

Certification Guide for Point-of-Use and Point-of-Entry Systems and Components



NSF International
The Public Health and Safety Company™

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INTRODUCTION



Retailers, dealers, OEMs and consumers increasingly value the NSF Mark. In consideration of the growing interest in NSF Certification worldwide, and the recognition that many companies seek to achieve the NSF Mark on their products to demonstrate their commitment to excellence, NSF has developed this Certification Guide. The purpose of the guide is to provide a simple understanding of the overall process and to allow you to achieve the most from your certification experience with the least amount of time and cost. This guide is your roadmap to success as you embark upon this endeavor.

It is important to note that this document is just one of many resources NSF makes available to assist you in this process. There are other resources that will be made available as you proceed, providing even greater details on the process. Equally important to this guide and supporting resources is the expert assistance we will provide through NSF's professional staff. Our commitment to you is excellence in customer service. You will be guided through each step of the process by an NSF Certification Project Manager (CPM) assigned to your company. It is their goal to ensure that you achieve certification in a timely, cost-effective manner. Please consider your CPM as your team member within the NSF organization, ready to assist you in any way possible.

Beyond the CPM, NSF staff includes expert toxicologists, chemists, engineers, microbiologists, and others whose role it is to provide the most comprehensive product evaluation available anywhere in the world, and who will likewise assist you in the process as needed. The CPM will coordinate all activities with these various NSF experts and departments, maintaining a simple and fully managed process for you.

We hope you find the following information to be helpful. At the end of the guide, you will find our contact information. We are available to answer any questions you may have, provide further information, and of course initiate the certification process when you are ready. We look forward to the opportunity to work with you, and to granting you use of the most widely recognized and valued Mark in the water treatment industry, to complement and support the quality of your products and the benefits they provide.

NSF International (NSF) was founded in 1944 as an organization devoted to public health safety and protection of the environment. Today, NSF is the leading global, independent third-party certification and testing organization for products that affect water quality and food safety. In addition, NSF is recognized as the leading authority in the development of consensus, national standards that bring together experts from the regulatory, manufacturing, academic, scientific research, and consumer industries. These comprehensive standards provide the basis by which product manufacturers can demonstrate the quality, reliability and performance of their products, and through which, buyers, consumers and health officials can be assured of their safety and benefits.

The NSF Drinking Water Treatment Units (DWTU) Certification Program for Point-of-Use (POU) and Point-of-Entry (POE) systems and components was first established in the early 1970s, beginning with the adoption of the first NSF DWTU Standard in 1973. Today, a total of seven NSF DWTU Standards have been adopted, to which hundreds of companies have certified thousands of POU and POE systems and components used around the world to improve and protect drinking water quality.

POU and POE Water Treatment Technologies

The innovations of the water treatment industry over the past 30 years have been truly impressive. Current technologies for water treatment include adsorptive medias, ion exchange, reverse osmosis, ceramic filters, pleated filters, ultra-violet, distillation, reduction-oxidation (redox), and others. The NSF testing, certification and DWTU Standards have all been kept current so as to address all of these technologies.

Any company with products covered by a standard for which NSF offers certification is eligible to have its products certified by NSF. All product evaluation requirements necessary for certification are included under one set of standards – the NSF/ANSI DWTU Standards. Structural integrity, material safety, contaminant reduction performance, and product literature requirements are all addressed by each of these standards, providing you with a single document that covers all test methods, evaluations and criteria.

The NSF DWTU Program certifies entire systems, as well as components of systems (see chart on following page). NSF defines a “system” as a complete water treatment product that provides the user with treated water. Complete systems are certified for material safety, structural integrity, and contaminant reduction.

A “component” is defined by NSF as a part or subassembly of a system that must be combined with other components before providing the user with treated water. Components are certified for material safety and, if applicable, structural integrity only. Some examples of components include: carbon block elements certified for material safety only, filter housings certified for material safety and structural integrity, and reverse osmosis elements certified for material safety only. There are many other types of components.

Product	Certified for Material Safety?	Certified for Structural Integrity?	Certified for Contaminant Reduction Claims?
Non-pressure bearing component	Yes	No	No
Pressure bearing component	Yes	Yes	No
System connected to plumbing	Yes	Yes	Yes
Non-pressure bearing system	Yes	No	Yes

Applicable NSF Standard

Each NSF Standard is technology-specific. Once you have identified the proper standard, that one standard includes all of the test methods and criteria for all requirements of your product necessary to achieve NSF Certification. No other standard is needed. The following chart will assist you in determining which standard(s) will govern certification of your product, as well as related contaminant reduction claims.

Product Type	Optional Contaminant Reduction Claims	Standard
Carbon, ceramic, or other filter system	Aesthetic - chlorine reduction, particulate reduction, chloramines reduction, etc.	42
Carbon, ceramic, or other filter system	Health - lead reduction, cyst reduction, VOC reduction, etc.	53
Reverse osmosis system	TDS reduction (mandatory), health claims - lead reduction, cyst reduction, VOC reduction, etc.	58
Ultra-Violet system	Disinfection	55
Distillation	TDS reduction (mandatory), health claims - lead reduction, cyst reduction, VOC reduction, etc.	62
Water softener system	Hardness reduction (mandatory), health claims - barium reduction, radium reduction	44
Shower filter system	Free available chlorine reduction	177
Carbon filter component	None	42
Filter housing component	None	42
Reverse osmosis element component	None	58
Hollow fiber technology	Mechanical - particulate reduction, asbestos reduction, cyst reduction, turbidity reduction	42, 53

Grouping Similar Products for Testing

If you have multiple, similar products you would like to certify, NSF has the expertise on staff to develop a technical justification where the testing of one product can support the certification of many other similar products without further testing of those similar products. This process is referred to as “bracketing.” Bracketing groups of products for testing is based on their similarity, such as common materials used throughout a product line, or structural similarities. When multiple products are submitted for certification, NSF will determine if bracketing is possible, and what products need to be tested. It is very important to submit information for all your products prior to testing, so that selection of proper test models can provide you with the maximum certification value.

Process Flow

It is possible to conduct multiple steps in the process simultaneously in order to achieve certification as quickly as possible. Once you have submitted certain initial information, your CPM can use this information to streamline the process and begin multiple activities. Your CPM will give you frequent updates on the status of each of these activities to keep the overall process on track. This is all made possible through NSF's complete in-house capabilities, and product evaluation capacity that far exceeds any other organization in the world. (See "General Information" for more detailed information on Process Flow.)

NSF Online

NSF offers convenient, secure online service so you can obtain relevant information at your convenience, 24 hours per day, seven days per week, from anywhere in the world. Referred to as "NSF Online," the secure website allows customers to view project status, production facility information, test reports, preliminary test results, supplier forms, status information, and invoices, as well as make electronic payments. NSF Online also has an online price calculator for estimating costs on some common contaminant reduction performance tests. This allows clients to explore the costs associated with specific testing at their leisure. Copies of relevant standards can also be downloaded.

GENERAL INFORMATION



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Your NSF Certification Project Manager (CPM) is prepared to assist you with every step in the certification process, to make it as smooth and timely as possible. The following information will be requested by your CPM to begin the process. They will assist you with gathering this information, and completing any necessary forms.

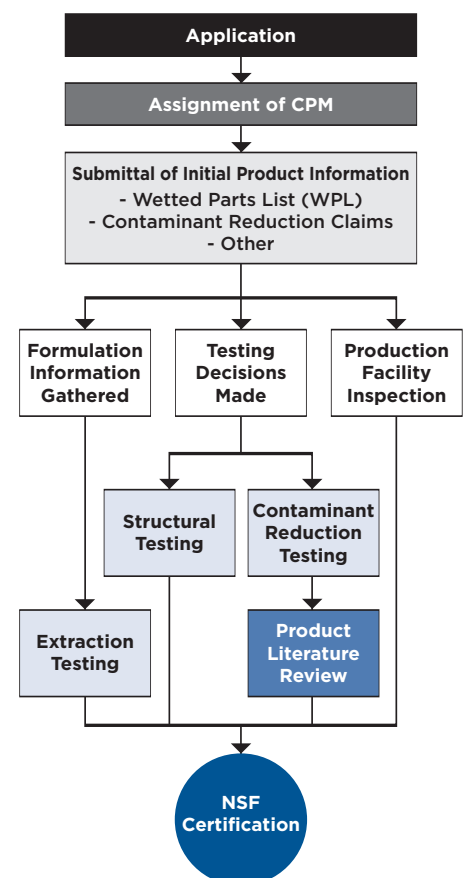
- **Application for certification and deposit**
- **Location of your corporate offices, and location of your production facility**
- **List and description of products requested for certification**
- **Exploded schematic diagrams or drawings of the products**
- **An indication of contaminant reduction claims to be tested, if your products are systems**
- **A list of wetted parts (WPL) for each product**

It is important to note that submittal of this information is critical. If this information is not submitted or is incomplete, it will result in project delays.

Once your CPM has this information, the project can quickly progress. A review of the WPL determines what material formulation information is already on file at NSF, and what information must be gathered from your suppliers. Formulation information on all wetted materials is required by the standards, and allows for proper testing of material safety.

While this information is being collected, NSF can conduct an initial inspection of your production facility. The inspector will explain the inspection requirements and procedures, and answer any questions. Contaminant reduction performance claims testing can be conducted in NSF's laboratory on a parallel path while the inspection is performed and while the formulation information is being collected from your suppliers. Once all the formulation information is received from the suppliers, the product is tested for material safety. While the product is on test, product literature can be reviewed and approved as required by the standards. Once the product has passed all testing and the literature is approved, your CPM will conclude your project by creating your official NSF Certification listing.

Certification Process Flow



FREQUENTLY ASKED QUESTIONS (FAQs)



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Following is a list of frequently asked questions regarding NSF Certification.

Q: Will my information be kept confidential?

A: NSF maintains strict confidentiality in regards to all information discussed with and submitted to NSF by clients and their suppliers. Our staff receives regular training regarding maintenance of confidential business information, and NSF client records are stored securely with restricted access and detailed tracking systems. Any test results, including test failures, are kept confidential by NSF and not made public or shared with anyone.

Q: What is the cost of certification?

A: NSF will use the basic product information that you submit as the basis to provide an accurate cost estimate for the certification of your products. There is no cost to prepare this estimate. It is necessary to have this basic information, as costs will vary depending upon the technology and the preferred contaminant reduction claims for which you are seeking certification. Other factors may include such things as the treatment system capacity and flow rate.

Q: How long will my certification project take?

A: NSF has the most extensive, most advanced DWTU testing laboratories in the world. We also have the largest staff of toxicologists, as well as inspectors located around the world. For most certifications, the laboratory testing can be completed within a few months. Other required activities such as product literature reviews and production facility inspections can be conducted during testing. Sometimes the overall timeline for a certification project is extended because of difficulty in obtaining material formulation information from suppliers (see the section titled “Working With Your Suppliers”).

Q: Is it required that I have all of my contaminant reduction claims tested and certified?

A: No. If you have more than one contaminant reduction claim, it is possible to be NSF Certified for only one of those, or several, or all. It is up to each individual company. In those cases where claims are made, but are not certified, we only require that it be made clear by the company on the product which claims are NSF Certified and which are not.

Q: What is the flow rate of my system?

A: The flow rate is the rate at which water will flow through the system at a certain water pressure. It is at this rate that your system will be tested for the claims you wish to make on your system. For systems that are to be certified under NSF/ANSI Standards 42 and 53, this is usually stated in gallons per minute (gpm) or liters per minute (lpm). For reverse osmosis (RO) systems that are to be certified under NSF/ANSI Standards 58, this is usually stated in gallons per day (gpd) or liters per day (lpd).

Q: What is the capacity of my system?

A: The capacity of a system is based on the volume of water that can be put through a system and still have the contaminant effectively reduced. This is usually provided in gallons or liters. If a system is certified for more than one contaminant, the system may claim only one capacity, and will be the smallest capacity achieved among the certified contaminant reduction claims. As an example, if a chlorine reduction claim reaches 5,000 liters of acceptable treatment, but a lead reduction claim only reaches 2,500 liters, then the 2,500 liters is the smallest capacity and would become the system's only capacity for both chlorine and lead reduction.

Q: What is a Wetted Parts List?

A: A Wetted Parts List (WPL) is a spreadsheet that describes all parts in your product that come in contact with drinking water. Required by your CPM to start the certification process, the completed WPL will indicate the name of the finished part or material supplier, and sometimes the name of the formulator of the raw material. It will also provide the contact area for the parts that are used. In most cases, the wetted contact area will be identified as in² or cm². For medias, such as carbon, the amount will be reported as pounds or grams.

Q: What type of testing is needed?

A: Testing will vary based on what type of product you are certifying, and whether it's a component or a system. (See the chart on Page 2.) If you are certifying a component, such as a cartridge or a housing, a material extraction test will be necessary. If the product is a pressure-bearing component, such as a housing, then a structural integrity test will also be needed. If you are certifying a system, testing will include material extraction and structural integrity, as well as testing for any contaminant reduction claims you wish to make on the system.

Q: When can my initial production facility inspection take place?

A: The production facility inspection needs to take place prior to obtaining product certification, but it can occur at any time during the process.

Q: What will happen during my initial production facility inspection?

A: The inspector will contact you to schedule the initial production facility inspection. During the inspection, they will review the manufacturing process, conduct a walk-through of the production facility to inspect product assembly, packaging, and raw materials, and review purchase records. See Appendix B for more details.

Q: When will I become NSF Listed?

A: A company can become Listed (which is interchangeable with the term “Certified”) when they have successfully completed all required documentation, testing, literature review and inspection requirements. NSF will notify you immediately upon your completion of these requirements.

Q: When can I use the NSF Mark?

A: A company can use the NSF Mark on products that have been shown to meet all the appropriate certification requirements. NSF will notify you immediately upon completion of these requirements.

Q: How will people know my company is NSF Listed?

A: NSF issues official certificates for each listed production facility. NSF also has web-based listings of certified products that can be accessed free of charge by anyone (see www.nsf.org). These online listings are updated daily, are searchable in many different ways, and are used by consumers, buyers, health officials, as well as manufacturing companies, to identify and locate certified systems and components.

Q: What if my product does not meet all of the certification requirements?

A: First, it is important to know that NSF does not share test data — whether passing or failing — with anyone other than the company seeking certification. If a product does not pass a test, it is not the end of the process. The company is given the option to evaluate the cause of the test result and to retest once they have identified the problem and corrected it. NSF is not able to offer advice on changes, as this compromises our independence. If other product testing had already been performed and resulted in passing results prior to the failing test, often times the passing tests do not need to be repeated.



NSF's DWTU Standards contain both mandatory testing requirements and optional testing requirements. Mandatory requirements include material safety and, if applicable, structural integrity testing. Certain minimum contaminant reduction claims may also be mandatory for specific technologies. Systems and components must pass mandatory testing for certification. Optional testing of contaminant reduction claims is available for systems and spans many different options. Contaminant reduction performance claims can also be made on components.

Additionally, systems have mandatory requirements for product literature, including installation and operation instructions, the performance data sheet, data plate, and, if applicable, replacement element packaging.

The standards make clear which tests are necessary for a particular technology. Your CPM will clarify this for your products at the beginning of the certification process. The following is a general overview of each category to provide a basic understanding of these requirements.

Materials Review and Testing: All Technologies

The material safety evaluation is a two-step process, beginning with the formulation review. This review evaluates all water contact materials in the system or component for ingredients, monomers, or impurities that could potentially leach into the water and negatively impact the water quality. The review is performed by NSF's expert toxicologists who will start with the information provided on the Wetted Parts List (WPL). Based on a review of your completed WPL, your CPM will provide you with information request forms to send to your suppliers of each part or assembly in your wetted parts list for which NSF does not already have information on file. Your supplier will complete the applicable forms and return them to NSF.

NSF already has on file more than 45,000 material formulations. If your supplier has previously completed the necessary form, they will not be required to complete it again. This list of formulations is maintained confidentially. However, your CPM has access to this information and will review your WPL to determine which material formulations are already in the database. Some suppliers certify their components with NSF to the DWTU Standards, or other related Standards such as NSF/ANSI 61. These lists of certified products are made public and can be used as a valuable resource when selecting component suppliers. The online certification database can be easily searched by the type of component, leading to a list of certified models, companies, and their contact information. Many certified components, of which there are several thousand, will have the proper formulations already on file with NSF. Selecting these will save time and cost in the certification process. For a list of these certified components, please visit www.nsf.org.

The second step in the process is material extraction testing. Material extraction testing is specified in the standard, and can vary by product technology. Your CPM will communicate with you regarding specific requirements for testing your products for conformance to the applicable standards, as well as details regarding shipping of test samples and the number of test samples that will be required. After initially flushing the product per your instructions, your product is exposed to water under specific conditions. The water derived from the extraction is tested for a variety of potential contaminants that could leach from the materials. There is a standard series of analyses performed for many potential contaminants, and then a further analysis for those potential contaminants the NSF toxicologist may consider important based on the formulations of materials used in the product. Any contaminant found in the water must not exceed maximum values, as indicated in each standard. Material extraction tests take approximately 35 days to complete from receipt of the test samples.

The one exception to the above material safety requirements of the NSF Standards as applied to water treatment technologies is shower filters. Recognizing that shower filters are not intended for the purpose of providing drinking water, the requirements for material safety are less extensive. For shower filters, formulations are still reviewed, but only to demonstrate an absence of lead as an intentional ingredient. No material extraction testing is required for shower filters.

Structural Integrity Testing: All Technologies

All NSF DWTU Standards require structural testing for complete systems and for components connected to a pressurized water supply. The structural tests can include cyclic pressure, hydrostatic pressure and burst pressure. Each test is conducted using one new (previously untested) test unit, such that the same test unit does not have to survive a series of tests. Additionally, tests are not carried out to failure of the product, but rather to the end of the prescribed test where the product must remain intact and without any water leakage.

Systems designed to work under pressure usually require a hydrostatic pressure test. For this test, the pressure in the system is raised to a maximum pressure prescribed by the standard and held for 15 minutes. The system must remain intact and watertight to pass. For most systems, the hydrostatic pressure test is conducted at 3 times the maximum working pressure, or 300 psig, whichever is greater. The maximum pressure for open discharge systems is 1.5 times the maximum working pressure or 150 psig, whichever is greater.

Most systems also require a cyclic test. The pressure to the system will increase to a specified pressure and then release to <2 psig before being increased again for a specified number of cycles. For this test, most systems are subjected to 100,000 cycles of 150 psig pressure. Open discharge systems are subjected to 10,000 cycles of 50 psig pressure. To pass the test, systems must not leak water.

Burst tests are required for non-metallic pressure vessel components. Complete systems are usually not burst tested. For a burst test, all openings are closed off, and pressure is increased in the tank to 400 psig or 4 times the maximum working pressure, whichever is greater. The maximum pressure is held for a brief moment and released. To pass the test, pressure vessels must not leak water.

Filter System Contaminant Reduction Testing

Filter system contaminant reduction testing is performed under Standards 42 and 53. These two standards are identical in their requirements for everything except contaminant reduction claims. Standard 42 is for aesthetic claims only, whereas Standard 53 is for health claims only. Most claims under both Standards 42 and 53 can be divided into two categories:

- **Chemical Reduction – includes chlorine, VOC, pesticides, herbicides, metals**
- **Mechanical Reduction – includes cyst, turbidity, asbestos, particulate**

Two systems must be used for each test, and new systems must be used for each test. So, for example, to test for chlorine reduction and VOC reduction, four systems total are needed. In all tests, both systems are tested at the same time under the same conditions and both must pass the test in order to successfully meet the requirements of the standard. If only one of the two systems passes the test, the overall test is a fail.

Chemical reduction testing is based on estimated capacity of the filtration element. Testing is continued to the following end points:

- **Standard 42: 100% of capacity**
- **Standard 53 with Performance Indication Device (PID): 120% of capacity**
- **Standard 53 without PID: 200% of capacity**

Testing beyond 100% of capacity is for health-related claims only, and provides for an additional safety factor if the user does not properly maintain the system per the manufacturer's instructions. Regardless of which safety factor is applied, i.e. either 120% or 200%, the resulting claim made by the manufacturer upon successful completion of the test can only be 100% of capacity. For example, a system that has no PID, with a requested lead claim for 1,000 liters, will be tested to 2,000 liters. The product must reduce lead to the requirements of the standard at 2,000 liters. If it is able to meet this test requirement, then the product will be certified as providing 1,000 liters of lead reduction. If the system had a PID, testing would have been stopped at 1,200 liters, and the product would likewise be certified as providing 1,000 liters of lead reduction. This is only applicable for health claims under Standard 53.

Sometimes companies are not sure of the capacity of the filtration element. There are some guidelines to keep in mind for these cases:

- **Only one capacity can be claimed for each system. If reduction of several contaminants will be claimed, the contaminant that demonstrates the least amount of capacity will decide the system capacity.**
- **The NSF laboratory can collect additional sample points for any test. This additional data can be used to establish the true system capacity. These test results may be used for certification. This is a great way to do research testing and certification testing at the same time.**

A PID is an indicator that tells the user when to change the filter. It must track volume of treated water through the system, and notify the system user when to change the filtration element based on reaching capacity. A device that counts calendar days is not considered a PID. Ways to notify the user to change the filtration element include activating lights, or stopping the flow of treated water. There is a test required by Standard 53 to make sure the PID activates properly.

Most contaminant reduction testing requires only one test. However, claims made under Standard 53 for metal contaminants must be tested at two different pH levels, 6.5 and 8.5. For example, to claim lead reduction, two different tests must be conducted, and passing results must be achieved for both to be certified for lead reduction. No claim can be made based on passing only one pH test.

Mechanical reduction testing is not based on capacity, but rather on a reduction in flow rate over the period of the test. Samples are collected at several points of flow reduction, based on a percentage of the initial flow rate, with the final sample point being 75% reduction in initial flow rate, or 50% reduction in flow for particulate reduction.

Testing of plumbed-in systems, whether for chemical or mechanical contaminant reduction claims, is conducted with on/off cycling of the system during the test. This cycling simulates the opening and closing of faucet valves, and stopping and starting of flow through the system. For mechanical reduction tests, the cycle is 50% on and 50% off (50/50), or an equal amount of time with flow and without flow. For chemical reduction tests, the cycle is either 50/50, or 10% on and 90% off (10/90). In either case, the maximum time for a total cycle is 40 minutes, and a minimum of 15 minutes. An example 10/90 cycle is flow for 2 minutes, followed by no flow for 18 minutes, for a 20-minute total cycle time. The choice is made by the company on a test-by-test basis. Reasons for choosing one cycle over another may include the following:

- **50/50 – test goes faster, which reduces testing costs**
- **10/90 – test takes longer which increases the cost, but may potentially improve performance for difficult contaminants**

Gravity-feed batch systems, such as pitchers and jug filters, are tested manually, according to guidelines provided by the company for the maximum number of batches per day that can be treated.

Testing is coordinated by your CPM. Test requests are documented in forms known as PSFs for Product Sample Forms, that are created and provided to you by your CPM. These forms include all test specifications, and serve as a record for both you and for NSF. Please review these forms prior to submitting test systems to make sure all of the test specifications are correct.

Reverse Osmosis System Contaminant Reduction Testing

All reverse osmosis (RO) systems are evaluated to NSF/ANSI Standard 58. Unlike Standards 42 and 53 where any contaminant reduction claim can be selected, Standard 58 requires that all systems be tested and certified for the reduction of total dissolved solids (TDS). This test is prescribed by the standard and lasts for seven days for any RO system. It also includes measurement of the system's daily production rate (DPR), system recovery, and where applicable, system efficiency.

Other contaminant reduction claims on RO systems are optional, and include primarily chemical reduction claims, such as metal and inorganic contaminants. As with the TDS test, all contaminant reduction tests last seven days. Testing of claims on RO systems is performed after removal of any pre- and post- filters, so the performance is based on the RO membrane only.

Two systems must be used for each test. In all tests, both systems are tested at the same time under the same conditions and both must pass the test in order to successfully meet the requirements of the standard. If only one of the two systems passes the test, the overall test is a fail.

Because membranes can last for several years and are not appreciably damaged by some tests, it is possible to use the same RO systems for several tests. It is also possible to test certain contaminants at the same time. By taking these measures, you are able to reduce your testing costs. Your CPM can advise you of these important options.

Literature Review: All Technologies

Literature Requirements

The purpose of the product literature is to help consumers understand the functioning of the product, as well as maintenance needs. All literature for NSF Certified products must comply with the requirements of the product literature section of the applicable standard, as well as with some NSF requirements for using the NSF Mark. According to the NSF Standards, literature is defined as:

- **Installation and Maintenance Instructions**
- **Performance Data Sheet**
- **Data Plate**
- **Replacement Element Packaging**

Information such as parts and service availability, and company name and address, are required. Certain contaminant reduction claims may require specific statements about those claims to be included in the literature. All information provided in the literature must be consistent with the tested conditions, such as flow rate, capacity and conditioning instructions.

In addition, any product brochures, print ads, or website advertising that makes claims or statements relating to your certification must conform to NSF requirements for use of the NSF Mark.

Your CPM can assist you in this process by reviewing draft literature prior to having the literature printed as final. This type of review can be very helpful by alerting you to any missing requirements early in the process. CPMs can work with literature in a variety of formats, although .pdf files are most commonly used and are preferred. NSF strongly advises that the literature be reviewed and approved by your CPM prior to actually printing final materials.



Company Listing Options

NSF offers several options for listing a company whose products have been NSF Certified.

Option One - Manufacturer Listing

The most frequently used listing for a company is one where the company requesting the listing is also the manufacturer of the product to be certified. In this case the company follows a normal application process and product submittal for evaluation, along with an initial inspection of the production facility. This would be true whether the manufacturer produces and assembles the complete product from raw materials, or partially from raw materials and partially from the purchase of already-manufactured components, or completely from the purchase of already-manufactured components.

Option Two - OTLM Listing

A second option is where a company utilizes contract manufacturing through an NSF Certified production facility that is owned by another NSF Listed company. This option is referred to as an “Other Than the Listed Manufacturer” (OTLM) listing. One benefit of this option is reduced inspection fees, because the NSF inspector can perform inspections for both companies during the same visit to a single production facility.

Under both options one and two, the product undergoes complete testing and evaluation prior to becoming NSF Certified.

Option Three - ANF Listing

A third option is where a company private-labels a product that is already certified by another listed company, and which is manufactured at that listed company’s production facility. This option is referred to as an “Another Name For” (ANF) listing. The company who is obtaining the private-labeled product certification (the ANF company) will have their own complete listing, with their own model designations, based entirely on the product already certified by the listed company producing the product (the base company). Because the product is identical to the certified product of the already listed company (the base company), no inspection fee is charged for ANF listings.

Requirements for an ANF Listing	
A	ANF Application
B	Cross-reference showing base and ANF products
C	ANF product literature
D	Letter from ANF Company indicating desire to have an ANF Listing

Option Four - Private Label Product Without Own Listing

A fourth and final listing option is for companies who use the private-label option noted in option three, but do not create their own listing. Instead, they have their private-labeled product appear as a separate model under the already-listed company's product listing. The product literature of the private-labeled product can carry the name of the non-listed company. However, it must also reference the name of the company that does have the NSF Listing so that consumers can trace the product back to NSF's published listings. This option is most economical because no additional listing or inspection fees are applied.

Additional Listing Information

With options three and four, no further product testing is needed, as the certification is based on already-certified product. The only added minimal product evaluation cost is for review of the product literature specific to the newly listed, private-labeled product. Options three and four can be completed much faster than options one and two.

All of these listing types offer companies a variety of options at different price points to obtain NSF Certification. However, they differ in terms of which company is responsible and has authority over the listing, and which has access to confidential product, testing, and audit information. Your CPM is ready to discuss these options with you in detail, and answer any questions to help you determine which is best for you.

Production Facility Inspections

Inspections are performed to verify that certified products are manufactured consistent with documentation submitted to NSF, and with the products evaluated.

Initial inspections are performed during the course of an initial certification project for companies not already listed by NSF, and are conducted prior to completing the product certification process. Initial inspections are scheduled with clients in advance of the visit. The purpose of the initial inspection is to verify information submitted to NSF, and to provide information to client personnel regarding requirements for future inspections.

Once listed, unannounced, annual inspections are performed. These inspections may include review of inventory records, review of official product documentation reports provided by NSF, parts and material verification, a manufacturing walk-through, quality assurance and testing that may be performed by the company, and use of the Marking on products and literature. For listed companies that want to certify additional products that will be manufactured at the listed production facility, these certified products can be added to a current listing without the need for an initial audit. The newly added certified products will be inspected during the next unannounced, annual visit to the production facility.

Each inspection is concluded with a summary of findings and conclusions. A final report follows each inspection. These reports include the inspection scope, as well as any variances found during the inspection. These variances must be corrected in a timely manner, to the satisfaction of the inspector.

Product Retesting

Product retesting is required at five-year intervals for continued certification. Product samples needed for five-year retesting will most likely be collected by inspectors at the time of the annual inspection.








Changes to Certified Products

It is common for companies to change products after they have been certified. Certification requires that companies inform NSF prior to making the change and be authorized to make the change. Authorization comes through a review of the change by NSF and a determination of any further evaluations that may be necessary to ensure the product continues to comply fully with the certification requirements. Your CPM will provide you with a reply regarding the change and any evaluations that may be necessary. Generally, testing performed previously for the initial certification of the product will still be valid to support the change. If further testing is needed, it is often far less than what was conducted initially.

Use of the NSF Mark

The NSF Mark is a widely recognizable confirmation that a product meets the high standards of quality, reliability and performance established by the NSF expert committees. Companies whose products bear this Mark will have complied with the most comprehensive standards available anywhere in the world.

Certified complete systems must bear the NSF Mark, and the Mark must also be displayed on packaging of certified components and replacement elements. Products bearing the Mark must be in full compliance with all applicable certification requirements; and will bear the Mark only when certified. There are specific requirements for wording associated with the NSF Mark on packaging, operation manuals, data plates, literature, and even on some types of shipping documents (see chart below). The Mark may be applied to products only at certified production facilities. Your CPM will clarify for you the applicable requirements of use of the NSF Mark on your certified products.

Complete Functional Systems or where the Replacement Element Data Plate Serves as the System Data Plate	Replacement Elements	Components
<div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>System Tested and Certified by NSF International against NSF/ANSI Standard ___ for the reduction of ___.</p> </div> <div style="text-align: center;"> <p>OR</p>  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>System Tested and Certified by NSF International against NSF/ANSI Standard ___ for the reduction of ___.</p> </div> <div style="text-align: center;"> <p>OR</p>  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Tested and Certified by NSF International for the reduction of ___.</p> </div>	<div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Tested and Certified by NSF International against NSF/ANSI Standard ___ in model ___ for the reduction of ___.</p> </div> <div style="text-align: center;"> <p>REPLACEMENT ELEMENT</p> </div> <div style="text-align: center;"> <p>OR</p>  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Tested and Certified by NSF International against NSF/ANSI Standard ___ in model ___ for the reduction of ___.</p> </div> <div style="text-align: center;"> <p>REPLACEMENT ELEMENT</p> </div>	<div style="text-align: center;">  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>This (name of component) is Tested and Certified by NSF International against NSF/ANSI Standard ___ for material requirements only.</p> </div> <div style="text-align: center;"> <p>COMPONENT</p> </div> <div style="text-align: center;"> <p>OR</p>  </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>This (name of component) is Tested and Certified by NSF International against NSF/ANSI Standard ___ for material requirements only.</p> </div> <div style="text-align: center;"> <p>COMPONENT</p> </div> <div style="text-align: center;"> <p>OR</p> <p>Box statement if component is certified for materials and structural requirements</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>This (name of component) is Tested and Certified by NSF International against NSF/ANSI Standard ___ for materials and structural integrity requirements</p> </div>

WORKING WITH YOUR SUPPLIERS

Today's marketplace includes many levels of product distribution with thousands of companies selling millions of products worldwide. Distributors may be the manufacturer of a product. However, many times they simply distribute products manufactured by others. Some distributors even distribute to other distributors. By the time these products reach you, they may be three or more steps removed from the actual product manufacturer.

NSF distinguishes these relationships when obtaining documentation on the parts that companies purchase and use in their certified products. For the purpose of tracking this information, NSF uses terms such as "supplier" and "formulator." The company you purchase parts from directly is your supplier. The company that actually owns the "recipe" and manufactures a raw material is the formulator. In some cases, when you purchase directly from the formulator, the supplier and formulator are one in the same. Oftentimes they are two separate companies.

NSF also tracks molders of plastic parts that are used by listed companies. These molders may or may not add ingredients such as pigments or mold release agents to materials purchased from formulators.

These relationships are tracked by NSF for two reasons. First, it is important that we document your direct suppliers, formulators and molders to know what comprises the product we have certified. This information can then be verified during the inspection.

Second, these relationships are important in order to gather the necessary material formulation information (see Materials Review and Testing in the "NSF Standards Requirements" section). From the distributor arrangement noted above, it can be a significant task to gather the required formulation information. Having more than 45,000 material formulations already on file at NSF, much of this work is already done. For those formulations not on file, it is necessary for you to work with your suppliers and formulators to gather this information.

Your CPM will work closely with you to assist in gathering this information. However, be aware that you can have a huge, positive impact on the process by proactively engaging your suppliers in making them aware of your certification project, by letting them know what will be expected of them, and by following up with them to ensure they submit the required information in a timely manner. We will provide them with the necessary information, forms, confidential procedures, and other assistance to make this process move as quickly as possible, but ultimately you will have ownership of this process.



Absorptive: Absorbs or “soaks up” contaminants from water.

Activated Carbon System: A system or component that uses activated carbon in its processes.

Additive: A substance that is added, directly or indirectly, to the drinking water.

Adsorptive: Adsorbs, or removes by surface interaction, contaminants from water.

Aesthetic: Factors related to drinking water that are not health concerns.

Another Name For (ANF): A type of NSF Listing in which an already-listed company certifies newly named products under a different company’s name and separate listing. The new products coming under the new company’s listing must be exactly the same as the already certified products except for the trade designation/model number.

Audit: See Inspection.

Capacity: The volume of water a system can process while maintaining a minimum amount of contaminant reduction performance. This is usually stated in gallons or liters.

Certification Project Manager (CPM): A representative of NSF’s DWTU program who will assist you through the certification process.

Chemical Reduction: Testing to determine the capability of a system to reduce contaminants in water.

Company: Any private or public organization, group, individual, or other entity contracting with NSF for certification, or a subsidiary or division of such an entity.

Component: A part of a system. Components can be certified alone but can bear the NSF Mark on the product packaging only and not on the product itself. Types of components include housings, filters, membranes, faucets, fittings, tubing, valves, storage tanks, etc.

Counter-Top Connected to Sink Faucet: Systems that are placed on a counter and connected by tubing to an existing kitchen sink faucet. Usually a diverter is used to direct water through the system as needed. The treated water dispenses out of a return tube from the kitchen sink faucet or the treated water is dispensed from a spout on the system.

Counter-Top Manual Fill: Systems that are placed on a counter and filled by the consumer by pouring water into the system and then the consumer activates the system that produces a batch of treated water. A manual fill distiller is usually considered to be a Counter-Top Manual Fill.

Cycling: A process of testing that simulates the stopping and starting of flow within a system. Testing can be completed on a 50/50 or 10/90 cycle, per the companies choosing.

Cyst: The resistant stage in the life cycle of waterborne protozoa that may be found in surface drinking water supplies and includes oocysts of *Cryptosporidium* and *Toxoplasma* and cysts of *Giardia* and *Entamoeba*.

Daily Production Rate (DPR): The amount of product water a system produces per day. This is usually used in reference to reverse osmosis systems.

Data Plate: A label or plate that is permanently attached to the system. It is included under NSF's literature requirements.

Distillation: A process that consists of vaporizing a liquid and then condensing it. Distillers are certified under NSF/ANSI Standard 62.

Distributor: A purchasing agent/supplier who does not directly manufacture or add to the parts or materials.

Documentation Report: A collection of documents pertaining to the certified system or component including the data sheet, exploded schematics, wetted parts list, literature, and testing information. A copy is to be kept at NSF and a CD is mailed to the listed company's production facility.

Efficiency Rating: Percentage measurement of the amount of influent water that is available as product water as used in reference to reverse osmosis systems.

Faucet Mount: Systems that are mounted on the existing kitchen sink faucet (usually by replacing the aerator or installed immediately before the aerator). A diverter is usually used to direct water through the system when treated drinking water is desired.

Flushing Instructions: A company's instructions to the consumer detailing the amount of time or volume of water needed to condition the system or component before use.

Formulator: Manufacturer of individual materials or parts from raw ingredients.

Influent: Test water put into a DWTU system for contaminant reduction testing.

Inspection: A visit by NSF's representative to a listed company's production facility to verify proper production of certified product.

Literature: Includes the owner's manual, performance data sheet, data plate, and packaging. Literature reviews are required under most NSF DWTU Standards.

Maximum Operating Temperature: The maximum temperature permitted for a system or component as determined by the manufacturer.

Maximum Working Pressure: The maximum pressure permitted for a system or component as determined by the manufacturer.

Mechanical Reduction: Testing to determine the capability of a system to mechanically separate particulate matter from water, includes claims of asbestos reduction, cyst reduction, particulate reduction, and turbidity reduction.

Media: Material(s) in a system or component that has adsorptive or absorptive properties and contributes to the reduction of contaminants in water.

Model Number: The name or trade designation of the product being certified.

Open Discharge: A system subject to line pressure only during the period of flow to the inlet of the device, and not during periods of no flow.

Other Than Listed Manufacturer (OTLM): A type of NSF listing in which a listed company may have their certified product produced by another listed company, and at that listed company's production facility. An OTLM product may or may not have the same trade designation/model number.

Owner's Manual: A manufacturer's instructions to the consumer detailing the general operation and maintenance requirements for the system or component. Also known as Installation Instructions.

Product Assembly (PA) Form: Form used for suppliers to confidentially disclose formulation information regarding assemblies that are not certified. Examples may include valves or filters.

Performance Data Sheet (PDS): A part of the literature requirement that details the actual results of the performance testing completed by NSF.

Performance Indication Device (PID): A device in the system or filter that tracks the volume of water treated by the system. The device actively notifies the user when to replace the filter. A filter change indicator.

Personal Water Bottle: A system that consists of a bottle and a filter. The filter may be integrated with the push/pull cap of the filter or may be integrated with a straw. These systems are certified under NSF/ANSI Standard 42.

Plant: See Production Facility.

Plumbed-In: A system that is installed directly into a pressurized water supply line. Examples are systems installed under the sink and discharge through a faucet, and systems installed in refrigerators for discharge through a water dispenser or ice-maker.

Plumbed-In to Separate Tap: A system that discharges water through a dedicated, auxiliary faucet.

Point-of-Entry (POE): A system that treats most or all the water entering a house. Point-of-Entry systems are usually installed after the water meter.

Point-of-Use (POU): A system that treats water at a single tap or multiple taps. POU systems are not used to treat an entire household water supply.

Post-Filter: A filter in place after the membrane in a reverse osmosis system. Post-filters may have claims associated with them such as chlorine or VOC reduction.

Pour Through: A system that has a filter that the water drips through by gravity into a pitcher or jug. Pour through systems typically have a lower capacity (i.e. are rated for fewer gallons) than other types of systems, and are certified under NSF/ANSI Standards 42 and 53.

Pre-Filter: A filter in place before the membrane in a reverse osmosis system. Pre-filters may not have claims associated with them.

Production Facility: A listed production location where the NSF Mark is applied to certified products.

Product Working (PW) File: An internal NSF file that contains applicable information pertaining to a certified system or component. It includes data sheets, exploded schematics, and wetted parts lists.

Rated Service Flow: The flow rate of a system that has been determined by the manufacturer. It is usually expressed in liters per minute or gallons per minute.

Recovery Rating: Percentage measurement in reverse osmosis systems of the amount of influent water that is available as product water when operated without a storage tank or the storage tank is bypassed.

Replacement Element: An element or component of a system that is sold pre-packaged. This would be a membrane, filter, media, or a combination thereof.

Reverse Osmosis System: A system that uses the method of reverse osmosis (forcing influent water through a semi-permeable membrane) to treat drinking water. These systems are certified under NSF/ANSI Standard 58.

Shower Filter System: A system that attaches to a shower fixture to provide treated shower water. These systems are certified under NSF/ANSI Standard 177.

Supplier: A company that supplies materials or components to an NSF Listed company. Suppliers can also be direct formulators of these items. Suppliers can also add ingredients to the materials or components supplied by the formulator.

System: A complete water treatment product comprised of components. Types of systems include Counter-Top Manual Fill, Counter-Top Connected to Sink Faucet, Faucet Mount, Personal Water Bottle, Plumbed-In, Plumbed-In to Separate Tap, Point-of-Entry, Pour Through, and Shower Filter.

Test Dust: Specially processed dust with specific particle size distributions, used for testing of mechanical reduction claims under NSF/ANSI Standards 42, 53, and 58.

Total Dissolved Solids (TDS): The sum of the mineral salts in water, measured in mg/L.

Ultra-Violet (UV) System: A system that utilizes ultra-violet light to treat drinking water. These systems are certified under NSF/ANSI Standard 55.

Water Softener: System designed to use cation exchange to soften water. These systems are certified under NSF/ANSI Standard 44.

Water Treatment (WT) Form: Form used for suppliers to confidentially disclose formulation information regarding materials that are not certified. Examples may include polypropylene or an O-ring.

Wetted Parts List (WPL) Form: Completed by the product manufacturer, the WPL is a complete list of components for the product that contact potable water. See Appendix A for a completed example of this form.

APPENDIX A: WETTED PARTS LIST (WPL)



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WETTED PARTS LIST (WPL)

Description:		NEW PRODUCT												
Item#	Alt Ind	Part Description	Part#	Supplier	Formulator	Material Type	Part Trade Name	Qty	Color	Wetted Area (per part)	Wetted Area (units)	Media Amt	Media Units	DCC#
1		END CAP	100	ABC MOLDERS	RESIN COMPANY	ABS	5678-4	2	BLUE	5	IN2			INTERNAL USE
2		NETTING	101	NETTING COMPANY	NETTING COMPANY	POLYPROPYLENE	SERIES C	1		18	IN2			INTERNAL USE
3		CARBON BLOCK	105	BLOCK DEPOT	BLOCK DEPOT	VARIOUS	80325-10-25	1		VARIOUS				INTERNAL USE
4	A	GASKET	106	GASKET DISTRIBUTOR	SEAL TIGHT	EPDM	E 70245	2		3	IN2			INTERNAL USE
4	A	GASKET	106	SEAL COMPANY	SEAL COMPANY	NBR	N 42ABC	2		3	IN2			INTERNAL USE
5		WRAP	107	WRAP COMPANY	WRAP COMPANY	POLYPROPYLENE	10-25FR	1		81	IN2			INTERNAL USE

THE **WETTED PARTS LIST** NAMES ALL THE PARTS OF THE PRODUCT THAT COME IN CONTACT WITH DRINKING WATER. THE FOLLOWING IS A BRIEF DESCRIPTION OF EACH COLUMN OF INFORMATION LISTED ABOVE.

ITEM # : THIS NUMBER LINKS THE PART BEING DESCRIBED ON THE WETTED PARTS LIST TO THE PRODUCT DRAWING.

ALT IND : ALTERNATE INDICATOR- GROUPS PARTS THAT ARE ALTERNATES TO EACH OTHER. THIS WETTED PARTS LIST SHOWS TWO SOURCES OF GASKETS.

PART DESCRIPTION : THIS IS BRIEF DESCRIPTION OF THE PART BEING DESCRIBED.

PART # : THIS IS YOUR INTERNAL PART NUMBER THAT IS USED TO ORDER PARTS FROM YOUR SUPPLIER.

SUPPLIER : THE NAME OF THE COMPANY THAT PROVIDES AN ITEM DIRECTLY TO YOUR COMPANY. THE SUPPLIER COULD ALSO BE THE FORMULATOR, EXTRUDER, MOLDER, FABRICATOR, ASSEMBLER, OR MIXER.

FORMULATOR : THE NAME OF THE COMPANY THAT PREPARES A MATERIAL ACCORDING TO A FORMULA. THE FORMULATOR AND SUPPLIER COULD BE THE SAME COMPANY.

MATERIAL TYPE : PROVIDE THE COMMON NAME FOR THE POLYMER.

PART TRADE NAME : PROVIDE THE SUPPLIER'S COMPLETE TRADE DESIGNATION FOR THE PART BEING DESCRIBED.

QTY : QUANTITY- INDICATE HOW MANY ARE USED IN ONE PRODUCT.

COLOR : INDICATE THE COLOR OF THE PIGMENT OR COLORANT INGREDIENT IF APPLICABLE.

WETTED AREA (PER PART) : INDICATE THE AREA OF THE NON-MEDIA PART THAT IS IN CONTACT WITH DRINKING WATER.

WETTED AREA OR MEDIA AMOUNT IS NEEDED. IF THE PART IS MADE OF MULTIPLE COMPONENTS YOU CAN INDICATE "VARIOUS".

WETTED AREA (UNITS) : INDICATE A UNIT OF AREA. SQUARE INCHES OR SQUARE CENTIMETERS ARE COMMON UNITS.

MEDIA AMT : MEDIA AMOUNT- INDICATE THE AMOUNT OF THE MEDIA MATERIAL. THIS IS USED WHEN WETTED AREA IS NOT APPROPRIATE.

MEDIA UNITS : INDICATE A UNIT OF MASS. GRAMS AND OUNCES ARE COMMON UNITS.

DCC# : DOCUMENT CONTROL CODE-THIS IS A NUMBER THAT IS GENERATED BY NSF INTERNATIONAL TO TRACK THE MATERIAL FILE FORMULATION. NSF INTERNATIONAL WILL PROVIDE THIS NUMBER. THE NUMBER IS SPECIFIC TO THE MATERIAL NOT THE PART.

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APPENDIX B: INSPECTION CHECKLIST

NSF production facility inspections include the following activities:

- **Review of formulation and/or manufacturing processes of all applied or certified products or materials.**
- **Inspection of product manufacturing.**
- **Review records of raw material suppliers, component suppliers, and ingredient suppliers, through purchase orders, purchasing records, or other production facility designated tracking systems.**
- **Review quality control programs and records.**
- **Observation of quality control testing.**
- **Review of analytical procedures and methods.**

APPENDIX C: NSF STANDARDS SUMMARIES



The NSF/ANSI DWTU Standards cover a broad range of products, with each standard addressing a specific technology. Following is a description of each standard:

NSF/ANSI Standard 42

The scope of Standard 42 is to establish the minimum requirements for material safety, structural integrity, product literature, and aesthetic, non-health related contaminant reduction performance claims. The most popular claims are chlorine reduction and particulate reduction. The most common technology addressed by Standard 42 is carbon filtration, and the standard includes both point-of-entry (POE) and point-of-use (POU) products.

NSF/ANSI Standard 44

Standard 44 establishes minimum requirements for the certification of residential cation exchange water softeners. The scope of Standard 44 includes material safety, structural integrity, accuracy of the brine system, product literature, and the reduction of hardness and the reduction of specific contaminants from a known quality water source. The most popular claims made under standard 44 are barium reduction, radium 226/228 reduction and softener performance.

NSF/ANSI Standard 53

Standard 53 establishes minimum requirements for material safety, structural integrity, product literature, and health related contaminant reduction performance claims such as lead, cyst, and VOC reduction, among many others. The most common technology addressed by Standard 53 is carbon filtration, and the standard includes both POE and POU products. Some products fall under the scope of both Standards 42 and 53 because they claim a combination of aesthetic and health claims.

NSF/ANSI Standard 55

Standard 55 establishes minimum requirements for the certification of ultra-violet (UV) systems. The scope of Standard 55 includes material safety, structural integrity, product literature, and UV performance. UV systems are categorized either as Class A (delivers minimum 40 mJ/cm² UV dose and has an alarm) or Class B (delivers minimum 16 mJ/cm²). Systems may be POE or POU. Class A systems may claim to disinfect water that may be contaminated with pathogenic bacteria, viruses, Cryptosporidium, or Giardia. Class B systems may claim to reduce normally occurring nuisance microorganisms.

NSF/ANSI Standard 58

Standard 58 establishes minimum requirements for the certification of POU reverse osmosis systems. The scope of Standard 58 includes material safety, structural integrity, product literature, total dissolved solids (TDS) reduction, and additional contaminant reduction claims. These additional contaminant reduction claims may include cyst reduction, barium reduction, radium 226/228 reduction, copper reduction, hexavalent and trivalent chromium reduction, arsenic reduction, nitrate/nitrite reduction, cadmium and lead reduction.

NSF/ANSI Standard 62

Standard 62 establishes minimum requirements for the certification of POU and POE distillation systems. The scope of Standard 62 includes material safety, structural integrity, product literature, total dissolved solids (TDS) reduction, and additional contaminant reduction claims.

NSF/ANSI Standard 177

Standard 177 establishes minimum requirements for the certification of residential shower filter systems. The scope of Standard 177 includes material safety, structural integrity, product literature, and free available chlorine reduction.

CONTACT INFORMATION



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Please ask for the DWTU Sales Account Executive or the DWTU Operations Manager.

Our Mission:

NSF International, an independent, not-for-profit, nongovernmental organization, is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders.



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