

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

ASSE 1070-2020 / ASME A112.1070-2020 / CSA B125.70-20
Performance Requirements for Water Temperature Limiting Devices

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 Scope

- 1.1 Does this device conform to the product stated in the standard?
 Yes No Questionable

If no or questionable, explain _____

Section II

2.0 Reference publications and definitions

Section III

3.0 Design and general requirements

3.1 Rated pressure, flow rate, and temperature change

- 3.1.1 Minimum and maximum working pressures as stated by the manufacturer's specification sheet:

Minimum: _____psi (_____kPa) Maximum: _____psi (_____kPa)

In compliance? Yes No Questionable

If no or questionable, explain: _____

- 3.1.2 Minimum flow rate as stated by the manufacturer's specification sheet:
_____gpm (_____Lpm)

Is the device integrated into a fixture fitting according to ASME A112.18.1 / CSA B125.1?

Yes No Questionable

If questionable, explain: _____

- 3.1.3 Outlet temperature range:
_____°F to _____°F (_____°C to _____°C).

Cold inlet temperature range:
_____°F to _____°F (_____°C to _____°C).

Hot inlet temperature range:
_____°F to _____°F (_____°C to _____°C).

Temperature outlet set by manufacturer per specification sheet:
_____°F to _____°F (_____°C to _____°C).

In compliance? Yes No Questionable

If no or questionable, explain _____

- 3.2 Do end connections comply with a nationally or internationally recognized standards?

Yes No N/A Questionable

If no or questionable, explain _____

3.3

3.3.2 Is this a fixed (i.e. non-adjustable) device?

Yes No Questionable

If no or questionable, explain _____

Can the temperature setting be adjusted and locked in position?

Yes No Questionable

If questionable, explain: _____

Can the temperature setting be adjusted with a tool to protect against ready adjustment by the user?

Yes No Questionable

If questionable, explain: _____

3.3.3 Is this device integral to a supply fitting?

Yes No N/A Questionable

If questionable, explain: _____

For integral devices with user controls, can the outlet temperature be set by the user beyond 120°F (49°C)?

Yes No N/A Questionable

If questionable, explain: _____

3.4 Cross-flow is addressed in section 4.4.

3.5 Toxicity and Lead Content

3.5.1 Is this device intended for contact with drinking water as defined by NSF 61?

Yes No Questionable

If questionable, explain: _____

If yes, attach separate report with respect to manufacturer's claims per NSF 61.

3.5.2 Maximum lead content of solder and flux used in device: _____%

Maximum lead content of metal alloys in contact with potable water used in device:
_____%

3.5.3 Is this device intended to convey or dispense water for human consumption through drinking or cooking as defined by NSF 372?

Yes No Questionable

If questionable, explain: _____

If yes, attach separate report with respect to manufacturer's claims per NSF 372.

3.6 Devices incorporating electrical features

3.6.1 Electrical power is supplied to low-voltage circuits ($\leq 42.2V$) by a:

- Battery supply
- Suitable Class 2 low-voltage transformer complying with CSA or UL standards
- Combination of transformer and fixed impedance that as a unit complies with CSA or UL standards for Class 2 transformers

3.6.2 Does the device include electrical features other than low-voltage circuits, i.e. $>42.2V$?

- Yes
- No
- Questionable

If questionable, explain: _____

3.6.3 Does the device comply with the applicable CSA or UL electrical Standards?

- Yes
- No
- NA

3.7 Can the integral parts of the device 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 _____

Does the device utilize union connections?

- Yes
- No
- Questionable

If no or questionable, explain _____

Is the device in compliance with all applicable sub-sections for Section III?

- Yes
- No
- Questionable

If no or questionable, explain _____

Section IV

4 Performance Requirements and Test Methods

4.1.2 Preconditioning

Were the specimens conditioned in ambient laboratory conditions for at least 12 hours?

Yes No Questionable

If no or questionable, explain _____

4.2 High Temperature Conditioning Test

4.2.2 Procedure

Cold inlet supply pressure: _____psi (_____kPa)

Hot inlet supply pressure: _____psi (_____kPa)

Cold inlet supply temperature: _____°F (_____°C)

Hot inlet supply temperature: _____°F (_____°C)

Adjusted outlet temperature: _____°F (_____°C)

Adjusted flow rate: _____gpm (_____Lpm)

Test period: _____ minutes.

4.2.3 Did the device leak?

Yes No Questionable

If questionable, explain: _____

Is the device in compliance with this section? Yes No Questionable

If no or questionable, explain _____

4.3 Temperature and Pressure Test

For devices integral to a fixture fitting, test the device in accordance with ASME A112.18.1/CSA B125.1

Ambient temperature of laboratory environment: _____°F (_____°C)

Does the device have an integral closure mechanism?

Yes No Questionable

If questionable, explain: _____

If yes, close the mechanism. If no, skip to next table.

	<u>Temperature</u>	<u>Pressure</u>	<u>Time</u>	<u>Leak?</u>	
a)	_____°F (_____°C)	_____psi (_____kPa)	_____min	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b)	_____°F (_____°C)	_____psi (_____kPa)	_____min	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c)	_____°F (_____°C)	_____psi (_____kPa)	_____min	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d)	_____°F (_____°C)	_____psi (_____kPa)	_____min	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Open the mechanism if available. Block the outlet.

	<u>Temperature</u>	<u>Pressure</u>	<u>Time</u>	<u>Leak?</u>
a)	____ °F (____ °C)	____ psi (____ kPa)	____ min	<input type="checkbox"/> Yes <input type="checkbox"/> No
b)	____ °F (____ °C)	____ psi (____ kPa)	____ min	<input type="checkbox"/> Yes <input type="checkbox"/> No
c)	____ °F (____ °C)	____ psi (____ kPa)	____ min	<input type="checkbox"/> Yes <input type="checkbox"/> No
d)	____ °F (____ °C)	____ psi (____ kPa)	____ min	<input type="checkbox"/> Yes <input type="checkbox"/> No

Is the device in compliance with this section? Yes No Questionable

If no or questionable, explain _____

4.4 Cross-flow Test

Install in open position if device contains an integral valve and block the outlet.

Open hot inlet to atmosphere.

Cold inlet pressure: ____ psi (____ kPa)

Time under pressure: ____ min

Leakage flow rate out of hot water supply inlet: ____ gpm (____ mL/min)

Open cold inlet to atmosphere.

Hot inlet pressure: ____ psi (____ kPa)

Time under pressure: ____ min

Leakage flow rate out of cold water supply inlet: ____ gpm (____ mL/min)

Is the device in compliance with this section? Yes No Questionable

If no or questionable, explain _____

4.5 Life-cycle Test

Cold inlet supply pressure (static): ____ psi (____ kPa)

Cold inlet supply pressure (flowing): ____ psi (____ kPa)

Cold inlet supply temperature: ____ °F (____ °C)

Hot inlet supply pressure (static): ____ psi (____ kPa)

Hot inlet supply pressure (flowing): ____ psi (____ kPa)

Hot inlet supply temperature: ____ °F (____ °C)

Ambient water temperature: ____ °F (____ °C)

Outlet discharge flow rate: ____ gpm (____ Lpm)

Outlet discharge temperature: ____ °F (____ °C)

Number of cycles performed: ____ cycles

Flow time per ambient cycle: ____ sec.

Flow time per hot cycle: ____ sec

Was there any leakage? Yes No Questionable

If yes or questionable, explain _____

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

4.6 Pressure and Temperature Variation Test

4.6.2 Data gathering

Can temperature-measuring equipment detect a 63.2% step change within 0.3 seconds?

Yes No Questionable

If no or questionable, explain _____

Data collection frequency: _____ Hz

Outlet temperature averaged every _____ seconds

Temperature sensors are in a Type _____ copper water tube.

Are the sensors located per section 4.6.1(d) of the standard?

Yes No Questionable

If no or questionable, explain _____

Size of the outlet tube inner diameter: _____ in (_____ mm)

4.6.2.2(a) For devices integral to plumbing fittings that comply with ASME A112.18.1 / CSA B125.1, fully open valves V1, V2, and V3. If the device uses a flow control, remove V3 from test assembly for flow control to be used.

For all other devices, output flow rate set at: _____ gpm (_____ Lpm)

4.6.2.2(b) Hot water supply pressure (P1): _____ psi (_____ kPa)

Cold water supply pressure (P2): _____ psi (_____ kPa)

4.6.2.2(c) Hot water supply temperature (T1): _____ °F (_____ °C)

Cold water supply temperature (T2): _____ °F (_____ °C)

4.6.2.2(e) Outlet temperature (T3): _____ °F (_____ °C)

4.6.2.2(g) Water flowed for _____ min

Outlet temperature (T3): _____ °F (_____ °C)

4.6.2.3.

4.6.2.3(a) Hot water supply pressure (P1): _____ psi (_____ kPa)

Average outlet temperature (T3) over 20±5 seconds after first 5 seconds: _____ °F (_____ °C)

Hot water supply pressure (P1) returned to: _____ psi (_____ kPa)

4.6.2.3(b) Hot water supply pressure (P1): _____ psi (_____ kPa)

Average outlet temperature (T3) over 20±5 seconds after first 5 seconds: _____ °F (_____ °C)

Hot water supply pressure (P1) returned to: _____ psi (_____ kPa)

- 4.6.2.3(c) Cold water supply pressure (P2): _____psi (_____kPa)
 Average outlet temperature (T3) over 20±5 seconds after first 5 seconds: _____°F (_____°C)
 Cold water supply pressure (P2) returned to: _____psi (_____kPa)
- 4.6.2.3(d) Cold water supply pressure (P2): _____psi (_____kPa)
 Average outlet temperature (T3) over 20±5 seconds after first 5 seconds: _____°F (_____°C)
 Cold water supply pressure (P2) returned to: _____psi (_____kPa)
- 4.6.2.3(e) Hot water supply temperature (T1): _____°F (_____°C)
 Rate at which temperature was increased: _____°F/min (_____°C/min)
 Average outlet temperature (T3) over 20±5 seconds after first 5 seconds: _____°F (_____°C)
 Hot water supply temperature (T1) returned to: _____°F (_____°C)

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

4.7 Cold Water Supply Failure Test
 Install device per Figure 1 of the standard.

Hot inlet supply pressure: _____psi (_____kPa)
 Cold inlet supply pressure: _____psi (_____kPa)
 Cold water supply closed over _____seconds

Maximum allowable temperature specified by manufacturer, if present: _____°F (_____°C)
 Flow rate at which outlet reached the above temperature or 120°F (49°C), whichever is lesser:
 _____gpm (_____Lpm)
 Minimum rated flow as specified by manufacturer: _____gpm (_____Lpm)

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

4.8 Hydrostatic Pressure Test
 Flow water to remove air from device. Close outlet.

Hot inlet supply pressure, flowing: _____psi (_____kPa)
 Cold inlet supply pressure, flowing: _____psi (_____kPa)
 Test period: _____ minutes.

Was there any leakage? 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 V

5.0 Markings, Packaging, Instructions, and Literature

5.1 Markings

5.1.1 Was the manufacturer's name, trademark, or other mark present on the device?

Yes No Questionable

If no or questionable, explain: _____

5.1.2 Were markings permanent, legible, and visible after installation?

Yes No Questionable

If no or questionable, explain: _____

5.2 Describe how the temperature controls were indicated?

5.3 Was the packaging marked with the manufacturer's name, trademark, or other mark?

Yes No N/A Questionable

If questionable, explain: _____

Was the packaging marked with a private label's name, trademark, or other mark?

Yes No N/A Questionable

If questionable, explain: _____

5.4 Did the installation instructions include (check if present):

- Installation instructions?
- Operation instructions?
- Adjustment instructions?
- Instructions to set the limit stop?
- Maintenance instructions?

5.5 Did the literature include (check if present):

- Rated minimum flow
- Rated maximum flow (for devices integral to supply fittings)

5.6 Did the literature include (check if present):

- Rated temperature if less than 120°F (49°C)

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: _____