

WaterWORKS



NSF®

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NSF'S PASSPORT PROGRAM PROVIDES SIMPLIFIED GLOBAL COMPLIANCE

THE GROWING WORLD ECONOMY provides manufacturers opportunities to access new global markets. Despite strained government budgets and the dip in new home starts in many regions, the world demand for water treatment products will rise 6.2 percent annually through 2015¹.

However, complex regulatory environments can hinder these expansion opportunities. The requirements and complexity of regulatory and certification rules vary greatly between countries and can even be conflicting or contradictory. Manufacturers of water treatment, distribution and plumbing products can struggle to meet the complex requirements essential to market entry, distribution, installation and acceptance.

Navigating the certification path and approval process in each country requires a trusted source with comprehensive knowledge of each regulation. For this reason, NSF International developed a new program to provide manufacturers with the access and expertise they need to leverage new global opportunities.

The NSF Passport Program™ streamlines the approval processes for multiple countries through a single point of contact and utilizes combined testing and auditing services. NSF International manages this



process from the initial application to final approval.

The NSF Passport Program is the first of its kind in the water industry, providing:

- global compliance expertise for water treatment, distribution and plumbing products;
- a single point of contact from product development to approval;
- cost and time savings through comprehensive auditing and testing;
- services in local language and time zone; and
- clear and accountable costs.

“This service is completely unique to the water industry,” said Pierre Sbabo, Vice President of NSF International's Global Water Division. “NSF has developed a program that facilitates product

certification for customers in more than 25 major and emerging global markets. NSF has met certification requirements specific to each country and certification body, which included completing multiple laboratory audits and earning numerous accreditations.”

NSF International's detailed and current knowledge of national regulations allows manufacturers to use certification and approval to minimize the risks of supplying and selling water fittings illegally in export markets.

According to Ginger Patera, Senior Global Product Development Manager at Whirlpool Corporation, “NSF's knowledge of international regulations and global regulatory requirements is exceptional. I have worked with NSF for over eight years and found their knowledge and insight to be valuable and integral to our business strategy.”

The NSF Passport Program can help companies gain international product approvals through three principal methods:

- 1. NSF Mark:** The NSF Mark and standards are recognized in numerous countries worldwide, allowing manufacturers to use the NSF Mark as their global compliance mark.
- 2. Direct Certification:** NSF is accredited by numerous international accreditation bodies, allowing NSF to test, audit, certify and issue certification licenses for many markets.
- 3. Worldwide Laboratories:** NSF International maintains state-of-the-art laboratories worldwide and through partnerships provides certifications and approvals for every market.

To learn more about NSF's Passport Program, visit www.nsf.org/info/passport or email us at nsfpassport@nsf.org.

¹ *World Water Treatment Products*. Rep. no. 2802. The Freedonia Group, Sept. 2011. Web. May 2012. <<http://www.freedoniagroup.com/DocumentDetails.aspx?DocumentId=557623>>.

NEW NSF/ANSI STANDARD 223 ESTABLISHES MINIMUM REQUIREMENTS FOR NSF/ANSI STANDARD 60 PRODUCT CERTIFIERS



THE NSF INTERNATIONAL JOINT COMMITTEE on Drinking Water Treatment Chemicals and the NSF Council of Public Health Consultants (CPHC) recently adopted **NSF/ANSI Standard 223: Conformity Assessment Requirements for Certification Bodies that Certify Products Pursuant to NSF/ANSI 60: Drinking Water Treatment Chemicals-Health Effects**. This new standard establishes minimum requirements for certification organizations to be used in the evaluation and certification of products to NSF/ANSI 60.

BACKGROUND

A change was made to the California Code of Regulations (CCR), which was adopted on March 9, 2008, that required annual recertification of drinking water treatment chemicals to NSF/ANSI Standard 60 (NSF 60). This change was prompted by concerns that, while some certification organizations provided annual retesting of treatment chemicals, other organizations allowed for up to five years in between product retests - a period considered too long by public health norms.

In 2009, Section 3.8 (Conformity Assessment), which contained minimum product testing and facility inspection requirements, was incorporated into NSF/ANSI Standard 60-2009a. However, it was decided that requirements for the conformity assessment process (e.g. facility inspections, periodic retest requirements) would better serve the public health and industry stakeholders if

placed in a separate conformity assessment standard specific to certification agencies. To accomplish this, NSF convened a Conformity Assessment Task Group composed of water utility personnel, drinking water supply regulators, ANSI-accredited NSF 60 product certifiers, and several manufacturers/distributors of treatment chemicals, to develop NSF Draft Standard 223 (NSF 223). This draft standard was later balloted successfully through the appropriate oversight committees.

PURPOSE AND SCOPE OF NSF 223

NSF 223 covers the minimum requirements to be used by conformity assessment organizations when testing and certifying products to NSF 60. These requirements are supplemental to those contained in ISO Guide 65 or ISO Guide 1720, and do not replace the requirements in either ISO standard. NSF 223 requirements include (but are not limited to) documentation reviews, product testing, and facility inspections conducted during surveillance. Minimum facility inspection requirements are defined, as are the conditions under which announced inspections are allowed in lieu of unannounced inspections. In addition, an informative annex has been included to provide examples of conformity assessment activities drawn from the experiences of the accredited NSF 60 product certifiers.

Two of the major requirements within NSF 223 are with respect to Product Testing and Facility Audits:

1. PRODUCT TESTING (NSF 223, SECTION 4):

Each chemical product that is certified to NSF 60 shall be sampled and tested at least once per calendar year. This includes the chemistry specific parameters identified in NSF 60 and any additional parameters (if applicable) that are assigned during the product's formulation review. Within each chemical family, the product with the highest concentration may be tested as the representative of a series of

analogous lower concentration products. Also, for a facility that blends, dilutes, dissolves, repackages or transfers products (where each of the original/incoming source products is certified on its own), a minimum of one product sample per facility shall be tested annually.

2. FACILITY AUDITS (NSF 223, SECTION 5):

NSF 223 establishes minimum audit content/scope criteria which includes validation of product formulations, review of records related to formulation control, and product sampling. The new standard also establishes minimum audit frequency criteria for NSF 60 certified facilities. Each certified chemical production or distribution facility shall be

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WHAT IS THE TRANSPARENCY INTERNATIONAL CORRUPTION PERCEPTIONS INDEX?

Transparency International's (TI) Corruption Perceptions Index (CPI) is constructed to aid international businesses in understanding the conditions they will face in the different countries in which they do business. The index has been constructed annually since 1995 for TI by Professor Johann Graf Lambsdorff of the University of Passau. The process sources 16 independent surveys of countries, and a country must appear in at least three of these sources in order for a score to be calculated. A score of 5.0 or lower on the CPI indicates that corruption is a significant factor in doing business in that country. As production moves to a wider variety of source countries and raw material sourcing is further diversified due to cost considerations, a method is needed to differentiate locations where oversight can be relaxed, and where it must be maintained. This external source of such judgments is the method most commonly used worldwide.



On January 1, 2013, the Single Product Allowable Concentration (SPAC) for bromate will be reduced from 5 ppb to 3 ppb.

NEW SPECIFICATION FOR BROMIDE SCREENING OF ELECTROCHLORINATION SALT

SINCE 2002, NSF/ANSI STANDARD 60 (NSF 60) has included bromate as a required test parameter for all sodium (and calcium) hypochlorite products. The test parameter was added (in 2002) as bromate became a regulated contaminant under the Disinfectants/Disinfection Byproducts Rule. Hypochlorite chemicals, in addition to ozonation systems, are a known contribution source of bromate ion in drinking water.

On January 1, 2013, the Single Product Allowable Concentration (SPAC) for bromate will be reduced from 5 ppb to 3 ppb. The US EPA's Maximum Contaminant Level (MCL) for bromate is 10 ppb. Thus, the bromate SPAC will be reduced from 50 to 30 percent of the EPA's MCL. This reduction in the allowed level of bromate gives water utilities, including those using a combination of ozone and hypochlorite chemicals, the confidence that certified hypochlorite treatment chemicals do not contribute to levels of bromate that approach the regulatory limit.

As many drinking water utilities manufacture sodium hypochlorite chemicals through onsite hypochlorite generators (in lieu of, or in addition to, purchased bleach), a need has also arisen for NSF 60 to include criteria to address the bromate-forming potential of sodium chloride salt, which is used as the feedstock for onsite hypochlorite generators. Many natural salt formations

contain a small level of bromide, which can form and release bromate ion during the electrochlorination process where hypochlorite effluent is generated. Up until this time, salt products (certified to NSF 60) have been tested exclusively for regulated metals and radionuclides (gross alpha/beta) content, so bromide will be a new evaluation parameter under NSF 60.

A recent task group, made up of water utility personnel, drinking water supply regulators, salt suppliers, and onsite hypochlorite generator manufacturers, developed a specification for bromide content in electrochlorination salt. This new criteria is being balloted to the Drinking Water Treatment Chemicals Joint Committee this summer and is expected to be included in the next edition of NSF 60.

The new criteria for electrochlorination salt would include the following parameters:

1. The manufacturer (of electrochlorination salt) shall submit a specification declaring the maximum bromide concentration for the product. Verification (by the product certifier) that the bromide concentration is less than or equal to the manufacturer's specification shall be conducted on the product in accordance with defined analytical parameters (these parameters are given in Annex B, Section 4.2.2.1 of NSF 60).

2. The bromide specification shall not exceed 54 mg/kg in NaCl (sodium chloride) salt for electrolytic hypochlorite generators at a maximum feed rate of 10 mg/L (as chlorine). A higher concentration of bromide is permitted in NaCl salt used in generators that deliver lower maximum feed concentrations of chlorine so that the total concentration of bromate does not exceed 3.0 ppb.

Note: The 54 mg/kg limit is based on a use assumption that 3.0 ug/L (ppb) bromate will be produced from 3.5 pounds of NaCl containing 54 mg/kg bromide with 15 gallons of water to produce (via electrolysis) 1 pound of free available chlorine (FAC) equivalent disinfectant and dosed to effect a 10 mg/L FAC in the finished drinking water.

3. In all instances where NSF 60 certification is indicated for a product (including but not limited to the product packaging, product literature and certification listings), an indication of the maximum bromide concentration specification, and the associated maximum feed concentration of chlorine, attested by NSF 60 shall also be indicated.

For more information, or for an advance copy of the new bromide specifications for salt products, contact Blake Stark at stark@nsf.org or (734) 769-5480.

STAINLESS STEEL: ACCEPTABLE MATERIALS VS. CERTIFIED PRODUCTS



NSF 61 Certified Stainless Steel Pipe and Fittings from Douglas Barwick Inc.

A COMMON MISUNDERSTANDING is that if a grade of stainless steel appears in Annex C of NSF/ANSI Standard 61 (NSF 61), any product manufactured solely from that alloy may be represented as certified to NSF 61. However, manufacturers of stainless steel products wishing to offer those products as certified to NSF 61 and bearing the NSF Mark must obtain certification of the specific product from NSF.

This process includes finished product testing and production location auditing to ensure compliance with the health based requirements of NSF 61. The testing of the finished product is performed by exposing the product to pH 5 and pH 10 waters, and analyzing for regulated metals such as antimony, arsenic, barium, cadmium, chromium (including chromium VI), copper, lead, mercury, selenium, thallium and nickel. The product is also exposed to pH 8 water, which is tested for organic chemical contaminants that could leach into the water. Contaminants from stainless steel products may derive from the welding, machining or passivation process.

In order to maintain certification, testing and unannounced production facility inspections are performed on an annual

basis to ensure that there are no changes in the materials of construction and the production process. Samples are retested on an annual basis by NSF to confirm continued compliance with the extraction requirements of NSF 61.

The certification process covers two separate applications, ambient/cold water use, which are tested at 23°C, and domestic or commercial hot water requirements, which are tested at 60°C or 82°C.

ANNEX C (ACCEPTABLE MATERIALS) OF NSF/ANSI 61

Several grades of stainless steel have standard material formulations or specifications (e.g., ASTM), and have been tested to the requirements of NSF 61 at specific surface area to volume ratios and at certain ambient temperatures (23°C and 30°C). The stainless steel grades that are currently approved for use with potable water in Annex C are 304, 304L, 316, 316L, 2205, 2203, 2101, 2304 and 2202.

NSF will consider additional material grades but will require additional testing to ensure compliance before adding to Annex C. Manufacturers utilizing these materials in their products under the conditions stated in Annex C may require

Even if a grade of stainless steel appears in Annex C of NSF/ANSI Standard 61 (NSF 61), the product manufactured from that alloy must still obtain certification from NSF to be offered as a certified product.

less product testing to achieve certification. However, using a product made from a material appearing in Annex C of NSF 61 does not mean the product is NSF certified. NSF certified products appear in the official NSF certification listing on the NSF website. To find NSF 61 certified stainless steel products, visit www.nsf.org and click the 'Search Listings' link at the top right corner. Users can search by manufacturer, manufacturing location, product type, trade name or material type.

NSF 61 certified stainless steel products allow potable water system producers and operators to install tested quality products that comply with regulatory requirements and protect public health.

For more information on NSF 61 certification, please contact Theresa Bellish at bellish@nsf.org or (734) 913-5773.

STANDARD 61



On July 1st, 2012, the reduced chemical extraction criteria for lead contained in Annex F of NSF 61 goes into effect.

JULY 1ST LEAD DEADLINE AND UPDATE

JULY 1ST, 2012 MARKS A SIGNIFICANT MILESTONE in the effort to reduce lead in drinking water. On this date, the reduced chemical extraction criteria for lead contained in Annex F of NSF/ANSI Standard 61 (NSF 61) goes into effect. This change and its relationship with lead content laws, which are also coming into effect, have created questions for our industry.

To understand these changes and its relation to other lead content laws, it's important to recognize that the initiatives to reduce lead in drinking water have centered on two separate fronts; one aimed at limiting the amount of lead that can be contained in the walls of products that contact drinking water; and a second aimed at limiting the amount of lead that can be leached from those products. Both initiatives are aimed at reducing lead at-the-tap. Here at NSF, we think the two work well together.

1. LEAD CONTENT

Toward the first initiative to limit lead contained in the product itself, new definitions of "lead-free" have been set in place in several US States (CA, VT, MD, and LA), as well as nationally through an update to the US Safe Drinking Water Act (SDWA). All are centered on a requirement that the weighted average lead content of products that come into contact

with drinking water should not exceed 0.25 percent. The first of these state laws (CA, VT) were put into effect in January 2010. Nationally, this requirement goes into effect January 2014. Standardized procedures to evaluate these requirements were first established in Annex G of NSF 61 and subsequently transferred to NSF/ANSI Standard 372.

2. LEAD EXTRACTION

Toward the second initiative to limit the amount of lead that can be leached into the water from a product, reductions in the allowable lead leaching criteria were adopted into NSF 61 in July of 2007. Recognizing the significant impact of these changes, the Drinking Water Additives Joint Committee, which has oversight of NSF 61, established an extended, five-year effective date - July 1, 2012. This date was selected to provide manufacturers a reasonable time to reengineer products to meet the new requirements, to have them tested, and to make them available in the marketplace. Manufacturers and certifiers were strongly encouraged to pursue conformance to the new requirements prior to the deadline.

With the arrival of July 1, 2012, two activities will be undertaken at NSF:

1. A 2012 version of NSF 61 will be issued in which the reduced lead extraction



criteria in Annex F will be moved into the main body of the standard and compliance mandated. Although Annex F itself will disappear, the reduced lead extraction requirements continue on through their placement within the standard.

2. All products currently certified to the standard but not in compliance with the new reduced lead extraction criteria will be removed from NSF listing.

If you would like more information concerning lead extraction or lead content requirements certification under NSF Standards, please contact Pete Greiner at greinerp@nsf.org or (734) 769-5517.

ONSITE CHEMICAL GENERATOR

A GROWING NUMBER OF WATER UTILITIES are using onsite generation of disinfection chemicals. NSF/ANSI Standard 61: *Drinking Water System Components - Health Effects* (NSF 61) is intended to cover products and materials that come into contact with drinking water, drinking water treatment chemicals, or both. This includes chemical generators, as well as chemical storage tanks. Onsite chemical generators that have earned NSF 61 certification by NSF have demonstrated that any chemical contaminants imparted into the drinking water are within the acceptable limits.

Onsite chemical generators undergo a seven-step certification process, which includes a review of the wetted parts list under which the information and formulation requirements of NSF 61 are reviewed for compliance. Section 3.2 of NSF 61 allows for the omission of

complete formulation information for a component material if the generic material type is contained in Table 3.1 of NSF 61 and the material is in a high flow device exclusively used at public water treatment facilities. The high flow devices are limited to six product types, which include disinfectant generators.

Certification to NSF 61 covers only health effects and does not certify the efficiency or performance of the generator. Testing is performed on a brand new unit and includes operating the unit under normal operating conditions until the target concentration of chemical is generated. At this point, the system will be shut down for a minimum of four hours or longer if recommended by the manufacturer. After the four-hour period, the system will be restarted and samples of the influent water and effluent chemical will be collected for analysis. Samples of influent chemicals

shall also be collected for control purposes.

Currently, there are eight manufacturers with a total of 86 chemical generators certified by NSF International to NSF 61. Among the generators listed include units that produce sodium hypochlorite, chlorine dioxide, calcium ferrate, sodium ferrate, mixed oxidant solutions, and chlorine. For a complete listing of currently certified disinfectant generators, please visit our online listings at www.nsf.org, under Drinking Water System Components, and select Chemical Generators from the drop down menu under product type.

If you would like more information concerning onsite chemical generators and certification under NSF 61, please contact Theresa Bellish at bellish@nsf.org or (734) 913-5773.

NSF/ANSI STANDARD 223, continued from page 2

audited at a minimum of once per calendar year. Facilities that have had severe and/or repeated non-compliances related to NSF 60 certification shall have a quarterly minimum audit frequency for a time period of no less than 36 months (reference Section 5.2.2 for details).

In addition, NSF 223 prescribes an increased audit frequency for some international facilities. Transparency International's Corruption Perceptions Index (TI CPI, see sidebar, page 2) is used as a baseline for establishing the audit frequencies of international facilities:

1. Facilities located in countries that have a score of less than 5.0 on the TI CPI, or that lack a score on this index, shall have a minimum audit frequency of twice per calendar year (reference Section 5.2.3 for details). The facility may reduce this to an annual audit frequency if:
 - a. The facility has demonstrated and

maintained 36 months of continuous freedom from Standard 60-related audit deficiencies; or

- b. The facility is registered to one of the following Quality or Environmental Management standards by a third-party registrar (that is accredited by an International Accreditation Forum signatory): ISO 9001, ISO 14000/14001, American Chemistry Council's Responsible Care Management System, or the National Association of Chemical Distributors' Code of Management Practice; or
 - c. The facility is part of a wholly owned global business entity or joint venture where all parties are operating under a quality management plan as described above.
2. Facilities that repackage/distribute material that is supplied by a facility located in a country with a TI CPI

score under 5.0 shall have a minimum audit frequency of twice per calendar year (reference Section 5.2.4 for details). The certification body has the option to reduce the inspection frequency to once per calendar year if the supplying facility meets one of the following criteria:

- a. The supplier to the facility receives audits from a certification body that is accredited by an International Accreditation Forum signatory.
- b. The chemical repackager/distributor has an alternate method, that is acceptable to the certification body, which provides a mechanism to verify that no changes have been made to the supplied product.

For more information, or for an advance copy of NSF 223, contact Blake Stark at stark@nsf.org or (734) 769-5480.



Currently, 46 US States and 11 Canadian Provinces and Territories require materials used in public drinking water systems to comply with NSF 61 requirements.

NSF CONCRETE SITE MIX TESTING PROGRAM

NSF EVALUATES CONCRETE to the requirements of NSF/ANSI 61 (NSF 61) to ensure these materials will not leach heavy metals or other contaminants into drinking water that could cause adverse human health effects. Currently, 46 US States and 11 Canadian Provinces and Territories require materials used in public drinking water systems to comply with NSF 61 requirements.

NSF 61 requires exposing concrete materials to three specifically formulated waters: pH 5, pH 8 and pH 10 for a five-day period. The water is then analyzed for a wide variety of metal and other contaminants. Contaminants from concrete that can sometimes cause compliance problems include heavy metals and grinding aids as well as chemicals from concrete additives. Examples include:

- Aluminum
- Chromium
- Strontium
- Ethanolamine
- Diethanolamine
- Diethylaminoethanol
- Dimethylpropanediol
- Quinoline
- Thiocyanate
- Toluenesulfonamide
- Methylacrylic acid

CASE STUDY: SEYMOUR-CAPILANO TWIN TUNNELS



METRO VANCOUVER IS IN THE PROCESS of completing a major water project that would pipe water from the Seymour and Capilano reservoirs to a single water treatment hub located down mountain known as The Seymour-Capilano Filtration Plant – the largest of its kind in Canada. To accomplish this, twin tunnels were built. Once operational in 2013, these twin tunnels will carry (via gravity) untreated water from each reservoir to the filtration plant, which will then treat up to 1.8 billion liters of water per day.

The twin tunnels are massive, measuring in at 3.8 meters in diameter and 7.1 kilometers long. Each needs to be lined with a propriety mix of shotcrete and grout that is required to be NSF/ANSI 61 compliant to ensure it does not leach harmful contaminants into the water. In order to meet their 2013 deadline of lining the twin tunnels, Frontier-Kemper working for Metro Vancouver needed to find an accredited testing and certification provider that had both the technology and expertise to test for trace contaminants, as well as the ability to meet their time constraint.

Frontier-Kemper turned to NSF International to help them achieve this goal. NSF scientists evaluated several concrete site mix samples in their accredited laboratories in Ann Arbor, Michigan and found them to be compliant to NSF/ANSI 61.

CERTIFICATION

LATEST NEWS FROM NSF PUBLIC DRINKING WATER EQUIPMENT PERFORMANCE CERTIFICATION

THE NSF PUBLIC DRINKING WATER EQUIPMENT PERFORMANCE (PDWEP) CERTIFICATION PROGRAM

tests and certifies the performance of drinking water treatment and other equipment used in public drinking water distribution. This service provides confidence to water utilities and consulting engineers that the products they specify will perform as claimed by the manufacturer.

The PDWEP provides third-party testing to validate manufacturers' performance claims such as *Cryptosporidium* inactivation for UV (Ultraviolet) systems or microbial and virus reduction for filtration systems. The certification program includes validation testing to EPA ETV (Environmental Technology Verification) protocols with the added benefit of recurring factory inspections by an accredited organization to ensure products meet established quality control requirements.

MEMBRANE FILTRATION



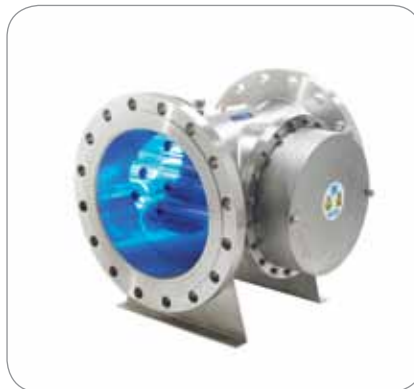
The testing protocol for membrane filters was developed with the EPA under the ETV program. There are two products listed as certified by NSF and approximately five more expected to complete certification by the end of this year.

The protocol was updated and published on August 2011 with input from state regulators, consultants and industry representatives. The protocol is up for



revision starting September 2012. NSF will solicit all stakeholders to review and submit comments by December 1, 2012.

ULTRAVIOLET REACTORS



NSF has completed the validation of three UV reactors under the EPA ETV program and started validation of reactors under the PDWEP Program. The EPA ETV validations were designed to troubleshoot the ETV protocol and share lessons learned with stakeholders to help improve performance validations.

The August 2011 EPA ETV UV Protocol completed stakeholder review April 30, 2012. Comments are being considered and addressed by the EPA and NSF under the ETV Program.

ALTERNATIVE FILTRATION

Another filtration technology mentioned in the EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) "tool box" is the bag or cartridge filter (BCF). A new ETV BCF protocol was developed March 2012 and stakeholder reviews were completed April 30, 2012. The protocol was developed based on market interest in a standardized test protocol.

GUIDELINE

The PDWEP Program is based on the NSF Guideline for Public Drinking Water Equipment Performance. This document establishes performance requirements in the treatment and production of drinking water, and references performance requirements that are described in US regulations such as the EPA's LT2ESWTR. This program does not address health effects, as those are covered by NSF/ANSI Standard 61.

For further details about the NSF Guideline for Public Drinking Water Equipment Performance, please email pdwep@nsf.org or visit the NSF ETV webpage at www.nsf.org/business/ETV_EPA_NSF/index.asp.

CERTIFICATION



Recently, there have been many incidents of non-certified or partially certified pipe being removed from jobs after the inspector noticed subtle, but significant, changes in marking.

PLASTIC PIPE MARKING CHALLENGE

THE DEVIL IS IN THE DETAILS and sometimes a subtle change in marking can mean something significant.

First, in order to know whether the marking is correct, we have to know what the requirement is. For this challenge we will establish the following specification: “Polyethylene Pipe with a minimum wall thickness of SDR 13.5 and pressure rating of 160 psi at 73°F. Pipe shall be third-party certified to ASTM F714, NSF 61, and NSF 14.”

CAN YOU IDENTIFY WHICH STRING IS IN COMPLIANCE?

- A. 10” DIPS SDR 13.5 160 psi Excellent Pipe **NSF[®]-61** ASTM F-714 PE 4710...
- B. 10” DIPS SDR 13.5 160 psi Excellent Pipe **NSF^{pw}** ASTM F-714 PE 4710...
- C. 10” DIPS SDR 13.5 160 psi Excellent Pipe **NSF/ANSI 61** ASTM F-714 PE 4710...

Pipe marking A contains a third-party certification Mark **NSF[®]-61**. This means NSF has certified this product to NSF/ANSI Standard 61 *Drinking Water System Components-Health Effects* (NSF 61). Certification to this standard indicates the product has been tested for health effects by an independent third party. While the product has an ASTM F-714 marking on it, the marking does not indicate that this product is third-party

certified to this standard. The marking only indicates that the manufacturer claims it meets this standard. There is also no marking indicating the products certification to NSF/ANSI Standard 14 *Plastic Piping System Components and related materials* (NSF 14).

Pipe marking B contains a third-party certification mark **NSF^{pw}**. This means NSF has certified this product for potable water, or in other words, NSF 61 for health effects and NSF 14 for performance and quality control. The performance aspect includes, in this case, the ASTM F-714 standard as well. This is the correct marking to satisfy the requirements of the specification above and the only one of the three that ensures a third-party certification for health, quality and performance.

Pipe marking C contains no third-party certification at all. This means the manufacturer is self-declaring the product to meet these requirements.

In recent years, a few manufacturers have tried to drop some of their full listings to see if the subtle change in marking will be noticed. One such case happened in Michigan where a service line had been installed to a state-owned facility. Although familiar with this pipe manufacturer from previous projects, the inspector checked the marking as something did not look right. He found there was no certification mark on the



product. After an investigation, the non-compliant pipe had to be removed.

We’ve seen many recent incidents of non-certified or partially certified pipe being removed from jobs after the inspector noticed these subtle, but significant, changes in marking. In some cases, the money saved on certification costs are offset by disputes with the installers over who is going to pay for the removal and re-installation.

If you have questions about whether a plastic piping product is properly certified, contact Jeremy Brown, NSF Codes and Regulatory Manager, at brown@nsf.org or (734) 769-5196.

NSF EXPANDS SCOPE OF PROTOCOL FOR MILITARY MICROBIOLOGICAL WATER PURIFICATION DEVICES (NSF PROTOCOL P248)

“The goal of the NSF protocol for microbiological water purifiers is to ensure that military personnel, and others, have access to safe drinking water from any freshwater source that may be available to them when deployed or in the field.”

Nikki Beetsch
Group Leader, Drinking Water Division
NSF International



NSF INTERNATIONAL RECENTLY EXPANDED the scope of NSF Protocol P248 *Military Operations Microbiological Water Purifiers* (NSF P248). Developed in conjunction with the U.S. Army Public Health Command (US APHC), the protocol helps protect the health of Service Members that use water purification devices by specifying requirements for removing the type of microbiological contaminants from drinking water likely to be encountered during military operations.

The protocol initially covered small individual water purifiers, but the expanded scope covers individual water purifiers and additional systems known as small unit (e.g. squad or platoon size) water purifiers collectively known as SWP (small water purifiers), which can be used on planned missions up to seven days in duration or longer under certain situations. In addition to military use, the water purification devices covered under the protocol can be used by disaster/emergency response teams, backpackers and others who do not have ready access to a treated water supply. NSF P248 is based on the *EPA Guide Standard and Protocols*

for Testing Microbiological Purifiers.

Manufacturers whose products are tested and comply with the performance (Appendix B) criteria of NSF P248 receive a Government Review Agency P248 Letter of Compliance, which can be provided to those who purchase these devices for the military and other agencies.

Products that also successfully complete material safety, structural integrity, performance, literature and labeling evaluation earn certification to NSF P248, which allows authorization to use the NSF Mark on the product and promotional materials in addition to the Government Review Agency P248 Letter of Compliance.

“The goal of the NSF protocol for microbiological water purifiers is to ensure that military personnel and others have access to safe drinking water from any freshwater source that may be available to them when deployed or in the field,” said Nikki Beetsch, Group Lead for NSF International’s Drinking Water Division.



NSF Protocol P248 covers individual water purifiers and additional systems known as small unit water purifiers and can be used on planned missions up to seven days or longer.

For more information about NSF Protocol P248 *Military Operations Microbiological Water Purifiers* contact military@nsf.org or (734) 913-5718 or visit www.nsf.org/business/engineering_and_research/p231_qa.asp.



NSF AND JAPAN WATER PURIFIER ASSOCIATION DEVELOP PROTOCOL THAT EVALUATES DRINKING WATER TREATMENT PRODUCTS' ABILITY TO REDUCE IODINE FROM WATER

NSF INTERNATIONAL AND THE JAPAN WATER PURIFIER ASSOCIATION (JWPA) are completing a jointly developed protocol to evaluate the ability of certain water filtration products to reduce iodine (including radioactive iodine) from drinking water. Once the protocol is complete, manufacturers can have their activated carbon, ion exchange, and reverse osmosis water filtration technologies tested and certified to ensure effective iodine reduction.

NSF and JWPA began developing the protocol, at the request of water treatment systems manufacturers following the tragic earthquake in Japan in March 2011, to help solve consumer confusion and provide a means to evaluate systems that reduce radioactive iodine. Manufacturers felt use of water systems certified to the protocol would provide consumers additional reassurance. The international protocol will be known as NSF/JWPA Protocol P72 *Drinking Water Treatment Units – Iodine Radioisotope Reduction*.

In developing the protocol, a team of NSF scientists, JWPA technical committee members, and other experts developed

test methods used to evaluate whether adsorptive and absorptive media, such as activated carbon, as well as reverse osmosis, and ion exchange point-of-use water filtration technologies can effectively reduce iodine from water.

The NSF/JWPA Protocol P72 also requires that the system meet appropriate drinking water treatment country standards. For example, for the U.S. market, the system must meet the requirements of NSF/ANSI Standard 42: *Drinking Water Treatment Units - Aesthetic Effects* or NSF/ANSI Standard 53: *Drinking Water Treatment Units - Health Effects* for adsorptive or absorptive media and NSF/ANSI Standard 58: *Reverse Osmosis Drinking Water Treatment Systems*. For Japan, the requirements of the Japanese Industrial Standard (JIS) 3201: *Testing Methods for Household Water Purifiers* must be met.

For more information on the new NSF Protocol contact Kanji Ishii, NSF Japan Country Manager, at ishii@nsf.org or visit www.nsf.org/business/drinking_water_treatment/index.asp.



After the devastating earthquake in Japan in March 2011, NSF and JWPA began developing the protocol to provide a means to evaluate systems that reduce radioactive iodine.

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NSF International, a global, independent organization, writes standards and certifies products for food, water and consumer goods industries to minimize adverse health effects and protect the environment (www.nsf.org). Founded in 1944, NSF is committed to protecting human health and safety worldwide and operates in more than 120 countries. NSF is a World Health Organization Collaborating Centre for Food and Water Safety and Indoor Environment. The NSF Water Treatment and Distribution Systems Program is responsible for the verification of drinking water treatment chemicals and drinking water system components to ensure these products do not contribute contaminants to drinking water that could cause adverse health effects.



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HOW THE US EPA ETV PROTOCOL CLARIFIES ASPECTS OF UV DISINFECTION GUIDANCE MANUAL AND FACILITATES ADVANCES IN UV VALIDATION

THE EPA, THROUGH ITS ENVIRONMENTAL TECHNOLOGY VERIFICATION (ETV) DRINKING WATER SYSTEMS (DWS) CENTER, completed the development of a generic protocol designed to validate the performance of small flow (<1000 GPM) Ultraviolet (UV) reactor equipment. A critical goal was the development of a clear and direct generic protocol based on the EPA's UV Disinfection Guidance Manual (UVDGM) and validation of UV dose of the reactors. The protocol was designed to validate UV reactors using a single sensor set point control strategy.

The ETV process is a procedure for continuing improvement of the protocol:

- through the input of all stakeholders,
- through sharing of lessons learned during validations that are then incorporated into the protocol, and
- allows for recent advances in science and technology.

It thus becomes a living and improving document.

Some recent improvements from this process included: allowing for virus reduction as well as *Cryptosporidium* log credits, stakeholder procedure for allowing test organism other than MS2, frequency of flow meter calibration, and frequency of reactor blanks.

The August 2011 EPA ETV UV Protocol completed stakeholder review April 30, 2012. Comments are being considered

and addressed by the EPA and NSF under the ETV Program. NSF published a request for comments on the August 2011 EPA ETV UV protocol. Industry provided comments through March and then the States through April 2012. As part of a transparent process, NSF posted the comments on its website for all stakeholders to read.

NSF and EPA plan to find where stakeholders have a common agreement on testing and will implement those changes. NSF and the EPA also consult with an independent Technical Advisory Team (TAT) of external advisors and experts to discuss the remaining technical issues to decide on the next course of actions such as continued discussion with stakeholders, how much data is needed, and of what kind or wait for research. The next steps are:

1. NSF makes editorial and germane clarifications throughout the protocol;
2. The TAT reviews technical issues;
3. NSF posts issue papers and holds open webinars on technical issues requiring more data and stakeholder input to resolve.

For more information, please contact Bruce Bartley at bartley@nsf.org or (734) 769-5148.