

inta's *guide to* **Thermostatic Protection**



**‘Up to 5 children are
scalded in the UK
everyday!’**

(hotwaterburns.org)

Introduction	3
Scalding	4-5
About TMV protection and Regulation changes	6-7
Legionella in hot and cold water	8
How Inta can help to combat against Legionella	9-11
1. Under bath thermostatic protection	12-13
2. Over-bath thermostatic protection	14-15
3. Showering protection	16-17
4. Independent basins protection	18-19
5. Multi-basin washrooms protection	20-21
6. Group shower installations protection	22-23

Product selector

A guide to which Inta valve suits various installations.

7. Private dwelling applications	24-25
8. Housing association applications	26-27
9. Housing association dwelling for the elderly	28-29
10. Young persons care home applications	30-31
11. Private hospital applications	32-33
12. NHS and private nursing home applications	34-35
13. Hotel and leisure centre applications	36-37
14. Schools and nurseries for the disabled applications	38-39
15. Schools including nurseries applications	40-41
Reference documents	42
Useful links	43

For over a decade anti-scald valves have been a compulsory fitment to baths in new bathrooms in the UK, under legislation designed to reduce the number of deaths and serious injuries caused by hot bath water. A large proportion of those injuries happen to young children and the elderly.

Anti-scald valves can save lives and prevent life-changing injuries and naturally, as professional industry specialists, installers should ensure that every installation they are involved with is compliant with regulations.

However Britain's bathrooms are still far from fully covered. Inta is the market leader in anti-scald valves and although we have supplied well over a million of our Intamix valves, that is still far short of the 50 million households with bathrooms. Thankfully, the installation of anti-scald valves is part of standard 'best practice' for many but to accelerate anti-scald protection to every British bathroom, the installation of thermostatic valves needs to be second nature every time work in a bathroom is undertaken.

We believe you will find everything you need to know about anti-scald in this booklet, but if you want to know more, please contact your Inta representative or our technical team directly.

Key to symbols



The blue anti-scald hand is your assurance that the valve will deliver safe hot water. This means that you can have hot water but the thermostatic cartridge will not allow the water to get hot enough to scald.



These valves have NSF accreditation; TMV2 for domestic, hotel and leisure applications and TMV3 for healthcare and education. TMV3 valves also comply with the NHS D08 Standard for care homes and hospitals.



Products with this logo are WRAS Approved and have undergone mechanical and water quality testing to comply with the Water Fittings Regulations.

2,000 children a year attend A&E following bath water scalds*

That's 5 children everyday!

**(hotwaterburns.org)*



Number of seconds it takes to get a deep burn from hot water
(hotwaterburns.org)



Treat burns with cold running water for at least 20 minutes



HOT TIP!

When you run a bath, put cold water in first, then top up with hot and never, ever, leave babies or young children alone in the bath. Cover any low-level hot pipes with insulating material if you can, in case children fall against them.

What is scalding?

Scalding is a burn to the skin caused by uncontrolled hot water and steam. A scald takes longer to heal and the scar is worse than that from dry heat. There is no cure for a burn. The only logical action is prevention.

Why so hot?

To kill off legionella, the bacteria that causes Legionnaires disease, hot water should be stored at or above 60°C. Unfortunately, hot enough to kill legionella means hot enough to kill or disfigure people too.

Legionella bacteria will die above 60°C but thrives between 20°C and 50°C. Although the bacteria will not multiply at temperatures below 20°C, it will remain dormant in the system as a potential threat.

Cooling it down

The process for cooling hot water is very simple. All it takes is a valve that blends hot water with cold in a controlled way which keeps the temperature steady.

Anti-scald or Thermostatic Mixing Valves (TMVs) are either installed into the water system close to the outlet, or they are an integral part of the outlet tap or shower.

Where to locate a TMV

A separate TMV should be located as close as possible but within 2 metres of the outlet, which in practice means that they can be concealed beneath a bath.

When choosing a position, thought should be given to future access for servicing. The best TMVs have a cartridge construction which allows easy repair and maintenance.

Choosing the right TMV

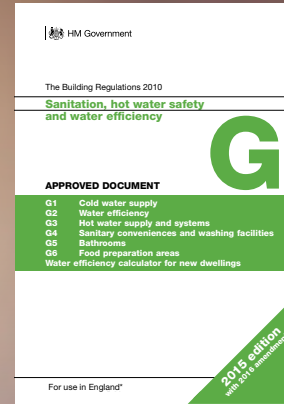
Depending on the installation, the main choice is between a separate TMV and a tap that has an integral TMV. Using a separate TMV means you can still choose whichever style of tap you want or simply keep your existing taps. An integral TMV comes in a range of stylish options and is easier to fit and service.

Installation

Careful thought about positioning a TMV is important to make the installation and subsequent maintenance as easy as possible. It needs to be easy to get at - behind a bath panel or basin pedestal is recommended. For safety reasons, TMVs should never be installed under floorboards or anywhere that requires major dismantling to gain access. TMVs contain temperature sensitive parts, so soldering near the valve should be avoided.

Different TMVs are designed to work with different inlet pressures and temperatures so always check that the valve you intend to use will work with the system you have. Inta TMVs work with a wide range of inlet pressures and temperatures (check the data sheet provided by the manufacturer). Inta's technical data is available from merchants and online at

www.intatec.co.uk



How Inta can help you comply with thermostatic protection legislation when installing a bath

Part G legislation

(which came into force April 2010) states:

'the hot water supply temperature to a bath should be limited to a maximum of 48°C by use of an in-line blending valve or other appropriate temperature control device, with a maximum temperature stop and a suitable arrangement of pipework'

This means all new baths must be thermostatically protected.

In order to comply with this new building legislation, Inta, the anti-scald specialists, has a range of solutions which comply with BS EN1111 and BS EN1287 for under and over the bath.

What is legionella?

Legionella bacteria is commonly found in water – the bacteria can multiply in temperatures between 20°C - 50°C but are often dormant below 20°C and the bacteria is killed above 60°C. Legionnaires disease is a potentially fatal type of pneumonia, contracted by inhaling airborne water droplets containing legionella bacteria. According to an article by the CIPHE the latest monthly legionella report showed that from January - October 2019 there were a reported 213 confirmed cases of legionella disease, by following the correct protocol and being aware of the main ways to prevent growth of this harmful bacteria, installers can play a critical part in getting it under control.

How Inta helps to Combat Legionella

The primary method used to control the risk from Legionella is water temperature. For example according to the Health and Safety Executive, Hot water storage cylinders should be stored at 60°C or higher. Hot water should be stored at least at 60°C and distributed so that it reduces to temperature of 50°C (55°C in Health Care) within one minute of the outlets. Cold water should be stored and distributed below 20°C.

Please see below the 7 mandatory requirements of any water system with the potential to be a source of legionella bacteria growth:

1. An identifiable duty holder which can include, Employers, facilities managers or anyone in control of a premises
2. A competent and appointed person to monitor the system
3. Systems must always be monitored and maintained
4. Systems must be risk assessed on a regular basis
5. Inspection records or a logbook must be kept
6. Plans of the system layout must be readily available to refer to
7. The system must be regularly cleaned

For more information and guidance on the control of legionella please refer to the Approved code of Practice L8 fourth edition (ACOP).

Inta have a range of products within its portfolio to help stay within the legionella guidelines, from a full range of thermostatic mixing valves to deliver water at a set temperature safely, with a unique bypass flushing method, to a full range of HBN00-10 HTM64 compliant Hospital taps complete with their own sterilisation feature built in.

60015CP - Thermostatic mixing valve with integral by-pass for sterilisation



Features

- Thermostatic Control
- Built-in manual bypass for hot water sterilisation
- Anti-scald fail safe technology
- Integral check valves

Inta's thermostatic mixing valve comes equipped with its own unique by-pass device to sterilise the valve and the waterway up to the tap without having to be disassembled. Whilst also delivering safe, blended hot water to taps, showers, bidets and other water outlets.

Thanks to the valve's temperature sensor which dilates and contracts depending on the desired temperature, it constantly and automatically regulates the water flow between hot and cold until the perfect temperature has been achieved.



HBNO0-10 HTM 64 safe touch thermostatic sequential wall-mounted tap

Designed and manufactured to meet the specific requirements of hospitals, where hygiene and infection control are paramount.

The range of clinical handwash mixers are WRAS and TMV3 approved, compliant with the Healthcare Performance Requirements and feature a long lever that can be operated without hand contact, a full safe-touch surface to prevent contact scalding, smooth lines and surfaces for easy cleaning and a simple flushing method for installation. Other features include optional removable spout models for auto-claving, one-piece removable cartridge, supply isolating valves accessible without removing from the wall/panel, simple sterilisation method, smooth internal surfaces and a flow outlet compliant with HTM04-01 addendum 2013.

For the full range of Inta HTM taps please visit the website at: www.intatec.co.uk/product_groups/htm64

HTM sterilisation

Inta's range of HTM Taps come fitted with a sterilisation and flushing feature, see the below range:



HTM safe touch thermostatic sequential wall-mounted tap

HTM (TBH 2a) safe touch thermostatic sequential wall-mounted tap
HTMWMCP (HTMWMRS - removable spout)

Features

- HTM04-01 compliant flow outlet and self-draining spout
- Built-in sterilisation method



HTM safe touch thermostatic sequential mixer tap with basin-mounting legs

HTM safe touch thermostatic sequential deck-mounted tap
HTMDMCP (HTMDMRS - removable spout)

Features

- HTM04-01 compliant flow outlet and self-draining spout
- Built-in sterilisation method



HTM (TB H6) safe touch infrared thermostatic wall-mounted tap

HTM (TB H6) safe touch infrared thermostatic wall-mounted tap with removable spout
HTMWMBCP, HTMWMBRS

Features

- Infrared operation - wave on / off with 60 second pre-set flow time
- 24 hour automatic hygiene flush

1. Under-bath thermostatic protection

Installation - baths

Building regulations Part G state that the temperature of water into a bath should be no more than 48°C, this also allows for heat loss in metal baths.

A comfortable bathing temperature is around 37°C. Ina have their own dedicated under bath mixing valve which has been specifically designed to be installed under baths providing thermostatic protection whilst also maintaining high volume flow rates for maximum heat efficiency.

This product can be found at the top of page 13.

Below you can find a typical installation layout of an under bath thermostatic mixing valve supplying a bath hot water outlet.



Intamix

low pressure under bath thermostatic mixing valve
22mm compression
60007CP

Features

- Thermostatic control
- Large flow rates with low pressure drops
- Anti-scald fail-safe technology
- Ideal for under-bath thermostatic control



15mm Intamix

thermostatic mixing valve
40015CP

22mm Intamix

thermostatic mixing valve
40022CP

Features

- Thermostatic control
- Anti-scald fail-safe technology
- Suitable for high and low pressure
- Integral check valves



2. Over-bath thermostatic protection

Installation - baths

Below you can see the TMV is built into the bath valve, meaning the thermostatic blending and protection is hidden within the bath valve itself. This can help reduce labour time and costs.

Building regulations Part G state that the temperature of water into a bath should be no more than 48°C. This also allows for heat loss in metal baths. A comfortable bathing temperature is around 37°C.

Inta have a full range of over bath thermostatic protection, some of which can be found on page 15.



Telo thermostatic bath shower mixer

with flexible slide rail kit and deck mounting legs
TL30024CP

FEATURES

- 5 Bar maximum inlet pressure (static)
- 0.2 Bar minimum inlet pressure (dynamic)
- Thermostatic fail-safe technology
- Easy to operate handles
- External flow diverter
- Deck and wall mounted options available



3. Showering protection

Installation - showers

It is best practice to use an approved TMV or an integrated thermostatic shower to deliver water at a maximum temperature of 41°C, with a fail-safe function should either the hot or cold water supply fail.

Examples of integrated showers are shown opposite and below. For these valves there is no external TMV required as any mixing and thermostatic protection is done within the shower valve. This helps makes a quick and efficient installation process.



Puro safe touch thermostatic bar shower with adjustable flexible slide rail kit and eco-air handset PU10031CP

Features

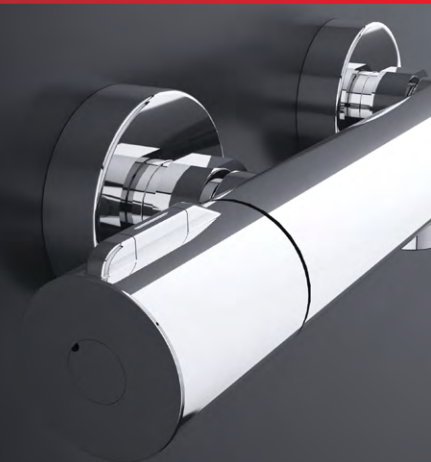
- Thermostatic control
- Anti-scald fail-safe technology
- Safe touch body
- Integral check valves



Acura exposed thermostatic sequential control shower valve with bottom outlet only 90030CP

Features

- Long lever to aid operation for users with limited dexterity
- Thermostatic sequential control
- Anti-scald fail-safe technology
- Available in concealed, exposed with top and bottom connection or bottom only connection



4. Independent basins protection

Installation - basins

For independent basins it is best practice to use a separate TMV or an integrated thermostatic basin tap to control the outlet temperature to a maximum of 41°C. This temperature allows for all of the normal uses of a basin including shaving to be hot enough for its intended purpose but not hot enough to scald. In the event of a failure on either the hot or cold supply the fail-safe function immediately shuts down the flow of water protecting the user from scalding. The Intatherm basin tap shown opposite is an example of an integrated anti-scald thermostatic mixer tap. Below you will find a typical layout of a non-thermostatic basin tap being fed by an Intamix TMV.



Intatherm safe touch

TMV3 thermostatic basin mixer tap with copper tails
IT1005CP

FEATURES

- Long lever to aid operation for users with limited dexterity
- Smooth internal water ways
- Self-draining spout
- DDA compliant
- Copper inlet connections



15mm Intamix

thermostatic mixing valve
40015CP

22mm Intamix

thermostatic mixing valve
40022CP

Features

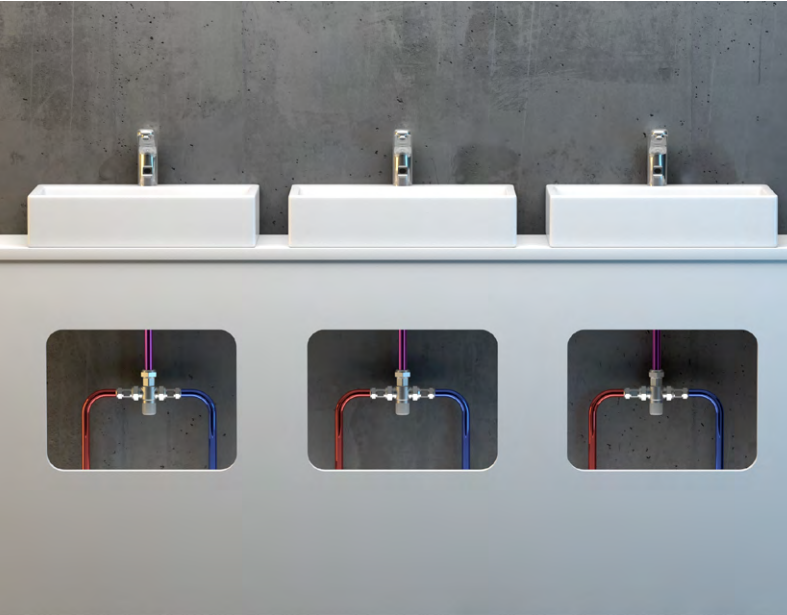
- Thermostatic control
- Anti-scald fail-safe technology
- Suitable for high and low pressure
- Integral check valves



5. Multi-basin washrooms protection

Installing - washrooms

An ideal installation technique for multi-basin washrooms where there are a number of outlets requiring thermostatic protection would be to fit an independent thermostatic mixing valve for each hot outlet. In the diagram below you can see our own Infra Red Basin Taps being supplied using the Intamix TMV, helping to maximise comfort and safety for the user at the same time as saving valuable water. Alternatively, a TMV3 approved basin mixer tap can be used, which can be found on page 19 of this booklet. There is no additional TMV required if this option is taken.



15mm Intamix
thermostatic mixing valve
40015CP

22mm Intamix
thermostatic mixing valve
40022CP

Features

- Thermostatic control
- Anti-scald fail-safe technology
- Suitable for high and low pressure
- Integral check valves



Infrared
infrared contemporary basin-mounted tap (battery operated)
IR120CP.1

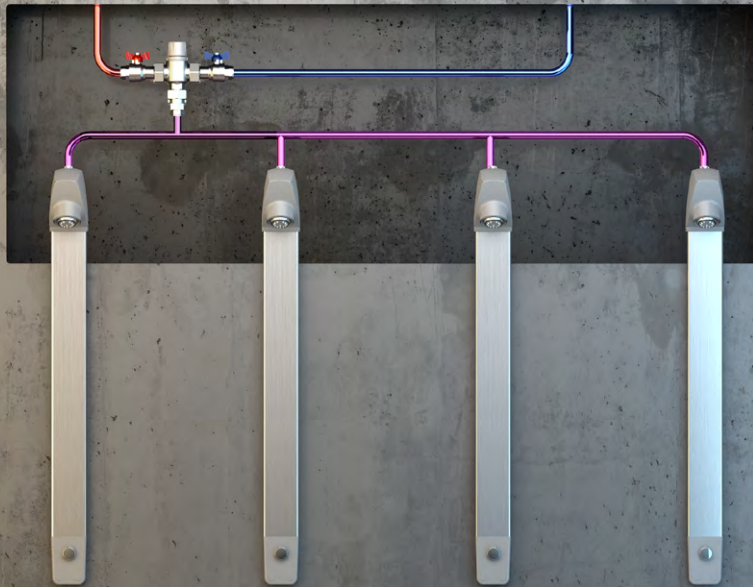
Features

- Infrared touch-free operation
- Timed flow control automatically closes the tap
- Automatic hygiene flush every 24 hours without operation
- Copper inlet connection
- Intended for use with intamix TMV 40015CP



Installing - group showers

Group showers can either be centrally mixed using an appropriate TMV valve as seen in the diagram below, or if required, a point of use thermostatic mixing valve providing each shower's independent thermostatic protection.



Inta i-sport shower panel
with push button timed flow control and adjustable shower head top inlet
SP9206CP

Features

- Timed flow control automatically closes the water
- Directional control of the shower head
- Limescale is easily removed with the rub clean shower head
- Intended for use with the intamix TMV

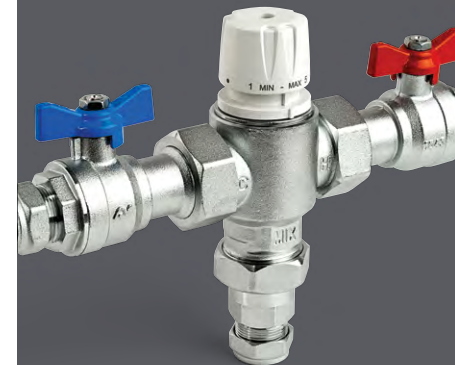


22mm Intamix pro v
with isolating unions
61022CPB











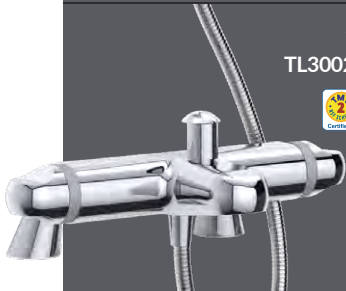





28mm Intamix pro v
with isolating unions
61028CPB

Features












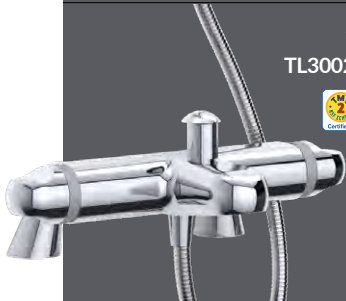







- Thermostatic control
- Large flow rates with low pressure drops for group mixing
- Built in fail-safe technology
- Integral check valve and isolating ball valves



7. Product selector - private dwelling applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✗	✗
Is a TMV suggested best practice?	✗	✓	✓
What type of valve?			
Reference documents	Guidance to Building Regulations (Sec G3)	Guidance to Building Regulations (Sec G3)	Guidance to Building Regulations (Sec G3)
Appropriate Inta valve	 <p>intamix low pressure 60007CP</p> 	 <p>15mm Intamix 40015CP</p>  	 <p>Nulo CB10032CP</p> 
	 <p>Telo TL30024CP</p> 	 <p>Intatherm safe touch IT1005CP</p> 	 <p>Enzo EN10032CP</p> 

8. Product selector - housing association applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✗	✗
Is a TMV suggested best practice?	✗	✓	✓
What type of valve?			
Reference documents	Housing Corp Standard (1.2.1.33a)	Housing Corp Standard (1.2.1.33a)	Housing Corp Standard (1.2.1.33a)
Appropriate Inta valve	 <p>intamix low pressure 60007CP</p> 	 <p>15mm Intamix 40015CP</p>  	  <p>Puro mini concentric PU90014CP</p> 
	 <p>Telo TL30024CP</p> 	 <p>Intatherm safe touch IT1005CP</p> 	 <p>Coolflow ST20017CP</p> 
			 <p>Telo TL10014CP</p> 

9. Product selector - housing association dwelling for the elderly

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✓	✓
Is a TMV suggested best practice?	✓	✓	✓
What type of valve?			
Reference documents	Housing Corp Standard (1.2.1.33a) and (1.2.1.59)	Housing Corp Standard (1.2.1.33a) and (1.2.1.59)	Housing Corp Standard (1.2.1.33a) and (1.2.1.59)
Appropriate Inta valve	<p>22mm Intamix 40022CP</p>	<p>15mm Intamix 40015CP</p>	<p>Acra exposed 90030CP</p> <p>Acra concealed 90032CP</p>

10. Product selector - young persons care home applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✓	✓
Is a TMV suggested best practice?	✓	✓	✓
What type of valve?			
Reference documents	DOH National Minimum Standard, Childrens Home Regulations, Care Standards act 2000, Care Home Regulations 2001, HSE Care Homes Guidance	DOH National Minimum Standard, Childrens Home Regulations, Care Standards act 2000, Care Home Regulations 2001, HSE Care Homes Guidance	DOH National Minimum Standard, Childrens Home Regulations, Care Standards act 2000, Care Home Regulations 2001, HSE Care Homes Guidance
Appropriate Inta valve	<p>22mm Intamix 40022CP</p>	<p>15mm Intamix 40015CP</p>	<p>Acra exposed 90030CP</p> <p>Acra concealed 90032CP</p>

11. Product selector - private hospital applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✓	✓
Is a TMV suggested best practice?	✓	✓	✓
What type of valve?			
Reference documents	Guidance to the Water Regulations (G18.6)	Guidance to the Water Regulations (G18.6)	Guidance to the Water Regulations (G18.6)
Appropriate Inta valve	<p>22mm Intamix MX 400MX22CP</p>	<p>Intatherm safe touch IT1005CP</p> <p>15mm Intamix MX 400MX15CP</p> <p>HTM (TBH 2a) tap HTMWMCP</p>	<p>Acura concealed 90032CP</p>

12. Product selector - NHS and private nursing home applications


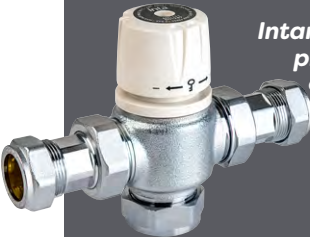




	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✓	✓
Is a TMV suggested best practice?	✓	✓	✓
What type of valve?			
Reference documents	NHS Health Guidance Note, Care Standards Act, Care Homes Regulation, D08	NHS Health Guidance Note, Care Standards Act, Care Homes Regulation, D08	NHS Health Guidance Note, Care Standards Act, Care Homes Regulation, D08
Appropriate Inta valve	<p>22mm Intamix MX 400MX22CP</p>	<p>15mm Intamix MX 400MX15CP</p>	<p>Acura exposed 90030CP</p>
		<p>Intatherm safe touch IT1005CP</p>	<p>Acura concealed 90032CP</p>

13. Product selector - hotel and leisure centre applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✘	✘	✘
Is a TMV suggested best practice?	✔	✔	✔
What type of valve?			
Reference documents	Guidance to the Water Regulations (G18.5)	Guidance to the Water Regulations (G18.5)	Guidance to the Water Regulations (G18.5)
Appropriate Inta valve	<p>22mm Intamix 40022CP</p>	<p>15mm Intamix 40015CP</p>	<p>Puro mini concentric PU90014CP</p>
	<p>Intamix low pressure 60007CP</p>	<p>Intatherm eco IT1008CP</p>	<p>Plus BSM 922245CPB</p>
	<p>Plus BSM 922245CPB</p>		<p>Kiko KK10032CP</p>

14. Product selector - schools and nurseries for the disabled applications

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?	✓	✓	✓
Is a TMV suggested best practice?	✓	✓	✓
What type of valve?			
Reference documents	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, If residential, Care Standards Act	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, If residential, Care Standards Act	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, If residential, Care Standards Act
Appropriate Inta valve	<p>22mm Intamix 40022CP</p>	<p>15mm Intamix 40015CP</p>	<p>Acura exposed 90030CP</p> <p>Acura concealed 90032CP</p>

	Bath	Basin	Shower
Is a TMV required or recommended by legislation or by authoritative guidance?			
Is a TMV suggested best practice?			
What type of valve?			
Reference documents	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, National Minimum Care Standards	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, National Minimum Care Standards	Building Bulletin 87 2nd Edition, The Schools Premises Regulations, National Minimum Care Standards
Appropriate Inta valve	<p>22mm Intamix 40022CP</p>  <p> </p> <p>Intamix low pressure 60007CP</p>  <p></p>	<p>15mm Intamix 40015CP</p>  <p> </p> <p>Intatherm safe touch IT1005CP</p>  <p></p>	<p>Acura exposed 90030CP</p>  <p></p> <p>Coolflow ST20015CP</p>  <p></p>

Part G

(Sanitation, hot water safety and water efficiency) of the Building Regulations, 2010.

Housing corp standard

Housing Corporation, Scheme Development Standards, 5th Edition, Housing Corporation 2003.

DO8 model engineering specifications

D 08 Thermostatic mixing valves (healthcare premises), NHS Estates, 1997.

Building bulletin 87 2nd edition

School Building and Design Unit Department for Education and Skills. Building Bulletin 87 2nd edition, Guidelines for environmental design in schools. DfES 2003, London. Guidance to the Water Regulations Department for Environment, Food & Rural Affairs, Water Supply (Water Fittings) Regulations 1999, Guidance Document relating to Schedule 1: Fluid Categories and

Schedule 2

Requirements for Water Fittings. DEFRA 1999, London.

DOH national minimum standards

Children's homes Regulations Department of Health, National Minimum Standards, Children's Homes Regulations

National minimum care standards section 25.8

HSE Care homes guidance

Health and Safety Executive, Health and Safety in care homes, HSG 220, HSE 2001.

Care standards act 2000

Care homes regulations 2001

Children's home regulations 2001

HTM 04 01 health technical memorandum 04 01

The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems

Part A

Design, Installation and Testing.

Part B

Operational Management

HTM64 health technical memorandum 64

Sanitary assemblies

ACOP L8

Approved code of practice and guidance on regulations L8 fourth edition

www.cbtrust.org.uk/infographics/2017/

www.hotwaterburns.org/some-statistics

www.cbtrust.org.uk/infographics/2017/

www.hse.gov.uk/pubns/hsis6.pdf

www.injuryprevention.bmj.com/content/17/4/238

www.hotwaterburns.org/ciphe

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