I&M Template Detailing the Information Required by the TMV3 Scheme

That Must Be Included Within The Installation And Maintenance (I&M) Documentation.

The BuildCert **TMV3** Scheme has produced this I&M template that can be used by license holders to fulfil there requirements of information that must be included within the Installation and Maintenance (I&M) documentation supplied with the TMV3 approved valve.

The following information must be included within the I&M document, with customer input required for details highlighted in Blue

Key: High Pressure (HP)
Low Pressure (LP)

The valves designation of use ie. HP-B, HP-S, HP-W, HP-T44, LP-B, LP-S, LP-W, LP-T etc…

Table 1: Normal Conditions of use for Type 3 valves

	High Pressure	Low Pressure
Maximum Static Pressure – Bar	10	10
Flow Pressure, Hot & Cold - Bar	1 to 5	0.2 to 1
Hot Supply Temperature - °C	52 to 65	52 to 65
Cold Supply Temperature - °C	5 to 20	5 to 20
Minimum Temperature Differential - °C		

Note: Delete columns from the above table to correspond with the pressure(s) required for your individual application

Table 2: Mixed Water Temperature

Application	Mixed water temperature (at point of discharge) °C
Bidet	38
Shower	41
Washbasin	41
Bath (44°C fill)	44
Bath (46°C fill)	46

NOTE 1: For washbasins, washing under running water is assumed.

NOTE 2: Bath fill temperatures of more than 44°C should only be available when the bather is always under the supervision of a competent person (e.g. nurse or care assistant).

NOTE 3: A thermostatic mixing valve having multiple designations (i.e. it is capable of satisfying the requirements of this specification for more than one application) should be re-set on site to suit its other designations.

Note: Delete rows from the above table to correspond with the designation(s) required for your individual application

If isolation valves are not provided then a statement is required that states: - The fitting of isolation valves is required as close as is practicable to the water supply inlets of the thermostatic mixing valve.

If strainers are not provided then a statement is required that states: - The fitting of strainers is recommended as close as is practicable to the water supply inlets of the thermostatic mixing valve.

Method for adjusting the mixed water temperature - Directions required on how to adjust/set the thermostatic mixing valve.

Information on Backflow - Details of backflow prevention devices that will be fitted, including the specification of the Backflow preventer, i.e. size, type and position (in-body/handset/hose/tail/servicing valve). If the Backflow preventer is not supplied as part of the package then details of the type of device to be used are to be specified.

Method for Commissioning Thermostatic Mixing Valves

Purpose

Since the installed supply conditions are likely to be different from those applied in the laboratory tests it is appropriate, at commissioning, to carry out some simple

checks and tests on each mixing valve to provide a performance reference point for future in-service tests.

Procedure

Check that:

a) the designation of the thermostatic mixing valve matches the intended application

b) the supply pressures are within the range of operating pressures for the designation of the valve

c) the supply temperatures are within the range permitted for the valve and by guidance information on the prevention of legionella etc.

Adjust the temperature of the mixed water in accordance with the manufacturer's instructions and the requirement of the application and then carry out the following sequence:

a) record the temperature of the hot and cold water supplies

b) record the temperature of the mixed water at the largest draw-off flow rate

c) record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured

d) isolate the cold water supply to the mixing valve and monitor the mixed water temperature

e) record the maximum temperature achieved as a result of (d) and the final stabilised temperature

NOTE: The final stabilised mixed water temperature should not exceed the values in Table 17

f) record the equipment, thermometer etc. used for the measurements

Table 17: Guide to maximum stabilised temperatures recorded during site tests

Application	Mixed water temperature °C
Bidet	40
Shower	43
Washbasin	43
Bath (44°C fill)	46
Bath (46°C fill)	48

Note: Delete rows from the above table to correspond with the designation(s) required for your individual application

In Service Testing

Purpose

The purpose of in-service tests is to regularly monitor and record the performance of the thermostatic mixing valve. Deterioration in performance can indicate the need for service work on the valve and/or the water supplies.

Procedure

Using the same measuring equipment or equipment to the same specification as used in the commissioning of the valve, adjust the temperature of the mixed water in accordance with the manufacturer's instructions and the requirement of the application. Carry out the following sequence:

a) record the temperature of the hot and cold water supplies

b) record the temperature of the mixed water at the largest draw-off flow rate

c) record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured

If the mixed water temperature has changed significantly from the previous test results (e.g.> 1 K) [5)], record the change and before re-adjusting the mixed water temperature check:

a) that any in-line or integral strainers are clean
b) any in-line or integral check valves or other anti-back siphonage devices are in good working order
c) any isolating valves are fully open

With an acceptable mixed water temperature, complete the following procedure:

a) record the temperature of the hot and cold water supplies

b) record the temperature of the mixed water at the largest draw-off flow rate

c) record the temperature of the mixed water at a smaller draw-off flow rate, which shall be measured

d) isolate the cold water supply to the mixing valve and monitor the mixed water temperature

e) record the maximum temperature achieved as a result of (d) and the final stabilised temperature

f) record the equipment, thermometer etc. used for the measurements

If at step (e) the final mixed water temperature is greater than the values in Table 17 and / or the maximum temperature exceeds the corresponding value from the previous results by more than about 2 K, the need for service work is indicated

NOTE: In-service tests should be carried out with a frequency, which identifies a need for service work before an unsafe water temperature can result. In the absence of any other instruction or guidance, the procedure described in Annex F of D 08 may be used

Annex F of D 08 (informative)

Frequency of in-service tests

General

In the absence of any other instruction or guidance on the means of determining the appropriate frequency of in-service testing, the following procedure may be used:

a) 6 to 8 weeks after commissioning carry out the tests detailed in "In-Service Tests"

b) 12 to 15 weeks after commissioning carry out the tests detailed in "In-Service Tests"

Depending on the results of the above tests, several possibilities exist:

a) If no significant changes (e.g. $\leq$ 1 K) in mixed water temperatures are recorded between commissioning and 6 to 8 week testing, or between commissioning and 12-15 week testing the next in-service test can be deferred to 24 to 28 weeks after commissioning.
b) If small changes (e.g. 1 to 2 K) in mixed water temperatures are recorded in only one of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test can be deferred to 24 to 28 weeks after commissioning.
c) If small changes (e.g. 1 to 2 K) in mixed water temperatures are recorded in both of these periods, necessitating adjustment of the mixed water temperature, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.
d) If significant changes (e.g. > 2 K) in mixed water temperatures are recorded in either of these periods, necessitating service work, then the next in-service test should be carried out at 18 to 21 weeks after commissioning.

The general principle to be observed after the first 2 or 3 in-service tests is that the intervals of future tests should be set to those which previous tests have shown can be achieved with no more than a small change in mixed water temperature.