

**American Society of Sanitary Engineering
Seal (Certification) Program**

**Laboratory Evaluation Report for:
Pressure Vacuum Breaker Assembly**

Tested under ASSE Standard 1020 • Revised: February, 2004

Laboratory File Number _____

Manufacturer _____

Model No. _____

Address _____

Serial No. _____

Other Identification Markings _____

Size _____

Connections (screwed, flanged, etc.) _____

General information and instructions for the testing engineer:

Within the text there may be items which are only advisory to conditions which experience indicates could be troublesome. It is not for evaluation related to acceptance of the product.

There may be other 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 item involved.

Documentation of material compliance must be furnished by the manufacturer. He 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.

Product Name _____
Model Number _____ Size(s) _____
Date Submitted for Review _____ Date Review Complete _____
Were the test units production models? Yes No
or prototypes? Yes No

Section I

1.0 General

1.1 Application

1.1.1 Application

Does the purpose of the device agree with that of the Standard? Yes
 No
 Questionable

If questionable, explain: _____

1.2 Scope

1.2.1 Description

Does the device conform to the product described in the Standard? Yes
 No
 Questionable

If questionable, explain: _____

1.2.2. Size Range

Size: _____mm (_____inches)

1.2.3. Working Pressure Range

What is minimum pressure? _____psi (_____kPa)

What is maximum pressure? _____psi (_____kPa)

In compliance? Yes
 No
 Questionable

If questionable, explain: _____

1.2.4 Temperature Range

a. Cold Water _____°F to _____°F (_____°C to _____°C)

b. Hot Water _____°F to _____°F (_____°C to _____°C)

In compliance? Yes
 No
 Questionable

If questionable, explain: _____

1.3 Mechanical Function

1.3.1 Were the check valve(s) force loaded to a normally closed position under static conditions? Yes
 No
 Questionable

If questionable, explain: _____

- 1.3.2 Air Inlet Valve
- a. Was the air inlet valve force loaded to a normally open position when the line pressure is atmospheric? Yes
 No
 Questionable
- If questionable, explain: _____
Is the air inlet valve located above the pipe line so it can drain by gravity? Yes
 No
 Questionable
- If questionable, explain: _____
- b. Did the air inlet valve start to open when the line pressure reached 1.0 psi (6.9 kPa) and did the inlet valve fully open to drain the water from the body? Yes
 No
 Questionable
- If questionable, explain: _____
In compliance? Yes
 No
 Questionable
- If questionable, explain: _____
- 1.3.3 Test Cocks
- Were the test cocks of the proper size, resilient seated and capable of meeting the hydrostatic requirements of this standard? Yes
 No
 Questionable
- If questionable, explain: _____
- 1.3.4. Accessibility
- Were the check and the air inlet valves accessible for inspection, repairs and replacements? Yes
 No
 Questionable
- If questionable, explain: _____

Section II

2.0 Test Specimens

2.1 Samples Submitted

State the quantity of units provided for the evaluation. _____

2.2 Samples Tested

How many units were utilized during the laboratory evaluation? _____

If more than one (1) unit was used, explain: _____

2.3 Drawings

Were assembly drawings, installation and other technical data which is needed to enable a testing agency to determine compliance with this standard submitted? Yes
 No

Were these items reviewed in the laboratory? Yes
 No

Section III**3.0 Performance Requirements and Compliance Testing****3.1 Hydrostatic Test of Complete Assembly**

The hydrostatic test pressure applied at the inlet of the assembly was: _____psi (_____kPa)

This pressure was maintained for _____minutes.

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.2 Hydrostatic Test of Check Valve

State the backpressure utilized for the section _____psi (_____kPa).

State the water elevation in the sight glass _____inches (_____mm)

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.3 Rated Flow and Maximum Allowable Pressure Loss

State the following for this section:

Rate of flow _____GPM (_____L/m)

Water pressure loss _____psi (_____kPa)

Describe the type of flow meter utilized for this test. _____

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.4 Air Inlet Valve Opening Pressure Test

State the following regarding this section.

Sight glass starting water elevation: _____inches (_____mm).

Sight glass water elevation at valve opening: _____inches (_____mm).

Did the vent valve fully open?

- Yes
 No
 Yes
 No
 Questionable

Did the device comply with this section?

If questionable, explain: _____

3.5 Drip Tightness of Check Valve Test

State the level of water in the sight glass: _____inches (_____mm).

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.6 Air Passage Comparative Areas

Describe how the check valve was held open: _____

State the number of test runs for the evaluation: _____

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.7 Back Siphonage Test

Did the fouling wire allow leakage?

- Yes
 No

Were compensations for elevation above sea level provided?

- Yes
 No

Report all water rise elevations for each subsection as an attachment to this report.

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.8 Shock (Water Hammer) Test of the Assembly

State the shock magnitude to the nearest 10 psi (69 kPa) induced in the system: _____psi (_____kPa).

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.9 Deterioration at Extremes of Manufacturer's Temperature RangeIndicate if this device is a hot or cold water device: Cold Hot

Cold water temperature utilized: _____°F (_____°C). Duration: _____hours.

Hot water temperature utilized: _____°F (_____°C). Duration: _____hours.

Water pressure: _____psi (_____kPa).

Rate of water flow _____GPM (_____L/m)

Did the device comply with this section?

- Yes
 No
 Questionable

If questionable, explain: _____

3.10 Life Cycle Test

Check the box to indicate which of the three (3) methods was used for the cycle test.

- Method 1 (1250 cycle Test Section 3.10.2)
 Method 2 (USC FCC & HR Life Cycle Test Section 3.10.3)
 Method 3 (Field Test Quarterly in accordance with the ASSE Series 5000 Standard Section 3.10.5)

3.10.2 Method 1

(a) State the 25% of rated flow for three (3) seconds: _____GPM (_____L/m)

(b) State the pressure used for six (6) seconds: _____psi (_____kPa)

(c) Repeat Section 3.10.2 a and 3.10.2 b for 1250 cycles.

Retest to Sections 3.4 and 3.5. Were these in compliance?

- Yes
 No

(d) State the 50% of rated flow for three (3) seconds: _____GPM (_____L/m)

State the pressure used for six (6) seconds: _____psi (_____kPa)

(e) Retest to Sections 3.4 and 3.5. Were these in compliance?

- Yes
 No

(f) State the 75% of rated flow for three (3) seconds: _____GPM (_____L/m)

(g) Retest to Sections 3.4 and 3.5. Were these in compliance?

- Yes
 No

(h) State the 100% of rated flow for three (3) seconds: _____GPM (_____L/m).

(i) Retest to Sections 3.4 and 3.5. Were these in compliance?

- Yes
 No

3.10.3 Method 2

- (a) State the 25% of rated flow for three (3) seconds: _____GPM (_____L/m)
- (b) State the pressure used for six (6) seconds: _____psi (_____kPa)
Retest to Sections 3.4 and 3.5. Were these in compliance? Yes
 No
- (d) State the 50% of rated flow for three (3) seconds: _____GPM (_____L/m)
State the pressure used for six (6) seconds: _____psi (_____kPa)
- (e) Retest to Sections 3.4 and 3.5. Were these in compliance? Yes
 No
- (f) State the 75% of rated flow for three (3) seconds: _____GPM (_____L/m)
- (g) Retest to Sections 3.4 and 3.5. Were these in compliance? Yes
 No
- (h) State the 100% of rated flow for three (3) seconds: _____GPM (_____L/m).
- (i) Retest to Sections 3.4 and 3.5. Were these in compliance? Yes
 No

- 3.10.4 Failure to pass Sections 3.4 and 3.5 shall result in a rejection of the device.
In compliance? Yes
 No

3.10.5 Method 3

- (a) Were three (3) devices of each size and type field tested? Yes
 No
- (b) If devices are identical except for inlet and outlet sizes, state the largest size to be tested: _____inches (_____mm)
- (c) Were two (2) flowing sites selected? Yes
 No
- (d) What was the flow for the inlet above? _____GPM (_____L/m).
- (e) Did each site selected have a different plumbing system? Yes
 No
- (f) During the one year period was the device tested at least quarterly? Yes
 No

- 3.10.6 Failure to pass the ASSE Series 5000 Field Tests during the twelve (12) months, shall result in a rejection of the device.
In compliance? Yes
 No

Section IV

4.0 Detailed Requirements

4.1 Materials

- 4.1.1 Material in Contact with Water
- Did the solder and fluxes used contain more than 0.2% lead? Yes
 No
 - Did any metal alloys contain over 8% of lead? Yes
 No

- 4.1.2 Non-Ferrous Cast Part
- Did the device comply with this section? Yes
 No
 Questionable
 - If questionable, explain: _____

- 4.1.3 Internal Non-Cast Part
- Did the device comply with this section? Yes
 No

Questionable

If questionable, explain: _____

4.1.4 Springs

Did the device comply with this section?

 Yes
 No
 Questionable

If questionable, explain: _____

4.1.5 Flexible or Non-Flexible Non-Metallic parts

Did the device comply with this section?

 Yes
 No
 Questionable

If questionable, explain: _____

4.1.6 Metal to Metal Seats

Did the device comply with this section?

 Yes
 No
 Questionable

If questionable, explain: _____

4.1.7 Test Cocks

See Section 1.3.3

4.1.8 Pipe Threads

Did the device comply with this section?

 Yes
 No
 Questionable

If questionable, explain: _____

4.2 Instructions for Marking and Installation**4.2.1 Marking of Devices**

List the markings found on the device:

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____

Were these markings visible in the installed position?

 Yes
 No

Identify how the markings were applied: _____

4.3 Installation and Maintenance Instructions

Did the device comply with each of these subsections?

 Yes
 No
 Questionable

If questionable, explain: _____

TESTING AGENCY _____

ADDRESS _____

PHONE: _____ FAX: _____

TEST ENGINEER(S) _____

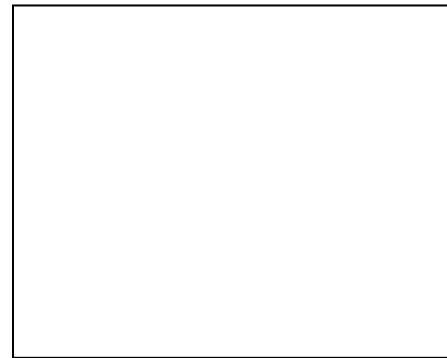
We certify that the evaluations are based on our best judgments and that the test data recorded is an accurate record of the performance of the device on test.

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