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Shower units —

Part 1: Guide on choice of shower units and their components for use in private dwellings

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Committees responsible for this British Standard

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Association of Manufacturers of Domestic Electrical Appliances
Association of Manufacturers of Domestic Unvented Supply Systems Equipment
British Bath Manufacturers' Association
British Ceramic Tile Council
British Gas Corporation
British Plastics Federation
Chartered Institution of Building Services
Consumer Standards Advisory Committee of BSI
Consumers' Association
Council of British Ceramic Sanitaryware Manufacturers
Department of Health and Social Security
Department of the Environment (Building Research Establishment)
Department of the Environment (PSA)
Disabled Living Foundation
Flat Glass Manufacturers' Association
Institute of Plumbing
Institution of Gas Engineers
National Brassfoundry Association
National Federation of Building Trades Employers
National House-Building Council
National Water Council
Plastic Bath Manufacturers' Association
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Contents

Foreword

This Part of BS 6340 has been prepared under the direction of the Building Services Standards Committee and was initiated by the Consumer Standards Advisory Committee, a need for such a standard having been indicated by various interested organizations.

The use of a shower unit is now a widespread practice, and in many cases shower units can prove more convenient and economic than a bath. They also take up less space than conventional baths and are therefore beneficial in small flats or single person dwellings having limited floor area. They have special advantages for those who have difficulty in using a bath.

Shower unit components may be purchased as individual items (e.g. shower tray, mixer valve), as groups of items (e.g. all brassware), and as complete pre-packed units ready for installing into the building. As a shower unit comprises many different components the consumer needs guidance on their choice and installation to ensure that the unit, when installed, performs satisfactorily.

In view of this many-faceted situation this standard is being published in the following Parts:

— *Part 1: Guide on choice of shower units and their components for use in private dwellings;*

— *Part 2: Specification for components for shower units and their installation;*

— *Part 3: Specification for prefabricated shower enclosures;*

— *Part 4: Specification for shower heads;*

— *Part 5: Specification for prefabricated shower trays made from acrylic material;*

— *Part 6: Specification for prefabricated shower trays made from porcelain enamelled cast iron;*

— *Part 7: Specification for prefabricated shower trays made from vitreous enamelled sheet steel;*

— *Part 8: Specification for prefabricated shower trays made from glazed ceramic.*

Components and installations that are not specific to shower units are covered in many other British Standards and these are referenced in this Part of this standard. Reference is made in this standard to a number of British Standards which at the time of publication of this Part were still in draft form. As these documents are published, amendments will be issued giving the appropriate cross-references. In the meantime the purchaser should seek the advice of the manufacturer or installer on the topics not yet covered, in order to achieve an acceptable installation.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 6340 provides guidance on the choice of shower units and their components for use in private dwellings. Shower units in touring caravans and in boats are not covered.

It provides details of minimum requirements to ensure that the facility provided is adequate and safe. It does not cover requirements for disabled persons and where the shower unit is to be used by a disabled person in a private dwelling, it may be appropriate to seek advice from the local authority social services department. Reference may also be made to specialist publications[1)]. Where the shower will be used by those in wheelchairs or by others with limited mobility, guidance on this aspect of access can be found in BS 5810.

NOTE The titles of the publications referred to in this Part of BS 6340 are listed on the inside back cover.

2 Definitions

For the purpose of this Part of BS 6340 the following definitions apply.

2.1
diverter assembly

a single outlet type combination tap assembly which includes a transfer valve fitted after the hot and cold taps, the operation of which transfers the flow of mixed water from the outlet into the bath to the shower head, and vice versa[2)]

2.2
fixed shower head

a fixed height shower head mounted in an overhead position

2.3
instantaneous water heater for showering purposes only

an appliance which heats the water as it flows through the appliance to the shower head. The appliance incorporates its own heat source, either gas or electricity

2.4
multi-point instantaneous water heater

an appliance which heats the water as it flows through the appliance to the point of delivery and which has several points of delivery

2.5
operating member

any means of operation of a shower control valve

2.6
private dwelling

a house, flat or maisonette occupied by one or more households

2.7
shower cabinet

a prefabricated but not necessarily preassembled structure comprising a shower tray and rigid water resistant enclosing wall(s) with an entry capable of being closed to provide a fully enclosed compartment

2.8
shower control valve

a mixing valve with controls for regulating the flow and temperature of blended water supplied to a shower head

2.9
shower enclosure

an arrangement of panels or curtains erected around a drained shower tray or bath in conjunction with one or more walls of the main building structure to provide a water containing area for the purpose of showering (see **2.7**)

2.10
shower handset

a movable shower head with an integral handle which, when used in conjunction with a flexible hose, permits the user to direct the water trajectory as required

2.11
shower head

a water fitting, for use in a shower, from which water issues as a film or spray[3)]

2.12
shower tray

a receptacle, which may be prefabricated or formed in situ, for catching water from a shower head[3)]

2.13
shower unit

an assembly of components which upon installation and permanent connection to a water supply and waste water drainage system provides a shower bathing facility which enables total body cleansing under running water

1) Such as "Designing for the Disabled" by Selwyn Goldsmith and published by the Royal Institute of British Architects.
2) This definition differs from that given in BS 4118.
3) This definition is taken from BS 4118.

2.14
slide bar

a fixture mounted in the shower enclosure consisting of a vertically mounted tube or bar and a clampable handset holder which allows the height of a shower handset to be varied to the user's particular needs

2.15
spray-plate

a plate containing holes or slots through which water passes and thereby forms a spray of water with separate, definable jets

2.16
swivel shower head

a fixed height shower head mounted at an average shoulder height, and incorporating a universal joint enabling it to be swivelled through a limited angular arc, thereby permitting the water spray trajectory to be adjusted

3 General requirements

A shower unit consists of an assembly of the following elements:

a) suitably piped supply of water;

b) water flow control;

c) means of temperature regulation;

d) shower head;

e) shower enclosure;

f) soap/shampoo/sponge dish;

g) shower tray or bath;

h) waste water drainage.

Elements a) to c) should be permanently installed. The shower head may be permanently mounted, perhaps with provision for position adjustment, or may be designed to be hand held when the user so desires. The shower enclosure, which may be prefabricated or partially prefabricated and partially formed in situ, directs the water into a shower tray or bath from which it is drained.

Optional facilities may include the provision of an integral seat, means of support in the form of rails or grab-handles, and a towel rail (normally outside the shower unit). Where a seat is required it should be integral with the enclosure. Loose stools are not recommended (see BS 6340-3).

4 Location

When choosing a site for the installation of a new shower unit, attention should be paid to allowing sufficient space around to ensure convenience in use, including storage of clothes and towels, and also to facilitate maintenance and cleaning (see CP 305-2[4)]).

5 Ventilation

Adequate ventilation of a shower unit is most important to avoid residual dampness such as condensation. When a shower is installed in an existing bathroom this aspect should be already effectively covered. When a shower is installed in a new building or in a room not previously used for bathing satisfactory ventilation may be provided by windows or fixed ventilation opening direct to the open air, although it will be advantageous to supplement such natural ventilation by mechanical means. Where ventilation is necessarily entirely mechanical, a minimum of three air changes per hour should be provided. Further guidance can be found in BS 5925.

6 Water supply

6.1 General. The local requirements of the water supplier, in whose area the shower unit is to be installed, should be ascertained.

NOTE Water Byelaws require written notice (7 days in England and Wales; 10 days in Northern Ireland and Scotland) of any alteration to any water fitting or to an existing supply.

The hot water supply should be from one of the following:

a) a central domestic hot water storage system;

b) an instantaneous water heater serving only the shower unit;

c) a multi-point instantaneous water heater serving other outlets;

d) a storage water heater serving only the shower unit.

The choice will depend on the availability and capacity of the existing or proposed system, and the location of the shower unit in relation to it. A long "dead leg" should be avoided in order to minimize heat loss, pressure drop and waste of water.

The installation should be designed to protect the user from sudden fluctuations from the set temperature.

This should be achieved by the system being installed as given in **6.2** or by the incorporation of a suitable device such as a thermostatic valve or pressure compensating valve.

[4)] In course of preparation.

6.2 Central domestic hot water system. Where the hot water supply is taken from the central domestic hot water storage system, separate supplies of hot and cold water to the shower will be required.

To reduce the problem of wide temperature variations, and the associated risk of scalding, and to ensure satisfactory operation, both the hot and cold water supplies should be supplied at nominally equal pressures from a common source. It is essential that mains pressure and stored pressure are not used together. The hot and cold water circuits should be so designed that the supply to the shower does not appreciably reduce in pressure or rate of flow when other outlets are used (see CP 310).

6.3 Instantaneous heaters. Where an instantaneous heater is used to heat the water the following points apply.

a) The water supply should be checked to ensure that under normal working conditions the water pressure is not less than the minimum pressure nor more than the maximum pressure recommended by the manufacturer of the heater (refer to the data plate). A restrictor valve should be fitted if the manufacturer of the heater advises it and if the inlet water pressure exceeds the specified figure.

b) Where a multi-point instantaneous water heater serving other outlets is used the advice of the manufacturer of the heater should be obtained on whether it is compatible with the shower controls and head it is intended to use. It should be appreciated that the mixed water temperature at a shower may be influenced by using other outlets in the water circuit.

6.4 Storage water heater serving only the shower unit. With the incoming cold water at 5 °C, the water system should be such as to provide 50 L at 40 °C at the shower head 15 min after drawing off 50 L at 40 °C.

7 Controls for regulation of flow rate and temperature

The rate of flow and the temperature of the water from the shower head can be regulated by separate controls, by combined control or by a single control.

When a shower is designed to be used by elderly or handicapped persons, ease of operation is imperative, and the use of lever handled controls is recommended.

The temperature should be controlled in one of the following ways.

a) *Combination mixing.* The temperature of the mixed water and the volume/shut-off feature of the hot and cold water is governed by the operation of two independent hot and cold taps.

b) *Single sequential control mixing.* The temperature of the mixed water is governed through a nominal range in a predetermined sequence by the operation of a single control which may also have a shut-off feature. If this mode is used the sequence of the operation should be:

off; cold; warm; hot.

c) *Twin (or dual) control mixing.* The temperature of the mixed water is independently governed by the operation of one control, and the volume/shut-off operation feature is independently governed by the operation of another control.

d) *Single control, twin (or dual) function mixing.* The temperature of the mixed water is independently governed by the operation of the single control in one mode, and the volume/shut-off feature is independently governed by the operation of the same control in an alternative mode.

e) *Flow controlled temperature (instantaneous water heaters).* The temperature of the hot supply is governed by the operation of one control which adjusts the flow rate; the slower the flow, the hotter the water.

Some units have a switch to select various loadings, e.g. 2.8 kW, 4.4 kW and 7.2 kW, to give cool, warm and hot water respectively. In each case the precise temperature is determined by adjustment of the flow rate.

Some units have a separate manual flow control on a cold supply to the shower head so that the temperature and flow from the shower head can be further varied.

Shower controls should be installed in such a position in the shower enclosure or cabinet that they can be operated without standing under or reaching through the shower spray.

The height of the shower head should be agreed between the purchaser and supplier. Where a shower handset is installed suitable provision should be made to prevent backsiphonage (see CP 310).

8 Shower enclosure

8.1 General. A shower enclosure may be a permanent or semi-permanent arrangement of panels or curtains and should have a means of access which can be closed to provide a water retaining area. The facility may be provided as a shower cabinet.

At and above a height of 525 mm above the rim of the shower tray or 150 mm above the rim of the bath, the shower enclosure should have a cross-sectional area of not less than 0.5 m^2 and a minimum width of 650 mm.

The means of access can be in the form of a hinged panel, sliding panel(s), or folding door or curtain.

8.2 Shower enclosures formed in situ. Any walls of the building to be used in conjunction with a shower enclosure should be designed to provide a watertight structure unless materials supplied as part of the shower enclosure are designed to provide a totally enclosed, water containing area without the use of additional waterproofing treatments. The finish of the walls should conform to the shape of the shower tray.

9 Shower tray or bath

9.1 General. The purpose of a shower tray or bath is to receive and dispense with the waste water while preventing such waste water from spreading to the surrounding floor area. In so doing it has also to support the weight of the person taking the shower and the weight of any helper.

The receiver should be in the form of:

a) a bath; or

b) a preformed tray; or

c) a built in-situ tray.

A slip-resisting surface should be provided or a suitable mat should be used.

9.2 Shower trays formed in situ. Shower trays formed in situ should be watertight, and may be covered with tiles complying with BS 1281 or BS 1286 as appropriate. The fixing of the tiles should be in accordance with the recommendations of BS 5385-1[5)].

10 Type of shower

A satisfactory shower partly depends on a subjective assessment of water temperature, flow rate and spray form (configuration and droplet size). It should be noted that the shower head and the rate of water flow available to it are interdependent and should be compatible.

With a conventional central domestic hot water system the temperature and flow rate will be determined by the hot water draw-off temperature (itself being time dependent), the hot water flow rate and the proportion of heated water and cold water used at the shower head.

With instantaneous heaters the water temperature rise through the heater is inversely proportional to the flow rate for a given quantity of heat transferred. For a given energy rating, therefore, the rate of flow through the shower head will depend on the inlet water temperature to the instantaneous water heater, e.g. water mains temperature. In the UK this is usually between 5 °C and 16 °C but may exceptionally vary between 0 °C and 25 °C.

For the purpose of this standard showers are divided into two types and under the minimum pressure head conditions specified by the manufacturer, their flow rate performance should be as follows:

a) *Type 70*. With the controls set to give a temperature of 40 °C at the shower head the water flow rate should be not less than 0.07 L/s.

b) *Type 40*. With the controls set to give a temperature of 40 °C at the shower head the water flow rate should be not less than 0.04 L/s.

NOTE Where a type 70 or type 40 incorporates an instantaneous water heater, the flow rate referred to above relates to incoming water supply to the heater at 5 °C. With inlet water temperatures above 5 °C and with higher energy rating heaters, the water flow rate at a satisfactory outlet temperature will be higher.

11 Exchange of information

The information to be exchanged between the interested parties should be in accordance with Appendix A of this Part of this standard.

12 Installation of shower unit

When installing the supplied shower unit the manufacturer's instructions should be carefully followed. Leakage of water can cause damage to the building structure by, amongst other things, encouraging rot to develop. Particular attention should therefore be paid to the sealing of all joints at the junctions of any panels, and around the shower tray or bath.

[5)] A code of practice giving recommendations for floor and wall tiling in special installations is in course of preparation.

Appendix A Information to be exchanged between the interested parties

The following is a specification clause and a check list of information to be exchanged between purchaser and supplier.

a) *Specification clause.* All components listed shall be in accordance with the relevant clauses of BS 6340-2. Where the contract includes the installation, the shower units, as fitted, shall accord with the guidance given in BS 6340-1 and shall perform in accordance with BS 6340-2, and the installer shall check that the existing services are adequate.

b) *Check list.* The purchaser and supplier should agree details regarding the following matters, where appropriate, so as to define the shower unit or component(s) to be provided.

Site address and location on site

Water supply	use existing hot water:
	provide electric heating unit: size:
	provide gas heating unit:
	type, single or multi outlet:
Type of shower	type 70 or type 40:
Control	to regulate rate of flow:
	to regulate temperature:
Shower head	type: fixed:
	adjustable:
Shower enclosure	type of enclosure:
	size:
	access:
Tray or bath	size:
	type:
Colours	enclosure:
	tray or bath:
Drainage	method of drainage:
Ventilation	is additional ventilation required:

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Publications referred to

BS 1281, *Glazed ceramic tiles and tile fittings for internal walls.*

BS 1286, *Clay tiles for flooring.*

BS 4118, *Glossary of sanitation terms.*

BS 5385, *Code of practice for wall tiling.*

BS 5385-1, *Internal ceramic wall tiling and mosaics in normal conditions.*

BS 510, *Code of practice for access for the disabled to buildings.*

BS 5925, *Code of practice for design of buildings: ventilation principles and designing for natural ventilation.*

BS 6340, *Shower units.*

BS 6340-2, *Specification for components for shower units and their installation.*

BS 6340-3, *Specification for prefabricated shower enclosures.*

BS 6340-4, *Specification for shower heads*[6)].

BS 6340-5, *Specification for prefabricated shower trays made from acrylic material*[6)].

BS 6340-6, *Specification for prefabricated shower trays made from porcelain enamelled cast iron*[6)].

BS 6340-7, *Specification for prefabricated shower trays made from vitreous enamelled sheet steel*[6)].

BS 6340-8, *Specification for prefabricated shower trays made from glazed ceramic*[6)].

CP 305, *Sanitary appliances.*

CP 305-2, *Activity spaces*[7)].

CP 310, *Water supply.*

[6)] Referred to in the foreword only.

[7)] In course of preparation.

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