical and mechanical properties of the Copper UNS NO. C12200 used in the tubes, including the percentage of phosphorous at 0.015-0.040% and the percentage of copper including silver at 99.39%. The chemical composition can be verified by ASTM Standards E 53 for copper and E 62 for phosphorous. Other requirements are min. tensile strength of 40 ksi as measured by ASTM

Standard E 8 and a minimum Rockwell Hardness value of 30 as specified under ASTM Standard E 18.

The standard requires that the copper tubes meet the electromagnetic examination/eddy-current test specified by ASTM Practice E 243 and the pneumatic test per ASME section 16.2.3.

ASTM B 306 also requires that dimensions such as weight, wall thickness, diameter tolerance, roundness tolerance, standard length and tolerance, temper, and squareness of cut meet specified parameters.

NSF can also test and certify copper tube to *ASTM B 88 - The Standard Specification for Seamless Copper Water Tube*. This specification covers Copper UNS No. C122000 seamless copper water tubes suitable for general plumbing and other similar fluid-carrying applications, and commonly used with flared, solder or compression-type fittings. The type of copper water tube that is suitable for

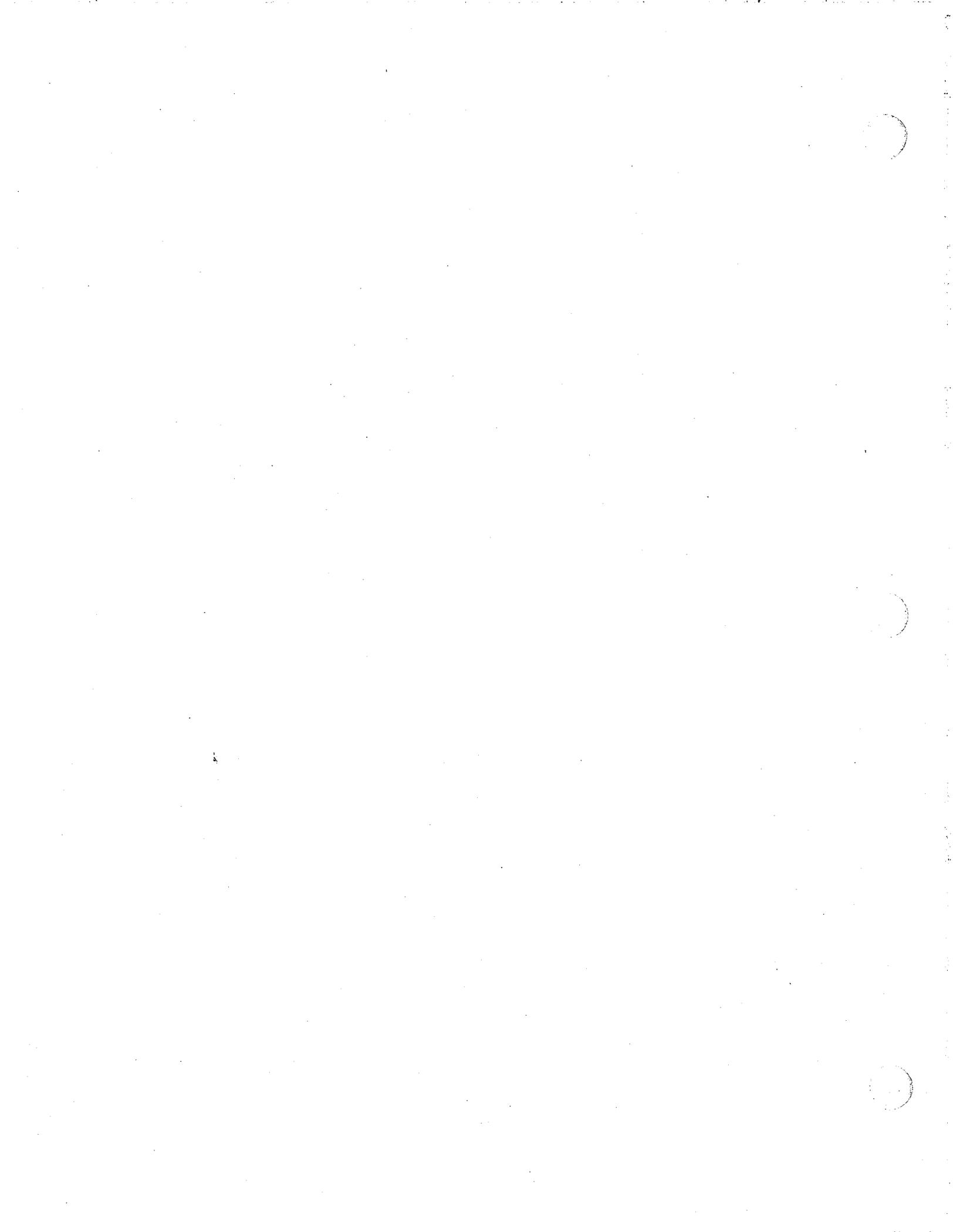
a particular application is determined by the installation and service conditions, by the internal or external fluid pressure and by local requirements. The method of joining or bending also affects the selection of the type of copper tube.

Among the requirements in ASTM B 88 are chemical composition, temper, mechanical properties, dimensions, mass, roundness, standard lengths and tolerances and squareness of cut.

Upon successful completion of all requirements for the applicable standard and NSF policies, the products are added to the NSF Listing and are allowed to bear the NSF Mark.

To search the complete list of NSF-Certified copper tube and other plumbing products, go to the Listings database at www.nsf.org.

For more information on testing and Certification to NSF/ANSI Standard 61, ASTM B 306-02 or ASTM B 88-02, contact Rich Martin, Business Unit Manager, at 1-800-NSF-MARK, ext. 5773 or martin@nsf.org.



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NSF International, an independent, not-for-profit, non-governmental organization, is dedicated to being the leading global provider of public health and safety risk management solutions while serving the interests of all stakeholders. NSF provides product certification safety audits for the food and water industries.

Other services include management systems registrations delivered through NSF International Strategic Registrations, Ltd., and education through the NSF Center for Public Health Education. Serving companies in 81 countries, NSF was founded in 1944 and is headquartered in Ann Arbor, MI USA.

Is Certification Required?

A common question from manufacturers is, "Do I need product certification?" For several years, there was a question about whether a manufacturer's self-declaration to a standard is acceptable under the codes. Today, U.S. plumbing codes are more consistent on this issue.

The 2003 Uniform Plumbing Code now states, "All pipe, pipe fittings, traps, fixtures, materials and devices used in a plumbing system shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and shall conform to approved applicable recognized standards referenced in this Code ..."

The 2003 International Plumbing Code requires potable water system components, fixture fittings, plastic pipe and fittings, and backflow preventers to be

third-party certified. Several drain, waste and vent products as well as plumbing fixtures are required to be third-party tested.

Although the National Plumbing Code of Canada does not have specific language requiring third-party certification, most plumbing jurisdictions in Canada are requiring third-party certification by an SCC-accredited certifier, such as NSF, to demonstrate conformity to code requirements.

The market for manufacturers without third-party testing and certification is being drastically reduced. This will result in an increase in overall product quality in North America, which benefits consumers and manufacturers alike. Now when manufacturers ask the question, "Do I need certification for my products?" The answer is an emphatic "yes."



The 2003 International Plumbing Code requires potable water system components, fixture fittings, plastic pipe and fittings, and backflow preventers to be third-party certified.



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