American Society of Sanitary Engineering

PRODUCT (SEAL) LISTING PROGRAM

ASSE STANDARD #1012 - REVISED: 2009

Backflow Preventers with an Intermediate Atmospheric Vent

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

MANUFACTURER: _____

CONTACT PERSON: _____ **E-MAIL:** _____

ADDRESS: _____

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: _____

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 Board. The Seal 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 Back Siphonage 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:

1. _____
2. _____
3. _____

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 Back Siphonage 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 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

4.1.1.2 Do all of the elastomers and polymers in contact with the water comply with the requirements of the U.S. Code of Federal Regulations (CFR) Title 21, 177? ○ Yes ○ No
If no, provide certification that these materials are non-toxic from an approved laboratory.

4.1.2 Do all non-ferrous cast parts in contact with water have a corrosion resistance at least equal to ASTM B524 alloy UNS# C84400? ○ Yes ○ No

4.1.3 Do all body and internal non-cast parts have a corrosion resistance of at least equal to non-ferrous alloy of not less than 58% copper. ○ Yes ○ No

4.1.4 Do all springs in contact with water have a corrosion resistance of at least equal to Series 300 Stainless Steel? ○ Yes ○ No

4.1.6 Indicate the seating materials of the check valves: _____

4.1.7 Are pipe threads in compliance with:

1. ANSI/ASME B1.20.1 for Taper Pipe Threads ○ Yes ○ No
2. ANSI/ASME B1.20.3 for dryseal ○ Yes ○ No
3. If other, specify: _____

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 they markings were made: _____

TESTING AGENCY: _____

ADDRESS: _____

PHONE: _____ **FAX:** _____

TEST ENGINEERS: _____

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

SIGNATURE OF THE OFFICIAL OF THE AGENCY: _____

TITLE OF THE OFFICIAL: _____ **DATE:** _____

SIGNATURE AND SEAL OF THE REGISTERED PROFESSIONAL ENGINEER SUPERVISING THE LABORATORY EVALUATION:

SIGNATURE: _____

PE SEAL

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Adobe Reader users: Adobe Reader does not allow users to place images into the document. You must print this completed document and then sign and stamp the PE seal by hand. You may then send the completed document to ASSE via fax or mail, or you can scan the completed document and send via e-mail.

COMMENTS: