Component Certification Specification

Company name: Heater Company X **Corporate Number:** 12340

Location(s): City/State/Country **Plant Number:** 12341

Products(s): Heating Product, Gas Fired, Electric, Solar/Radiant
Sizes: BTU or Heat Rise at 50F, 85F, or other claimed input water temperature

Standard(s): NSF/ANSI Standard 50,

Purpose: This product is covered by the scope of NSF/ANSI Standard 50 applicable requirements can be found within the body of the standards. This component specification is intended to document the portions of the standard that applies to this product and any additional requirements which must be met as part of NSF certification.

Materials (NSF/ANSI Standard 50):

Must comply Section 3 – Materials
3.2 Materials formulation,
3.3 Corrosion resistance,
3.4 Dissimilar Metals,
3.5 Insulating Fittings,
3.6 Piping Materials,

Design and Construction (NSF/ANSI Standard 50):

Must comply with Section 4 – Design and Construction
4.1 Mechanical Parts
4.1.1 Installation of piping, valves, and fittings
4.1.2 Assembly – must be capable of being disassembled for maintenance and repair
4.1.3 Closing and sealing devices clamps, gaskets, and sealing devices shall not leak when subjected to applicable pressure requirements
4.2 Electrical requirements, Electrical components shall conform to applicable requirements of the National Electric Code (NEC)

Marking

The heater shall be clearly and permanently marked or labeled with the following:

1. NSF Mark
2. Manufacturer's Name (Company name) and address
3. Trade/model designation
4. Serial Number or Production date code (with explanation of date code received during audit)
5. Working pressure (maximum working pressure)
6. Temperature rise (minimum from inlet temperature of 50F, 86F, 104F or other claims)
7. Design flow rate (maximum flow rate)
8. Head loss (head or pressure loss through the device at maximum flow rate)

Testing by NSF

Working Pressure-The working pressure of a heater shall be 345 kPa (50 psi) or greater for public/commercial applications and 173 kPa or (25psi) or greater for residential applications.

1. Physical Evaluation – Review of marking, design and construction

2. Dimensions- Verify connections per ASME, ASTM, etc. sizing standards for threads, sockets, flanges
3. Pressure testing (performed in order)
   Hydrostatic Pressure-equal to two times the working pressure (achieved within 60-70 seconds)
   Cyclic Strength-20,000 consecutive low-high pressure cycles
   Burst Strength-Hydrostatic pressure equal to 1.5 times the working pressure for 300 seconds
4. Head Loss-Loss through the heater shall not exceed the manufacturer's maximum design head loss.
5. Temperature Rise-Test per NSF Standard 5
6. Thermostat/Thermometer Accuracy (if applicable)

In-Plant QC Tests w/ NSF Auditor to Verify:

The following tests are required at the production location records are to be maintained and reviewed by NSF Staff:
(To be determined based on production QA/QC procedure)

Sampling and Testing (NSF 50):

Product to be sampled for full retesting every 5 years. Requires collection of 2 heaters

1. Physical Evaluation – Review of marking, design and construction
2. Dimensions- Verify connections per ASME, ASTM, etc. sizing standards for threads, sockets, flanges
3. Pressure testing (performed in order)
   Hydrostatic Pressure-equal to two times the working pressure (achieved within 60-70 seconds)
   Cyclic Strength-20,000 consecutive low-high pressure cycles
   Burst Strength-Hydrostatic pressure equal to 1.5 times the working pressure for 300 seconds
4. Head Loss-Loss through the heater shall not exceed the manufacturer's maximum design head loss.
5. Temperature Rise-Test per NSF Standard 5
6. Thermostat/Thermometer Accuracy (if applicable)

This document describes the annual sampling and testing requirements for the product(s) given above. This document will be maintained on file at the production facility and NSF International. This document must also be made available to NSF Staff upon request.

