

# ASSE International

## PRODUCT (SEAL) LISTING PROGRAM



### ASSE 1012-2021

#### Backflow Preventers with an Intermediate Atmospheric Vent

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Separate, complete laboratory evaluation report forms for each alternate orientation must be submitted to ASSE for review.

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 1**

**1.0 General**  
**1.1 Application**

Does the purpose of the device, as stated by the manufacturer, comply with this section?  
 Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

1.2.1 Description  
Does the product conform to the description in the standard?  Yes  No  
 Questionable

If questionable, explain: \_\_\_\_\_

1.2.2 Size Range  
\_\_\_\_\_ inches to \_\_\_\_\_ inches ( \_\_\_\_\_ mm to \_\_\_\_\_ mm)

1.2.3 Pressure Rating  
What is the maximum working pressure as stated by the manufacturer?  
\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

1.2.4 Temperature Range  
What is the temperature range as stated by the manufacturer?  
\_\_\_\_\_ °F to \_\_\_\_\_ °F ( \_\_\_\_\_ °C to \_\_\_\_\_ °C)

1.2.5 What is the manufacturer's advertised maximum flow rate? GPM \_\_\_\_\_ ( L/m)

**SECTION II**

**2.0 Test Specimens**

2.1 How many devices of each size and model were submitted by the manufacturer? \_\_\_\_\_

2.2 How many units were utilized during the laboratory evaluation? \_\_\_\_\_

2.3 Drawings  
Were assembly, installation instructions and other technical data needed to determine compliance with this standard submitted to the laboratory?  Yes  No  
Were these reviewed by the testing laboratory?  Yes  No

**SECTION III**

**3.0 Performance Requirements and Compliance Testing**

3.1 **Hydrostatic Test of Complete Assembly**  
What was the temperature of the water used for this test? °F \_\_\_\_\_ ( °C)  
What was the supply pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
The test period was for \_\_\_\_\_ minutes  
Were there any leaks or indication of damage?  Yes  No

3.2 **Hydrostatic Test of Downstream Check**  
The test period was for \_\_\_\_\_ minutes  
What was the pressure applied to the downstream side of the outlet check?  
\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
What was the pressure on the upstream side of the outlet check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
With the sight glass per Figure 1 open, what was the rise in the water level when the outlet check was pressurized?  
\_\_\_\_\_ inches ( \_\_\_\_\_ mm)



**3.3 Shock (Water Hammer) Test of the Device**

What was the shock wave pressure recorded at the outlet?

First Trial	_____ psi	( _____ kPa)
Second Trial	_____ psi	( _____ kPa)
Third Trial	_____ psi	( _____ kPa)
Fourth Trial	_____ psi	( _____ kPa)

Was there any damage to the intended function of the device?  Yes  No

**3.4 Reseating Tightness of the Downstream Check Test**

What was the beginning level of water in the sight glass? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for \_\_\_\_\_ minutes.

What was the final level of water in the sight glass? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.5 Reseating Tightness of the Upstream Check Test**

What was the beginning level of water in the sight glass? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for \_\_\_\_\_ minutes.

What was the final level of water in the sight glass? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.6 Atmospheric Vent Valve Leakage Test**

What is the manufacturer's maximum advertised flow rate? GPM \_\_\_\_\_ ( \_\_\_\_\_ L/m)

What was the pressure applied at the inlet of the device? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the maximum flow rate used for this test? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the amount of leakage at the vent valve? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**3.7 Backflow Through Upstream Check Test**

With the downstream check held open and the vent outlet sealed closed, what pressures were applied to the downstream side of the upstream check?

1. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

2. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

3. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Was there a backflow of water into the inlet at any of the test pressures?  Yes  No

**3.8 Atmospheric Vent Open Pressure Test**

What was the upstream pressure when the atmospheric vent started to discharge water at the following downstream pressures?

25.0 psi (172.4 kPa)	_____ psi	( _____ kPa)
75.0 psi (517.1 kPa)	_____ psi	( _____ kPa)
150.0 psi (1034.2 kPa)	_____ psi	( _____ kPa)

Was the supply pressure ever less than 20% of the downstream pressure when the atmosphere vent began to open?  Yes  No

**3.9 Backsiphonage Test**

The upstream check was fouled with a \_\_\_\_\_ inch ( \_\_\_\_\_ mm) fouling wire per Figure \_\_\_\_\_.

Describe the sequence of vacuum levels applied to the inlet of the device:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



What was the diameter of the sight glass used for this test? inch \_\_\_\_\_ ( mm)  
 What was the rise in the water level in the sight glass? \_\_\_\_\_ inch ( \_\_\_\_\_ mm)

**3.10 Backsiphonage Back Pressure Test**

The upstream check was fouled with a \_\_\_\_\_ inch ( \_\_\_\_\_ mm) fouling wire per Figure \_\_\_\_\_ .

Back pressures of \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) and \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) were applied to the outlet of the device while a sequence of the following vacuums were applied to the inlet of the device:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

The downstream check was fouled with a \_\_\_\_\_ inch ( \_\_\_\_\_ mm) fouling wire per Figure \_\_\_\_\_ .

Back pressures of \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) and \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) were applied to the outlet of the device while a sequence of the following vacuums were applied to the inlet of the device:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Was there a backflow of water into the inlet piping during any of the test sequences of Section 3.10?  
 Yes  No

**3.11 Flow and Pressure Loss Test**

What was the inlet pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the minimum flow rate per Table 2 for the size of the device on test?  
 \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the pressure loss across the device when the minimum flow rate was obtained?  
 \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Was there an adjustment made for the pressure loss in the piping between the gauges and the device on test?  Yes  No

If yes, what was the adjustment? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

**3.12 Flow with Low Supply Pressure Test**

At 10 psi (68.9 kPa) supply pressure, the flow was \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

20% of rated flow for the size of the device on test is \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**3.13 Deterioration at Extremes of Manufacturer's Temperature Range Test**

What was the temperature of the hot water used for this test? \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

The test period was for \_\_\_\_\_ hours.

The water flow rate was \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the inlet pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for \_\_\_\_\_ hours/day for a total of \_\_\_\_\_ days.

During the 80 hour test, the device was exposed to steam at °F \_\_\_\_\_ ( °C)  
 at \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) for \_\_\_\_\_ hours.

Following the 80 hour test, water at \_\_\_\_\_ °F ( \_\_\_\_\_ °C) was circulated through the device for \_\_\_\_\_ hours.



Following the hot and cold water testing the device was retested to Sections 3.6, 3.7 and 3.10 with the following results:

**Retest Section 3.6**

- What is the manufacturer's maximum advertised flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)
- What was the pressure applied at the inlet of the device? psi \_\_\_\_\_ ( kPa)
- What was the maximum flow rate used for this test? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)
- What was the amount of leakage at the vent valve? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**Retest Section 3.7**

With the downstream check held open and the vent outlet sealed closed, what pressures were applied to the downstream side of the upstream check?

1. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)
2. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)
3. \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Was there a backflow of water into the inlet at any of the test pressures?  Yes  No

**Retest Section 3.10**

The upstream check was fouled with a \_\_\_\_\_ inch ( \_\_\_\_\_ mm) fouling wire per Figure \_\_\_\_\_ .

Back pressures of \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) and \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) were applied to the outlet of the device while a sequence of the following vacuums were applied to the inlet of the device:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

The downstream check was fouled with a \_\_\_\_\_ inch ( \_\_\_\_\_ mm) fouling wire per Figure \_\_\_\_\_ .

Back pressures of \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) and \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) were applied to the outlet of the device while a sequence of the following vacuums were applied to the inlet of the device:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Was there a backflow of water into the inlet piping during any of the test sequences of Section 3.10?  Yes  No

**Section 3.13 continued**

Was the device on test in complete compliance with Sections 3.1 through 3.13 of this standard?  Yes  No

**SECTION IV**

**4.0 Detailed Requirements**

**4.1 Materials**

- 4.1.1 Is the device intended for human consumption?  Yes  No
- If yes, does the device comply to NSF 61 and NSF 372?  Yes  No
- Is the device intended for human consumption through cooking only?  Yes  No
- If yes, does it comply with NSF 372?  Yes  No
- Did any solder and fluxes or metal alloys in contact with the potable water supply exceed 0.2% or 8% lead content respectively?  Yes  No



- 4.1.2 Were flexible non-metallic parts designed for continuous exposure to water at the maximum rated operating temperature of the device without change in physical characteristics which would prevent full compliance with all requirements of the standard?  Yes  No
- 4.1.3 Indicate the seating materials of the check valves: \_\_\_\_\_
- 4.1.4 Are pipe threads in compliance with:
- 4.1.4.1 ANSI/ASME B1.20.1 for Taper Pipe Threads  Yes  No
- 4.1.4.2 ANSI/ASME B1.20.3 for dryseal  Yes  No
- 4.2.1 List markings found on the device: \_\_\_\_\_
- Would these markings be visible in the installed position?  Yes  No
- 4.2.2 Describe how the markings were applied: \_\_\_\_\_



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: \_\_\_\_\_