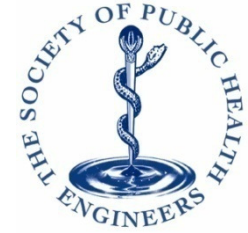


CIBSE & SoPHE CPD Technical Evening



The phasing out of BS 6700

&

A review of the requirements of BS EN 806

By: - Chris Northey

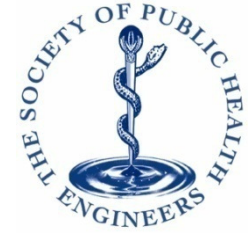
Head of Public Health Engineering, BDSPP Partnership
Chairman of the Society of Public Health Engineers (SoPHE),

21st February 2013





A review of the requirements of BS EN 806

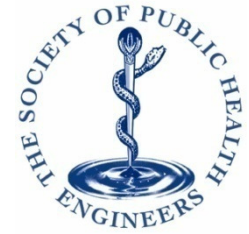


Contents

- Introduction
- The withdrawal of BS 6700
- The introduction of BS EN 806
- The introduction of BS 8558
- Overall Summary & Conclusions



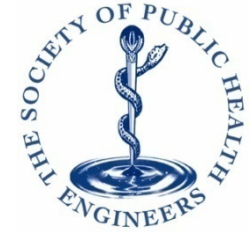
A review of the requirements of BS EN 806



Introduction



A review of the requirements of BS EN 806

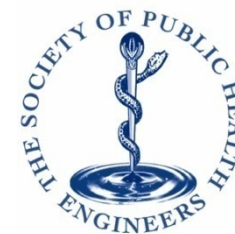


Introduction

- Designers should already be well aware of all the requirements of BS 6700
- However, there is a need to comply with the requirements of BS EN 806
- Up until recently BS 6700 was still an active document
- This is important now as this is no longer the case & BS 6700 has now been withdrawn
- It is therefore now necessary to fully comply with BS EN 806
- This presentation will summarise the main requirements of these new design standards



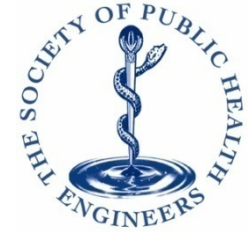
A review of the requirements of BS EN 806



The withdrawal of BS 6700

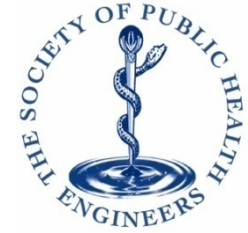


The withdrawal of BS 6700

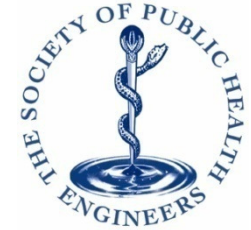


- In the area of Domestic Water Supply, BS 6700 was the lead document until such time as BS EN 806-5 was published
- BS EN 806-5 was published in February 2012 at which point 6700 was withdrawn
- Thus BS 8558 (2011) then became the lead document
- The content of BS 8558 (2011) was taken from BS 6700 (2006) + A1 (2009), which has now been withdrawn following the publication of all parts of BS EN 806
 - 5 parts in total

The introduction of BS EN 806



- BS EN 806 – Specification for installations inside buildings conveying water for human consumption
 - 5 Parts as follows: -
 - 806-1 (2000) : Part 1 – General
 - 806-2 (2005) : Part 2 – Design
 - 806-3 (2006) : Part 3 – Pipe sizing – Simplified method
 - 806-4 (2010) : Part 4 – Installation
 - 806-5 (2012) : Part 5 – Operation & maintenance



A review of the requirements of BS EN 806

BRITISH STANDARD

BS EN
806-1:2000
*Incorporating
Amendment No. 1*

Specification for installations inside buildings conveying water for human consumption —

Part 1: General

Part 1 (2000) – General

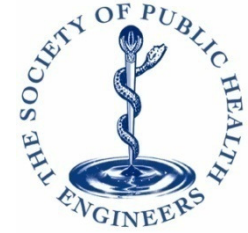
This European Standard (EN 806-1:2000), with incorporation of amendment A1:2001, has the status of a British Standard

BS EN 806-1

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The introduction of BS EN 806



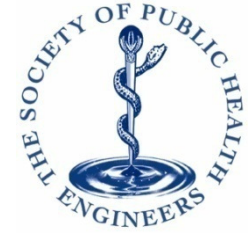
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

– Contents

- (1) Scope
Covers the system of pipes, fittings & connected appliances installed for supplying potable water
- (2) Normative references
Relevant EN's & ISO's

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

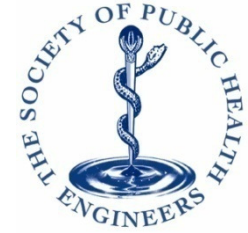
– Contents

- (3) Objectives

The main objectives are to ensure that:

- the deterioration in water quality within the installation is avoided
- the required flow of water & pressure is available at the draw off points & appliances, e.g. washing machines & water heaters
- the potable water meets the standards for;
 - ◆ physical
 - ◆ chemical
 - ◆ & microbiological quality at the draw-off points

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

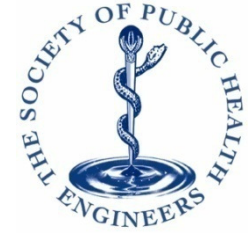
– Contents

- (3) Objectives

The main objectives are to ensure that:

- all parts of the installation do not cause danger to health & do not damage property within calculated lifetimes
- the maintenance of the installation meets the functional requirements at all times during the lifetime of the system
- sound levels are kept to a practicable minimum
- contamination of the public water supply, undue consumption, leakage & misuse is avoided

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

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- (4) Competence & duties for design, construction & operation

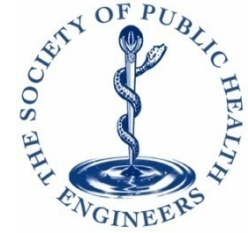
◆ (4.1) Designer

The design shall be carried out by competent persons, e.g. persons with relevant experience, qualifications, knowledge of regulations & safety requirements

◆ (4.2) Installer

The work for construction, alteration & maintenance shall be carried out by competent installers in accordance with qualifications required by national or local regulations

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

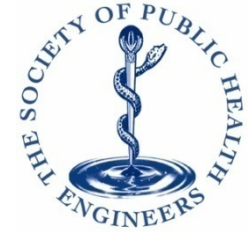
– Contents

- (5) Terms & definitions

There are 43 terms & definitions described; some examples
Include:

- ▶ Potable Water – “...shall be suitable for human consumption & conform with the relevant regulations based on ECC directives. The water may also be used for washing, cooking & sanitary appliances (at temperatures up to 95°C to allow for malfunctions)”

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

– Contents

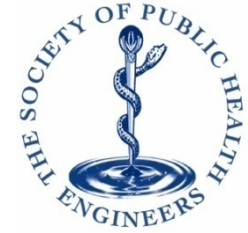
- (6) Graphic symbols & abbreviations

Described under Table 1 – Graphic symbols & abbreviations

A number of examples are provided for: -

- Water pipes
- Joints & coupling connections
- General purpose valves
- Outlet taps & related devices
- Protection units
- Safety devices
- Water conditioning units

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 1 – General (2000)

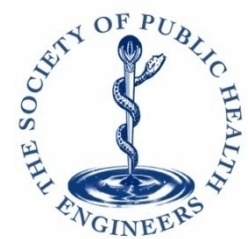
– Contents

- (6) Graphic symbols & abbreviations

Described under Table 1 – Graphic symbols & abbreviations

A number of examples are provided for: -

- Appliances with rotating parts
- Appliances without rotating parts
- Measuring & controlling devices
- Actuators
- Cisterns & water heaters
- Fire fighting devices
- Miscellaneous symbols



A review of the requirements of BS EN 806

BRITISH STANDARD
BS EN
806-2:2005

**Specification for
installations inside
buildings conveying
water for human
consumption —**

Part 2: Design

Part 2 (2005) – Design

The European Standard EN 806-2:2005 has the status of a British Standard

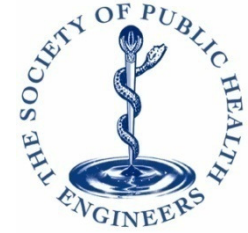
BSI 2005

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The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

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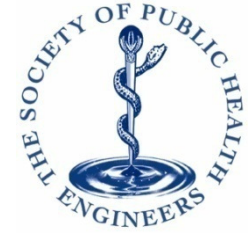
- (1) Scope

This document gives recommendations, and specifies requirements, on the design of potable water installations within buildings, & for pipework outside buildings but within premises (refer to BS EN 806-1) & applies to new installations, alterations & repairs

- (2) Normative references

Relevant EN's & ISO's

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

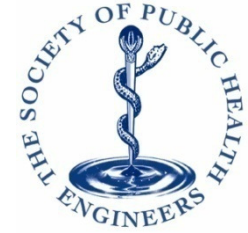
Part 2 – Design (2005)

– Contents

- (3) General requirements

- ▶ 3.1 Water supply – Document applies irrespective of the water being supplied by a statutory water supplier or from a private supply
- ▶ 3.2 Basic concepts –
 - General : For design & construction of a potable water installation 2 types of installation are considered:
 - » Installation type A : Closed potable water installations
 - » Installation type B : Vented potable water installations

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

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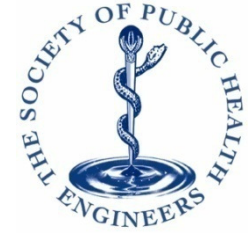
- (3) General requirements

- ▶ 3.2 Basic concepts –

- The potable water installation shall be designed to:

- a) avoid waste, undue consumption, misuse & contamination;
- b) avoid excessive velocity, low flow rates & stagnant areas;
- c) enable water supply to all individual water outlets, taking into consideration pressure, flow rate, water temperature & use of building;
- d) avoid the trapping of air during filling & the formation of air locks during operation of the building;

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

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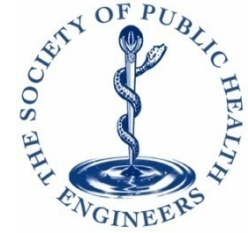
- (3) General requirements

- ▶ 3.2 Basic concepts –

- The potable water installation shall be designed to:

- e) not cause danger or inconvenience to persons & domestic animals nor endanger buildings or their contents;
- f) avoid damage (e.g. scaling, corrosion & degradation) & to prevent the water quality being affected by local environment
- g) facilitate access & maintenance operations of appliances;
- h) avoid cross-connections
- i) minimise the generation of noise

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (3) General requirements

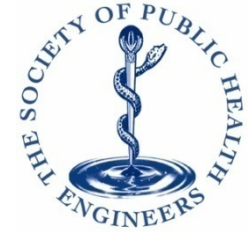
- ▶ Water & energy conservation

- The designer shall consider the water usage & energy demands of an installation & seek to minimise these

- ▶ Materials, components & appliances

- All pipes & joints of a PW system shall be designed for a service life of 50 years at a temperature of 20°C & a design pressure of 10 bar

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (3) General requirements

- ▶ Water flow rates

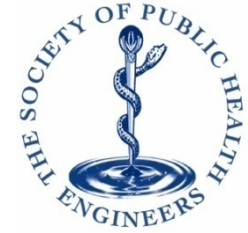
- Design flow rates from outlets are given in BS EN 806 -3

- ▶ Operating Temperature

- 30 s after opening a draw-off fitting the temp. should not exceed 25°C for cold water draw-off points & should be not less than 60°C for central HWS unless otherwise specified by local or national regulations

- (4) Private water supplies

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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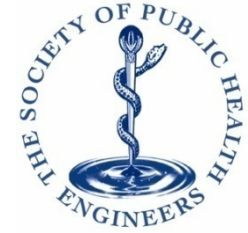
- (5) Acceptable materials

The following factors shall be taken into account in selecting materials used in a water system:

- effect on water quality
- vibrations, stresses or settlement
- internal water pressure
- internal & external temperatures
- internal & external corrosion
- compatibility of different materials
- ageing, fatigue, durability & other mechanical factors
- Permeation

Note: Lead pipes & fittings shall not be used

The introduction of BS EN 806



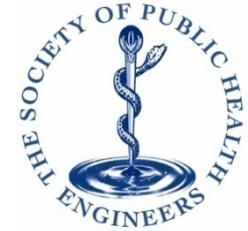
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (6) Components – Stop valves, expansion joints & hoses
- (7) Pipework inside buildings – Isolation, positioning, surface mounting & backflow protection
- (8) Cold potable water Services
 - 8.1 Potable water taps – No potable water tap shall be installed at the end of a long pipe from which only small volumes of water are drawn or water is drawn infrequently
 - 8.2 Differentiation & identification of pipes & components
 - 8.3 Supply & distributing pipes
 - A servicing valve shall be fitted upstream of & as close as practicable to every float-operated valve

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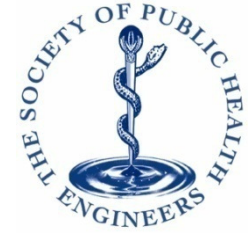
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- (8) Cold potable water Services
 - 8.4 Electrical isolators
 - 8.5 Additional requirements for vented cold water systems
- (9) Hot water systems
 - 9.1 General – “.. the prevention of growth of legionella bacteria national or local regulations shall apply”
 - 9.2 Components
 - 9.3 Taps & mixing valves
 - 9.4 Surface temperatures – “.. storage vessels shall be insulated to promote max. economy of fuel & water
 - 9.5 Connections between cold & hot water pipes
 - 9.6 Additional requirements for vented hot water systems

The introduction of BS EN 806



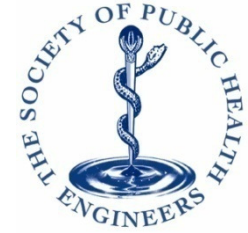
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (10) Prevention of bursting
 - 10.1 General – Safety units, safety valves, temperature & pressure relief valves, expansion valves, etc, should be accessible
 - 10.2 Energy control -
 - Temperature & pressure relief valves & safety units shall be located directly on the storage vessel, sensing the stored water temperature to ensure the water does not exceed 95°C, except where national or local regulations apply;
 - No valves shall be fitted between the temperature and pressure relief valve & the vessel

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (10) Prevention of bursting

- 10.3 Pressure Control

- Safety units, safety valves, temperature & pressure relief valves, expansion valves, etc, should be accessible

- 10.4 Expansion water

- An expansion valve shall be located on the cold feed upstream of the heater & no isolating valves shall be fitted between the expansion valve and the heater

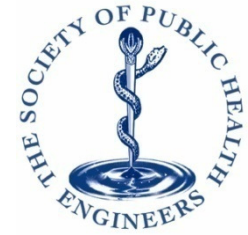
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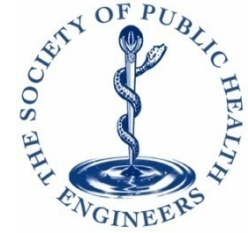
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- (11) Guidelines for water meter installations
 - 11.1 General
 - 11.2 Selection
 - 11.3 Location – accessibility
 - 11.4 Risk of freezing



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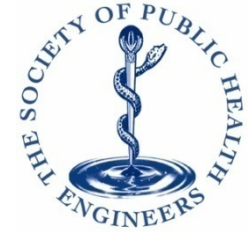
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- (12) Water conditioning
 - 12.1 General
 - 12.2 Basic requirements
 - 12.3 Water conditioning processes
- (13) Acoustics
 - 13.1 General
 - 13.2 Pipework
 - 13.3 Components

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- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (14) Protection of systems against temperatures external to pipes, fittings & appliances
 - 14.1 Freezing – Location of pipes, fittings & appliances
 - 14.2 Heat gain – adequately protected by insulation/clearance
 - 14.3 condensation – CWS pipework to be adequately protected
- (15) Boosting
 - 15.1 General
 - 15.2 Design principles
 - 15.3 Pressure boosters – determination of the pressure zones

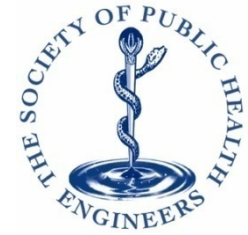
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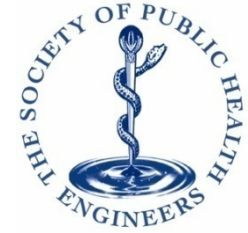
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- (16) Pressure reducing valves
 - 16.1 General – examples of where PRV's may be required;
 - 16.2 Installation
- (17) Combined drinking water & fire fighting services
 - 17.1 General
 - 17.2 Design – responsibilities of designers, installers & operators, H&S, service pipes, direct connection to the main + connection to potable water installation



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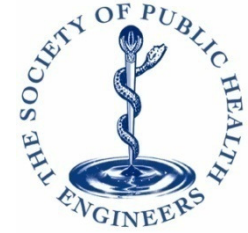
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- (18) Prevention of corrosion damage
 - 18.1 General – minimise risk of corrosion
 - 18.2 Selection of materials – designer to review water analysis data
 - 18.3 Design – designer to choose all appropriate products
 - 18.4 Water conditioning – risk of corrosion to be considered
 - 18.5 Storage & assembly – installer to ensure adequate procedures are put in place on site
 - 18.6 Jointing – designer to select method of jointing to align with manufacturer's recommendations
 - 18.7 Corrosion protection of outside surfaces – several points listed with this document

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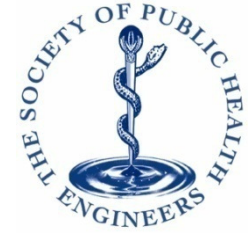
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (19) Additional requirements for vented cold & hot water systems
 - 19.1 Cold water services – storage cisterns supplying water for domestic purposes shall:
 - ❖ fitted with a rigid, close fitting & securely fixed cover, which is airtight but excludes light & insects
 - ❖ Insulated against heat & frost
 - ❖ Provided with warning & overflow pipes, as appropriate, which are arranged to exclude insects

The introduction of BS EN 806



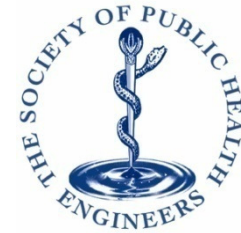
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

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- (19) Additional requirements for vented cold & hot water systems
 - 19.1 Capacity of storage cisterns: in determining the total capacity of cold water storage for a premise it is important to consider-
 - ❖ Prevention of stagnation
 - ❖ Requirements of appliances and water fittings, particularly where interruptions can cause damage to the property or cause inconvenience to the user

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

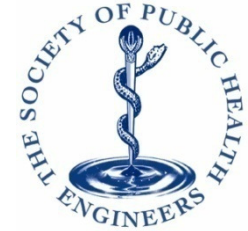
Part 2 – Design (2005)

- (19) Additional requirements for vented cold & hot water systems

Table 6 – Recommended minimum storage of cold water for domestic purposes (hot & cold outlets) (used as guidance only) (Note: Previous BS 6700 figures)

<u>Type of building or occupation</u>	<u>Minimum storage (l)</u>	
Hostel	90 per bed space	(90)
Hotel	200 per bed space	(200)
Office premises: with canteen facilities	45 per employee	(45)
without canteen facilities	40 per employee	(40)
Restaurant	7 per meal	(7)
Day school Nursery or primary	15 per pupil	(15)
Secondary or technical	20 per pupil	(20)
Boarding school	90 per pupil	(90)
Children’s home or residential nursery	135 per bed space	(135)
Nurse’s home	120 per bed space	(120)
Nursing or convalescent home	135 per bed space	(135)

The introduction of BS EN 806



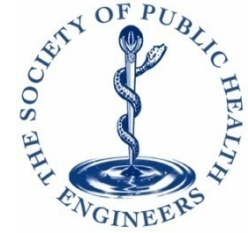
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

- (19) Additional requirements for vented cold & hot water systems

- Capacity of storage cisterns
 - The water supplier should be consulted before finalising cistern capacity to hotels, hostels, office premises, schools & other substantial establishments
 - For dwellings a max. capacity of 80 l per person, a larger capacity based on 130 l per person would normally be appropriate refilling normally takes place only during the night hours
- Materials
- Support
- Positioning
- Water inlet control devices
- Outlets from cisterns
- Larger cisterns
- Warning & overflow pipes

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

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- (19) Additional requirements for vented cold & hot water systems
 - 19. 2 Hot water services –
 - ❖ General principles
 - ❖ Vented system
 - ❖ Direct & indirect heated systems
 - ❖ Double feed vented primary circuits
 - ❖ Single feed primary circuits
 - ❖ Cold feed pipe
 - ❖ Open vent pipe

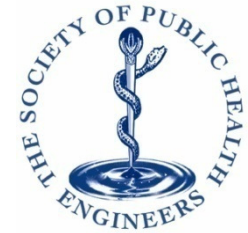
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- Annex A (informative) – List of acceptable materials
 - A.1 Copper & copper alloys
 - A.2 Ferrous materials
 - A.3 Ductile cast iron
 - A.4 Plastics
- Annex B (informative) – Aspects for water conditioning
 - B.1 Corrosion
 - B.2 Scaling
 - B.3 Suspended matter
 - B.4 Mechanical filtration
 - B.5 Chemical dosing



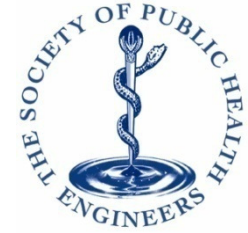
The introduction of BS EN 806

- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 2 – Design (2005)

– Contents

- Annex B (informative) – Aspects for water conditioning
 - B.6 Softening by ion exchange
 - B.7 Nitrate removal by ion exchange
 - B.8 Electrolytic processes
 - B.9 Neutralisation - Hardening
 - B.10 Disinfection by ultraviolet radiation
 - B.11 Reverse osmosis & other membrane processes
 - B.12 Active media





A review of the requirements of BS EN 806

BRITISH STANDARD

BS EN
806-3:2006

Specifications for installations inside buildings conveying water for human consumption —

Part 3: Pipe sizing — Simplified method

The European Standard EN 806-3:2006 has the status of a
British Standard

ICS 91.040.00

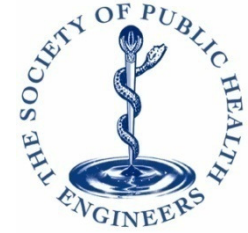
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Part 3 (2006) – Pipe sizing Simplified method

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The introduction of BS EN 806



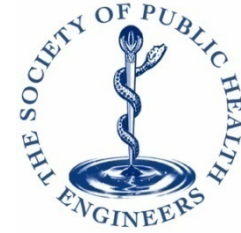
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 3 – Pipe sizing – Simplified method (2006)

– Contents

- (1) Scope
- (2) Normative references
- (3) Terms, symbols & units
- (4) & (5) Principles of pipe sizing calculations – simplified method
 - In most buildings the simplified method can be applied
 - This method is equally used for cold & hot water pipes
 - Detailed calculations: The designer is free to use a nationally approved detailed calculation method for pipe sizing (see Annex C) (BS 6700 – which is now superseded !!!)
 - Hot water return pipes cannot be sized using this method. National or manufacturer's recommendations should be used

The introduction of BS EN 806



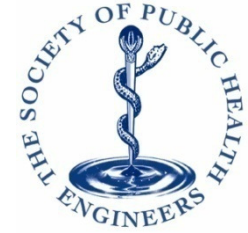
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 3 – Pipe sizing – Simplified method (2006)

- Contents
 - (4) & (5) Principles of pipe sizing calculations – simplified method
- Loading Units : 1 (LU) = flow rate of 0.1 l/s
- Table 2 Draw off flow rates(Q_A). Min flow rates Q_{min} and LU draw off points

<u>Draw-off point</u>	<u>Q_A (l/s)</u>	<u>Q_{min} (l/s)</u>	<u>Loading Units</u>
WHB, Bi, WC	0.1	0.1	1 (2)
Sink, W/M, D/W, SH	0.2	0.15	2 (3)
Urinal flush valve	0.3	0.15	3 (-)
Bath domestic	0.4	0.3	4 (10)
Taps/garden/garage	0.5	0.4	5 (3)
Non domestic sink & bath	0.8	0.8	8 (-)
Flush valve	1.5	1.0	15 (-)

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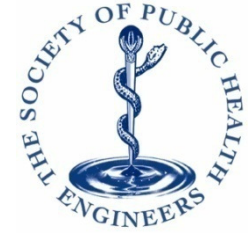


- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 3 – Pipe sizing – Simplified method (2006)

- Contents
 - (4) & (5) Principles of pipe sizing calculations – simplified method
- Table 3 LU for determination of pipe diameters
- Different tables for different materials
 - » Hot-dip galvanised steel
 - » Copper
 - » Stainless steel
 - » PE-X
 - » PB
 - » PP
 - » PVC-C
 - » PEX/ALPE-HD resp. PE-MD/AL/PE-HD

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 3 – Pipe sizing – Simplified method (2006)

- Contents

- (6) Special-installations

- Special-installations are installations, which do not fulfil the conditions for standard-installations or if the building has measurements, which highly exceed the average
- Pipes for special installations shall be sized by nationally approved detailed calculations (see Annex C)
- Annex A - Example for determination of pipe sizes for standard-installations
- Annex B – Design flow rates in relation to total flow rates
- Annex C – List of national pipe sizing methods (note: only lists BS 6700 which is now withdrawn!)



A review of the requirements of BS EN 806

BRITISH STANDARD

BS EN 806-4:2010

Specifications for installations inside buildings conveying water for human consumption

Part 4: Installation

Part 4 (2010) – Installation

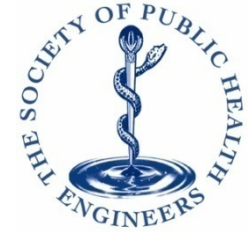
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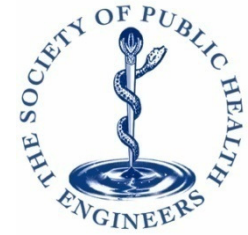
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Part 4 – Installation (2010)

– Contents

- (1) Scope
- (2) Normative references
- (3) Terms, symbols & units
- (4) Work on site – handling of materials, bending pipes, jointing of pipes
- (5) Dissimilar metals – combination of pipes & fittings/valves made of different materials + Flow direction-rule, i.e. galvanised steel shall be installed upstream of copper, also copper & galvanised steel products shall not be used in the same drinking water circulation system
- (6) Commissioning - test procedures outlined, flushing of pipework, disinfection

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 4 – Installation (2010)

– Contents

- Annex A - Pipe system material specifications, jointing procedures & pipe installation for different types of materials
- Annex B - Calculation & compensation for thermal effects of pipes
- Annex C – Recommended maximum spacings of fixings for metal pipes



A review of the requirements of BS EN 806

BS EN 806-5:2012



**Specifications for installations
inside buildings conveying
water for human consumption**
Part 5: Operation and maintenance

Part 5 (2012) Operation & maintenance

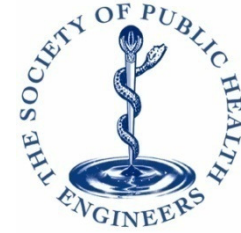
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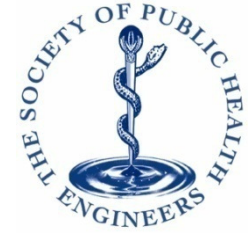
- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 5 – Operation & maintenance (2012)

– Contents

- (1) Scope
- (2) Normative references
- (3) Terms & definitions
- (4) General – Installations shall be operated & maintained to avoid adversely affecting the quality of the potable water, the supply to the consumers & the equipment of the water supplier
- (5) Documentation – O&M manuals required
- (6) Operation – e.g. All spare parts shall be readily available & fit for purpose. Original manufacturers' spare parts are preferred
- (7) Interruptions to operation & disconnection – Installations, which will not be operated within 7 days of their completion or are out of service for more than 7 days, shall either be shut off at the supply stop valve & drained or the water shall be flushed regularly

The introduction of BS EN 806



- BS EN 806 :- Specification for installations inside buildings conveying water for human consumption

Part 5 – Operation & maintenance (2012)

– Contents

- (8) Resumption of supply – After interruptions to the operation, it is usually sufficient for the individual draw-off fittings to be fully opened for a short period (approx 5 min) to allow stagnant water to run off
- (9) Damage & faults – Change in water quality, insufficient water supply & noise emission
- (10) Alterations, extensions & refurbishment
- (11) Accessibility of installation components
- (12) Maintenance – Inspection: The system shall be visually checked on a regular basis
- Annex A - Frequencies for inspection & maintenance of components for water installations
- Annex B - Inspection & maintenance procedures
- Annex C - Inspection & maintenance procedures for water conditioning devices

A review of the requirements of BS 8558

BS 8558:2011



BSI Standards Publication

**Guide to the design,
installation, testing and
maintenance of services
supplying water for
domestic use within
buildings and their
curtilages – Complementary
guidance to BS EN 806**

**Guide to the design, installation,
testing & maintenance of
services supplying water for
domestic use within buildings
& their curtilages : 2011
Complementary guide to
BS EN 806**

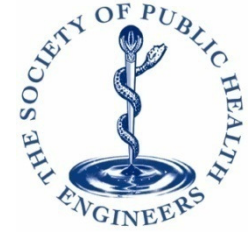
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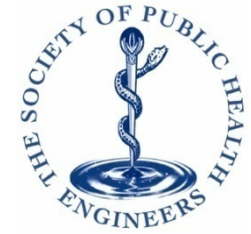
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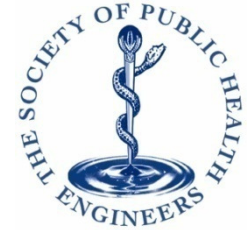


- Guide to the design, installation, testing & maintenance of services supplying water for domestic use within buildings & their curtilages : 2011
 - Complementary guide to BS EN 806
- This document provides additional supplementary design guidance and information to all of the suite of BS EN 806 – Parts 1 to 5
- This documents is focused on British Standards relevant to the main core elements of BS EN 806 (1-5)
- This document resembles some of the formatting and structure as the now withdrawn BS 6700 but reflecting the overall requirements of BS EN 806 (1-5)



Overall Summary & Conclusions

Implications of system design



- Considerate design in terms of Architectural Space Planning & Good Public Health Engineering Design, should ensure the risk of contamination (Legionella) is minimised, by primarily: -
 - Omission of dead legs to remote appliances, etc
 - Maintaining CWS below 25°C
 - Maintaining HWS above 55°C
- LU values have been revised (reduced) than those originally within BS 6700 – thus should reduce the risk of over-sizing of pipework
- Cold water storage tank sizing should be selected on known occupancy levels and period of operation
- Hot water calorifier sizing should be selected on known occupancy levels and period of operation



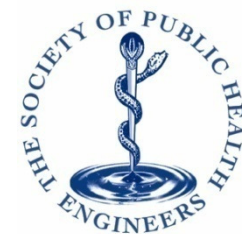
Implications of system design



- The design process is an integral part of the overall risk reduction process in terms of water quality, as well as the installation and maintenance work activities
- Poor or inadequate design can lead to problems occurring after the building has been constructed and occupied. The buildings' maintenance staff would ultimately be left with problems relating to controlling such issues as legionella, etc
- Designers face a real challenge in order to reduce the risk of problems like legionella. The task has never been more crucial & will continue to be an issue!
- Design is only the beginning of the process & the new standards will be a part of addressing these issues!



Follow-Up Action



- Industry wide collation of comments/concerns
- Update presentation on findings
- Final comments
- Consolidate comments into common document
- Present to BSI Standards Committee



End of Presentation

Thank you for your attention this evening

Q & A Session