

**ASSE International
Product (Seal) Listing Program**

ASSE 1087-2018
Performance Requirements for Commercial and Food Service Water Treatment
Equipment Utilizing Drinking Water

Manufacturer: _____

Contact Person: _____ **E-mail:** _____

Address: _____

Laboratory: _____ **Laboratory File Number:** _____

Model # Tested: _____

Model Size: _____

Additional models report applies to: _____

Additional Model Information (i.e. orientation, series, end connections, shut-off valves)

Date models received by laboratory: _____ **Date testing began:** _____

Date testing was completed _____

If models were damaged during shipment, describe damages:

Prototype or production sample? _____

Were all tests performed at the selected laboratory? Yes No

If offsite, identify location: _____

General information and instructions for the testing engineer:

The results within this report apply only to the models listed above.

There may be items for which the judgment of the test engineer will be involved. Should there be a question of compliance with that provision of the standard, a conference with the manufacturer should be arranged to enable a satisfactory solution of the question.

Should disagreement persist and compliance remain in question by the test agency, the agency shall, if the product is in compliance with all other requirements of the standard, file a complete report on the questionable items together with the test report, for evaluation by the ASSE Seal Control Board. The Seal Control Board will then review and rule on the question of compliance with the intent of the standard then involved.

Documentation of material compliance must be furnished by the manufacturer. The manufacturer shall furnish to the testing agency, a bill of material which clearly identifies the material of each part included in the product construction. This identification must include any standards which relate thereto.

Section I

1.0 General

1.1 Application

Does the device meet the application?

Yes No Questionable

If questionable, explain: _____

1.2 Scope

1.2.1 Description

Does this device conform to the product described in the standard?

Yes No Questionable

If no or questionable, explain _____

1.2.2 Connections

Please check all that apply with regards to the pipe threads and other connections and the applicable standards:

- Tapered pipe threads complying with ASME B1.20.1
- Dry seal pipe threads complying with ASME B1.20.3
- Compression assemblies compatible with SAE J 512
- Soldered connections complying with ASME B16.18 or ASME B16.22
- Push fit connections complying with ASSE 1061
- Press connections complying with ASME B16.51

1.2.3 Temperature Range

Is the device intended for cold water or hot water applications?

Hot water Cold water

What is the maximum working temperature? _____°F (_____°C)

1.2.4 Pressure Range

What is the working pressure range? _____ - _____ psi (_____ - _____ kPa)

1.2.6 POU or POE Category

Is the device categorized as POU, POE, or both?

POU POE Both

Section II

2.0 Test specimens

2.1 Samples Submitted for Test

How many samples were submitted by the manufacturer? _____

2.2 Samples Tested

How many models were selected for testing? _____

2.3 Drawings

Were assembly drawings, installation instructions, and other necessary data submitted with the device?

Yes No Questionable

If no or questionable, explain _____

Section III

3.0 Performance Requirements and Compliance Testing

3.1 Service Flow Capacity

3.1.2 Procedure

- a. What was the flow rate adjusted to? _____ GPM (_____ L/s)
What was the pressure differential between P2 and P1? _____ psi (_____ kPa)
What was the incoming flowing water temperature? _____ °F (_____ °C)
- b. How long was water flowed for? _____ minutes
What was the average flow rate? _____ GPM (_____ L/s)
What was the average pressure differential between? _____ psi (_____ kPa)
- c. What was the pressure differential between P2 and P1 adjusted to?
_____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
- d. How long was water flowed for? _____ minutes
What was the average flow rate? _____ GPM (_____ L/s)
What was the average pressure differential between? _____ psi (_____ kPa)
- e. What was the tested service flow coefficients?
 $C_v =$ _____; $C_v =$ _____
- f. What was the stated service flow coefficient per the specification sheet?
 $C_v =$ _____

3.1.3 Criteria

Is the tested maximum service flow coefficient greater than the maximum service flow coefficient as derived from the manufacturer's specification sheet?

- Yes No Questionable

If no or questionable, explain _____

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

3.2 Flow Capacity – Point-of-Entry System

3.2.2 Procedure

- b. What was the dynamic water pressure set to? _____ psi (_____ kPa)
What was the dynamic water temperature set to? _____ °F (_____ °C)
- d. What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
- e. *Repeat 3.2.2.d at pressure drop of 20 ± 1 psi (138 ± 6.9 kPa):*
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
Repeat 3.2.2.d at pressure drop of 25 ± 1 psi (172 ± 6.9 kPa):
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)

3.2.3 Criteria

What is the flow rate at 15 psi (103 kPa) as stated by the manufacturer? GPM (_____ L/s)

What is the flow rate at 25 psi (172 kPa) as stated by the manufacturer? GPM (_____ L/s)

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

3.3 Flow Capacity – Point-of-Use System

3.3.1 Procedure

a. Repeat Sections 3.2.2.a-c.

What was the dynamic water pressure set to? _____ psi (_____ kPa)

What was the dynamic water temperature set to? _____ °F (_____ °C)

b. What was the flow rate adjusted to? _____ GPM (_____ L/s)

What was the pressure drop? _____ psi (_____ kPa)

3.3.2 Criteria

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

3.4 Backsiphonage During System Regeneration

3.4.2 Procedure

d. What vacuum was slowly applied and held? _____ psig (_____ mm-Hg)

How long was the vacuum held for? _____ minutes

What was the vacuum reduced to? _____ psig (_____ mm-Hg)

Over what period was the vacuum reduced? _____ minutes

e. After closing the quick-acting valve, what was the vacuum upstream of the valve increased to? _____ psig (_____ mm-Hg)

f. During the surge effect, what was the range of the vacuum created? _____ psig (_____ mm-Hg)

3.4.3 Criteria

Was there any rise of water in the sight glass, including the bowing of the meniscus, exceeding 3.0 in (76 mm) above the water reservoir?

Yes No Questionable

If yes or questionable, explain _____

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

3.4.4 Chemicals in Effluent

Are chemicals intended to remain in the effluent water as a result of treatment certified to NSF/ANSI 60?

Yes No Questionable

If no or questionable, explain _____

3.5 Bypass Flow Capacity During System Regeneration

3.5.2 Procedure

b. What was the pressure differential between P2 and P1? _____ psi (_____ kPa)

What was the flow rate adjusted to? _____ GPM (_____ L/s)

- d. What was the maximum flow rate during the regeneration cycle? _____ GPM
(_____ L/s)
What was the corresponding pressure differential between P2 and P1? _____ psi
(_____ kPa)
What was the duration of the maximum flow rate? _____ minutes
What was the minimum flow rate during the regeneration cycle? _____ GPM
(_____ L/s)
What was the corresponding pressure differential between P2 and P1? _____ psi
(_____ kPa)
What was the duration of the maximum flow rate? _____ minutes
What was the average flow rate during the regeneration cycle? _____ GPM
(_____ L/s)
What was the average pressure differential between P2 and P1? _____ psi
(_____ kPa)
What was the tested bypass flow coefficient? $C_v =$ _____
What was the stated bypass flow coefficient per the specification sheet? $C_v =$ _____

3.5.3 Criteria

Was the tested bypass flow coefficient calculated in 3.5.2 no less than 50% of the service flow coefficient at 15 psi (103.4 kPa) as tested in Section 3.1.2?

- Yes No Questionable

If no or questionable, explain _____

Was the flow rate reduced to zero at any time?

- Yes No Questionable

If yes or questionable, explain _____

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

3.6 24-hour Pressure Loss

3.6.2 Procedure

- a. What was the temperature of the water? _____ °F (_____ °C)
c. What was the pressure of the incoming water supply adjusted to? _____ psi
(_____ kPa)
e. How long did the device remain at the set pressure? _____ hours
f. What was the inlet pressure? _____ psi (_____ kPa)
What was the outlet pressure? _____ psi (_____ kPa)

3.6.3 Criteria

What was the maximum change in inlet pressure? _____ psi (_____ kPa)

What was the maximum change in outlet pressure? _____ psi (_____ kPa)

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

3.7 Pressure Shock (Water Hammer)

3.7.2 Procedure

- b. What was the flow rate? _____ GPM (_____ L/s)
- c. What was the shock pressure applied? _____ psi (_____ kPa)
How many times was the shock pressure applied? _____ times

3.7.3 Criteria

Was there any indication of damage that impaired the intended function of the device?

- Yes No Questionable

If yes or questionable, explain _____

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

3.8 Structural Integrity – Hydrostatic

3.8.2 Procedure

- b. Is the device intended for use in cold or hot water?
 Cold water Hot Water
What was the water temperature set to? _____°F (_____°C)
- d. What the system or component pressurized to? _____ psi (_____ kPa)
What is the diameter of the system? _____ in (_____ cm)
How fast was the pressure increased by? _____ psi (_____ kPa) per second
- e. How long was the pressure maintained? _____ minutes

3.8.3 Criteria

Were there any breaks and cracks in the product causing spraying from the system or component?

- Yes No Questionable

If yes or questionable, explain _____

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

3.9 Structural Integrity – Cycle Test

3.9.2 Procedure

- b. Is the device intended for use in cold or hot water?
 Cold water Hot Water
What was the water temperature set to? _____°F (_____°C)
- d. What the system or component pressurized to? _____ psi (_____ kPa)
What is the diameter of the system? _____ in (_____ cm)
How fast was the pressure increased by? _____ psi (_____ kPa) per second
How long did it take for the pressure to be reduced to 10 psi (68.9 kPa)?
_____ seconds
- e. How many cycles were done for 3.9.2.d? _____ cycles

3.9.3 Procedure for When Subassemblies Include a Booster Pump

Is a portion of the system normally operated above 150 psi (1034 kPa)?

- Yes No Questionable

If questionable, explain _____

If yes, proceed to the sections below.

If no, proceed to Section 3.9.4.

Test the system per Section 3.2.2:

- b. What was the dynamic water pressure set to? _____ psi (_____ kPa)
What was the dynamic water temperature set to? _____°F (_____°C)
- d. What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
- e. *Repeat 3.2.2.d at pressure drop of 20±1 psi (138±6.9 kPa):*
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
Repeat 3.2.2.d at pressure drop of 25±1 psi (172±6.9 kPa):
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)

Repeat Sections 3.2.2.b through 3.2.2.e with sub-assembly pressurized to the maximum output setpoint of the pump:

- b. What was the dynamic water pressure set to? _____ psi (_____ kPa)
What was the dynamic water temperature set to? _____°F (_____°C)
- d. What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
- e. *Repeat 3.2.2.d at pressure drop of 20±1 psi (138±6.9 kPa):*
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)
Repeat 3.2.2.d at pressure drop of 25±1 psi (172±6.9 kPa):
What was pressure drop across P2 and P1 adjusted to? _____ psi (_____ kPa)
What was the flow rate adjusted to? _____ GPM (_____ L/s)

3.9.4 Criteria

Were there any breaks and cracks in the product causing spraying from the system or component?

- Yes No Questionable

If yes or questionable, explain _____

Is the device in compliance with this section?

- Yes No Questionable

If no or questionable, explain _____

Section IV

4.0 Detailed Requirements

4.1 Materials

For POU devices, does the device comply with NSF/ANSI 42, NSF/ANSI 53, or NSF/ANSI 58?

Yes No Questionable N/A

If no or questionable, explain _____

For all other devices, does the device comply with NSF/ANSI 61?

Yes No Questionable N/A

If no or questionable, explain _____

Does the device comply with NSF/ANSI 372?

Yes No Questionable N/A

If no or questionable, explain _____

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

4.2 Installation and Maintenance Instructions

Were instructions for installing, adjusting, and maintaining the device included with each device?

Yes No Questionable

If no or questionable, explain _____

State the information provided on the installation instructions. For d, e, and f, state whether this was listed on the installation instructions:

- Inlet and outlet connection sizes: _____
- Manufacturer's maximum working pressure: _____
- Manufacturer's stated minimum and maximum flow rates: _____
- For devices that connect to a drain, the statement, "Connection to drain shall not pierce or damage existing pipes. Install an air gap fitting compliant with ASME A112.1.3 between this device and the drain connection.": _____
- System components that are designed to be replaced in the field are identified by component part number: _____
- The statement, "The device shall be made accessible for replacement and repair.": _____

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

4.3 Identification and Markings

State the information given on the product:

- Name of manufacturer or trademark: _____
- Model number: _____
- Working temperature range: _____
- Working pressure range: _____
- For POU devices: the service flow rate per the manufacturer's specification sheet: _____
- For POE systems: flow rates at 15 psi (103.4 kPa) and 25 psi (172 kPa) pressure drops: _____

Are the inlet and outlet connections clearly marked?

Yes No Questionable

If no or questionable, explain _____

Do the labels comply with UL 969 for permanence?

Yes No Questionable

If no or questionable, explain _____

Is the device in compliance with this section?

Yes No Questionable

If no or questionable, explain _____

LISTED LABORATORY: _____

ADDRESS: _____

PHONE: _____ FAX: _____

TEST ENGINEER(S): _____

If applicable:

OUTSOURCED LABORATORY: _____

ADDRESS: _____

PHONE: _____ FAX: _____

TEST ENGINEER(S): _____

Scope of outsourced testing: _____

We certify that the evaluations are based on our best judgments and that the test data recorded is an accurate record of the performance of the device on test.

Signature of the official of the listed laboratory: _____

Signature

Title of the official: _____ Date: _____