

*American Society of Sanitary Engineering*  
PRODUCT (SEAL) LISTING PROGRAM  
Factory Audit Inspection Test Report Form



**ASSE STANDARD #1017 - REVISED: 2009**  
**Temperature Actuated Mixing Valves**  
**for Hot Water Distribution Systems**

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LABORATORY FILE NUMBER: \_\_\_\_\_

LISTEE: \_\_\_\_\_

SEAL #: \_\_\_\_\_

MODEL # TESTED: \_\_\_\_\_

MODEL SIZE: \_\_\_\_\_

ADDITIONAL MODEL INFORMATION (i.e. orientation, series, end connections, shut-off valves): \_\_\_\_\_

NUMBER OF SAMPLES SUBMITTED: \_\_\_\_\_ NUMBER OF SAMPLES TESTED: \_\_\_\_\_

DATE TESTING BEGAN: \_\_\_\_\_

DATE TESTING COMPLETED: \_\_\_\_\_

**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.



# FIRST SAMPLE TEST RESULTS

## SECTION III

### 3.0 Performance Requirements and Compliance Testing

#### 3.1 Conditioning Test

What was the water temperature used for this test? \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 What was the flowing pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Duration of test: \_\_\_\_\_ hours

Was there any indication of leaks, distortion, damage or indication of change to the physical characteristics of the device?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

#### 3.2 Temperature Control Test

The manufacturer's maximum advertised flow rate is: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)  
 The manufacturer's minimum advertised flow rate is: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

a) At a differential pressure of 10.0 psi ± 0.5 psi (69.0 kPa ± 3.4 kPa) and a mixed water outlet temperature of 110.0°F ± 2.0°F (43.3°C ± 1.1°C), allow the water to flow for one (1) minute, then record all temperatures, pressures and flow:  
 Hot water inlet temperature (T<sub>1</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure (P<sub>1</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature (T<sub>2</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure (P<sub>2</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature (T<sub>3</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure (P<sub>3</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)

b) Reduce the mixed water flow by 50%. Allow water to flow for one (1) minute, then record all temperatures, pressures and flow:  
 Hot water inlet temperature (T<sub>1</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure (P<sub>1</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature (T<sub>2</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure (P<sub>2</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature (T<sub>3</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure (P<sub>3</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

In compliance?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

c) Increase the hot water supply temperature (T1) by 25.0°F ± 1.0°F (13.9°C ± 0.6°C) within five (5) minutes. (See chart below for acceptable temperature ranges.) Allow water to flow for one (1) minute, then record all temperatures, pressures and flow:  
 Hot water inlet temperature (T<sub>1</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure (P<sub>1</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature (T<sub>2</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure (P<sub>2</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature (T<sub>3</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure (P<sub>3</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)



Starting Temperature	Acceptable Range
138°F (58.9°C)	162°F to 164°F (72.2°C to 73.3°C)
139°F (59.4°C)	163°F to 165°F (72.7°C to 73.9°C)
140°F (60.0°C)	164°F to 166°F (73.3°C to 74.4°C)
141°F (60.6°C)	165°F to 167°F (73.9°C to 75.0°C)
142°F (61.1°C)	166°F to 168°F (74.4°C to 75.5°C)

In compliance?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

d) With the valve of the device open to full flow, allow the water flow for one (1) minute, then record all temperatures, pressures and flow:

Hot water inlet temperature (T<sub>1</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure (P<sub>1</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature (T<sub>2</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure (P<sub>2</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature (T<sub>3</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure (P<sub>3</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

In compliance?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

Did the first sample pass all the required testing?  Yes  No  
 If no, test the second sample and record the results below.

## SECOND SAMPLE TEST RESULTS\*

\*A second sample shall only be tested if the first sample failed the necessary test sections.

### SECTION III

#### 3.0 Performance Requirements and Compliance Testing

##### 3.1 Conditioning Test

What was the water temperature used for this test? \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 What was the flowing pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Duration of test: \_\_\_\_\_ hours

Was there any indication of leaks, distortion, damage or indication of change to the physical characteristics of the device?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

##### 3.2 Temperature Control Test

The manufacturer's maximum advertised flow rate is: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)  
 The manufacturer's minimum advertised flow rate is: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

a) At a differential pressure of 10.0 psi ± 0.5 psi (69.0 kPa ± 3.4 kPa) and a mixed water outlet temperature of 110.0°F ± 2.0°F (43.3°C ± 1.1°C), allow the water to flow for one (1) minute, then record all temperatures, pressures and flow:

Hot water inlet temperature (T<sub>1</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure (P<sub>1</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature (T<sub>2</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure (P<sub>2</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature (T<sub>3</sub>): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure (P<sub>3</sub>): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)



b) Reduce the mixed water flow by 50%. Allow water to flow for one (1) minute, then record all temperatures, pressures and flow:

Hot water inlet temperature ( $T_1$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure ( $P_1$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature ( $T_2$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure ( $P_2$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature ( $T_3$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure ( $P_3$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

In compliance?  Yes  No  Questionable

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

c) Increase the hot water supply temperature ( $T_1$ ) by  $25.0^\circ\text{F} \pm 1.0^\circ\text{F}$  ( $13.9^\circ\text{C} \pm 0.6^\circ\text{C}$ ) within five (5) minutes. (See chart below for acceptable temperature ranges.) Allow water to flow for one (1) minute, then record all temperatures, pressures and flow:

Hot water inlet temperature ( $T_1$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure ( $P_1$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature ( $T_2$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure ( $P_2$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature ( $T_3$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure ( $P_3$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

Starting Temperature	Acceptable Range
138°F (58.9°C)	162°F to 164°F (72.2°C to 73.3°C)
139°F (59.4°C)	163°F to 165°F (72.7°C to 73.9°C)
140°F (60.0°C)	164°F to 166°F (73.3°C to 74.4°C)
141°F (60.6°C)	165°F to 167°F (73.9°C to 75.0°C)
142°F (61.1°C)	166°F to 168°F (74.4°C to 75.5°C)

In compliance?  Yes  No  Questionable

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

d) With the valve of the device open to full flow, allow the water flow for one (1) minute, then record all temperatures, pressures and flow:

Hot water inlet temperature ( $T_1$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Hot water inlet pressure ( $P_1$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Cold water inlet temperature ( $T_2$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Cold water inlet pressure ( $P_2$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet temperature ( $T_3$ ): \_\_\_\_\_ °F ( \_\_\_\_\_ °C)  
 Mixed water outlet pressure ( $P_3$ ): \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 Mixed water outlet flow: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/min)  
 Variation of mixed water outlet temperature was: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

In compliance?  Yes  No  Questionable

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

Did the second sample pass all the required testing?  Yes  No

If yes, please provide and explanation of failure for the first sample below.

\_\_\_\_\_  
 \_\_\_\_\_



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TESTING AGENCY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

TEST ENGINEERS: \_\_\_\_\_

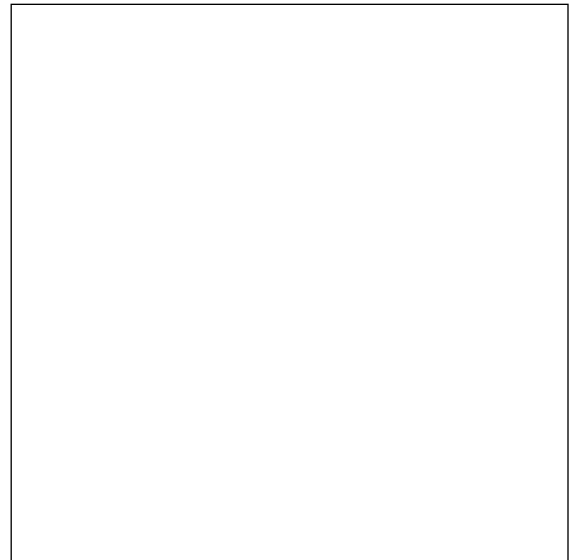
*We Certify that the evaluations are based on our best judgements and that the test data recorded is an accurate record of the performance of the device on test.*

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**

\*To insert images into document (PE seal and signatures)

**Adobe Acrobat Pro users:** At the top of the page, go to: Tools > Advanced Editing > TouchUp Object Tool. Once you have selected TouchUp Object Tool, right click within the document and select Place Image. Choose the image you want to place (PE seal or signature) and then select Open. Once the image is in the document, move and re-size the image accordingly. Save and send to ASSE.

**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:**