ASSE International
Product (Seal) Listing Program

ASSE Standard #1081 Revised 2014

Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems

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 _____

Were All Tests Performed at the Selected Laboratory? ☐ **Yes** ☐ **No**

If offsite, identify location and tests involved: _____

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 I

1.0 General

1.1 Is the purpose of the device, as described by the manufacturer, as stated in this section?

☐ Yes
☐ No
☐ Questionable

If no or questionable, explain _____

1.2 Scope

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

☐ Yes
☐ No
☐ Questionable

If no or questionable, explain _____

1.2.2 Inlet pipe size: _____ inches NPS
Outlet pipe size: _____ inches NPS

1.2.3 Maximum working pressure as stated by the manufacturer's specification sheet:
_____psi (_____kPa)

1.2.4 Operating temperature range as stated by the manufacturer's specification sheet:
_____°F to _____°F (_____°C to _____°C).

1.2.5 Maximum flow rate as stated by the manufacturer's specification sheet:
_____gpm (_____Lpm)

1.3 Limitations on Design

1.3.1(a) Can the integral parts of the device or strainers be accessible for inspection, cleaning, repair, or replacement?

☐ Yes
☐ No
☐ Questionable

If no or questionable, explain _____

Is the design serviceable without removing it from the pipeline?

☐ Yes
☐ No
☐ Questionable

If no or questionable, explain _____

Section II

2.0 Test Specimens

2.1 How many devices of each size and model were submitted by the manufacturer to the testing laboratory? _____

2.2 How many devices were utilized during the laboratory evaluation? _____

If more than one (1) device was used during the evaluation, state why additional devices were necessary: _____

2.3 Were top-level assembly drawings, installation instructions, and specification sheets submitted?

☐ Yes
☐ No
☐ Questionable

If no or questionable, explain _____

Section III

3.0 Performance Requirements and Compliance Testing

3.1 **Hydrostatic Test #1 at inlet**

3.1.2 Procedure

Inlet supply pressure: _____psi (_____kPa)
Reduced pressure at outlet: _____psi (_____kPa)
Test period: _____ minutes.

3.1.3 Was there a continued rise in reduced pressure at the outlet? ☐ Yes ☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.2 **Hydrostatic Test #2 of Complete Device**

3.2.2 Procedure

Inlet supply pressure: _____psi (_____kPa)
Reduced pressure at outlet: _____psi (_____kPa)
Test period: _____ minutes.

3.2.3 Were there any external leaks or indication of damage? ☐ Yes ☐ No

If yes, explain: _____

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.3 **Hydrostatic Test of Downstream Check – Test #3**

3.3.2 Procedure

Pressure at upstream side of the outlet check? _____psi (_____kPa)
Pressure applied at downstream side of the outlet check? _____psi (_____kPa)
Test period: _____ minutes.

3.3.3 Was there any indication of water discharging through the atmospheric vent?

☐ Yes
☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.4 **Shock (Water Hammer) Test of the Device – Test #4**

3.4.2 Procedure

Was an electronic pressure transducer used for this test?

☐ Yes
☐ No

Flow rate used to create shock: _____gpm (_____Lpm)
Shock wave pressure at outlet: _____psi (_____kPa)

	gpm	(Lpm)	psi	(kPa)
First Trial				
Second Trial				
Third Trial				
Fourth Trial				

3.4.3 Was there any damage to the intended function of the device?

☐ Yes
☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.5 **Reseating Tightness of the Downstream Check – Test #5**

3.5.2 Procedure

Beginning level of water in the sight glass: _____in (_____mm)
Test period: _____ minutes.
Final level of water in the sight glass: _____in (_____mm)

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.6 **Reseating Tightness of the Upstream Check – Test #6**

3.6.2 Procedure

Beginning level of water in the sight glass: _____in (_____mm)

Test period: _____ minutes.

Final level of water in the sight glass: _____in (_____mm)

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.7 **Atmospheric Vent Valve Leakage – Test #7**

3.7.2 Procedure

Flow % of max	Inlet Supply Pressure		Flowrate		Leakage?	
	psi	(kPa)	gpm	(Lpm)		
0%			0	0		
25%					☐Yes	☐ No
50%					☐Yes	☐ No
75%					☐Yes	☐ No
100%					☐Yes	☐ No

3.7.3 Was there any leakage during the test?

☐ Yes

☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.8 **Atmospheric Vent Open Pressure – Test #8**

3.8.2 Procedure

What was the upstream pressure when the atmospheric vent started to discharge water?

Test with downstream pressure at 25, 75, and 150±3.0 psi

Downstream Test Pressure		Supply Pressure at Atmospheric Vent Opening	
psi	(kPa)	psi	(kPa)

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.9 **Reduced Flowing Pressure Deviation Test – Test #9**

3.9.2 Procedure

Upstream Supply Pressure		Reduced Outlet Pressure	
psi	(kPa)	psi	(kPa)

Did the reduced outlet pressure change more than 1.0 psi (6.9 kPa) for every 10.0 psi (68.9 kPa) change in supply pressure from the baseline?

☐ Yes
☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.10 **Reduced Pressure Adjustment Range Test – Test #10**

3.10.2 Procedure

Supply pressure at device inlet: _____psi (_____kPa).

Maximum reduced pressure attainable: _____psi (_____kPa)

Minimum reduced pressure attainable: _____psi (_____kPa)

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.11 **Backflow Through the Upstream Check**

3.11.2 Procedure

The downstream check is held open and the vent outlet is sealed closed.

Step	in H_2O	(mm H_2O)	psi	(kPa)	minutes held	Colored water in inlet?	
1						☐Yes	☐ No
2						☐Yes	☐ No
3						☐Yes	☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.12 **Back-Siphonage – Test 1**

3.12.2 Procedure

Diameter of fouling wire for downstream check: _____ in _____ (mm)
Type of upstream check valve: _____
Type of downstream check valve: _____
Diameter of sight glass: _____ in _____ (mm)

3.12.2(a)
Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.12.2(b)
Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.12.2(c) Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

3.13 **Back-Siphonage Back Pressure – Test #2**

3.13.2 Procedure

3.13.2(a)

Foul the upstream check.

Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(b)

Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(c)

Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.13.2(d) Drain upstream fluid into beaker

Repeat with downstream check.

3.13.2(a)

Foul the downstream check.

Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(b)

Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(c)

Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.13.2(d) Drain upstream fluid into beaker

Is the device in compliance? ☐ Yes ☐ No ☐ Questionable

If no or questionable, explain _____

3.14 Deterioration at Extremes of Manufacturer's Temperature Range Test

3.14.2 Procedure

Hot water test

Temperature of the hot water? _____ °F (_____ °C)

Water circulation time: _____ hours.

3.7 Atmospheric Vent Valve Leakage – Test #7

3.7.2 Procedure

Flow % of max	Inlet Supply Pressure		Flowrate		Leakage?	
	psi	(kPa)	gpm	(Lpm)		
0%			0	0		
25%					☐ Yes	☐ No
50%					☐ Yes	☐ No
75%					☐ Yes	☐ No
100%					☐ Yes	☐ No

3.7.3 Was there any leakage during the test?

☐ Yes

☐ No

3.11 Backflow Through the Upstream Check

3.11.2 Procedure

The downstream check is held open and the vent outlet is sealed closed.

Step	in H_2O	(mm H_2O)	psi	(kPa)	minutes held	Colored water in inlet?	
1						☐ Yes	☐ No
2						☐ Yes	☐ No
3						☐ Yes	☐ No

3.13 Back-Siphonage Back Pressure – Test #2

3.13.2 Procedure

3.13.2(a)

Foul the upstream check.

Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(b)

Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(c)
Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.13.2(d) Drain upstream fluid into beaker

Repeat with downstream check.
3.13.2(a)
Foul the upstream check.
Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.14.2(b)
Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.14.2(c)
Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.14.2(d) Drain upstream fluid into beaker

Is the device in compliance with the hot water test? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

Ambient water test

Temperature of the ambient water? _____ °F (_____ °C)

3.1 **Hydrostatic Test #1 at Inlet**

3.1.2 Procedure

Inlet supply pressure: _____psi (_____kPa)
Reduced pressure at outlet: _____psi (_____kPa)
Test period: _____ minutes.

3.1.3 Was there a continued rise in reduced pressure at the outlet? ☐ Yes ☐ No

3.2 **Hydrostatic Test #2 of Complete Device**

3.2.2 Procedure

Inlet supply pressure: _____psi (_____kPa)
Reduced pressure at outlet: _____psi (_____kPa)
Test period: _____ minutes.

3.2.3 Were there any external leaks or indication of damage? ☐ Yes ☐ No

If yes, explain: _____

3.3 **Hydrostatic Test of Downstream Check – Test #3**

3.3.2 Procedure

Pressure at upstream side of the outlet check? _____psi (_____kPa)
Pressure applied at downstream side of the outlet check? _____psi (_____kPa)
Test period: _____ minutes.

3.3.3 Was there any indication of water discharging through the atmospheric vent? ☐ Yes ☐ No

Is the device in compliance with the ambient water test? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

Cold water test

Temperature of the cold water? _____ °F (_____ °C)

Water circulation time: _____ hours.

3.7 **Atmospheric Vent Valve Leakage – Test #7**

3.7.2 Procedure

Flow % of max	Inlet Supply Pressure		Flowrate		Leakage?	
	psi	(kPa)	gpm	(Lpm)		
0%			0	0		
25%					☐Yes	☐ No
50%					☐Yes	☐ No
75%					☐Yes	☐ No
100%					☐Yes	☐ No

3.7.3 Was there any leakage during the test?

☐ Yes

☐ No

3.11 **Backflow Through the Upstream Check**

3.11.2 Procedure

The downstream check is held open and the vent outlet is sealed closed.

Step	in H_2O	(mm H_2O)	psi	(kPa)	minutes held	Colored water in inlet?	
1						☐Yes	☐ No
2						☐Yes	☐ No
3						☐Yes	☐ No

3.13 **Back-Siphonage Back Pressure – Test #2**

3.13.2 Procedure

3.13.2(a)

Foul the upstream check. Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(b)

Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.13.2(c)
Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.13.2(d) Drain upstream fluid into beaker

Repeat with downstream check.

3.13.2(a)
Foul the downstream check. Vacuum of _____ in-Hg _____ (mm-Hg) held for _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.14.2(b)
Vacuum raised from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Vacuum lowered from _____ in-Hg _____ (mm-Hg) to _____ in-Hg _____ (mm-Hg) over _____ seconds

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

Release vacuum.

3.14.2(c)
Create the surge effect.

Rise of water level in sight glass?	Crown of meniscus >0.13in above reservoir water level?
☐ Yes	☐ Yes
☐ No	☐ No

3.14.2(d) Drain upstream fluid into beaker

Is the device in compliance with the cold water test? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

Is the device in compliance with Section 3.14? ☐ Yes ☐ No ☐ Questionable
If no or questionable, explain _____

Section IV

4.0 Detailed Requirements

4.1 Materials

4.1.1 List the materials of non-ferrous parts in contact with water

_____

_____

_____

4.1.2 List the materials of internal non-cast parts

_____

_____

_____

4.1.3 List the materials of stainless steel or nickel alloy parts

_____

_____

_____

4.1.4 List the materials of springs and screens

_____

_____

_____

4.1.5 List the materials of flexible non-metallic parts.

_____

_____

_____

4.1.6 Are there any metal-to-metal seating check valves? ☐ Yes ☐ No

4.1.7 Do screw threads meet ANSI/ASME B1.1-08? ☐ Yes ☐ No

4.1.8 Pipe Threads

4.1.8(a) Do taper pipe threads meet ANSI/ASME B1.20.1-13? ☐ Yes ☐ No

4.1.8(b) Do dryseal pipe threads meet ANSI/ASME B1.20.3-13? ☐ Yes ☐ No

4.1.8(c) Do metric pipe threads meet BS EN 10226-1? ☐ Yes ☐ No

4.2 Markings

List the markings found on the test unit:

(a) Name of Manufacturer or Trademark: _____

(b) Type and/or Model: _____

(c) Maximum working Pressure: _____

(d) Maximum water Temperature: _____

(e) Serial number: _____

(f) Nominal size of device: _____

(g) Direction of water flow: _____

4.3 Installation instructions

4.3.1 Is the minimum working pressure stated? ☐ Yes ☐ No

4.3.2 If the unit can be maintained or repaired in the field, are those instructions present?

☐ Yes ☐ No

4.3.3 Is this statement in the installation instructions?

"The device shall not be installed in a concealed or inaccessible location or where the venting of water from the device during its normal functioning may be deemed objectionable."

☐ Yes ☐ No

TESTING AGENCY _____

ADDRESS _____

PHONE: _____ FAX: _____

TEST ENGINEER(S) _____

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 agency: _____

Title of the official: _____ Date: _____

Signature and seal of the Registered Professional Engineer supervising the laboratory evaluation:

_____
Signature

Seal