

**Kiwa Watertec - EG001**

01.07.2015

editorial amended 10.02.2016

# Evaluation Guideline

for the Kiwa Watertec certificate for

- Thermostatic Mixing Valves  
(Type 2 TMV and Type 3 TMV)
- Tempering valves



# Preface

This evaluation guideline has been accepted by the Kiwa Watertec Expert Group, in which parties concerned in the Drinking Water sector in the UK are being represented. This Kiwa Watertec Expert Group also supervises the certification activities and where necessary requires this guideline to be revised.

This evaluation guideline will be used by Kiwa Watertec in conjunction with the Kiwa-Regulations for Product Certification. This regulation details the method employed by Kiwa for conducting the necessary investigations prior to issuing the product certificate and the method of external control.

The Kiwa-Regulations for Product Certification also refer to the “Kiwa Regulations for the Board of Appeal”. In reference to what has been mentioned in clause 2.1 of these regulations, the chairman and deputy chairman do not need to have a university degree in law.

This evaluation guideline is to be assessed by the Kiwa Watertec Expert Group at least every 5 years, but at the latest before 1<sup>st</sup> July 2020.

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The use of this evaluation guideline by third parties, for any purpose whatsoever, is only allowed after a written agreement is made with Kiwa to this end.

#### **Validation**

This evaluation guideline has been validated by Kiwa Watertec on 1 July 2015

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# 1 Introduction

## 1.1 General

This evaluation guideline includes all relevant requirements which are adhered to by Kiwa Watertec as the basis for the issue and maintenance of a EN-ISO –IEC 17065 Certification Certificate for thermostatic mixing valves (TMV2 and TMV3) and Tempering valves.

For the performance of its certification work, Kiwa Watertec is bound to the requirements as included in the clause 7.11 “Termination, reduction, suspension or withdrawal of certification” of EN-ISO-IEC17065.

## 1.2 Field of application / scope

Thermostatic mixing valves and Tempering valves are intended for application in tap water installations with a static water pressure of maximum 10 bar and a maximum water temperature of 90°C.

The thermostatic mixing valves can be distinguished in:

- sanitary thermostatic mixing valves (Type 2 TMV);
- safety valves to be used in (health-) care premises (Type 3 TMV);
- tempering valves

Sanitary thermostatic mixing valves can be divided in the following types:

- bath/shower mixing valve;
- shower mixing valve;
- wash basin mixing valve;
- bidet mixing valve;
- sink mixing valve;
- In-line thermostatic mixers suitable to supply multiple outlets (central thermostatic mixers).

Thermostatic safety mixing valves to be used in (health-) care premises use can be divided in the following types:

- bath/shower mixing valve;
- bath mixing valve;
- shower mixing valve;
- wash basin mixing valve;
- bidet mixing valve.

Tempering safety mixing valves to be used in all premises can be divided in the following types:

- non-adjustable, with pre-set temperature;
- adjustable with or without tool and with pre-set temperature

The recommended limits for correct operation are as indicated in the table below.

|                                    | Type 2 TMV                 |                             | Type 3 TMV                    |                                | Tempering valves<br>BS EN 15092 |
|------------------------------------|----------------------------|-----------------------------|-------------------------------|--------------------------------|---------------------------------|
|                                    | Low Pressure<br>BS EN 1287 | High Pressure<br>BS EN 1111 | Low Pressure<br>NHS Spec D 08 | High Pressure<br>NHS Spec D 08 |                                 |
| Flow Pressure,<br>Hot & Cold (Bar) | 0.1 to 1                   | 0.5 to 5                    | 0.2 to 1                      | 1 to 5                         | 1 to 5                          |
| Hot Supply<br>Temperature (°C)     | 55 to 65                   | 55 to 65                    | 55 to 65                      | 55 to 65                       | 60 to 80                        |
| Cold Supply<br>Temperature (°C)    | ≤ 25                       | ≤ 25                        | 5 to 20                       | 5 to 20                        | ≤ 25                            |

## 1.3 Acceptance of test reports provided by the supplier

When reports from laboratories are supplied in order to demonstrate that the product meets the requirements of this evaluation guideline, Kiwa Watertec must approve the laboratory undertaking the testing prior to tests commencing

The laboratory shall meet the applicable accreditation norm, EN-ISO/IEC 17025, where the scope of accreditation shall refer to the examinations as required in this guideline. These requirements are being considered to be fulfilled when a certificate of accreditation can be shown, either issued by UKAS or one of the institutions with which UKAS has an agreement of mutual acceptance.

When no certificate of accreditation can be shown, Kiwa Watertec will verify whether the accreditation norm is fulfilled. Validity (date) of tests reports to be determined by the Kiwa Watertec Expert Group.

Kiwa Watertec will reserve the inspect the laboratory and require inter-laboratory trials and details of the laboratory procedures (in English right to inspect the laboratory and require) for testing and to carry out site inspections as necessary.

#### **1.4 Quality approval certificate.**

The quality approval certificate to be issued by Kiwa Watertec are described as Kiwa Watertec product certificate. A model of the certificate to be issued on the basis of this Evaluation Guideline has been included as an Annex.

## 2 Terms and definitions

For the products as referred to in this evaluation guideline the following terms and definitions are applicable:

**Board of Experts:** board of Kiwa Watertec, in which parties concerned in the Drinking Water sector in the UK are being represented”.

**Backflow** means a flow in a direction contrary to the intended normal direction of flow.

**Back Siphonage** means a backflow caused by the siphonage (by vacuum) of a liquid from a cistern or appliance into the pipe feeding it, possible leading to a contamination of the water supply.

**Check Valve** a plumbing fitting designed to allow water flow in one direction only.

**Cross Flow** the flow of water from one side of a hot/cold water mixer to the other, possible leading to a contamination of the water supply.

**Dynamic Pressure** the water pressure in the pipework to a fitting whilst flow is taking place.

**Evaluation Guideline:** the agreements made within the Board of Experts on the subject of certification.

**Flow regulator** a device with moving parts which responds to variable inlet pressure to control flow at a reasonable constant rate.

They are subdivided into two types.

- Fixed – manufactured in a range of predetermined flow rates.
- Variable – manually adjustable to provide different flow rates.

**Flow Restrictor** a device with no moving parts which restricts flow. Unlike a flow regulator it does not keep a constant flow when the supply pressure varies.

**Inspection tests:** tests carried out after the certificate has been granted in order to ascertain whether the certified products continue to meet the requirements recorded in the Evaluation Guideline.

### Remark

The test matrix contains a summary showing what tests Kiwa will carry out in the pre-certification stage and in the event of inspections as well as showing the frequency with which the inspection tests will be carried out.

**IQC scheme:** (Internal Quality Control) Scheme which describes the manufacturing process and quality inspections carried out by the supplier as part of their quality system.

**Mains Pressure** see dynamic pressure.

**Maximum supply pressure:** a pressure rating of the product either stated by the manufacturer or determined by the relevant standard.

**Product requirements:** requirements made specific by means of measures or figures, focusing on (identifiable) characteristics of products and containing a limiting value to be achieved, which limiting value can be calculated or measured in an unequivocal manner.

**Pre-certification examination:** functional tests and initial assessment of the production process to be carried out, in order to ascertain that all the requirements recorded in the Evaluation Guideline are met.

**Product certificate:** a document, in which Kiwa declares that a product may, on delivery, be deemed to comply with the product specification recorded in the product certificate.

**Servicing Valve** a valve for shutting off the flow of water in a pipe connected to water fitting to facilitate the maintenance or servicing of the fitting.

**Static Pressure** the water pressure existing at a fitting when no flow is taking place.

**Strainer** a screen to prevent debris from entering a water fitting

**Supplier:** the party that is responsible for ensuring that the products meet and continue to meet the requirements on which the certification is based.

**Pressure:** the effective pressure ( $P_e$ ). The difference between the absolute pressure ( $P$ ) and the surrounding pressure ( $P_{amb}$ ). Expressed as a formula:  $P_e = P - P_{amb}$

**Thermostatic safety mixing valves:** device to compensate for variations in pressure and, or temperature of the incoming water supplies, to maintain a selected blend temperature.

**Tempering valve:** reduce the temperature of sanitary hot water for distribution throughout the hot water system. The valves are intended to be used with storage water heaters to provide tempered hot water to the terminal fitting. They are not intended to control the temperature at the point of use. Tempering valves control the distribution temperature from a water heater to a preset value or an adjustable range, both between 45 °C and 65 °C.

**Water Fittings** Includes pipes, taps, ferrules, valves, cisterns, mixing valves and similar apparatus used in connection with the supply of water within a building.

**Wholesome water.** Water supplied by a water undertaker and complying with the requirements of regulations made under section 67 of the Water Industry act 1991. Wholesome water complies with the Drinking Water Directive and is intended for drinking, cooking, food preparation or other domestic purposes (also referred to as Potable Water)

**Remark**

- Wholesome water can be drinking water or heated drinking water.
- the definition for wholesome water is also referred to as tap water which deflects from that of the DWD (Drinking Water Directive).

**Working pressure:** the highest pressure occurring in the drinking water system, which the appliance or fitting is acceptable to work to.



# 3 Procedure for granting the Approval Certificate.

## 3.1 Pre certification examination

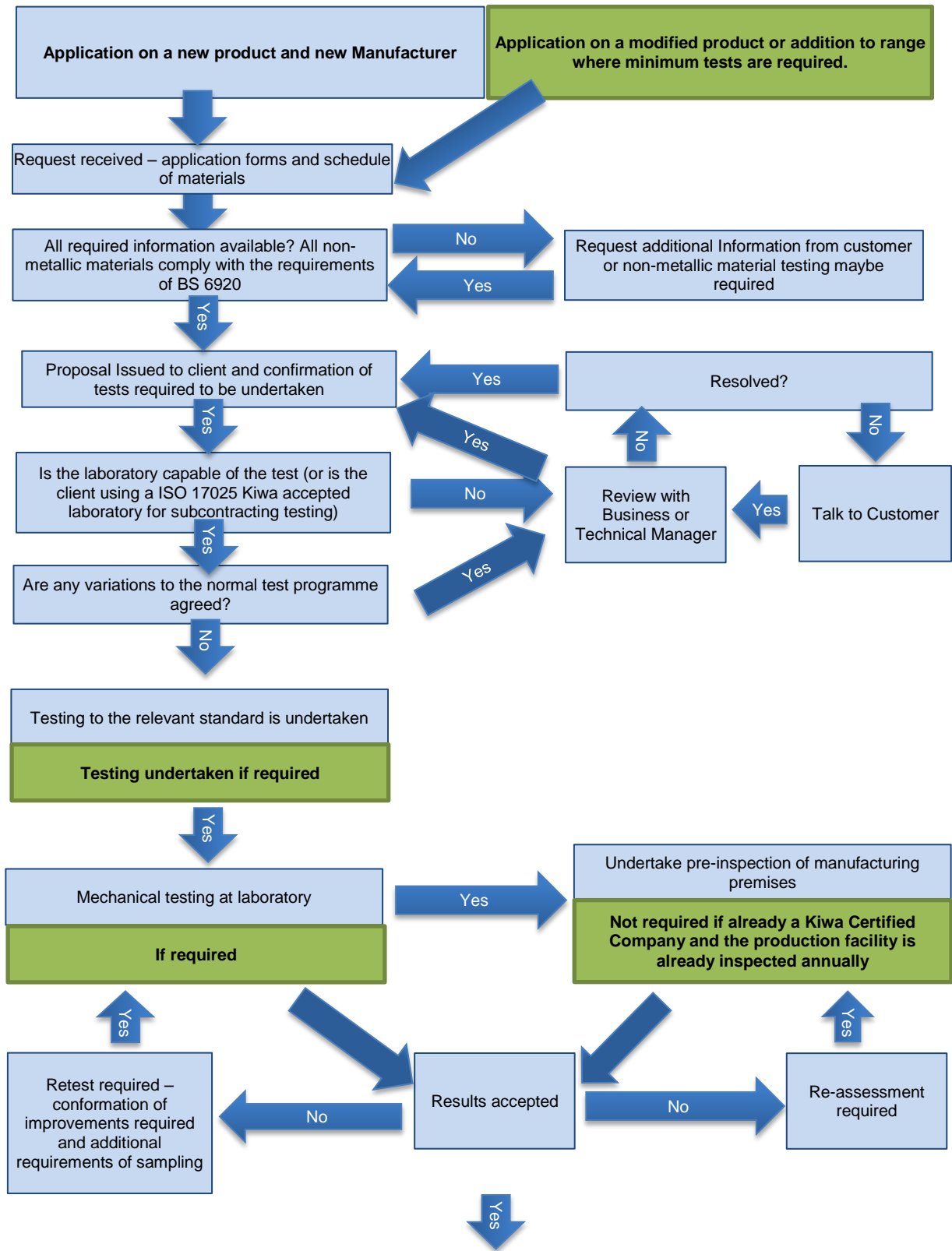
The pre certification-examination to be performed is based on the (product) requirements as included in this evaluation guideline including the test methods and contain, depending on the nature of the product to be certified:

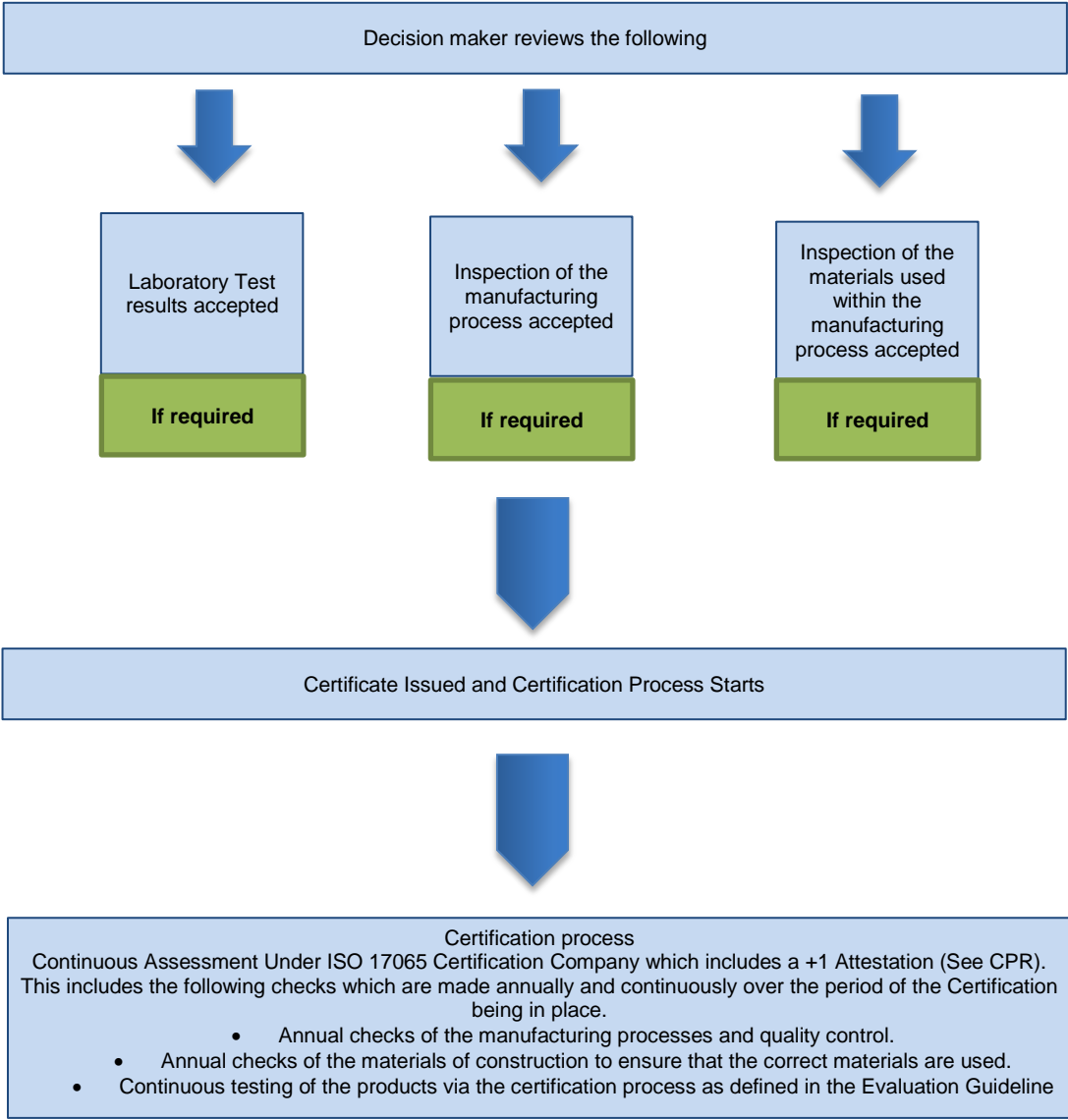
- type testing to determine whether the products comply with the product and/or functional requirements,
- Production Process Assessment
- Assessment of the quality system and the IQC-scheme,
- Assessment of existing procedures within the manufacturer's quality system.

## 3.2 Granting the Approval Certificate.

After finishing the pre-certification examination, the results are presented to the decision-maker deciding on granting of the certificate. This person evaluates the results and decides whether the certificate can be granted or additional data and/or tests are necessary as stated in ISO 17065 Clause 7.6.2.

**Flow Chart for a new application, an application for a modified product or an additional product to range**





# 4 Requirements and test methods

## 4.1 General

This chapter contains the requirements for thermostatic mixing valves and tempering valves have to comply with. These requirements will make part of the technical specification of the products, as included in the certificate.

## 4.2 Sanitary thermostatic mixing valves (Type 2 TMV)

### 4.2.1 Product requirements and test methods

The requirements the product shall meet and the respective test methods have been laid down in the following standards:

**BS EN 1111:1998      Sanitary tapware - Thermostatic mixing valves (PN 10) – General technical specifications.**

and/or

**BS EN 1287:1999      Sanitary tapware - Low pressure thermostatic mixing valves - General technical specifications**

and

**UK Water Regulator's Specifications.**

Acoustic testing is excluded unless otherwise requested by the applicant.

### 4.2.2 Additional specifications: Material

In view of what has been mentioned in the introduction of the BS EN 1111 and BS EN 1287 the following requirements are applicable.

#### 4.2.2.1 Materials - Requirements to avoid deterioration of the quality of the drinking water

Products and materials, which (may) come into contact with drinking water or warm tap water, shall not release substances in quantities which can be harmful to the health of the consumer or negatively affect the quality of the drinking water. Therefore, the products or materials shall meet the requirements of BS 6920 and be subject to re-assessment of the materials in contact with drinking water every five years.

### 4.2.3 Further specifications

#### 4.2.3.1 Flexible connecting hoses (ad BS EN 1111/1287 – art. 8.2.1.3)

Flexible connecting hoses shall comply with the UK Water Regulators Specification.

Threaded connecting ends to the mixer body shall conform to relevant international standards.

#### 4.2.3.2 Cross flow contamination between hot and cold water (ad BS EN 1111 – art. 9.4)

Where appropriate check valves used in order to prevent cross flow shall comply with the UK Regulators Specification.

#### 4.2.3.3 For Bath and Bidet mixers only – Override facilities

Valves provided with a temperature override facility, are set at the recommended mixed water temperature and that when overridden will not provide a mixed water temperature greater than 48°C.

#### 4.2.3.4 For Bath and Bidet mixers only - Safety with cold water failure (ad BS EN 1111/1287 – art. 10.7)

When tested the thermostatic mixing valve shall be in accordance with BS EN 1111, article 10.7 with an elevated mixed water temperature of 46°C, the valve shall comply with the requirements indicated in BS EN 1111, art. 10.7.3.

#### 4.2.3.5 *Endurance test operating mechanism (ad BS EN 1111/1287 – art. 12.1)*

During and after the test the test handles and its connections may not show any fracture or deformation. Also the thermostatic mixing valve shall comply with the requirements for closure and water tightness as embodied in BS EN 1111/1287, article 9.3, 9.4. and 9.5.

#### 4.2.3.6 In-line thermostatic mixers suitable to supply multiple outlets (central thermostatic mixing valves)

##### a. Flow rate

The flow rate to be measured in accordance with BS EN 1111 article 10.5, shall be at least 0,33 l/s (20 l/min).

##### b. Temperature limitation

Thermostatic mixing valves shall be capable of delivering water with a temperature higher than 60°C<sup>1</sup>.

### 4.3 Thermostatic safety mixing valves (Type 3 TMV)

#### 4.3.1 *Product requirements and test methods*

The requirements the thermostatic safety mixing valves shall meet and the respective test methods have been laid down in the following standard:

**National Health Service Model engineering specifications D 08 “Thermostatic mixing valves (Healthcare premises)”**.

#### 4.3.2 *Additional specification: Material*

In view of what has been mentioned in the NHS D08, also the following requirements are applicable for the materials to be used.

#### 4.3.2.1 *Requirements to avoid deterioration of the quality of the drinking water*

Products and materials, which (may) come into contact with drinking water or warm tap water, shall not release substances in quantities which can be harmful to the health of the consumer or negatively affect the quality of the drinking water. Therefore, the products or materials shall meet the requirements of BS 6920 and be subject to re-assessment of the materials in contact with drinking water every five years.

#### 4.3.3 *Further specifications*

##### 4.3.3.1 *Flexible connecting hoses*

Flexible connecting hoses shall comply with the requirements of the UK Regulators Specification.

##### 4.3.3.2 *Cross flow between hot and cold water (ad NHS D08 – art. 5.5)*

Check valves, if used, shall comply with the requirements of the UK Water Regulators Specification.

### 4.4 Tempering mixing valves

#### 4.4.1 *Product requirements and test methods*

The requirements the product shall meet and the respective test methods have been laid down in the following standards:

**BS EN 15092:2008 Building valves - Inline hot water supply tempering valves - Tests and requirements.**

#### 4.4.2 *Further specifications: material*

In view of what has been mentioned in the BS EN15092, also the following requirements are applicable for the materials to be used.

<sup>1</sup> For thermostatic mixing valves with a limitation of the mixing water temperature which is less than 60°C, problems may occur in case of measurements to be taken in relation to the prevention of legionnaires disease.

#### 4.4.2.1 *Requirements to avoid deterioration of the quality of the drinking water*

Products and materials, which (may) come into contact with drinking water or warm tap water, shall not release substances in quantities which can be harmful to the health of the consumer or negatively affect the quality of the drinking water. Therefore, the products or materials shall meet the requirements of BS 6920 and be subject to re-assessment of the materials in contact with drinking water every five years.

In addition to the requirements of BS 6920 for materials the NHS may request additional requirements for materials used in Health Care Premises,

# 5 Sampling

## 5.1 General

The sampling shall be undertaken based on ISO 2859-1 "Sampling procedures for inspection by attributes". The selection of test samples shall be drawn from the same production batch. Sampling of the test item shall be selected by a sample drawn from the lot by the Spot sample of random sampling to ISO 3534-2 Clause 2.1.6<sup>1</sup>.

The AQL (Acceptable Quality Level) and the sample size shall be used to obtain the sampling plan from ISO 2859-1 Table 1 - S1 (C). In all cases the minimum selection shall be 5 samples from a minimum batch size of 30 or be subject to a separate agreement with Kiwa Watertec.

## 5.2 Failures.

When additional samples have to be selected due to a failure in testing, a new batch of samples shall be selected from a new production batch and to the above method.

## 5.3 The person undertaking the sampling.

The person who undertakes the sampling shall be totally independent of the manufacturing company. The independence of the person making the sample selection shall be agreed prior to the selection process.

**Note:**

Transport of valves by air without adequate protection against damage e.g. by freezing or depressurisation, is not advised as the performance of the valve may be affected.

## 5.4 Products which are already Kiwa NL Certified Products.

Where a TMV or tempering valve is already certified by Kiwa NV via a ISO17065 Product Certification Scheme, the valve is deemed acceptable and a Test Report is held within the Kiwa UK Certification documentation. Where this is the case, no further production testing is required and there is no requirement to undertake a pre-inspection of the manufacturers premises due to the fact that annual inspections of the premises are already being undertaken by a Kiwa NV company. The normal annual inspection will be undertaken and the IQC Scheme validated by Kiwa UK Staff during the standard annual inspection. Additional tests maybe required at the annual inspection.

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<sup>1</sup> ISO 3534-2 Clause 2.1.6

Spot sample. A spot sample of a specific number or size is taken from a specific place in the material or at a specified place and time in a stream and considered representative of its own immediate or local environment.

## 6 Installation and Maintenance documents

An Installation and Maintenance (I&M) document in the English language shall be available for the valves<sup>1</sup>. This document shall include specific information upon the operating characteristics of the valve, maximum allowable temperatures and operational procedures and include the following:

### **Type 2 TMV**

- a. Operating conditions of use, pressure and temperature (hot and cold) Table 1 in BS EN 111 and BS EN 1287.
- b. Statement that valves operating outside these conditions of use cannot be guaranteed to operate as Type 2 valves.
- c. Its designation of use LP (Low pressure to BS EN 1287) or HP (high pressure to BS EN 1111) or HP and LP if tested against both.
- d. Valves approved for designation of use HP only must state – if water supply is fed from a storage cistern by gravity then the supply pressure should be verified to ensure the conditions of use are appropriate for the valve.
- e. Recommended maximum set mixed water temperatures for applications of use, including the recommended safe water temperature for children.
- f. Information upon the installation of the valve, this will include:
  - Requirements for the valve accessibility to commission and maintain the valve.
  - Maintenance instructions.
  - If isolation valves are not provided then a statement is required that states “The fitting of isolation valves is required and identify the preferred location.
  - If strainers are not provided then a statement is required that states “The fitting of strainers is recommended and identify the preferred location.
- g. Information upon commissioning and testing of the valve, this will include.
  - Method of adjusted the mixed water temperature
  - Method for commissioning the valve
  - Statement that mixed water temperature at the terminal fitting should never exceed 46°C
  - Information on residual flow during cold water supply isolation test.
- h. Reference to be made to the installation shall comply with the Water Supply (Water Fittings) Regulations 1999.
- i. Valves approved for low pressure tub/bath applications that only achieve the minimum flow rate requirement at a supply pressure of 0.2 bar must indicate that the minimum supply pressure for the tub/bath applications is 0.2 bar.
- j. Where valves have passed the test for multi outlets, then the maximum number of outlets shall be stated.
- k. Information on backflow if required.

### **Type 3 TMV.**

- a. Operating conditions of use, pressure and temperature (hot and cold).
- b. Statement that valves operating outside these conditions of use cannot be guaranteed to operate as Type 3 valves.
- c. Its designation of use LP (Low pressure) or HP (high pressure) and include HP-B, HP-S, HP-W, HP-T44, LP-B, LP-S, LP-W, LP-T etc.

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<sup>1</sup> In case the manual is available as an electronic document on the internet, the valves shall be accompanied by a paper document indicating the website where the manual can be found.



- d. Valves approved for designation of use LP only must state – if water supply is fed from a storage cistern by gravity then the supply pressure should be verified to ensure the conditions of use are appropriate for the valve.
- e. Recommended maximum set mixed water temperatures for applications of use, including the recommended safety water temperature for children.
- f. Information upon the installation of the valve, this will include:
- Requirements for the valve accessibility to commission and maintain the valve.
  - Maintenance instructions.
  - If isolation valves are not provided then a statement is required that states “The fitting of isolation valves is required and identify the preferred location.
  - If strainers are not provided then a statement is required that states “The fitting of strainers is recommended and identify the preferred location.
- g. Information upon commissioning and testing of the valve, this will include.
- Method of adjusted the mixed water temperature
  - Method for commissioning the valve
  - Statement that mixed water temperature at the terminal fitting should never exceed 46°C
  - Method and frequency (1 year maximum) for performing the in-service tests.
  - Information on residual flow during cold water supply isolation test.
- h. Reference to be made to the installation shall comply with the Water Supply (Water Fittings) Regulations 1999.
- i. Information on backflow if required.

# 7 Marking

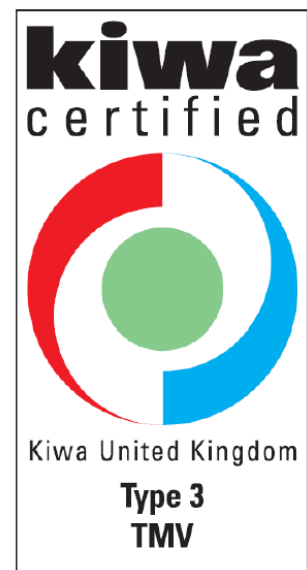
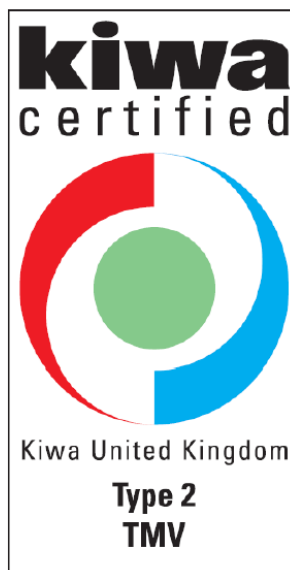
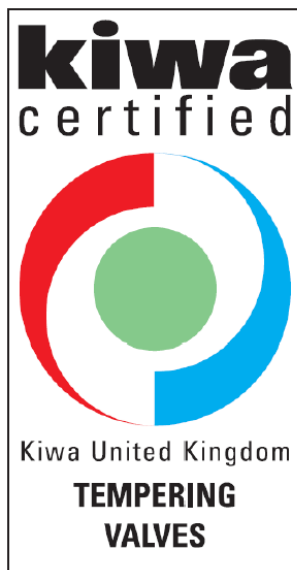
## 7.1 General

The products shall be marked conform the requirements of their respective standard.

## 7.2 Certification mark

After completing a Kiwa Watertec certification agreement, the certified products shall be indelibly marked with the certification mark “KUK”.

The packaging may be provided with (one of) the following mark(s)



## 7.3 Economy flow rate.

The following thermostatic mixers, having the designations bidet, shower or washbasin, may, in relation with this Guideline, be indicated as “economy flow rate”;

- Type 2 TMV (only applicable to HP valves approved to BS EN 1111 excluding bath use), in case the mixed water flow rate is between 4.8 and 12 litre/minute.
- Type 3 TMV, in case the mixed water flow rate is less than 8 litre/minute.

# 8 Requirements in respect of the quality system

This chapter contains the requirements which have to be met by the supplier's quality system.

## 8.1 Manager of the quality system

Within the supplier's organizational structure an employee must have been appointed who is in charge of managing the supplier's quality system.

## 8.2 Internal quality control/quality plan

The supplier shall have an internal quality control scheme (IQC scheme) which is applied by him.

The following must have been demonstrably recorded in this IQC scheme:

- what aspects are checked by the producer;
- according to what methods such inspections are carried out;
- how often these inspections are carried out;
- in what way the inspection results are recorded and kept.

This IQC scheme should at least be an equivalent derivative of the model IQC scheme included in the addendum.

## 8.3 Procedures and working instructions

The supplier shall be able to submit the following:

- procedures for:
  - dealing with products showing deviations;
  - corrective actions to be taken if non-conformities are found;
  - dealing with complaints about products and/or services delivered;
- the working instructions and inspection forms used.

# 9 Summary of tests and inspections

This chapter contains a summary of the following tests and inspections to be carried out in the event of certification:

- Pre-certification tests;
- Inspection test as to BS6920 and product requirements;
- Inspection of the quality system.

The frequency with which Kiwa will carry out inspection tests is also stated in the summary.

## 9.1 Test matrix

| Description of requirement   | Clause  | Tests within the scope of |   |                      |
|--|---------|---------------------------|---|----------------------|
|  |         | Pre-certification         | Supervision by Kiwa after granting of certificate <sup>1)</sup><br>inspection <sup>2)</sup> | frequency (no./year) |
| <b>Sanitary thermostatic mixing valves BSEN 1111 &amp; BSEN1287</b>                  |         |                           |   |                      |
| <b>Material</b>  |         |                           |   |                      |
| Materials - Requirements to avoid deterioration of the quality of the drinking water | 4.2.2.1 | X                         | X   | 1/5                  |
| <b>Functional requirements</b>   |         |                           |   |                      |
| • Dimensions   | 4.2.1   | X                         | X   | 1                    |
| • Water tightness  |         | X                         | X   | 1                    |
| • flow rate  |         | X                         | X   | 1/3                  |
| • sensitivity  |         | X                         | X   | 1/3                  |
| • safety   |         | X                         | X   | 1/3                  |
| • temperature regulation   |         | X                         | X   | 1/3                  |
| • closure  |         | X                         | X   | 1/3                  |
| • durability   |         | X                         | X   | 1/5                  |
| • resistance against forces  |         | X                         | X   | 1/3                  |
| <b>Further specifications</b>  | 4.2.3   | X                         | X   | 1/3                  |
| <b>Marking</b>   | 7       | X                         | X   | 1                    |
| <b>Thermostatic safety mixing valves TMV3 (DO8)</b>                                  |         |                           |   |                      |
| <b>Material</b>  |         |                           |   |                      |
| Materials - Requirements to avoid deterioration of the quality of the drinking water | 4.3.2.1 | X                         | X   | 1/5                  |
| <b>Functional requirements</b>   |         |                           |   |                      |
| • Dimensions   | 4.3.1   | X                         | X   | 1                    |
| • Water tightness  |         | X                         | X   | 1                    |
| • flow rate  |         | X                         | X   | 1/3                  |
| • Thermal performance tests  |         | X                         | X   | 1/3                  |
| • Temperature overshoot tests  |         | X                         | X   | 1/3                  |
| • Temperature stability tests  |         | X                         | X   | 1/3                  |
| • Durability tests   |         | X                         | X   | 1/5                  |
| <b>Further specifications</b>  | 4.3.3   | X                         | X   | 1/3                  |
| <b>Marking</b>   | 7       | X                         | X   | 1                    |
| <b>Tempering mixing valves BSEN15092</b>   |         |                           |   |                      |
| <b>Material</b>  |         |                           |   |                      |
| Materials - Requirements to avoid deterioration of the quality of the drinking water | 4.4.2.1 | X                         | X   | 1/5                  |
| <b>Functional requirements</b>   |         |                           |   |                      |
| • Dimensions   | 4.3.1   | X                         | X   | 1                    |
| • Water tightness  |         | X                         | X   | 1                    |

| Description of requirement                                     | Clause | Tests within the scope of |   |                      |
|--|--------|---------------------------|---|----------------------|
|  |        | Pre-certification         | Supervision by Kiwa after granting of certificate <sup>1)</sup><br>inspection <sup>2)</sup> | frequency (no./year) |
| • Type 1 - Verification of valve temperature settings          |        | X                         | X   | 1/3                  |
| • Type 2 – Pre-set temperature adjustable                      |        | X                         | X   | 1/3                  |
| • Determination of flow  |        | X                         | X   | 1/3                  |
| • Test for temperature stability starting from ambient         |        | X                         | X   | 1/3                  |
| • Test for temperature stability with changing flow rates      |        | X                         | X   | 1/3                  |
| • Test for thermal shutoff with cold supply failure            |        | X                         | X   | 1/3                  |
| • Test for temperature stability with changing inlet pressures |        | X                         | X   | 1/3                  |
| • Endurance test on the thermostat                             |        | X                         | X   | 1/5                  |
| <b>Marking</b>   | 7      | X                         | X   | 1                    |

<sup>1)</sup> In case of significant changes of the product or production process, compliance of the product to the performance requirements shall be determined

<sup>2)</sup> Inspections as indicated are to be conducted either by

- the manufacturer in their own ISO 17025 accredited laboratory,
- the manufacturer in presence of the inspector,
- an ISO 17025 accepted accredited laboratory.

## 9.2 Inspection of the quality system

The quality system will be checked by Kiwa on the basis of the IQC scheme.

The inspection contains at least those aspects mentioned in the Kiwa Regulations for Product certification.

# 10 Agreements on the implementation of certification

## 10.1 General

Beside the requirements included in these evaluation guidelines, also the general rules for certification as included in the Kiwa Regulations for Product Certification apply.

These rules are in particular

- The general rules for conducting the pre-certification tests, to be distinguished in:
  - the way suppliers are to be informed about an application is being handled,
  - how the tests are conducted,
  - the decision to be taken as a result of the pre certification tests.
- The general directions for conducting inspections and the aspects to be audited,
- The measurements to be taken by Kiwa in case of Non Conformities,
- Measurements taken by Kiwa in case of improper Use of Certificates, Certification Marks, Pictograms and Logos,
- Terms for termination of the certificate,
- The possibility to lodge an appeal against decisions of measurements taken by Kiwa.

## 10.2 Certification staff

The staff involved in the certification may be sub-divided into:

- certification experts: they are in charge of carrying out the pre-certification tests and assessing the inspectors' reports;
- inspectors: they are in charge of carrying out external inspections at the supplier's works;
- decision-makers: they are in charge of taking decisions in connection with the pre-certification tests carried out, continuing the certification in connection with the inspections carried out and taking decisions on the need to take corrective actions.

## 10.3 Report Pre certification tests

Kiwa records the results of the pre certification tests in a report. This report shall comply with the following requirements:

- completeness: the reports verdicts about all requirements included in the evaluation guideline,
- traceability: the findings on which the verdicts have been based shall be in a recorded traceable manner,
- basis for decision: the decision maker shall be able to base his decision on the findings included in the report.

## 10.4 Decision for granting the certificate

The decision for granting the certificate shall be made by a qualified decision maker which has not been involved in the pre certification tests. The decision shall be recorded in a traceable manner.

## 10.5 Lay out of Certification Certificate

The product certificate shall conform to the model included as appendix I

## 10.6 Nature and frequency of external inspections

The certification body shall carry out Audits at the supplier at regular intervals to check whether the supplier complies with his obligations. Regarding the frequency of inspections the Board of Experts decides. At the time this Evaluation Guideline took effect, the frequency was set at a number of 1 inspection (duration up to 2 days) visits per year. The duration depends on how the manufacturer complies with section 9.1 of this Evaluation Guide Line.

Inspections shall at least refer to:

- The suppliers IQC-scheme and the results obtained from inspections carried out by the supplier,
- The correct way of marking of certified products
- Complying with required procedures.

The results of each inspection shall be recorded within a traceable report.

## 10.7 Interpretation of requirements

The Board of Experts may record the interpretation of requirements of these evaluation guidelines in one separate interpretation document.

# 11 Titles of standards

| <b>Number</b>                                      | <b>Title</b>   |
|--|--|
| BS 6920  | Suitability of non-metallic materials for use in contact with water intended for human consumption with regard to their effect on water quality. |
| BS EN 248 : October 2002                           | Sanitary tapware. General technical specifications for electrodeposited nickel chrome coatings   |
| BS EN 1111 : May 1998                              | Sanitary tapware – Thermostatic mixing valves (PN 10) – General technical specifications   |
| BS EN 1287 : April 1999                            | Sanitary tapware – Low Pressure Thermostatic mixing valves – General Technical Specification.  |
| BS EN 15092 : June 2008                            | Building valve – Inline hot water supply tempering valves – Tests and requirements.  |
| NHS D08  | National Health Service Model Engineering Specification - Thermostatic mixing valves (Healthcare premises)                                       |
| UK Regulators Specificatiën                        | A set of test criteria issued by the UK Government for compliance with the UK Water Supply (Water Fittings) Regulations 1999.                    |
| UK Water Supply (Water Fittings) Regulations 1999. | UK Government Regulations protecting the supply of wholesome water supplied by the Water Undertaker  |

# I Model Certificate

Kiwa Watertec Product certificate  
KUK-XXXXX/01



Issued

Replaces

Page

## Thermostatic Mixing Valves Type 2 TMV

### KIWA WATERTEC

declares that legitimate confidence exists that the products as specified in this certificate and supplied by

### Manufacturer

be relied upon to comply with  
**evaluation guideline Kiwa UK - EG001.**  
when marked with the  
**KUK®-mark**

The products are intended to be used in the **UK\*** only  
and in compliance with the  
**Water Supply (Water Fittings) Regulations 1999**

The certificate has been issued in accordance with the Kiwa Regulations for Product Certification after initial type testing and Factory Inspection

The validity of the certificate depends on results of the surveillance audits as conducted by  
**Kiwa Watertec**  
at regular intervals.

David Jay  
Kiwa Watertec

Publication of the certificate is allowed.

Advice: consult [www.kiwa.co.uk](http://www.kiwa.co.uk) in order to ensure that this certificate is still valid.

\* for other countries, other (national) requirements may apply.

Supplier

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Fax: +44 (0) 1495 304 496  
[www.kiwa.co.uk](http://www.kiwa.co.uk)



Certificate



## II Model IQC-scheme

| Subjects   | Aspects | Method | Frequency | Registration |
|--|---------|--------|-----------|--------------|
| Raw materials or materials supplied: <ul style="list-style-type: none"> <li>• Purchase specifications</li> <li>• Incoming inspection raw materials</li> </ul>  |         |        |           |              |
| Production process, production equipment, material: <ul style="list-style-type: none"> <li>• procedures</li> <li>• work instructions</li> <li>• equipment</li> <li>• release of product</li> </ul>                           |         |        |           |              |
| Finished-products  |         |        |           |              |
| Measuring and testing equipment <ul style="list-style-type: none"> <li>• measuring equipment</li> <li>• calibration</li> </ul>   |         |        |           |              |
| Logistics <ul style="list-style-type: none"> <li>• internal transport</li> <li>• storage</li> <li>• preservation</li> <li>• packaging</li> <li>• identification or marking of semi finished and finished products</li> </ul> |         |        |           |              |