WHBN 00-10

Welsh Health Building Note

Part C: Sanitary assemblies

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Overview

This Welsh Health Building Note (WHBN) outlines the policy and performance requirements for sanitary assemblies used in healthcare facilities. These requirements are a set of essential standards of quality and safety that sanitary assemblies must comply with.

WHBN 00-10 Part C supersedes Health Technical Memorandum 64.

This WHBN outlines the relevant standards that healthcare organisations will need to include in their design briefs.

This WHBN allows choice in the materials and methods of construction – provided they satisfy the performance requirements outlined.

The sanitary assemblies used should be appropriate for the type of premises in which they are being fitted, for example, primary care facilities may have different design requirements from acute care facilities.

Note

Mental health facilities have their own specific design requirements. These are addressed in Welsh Health Building Note 03-01 – 'Adult acute mental health units'.

Acknowledgements

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The contents of the original document were reviewed by NHS Wales Shared Services Partnership – Facilities Services.

Contents

Chapter 1 Introduction

Regulatory framework and policy drivers

1.1 One of the Government's key priorities is delivering better health outcomes for patients.

1.2 The quality and fitness-for-purpose of the NHS estate is vital for high quality, safe and efficient healthcare, and this Welsh Health Building Note (WHBN) seeks to set out the quality and standards of certain components used in the construction of the estate.

1.3 Underpinning the guidance set out in this WHBN are the Government's healthcare standards set out in 'Doing Well, Doing Better – Standards for Health Services in Wales' – April 2010. Of particular relevance are 'Standard 12 – Environment' and 'Standard 13 – Infection Prevention and Control (IPC) and Decontamination'.

Infection prevention and control

1.4 A complex range of issues distinguishes healthcare environments from most other building types. One of the most important of these relates to the prevention and control of infection. Hospital environments in particular are subject to spillage of a range of potentially dangerous substances in areas of general use such as circulation areas and in wards. The choice of finishes is important in determining cleaning regimes.

1.5 Infection prevention and control teams should be consulted in design decisions and a risk analysis conducted on many issues of design (see WHBN 00-09 – 'Infection control in the built environment').

Hygiene and cleaning

1.6 The prevention and control of healthcare-associated infection (HCAI) is a priority issue in terms of not only the safety and well-being of patients and staff, but also the resources consumed by potentially avoidable infections. It is important that the design of the building facilitates good infection prevention and control practices and has the quality and design of finishes and fittings that enable thorough access, cleaning, disinfection and maintenance to take place.

1.7 All finishes in healthcare facilities should be chosen with cleaning in mind, especially where contamination with blood or body fluid is a possibility, that is, smooth, non-porous and water-resistant. Early and sustained involvement of the infection prevention and control (IPC) team is essential and will lead to the minimisation of infection risks.

1.8 Requirements for frequency of cleaning may impact on the use of rooms, circulation and waiting areas at various times of the day. Cleaning regimes including frequency of cleaning should be addressed in line with current national guidance together with any additional local management requirements.

1.9 Relevant provisions of current guidance are embodied in the following documents:

- 'National Standards for Cleaning in NHS Wales – Revised October 2009'.
- WHBN 00-09 – 'Infection control in the built environment'.

Note on antimicrobial-impregnated products

Whilst antimicrobial-impregnated products, such as surface coatings, paints and curtains and anti-microbial materials are available, there are, at present, no definitive data to support their efficacy in reducing healthcare-associated infection.

Life-cycle and maintenance

1.10 Early consideration of maintenance and replacement of building elements will help to achieve compliance with all the policy drivers.

1.11 Materials and finishes are to be selected to minimise maintenance and be compatible with their intended function and lifespan/duration of use.

1.12 Some spaces require more maintenance than others due to usage and traffic, and recognition of this is required during the design stage so that, for example, more robust flooring can be specified in potential problem areas. Maintenance is critically important in the prevention and control of infection, avoiding cracks and tears in finishes where dirt, etc., can build up. Good maintenance can also aid the ease of cleaning, ensuring that cleanliness is maintained. The life-cycle cost of materials is affected by these criteria.

1.13 Organisations responsible for building and engineering maintenance should have access to original copies of all building and engineering commissioning data, including as-fitted drawings and records of any changes implemented since the building was originally built and commissioned. Maintenance personnel should have access to operation and maintenance manuals, including BIM systems, containing building and engineering information such as the suppliers of the materials, fittings and equipment installed during construction, including instructions on cleaning and maintenance.

1.14 A useful whole life-cycle document that will aid designers and NHS organisations in both design and choice of materials when designing new schemes or refurbishments is the British Standards Institute's (BSI) 'PD 156865 Standardized method of life cycle costing for construction procurement: a supplement to BS ISO 15686-5 Buildings & constructed assets – Service life planning – Life cycle costing'.

Sustainability

1.15 Welsh Health Technical Memorandum 07-07 – 'Sustainable health and social care buildings' provides relevant advice on how to embrace sustainability protocols throughout the design and build process and should be read in conjunction with undertaking the Building Research Establishment Environmental Assessment Method (BREEAM) Healthcare assessment.

1.16 The BREEAM for healthcare facilities (BREEAM Healthcare) is the standard tool for assessing the environmental impact of a healthcare facility.

1.17 All new healthcare development projects funded by the Welsh Government and Welsh Government Sponsored Bodies must be built to the BREEAM "excellent" standard, or equivalent. For extensions, alterations and refurbishment, a BREEAM excellent rating is not a requirement, and there are exceptions for small schemes. However, even these small projects must have an energy efficient design solution, and further advice is available from the appropriate Government official dealing with the funding of such projects.

1.18 All new primary care buildings will need to achieve the BREEAM standard of 'Very Good' with the attainment of 'Excellent' in respect of energy.

Relationship to other data

1.19 The main sources of data used in the preparation of this WHBN are listed in the References section.

1.20 Readers should ensure that they use this WHBN in conjunction with all current building legislation, British and European Standards, etc.

1.21 All products should conform to the relevant provisions of an appropriate British or European Standard. Suppliers offering products other than to these standards should provide evidence to show that their products are at least equal to such standards.

1.22 This WHBN's content does not diminish:

- a specifier's responsibility for selection and application of appropriate products to meet project requirements;
- a supply chain's responsibility for fitness for purpose of products;
- a contractor's responsibility for correct product/system installation;
- the need to comply with statutory requirements, including the Building Regulations.

A note on the Equality Act 2010, Approved Document M of the Building Regulations and BS 8300

Where the guidance outlined in this manual proposes requirements that differ from those in Approved Document M or BS 8300:2009, these special requirements should apply as they take into account specific healthcare building issues. The occupier of the healthcare premises should prepare an access statement in support of their argument that the premises comply with the requirements of the Equality Act.

Chapter 2 Sanitary assemblies

2.1 This WHBN contains the performance requirements for sanitaryware and pre-plumbed assemblies in healthcare buildings. It excludes macerators, dishwashers, bedpan-washers, autoclaves and other similar service supplies.

2.2 It is strongly advised that this section should be read in conjunction with the following topics:

- Welsh Health Building Note 00-02 –'Sanitary spaces';
- Welsh Health Technical Memorandum 07-04 – 'Water management and water efficiency'; and
- Welsh Health Technical Memorandum 04-01 – 'The control of *Legionella*, hygiene, "safe" hot water, cold water and drinking water systems'.

Note

There may be a requirement to consider different design applications where there is an identified local need, e.g. provision of multi-faith ablution rooms, main public WCs, squatting WC pans, variable-height baths, autopsy tables, birthing pools and drinking fountains or specific requirements for religious or ethnic groups. In such circumstances, advice and guidance should be sought from specialists or specialist manufacturers. Consideration will need to be given to the suitability, functionality and sustainability, as well as addressing infection prevention and control, and local policies and procedures.

2.3 **The diagrams used in this chapter are indicative and should be used for guidance only. Actual installations may vary from those shown but the key principles should be followed.**

Performance requirements

General

2.4 Pipework should be planned to avoid dead-legs (see Health Technical Memorandum (WHTM) 04-01 for guidance on design and installation of hot and cold water systems).

2.5 The supply temperature regime outlined in WHTM 04-01 should be followed.

2.6 All installations must comply with the Water Supply (Water Fittings) Regulations.

2.7 All supplies to fittings should be concealed.

2.8 Exposed surfaces should be smooth and easily cleaned, with no sharp edges.

2.9 Shower fixings should be in accordance with the guidance given in WHBN 00-02 – 'Sanitary spaces'.

2.10 Supply fittings on baths, basins and sinks with fixed outlets should be arranged so that the discharge point creates an AUK3 air gap of twice the inlet diameter and never less than 20 mm above the spill-over level of the appliance.

2.11 Taps should not be aligned to run directly into the drain aperture.

2.12 Plugs are only allowed in bathroom basins, where personal washing takes place. All other basins should not take a plug as washing takes place under running water (see the 'Basins' section).

2.13 Overflows to sinks, basins, baths and bidets are not recommended, as they constitute a constant infection control risk much more significant than the possible risk of damage due to water overflowing.

2.14 Where flexible hoses are used, for example on essential equipment such as variable height baths, they must be lined with a suitable alternative to ethylene propylene diene monomer (EPDM), as well as being WRAS-approved. Care should be taken to avoid kinking or distorting them during installation.

2.15 The water temperature at point of delivery should be controlled either by:

- manual control (separate hot and cold water taps or blending valves controlled manually by the user);

Note

Assemblies that use manual control should be subject to a "duty of care" risk assessment. When temperatures are in excess of 43°C, "scald risk" warning notices should be displayed.

- individual thermostatic control (thermostatic mixing of hot and cold water is by valve at the fitting).

Note

See WHTM 04-01 for further guidance on safe water temperatures and delivery devices.

2.16 Noise from WC cisterns and waste outlets should be considered (see WHTM 08-01 – 'Acoustics' for guidance).

Sanitaryware

Disposal units and clinical sinks

Disposal units

Note

The relationship between soil appliances and fittings that make up the complete assembly is critical. Therefore, disposal units should be treated as assemblies for the purposes of design, specification, procurement and installation.

2.17 A disposal unit should be provided in clinical areas for the disposal of solid and liquid waste, and the contents of vomit bowls, drainage bags and urine bottles. Examples of disposal units are shown in Figure 1.

2.18 Typical assembly requirements are:

- lever action taps to avoid cross-contamination;
- separate manual control of hot and cold water;
- open nozzle and flow straighteners with minimal restriction.

2.19 The space requirements for a disposal unit are given in the ergonomic drawings for a dirty utility room. See Figures 74 and 79 in WHBN 00-03 – 'Clinical and clinical support spaces'.

Clinical sinks

2.20 Sinks used in clinical areas, such as dirty utilities, should not have tap holes, that is, wall-mounted taps should be used. The option to use a sink with tap-holes should only be considered when it is impractical to conceal pipework; in this case, the supply pipework should be surface-mounted below sink.

2.21 Services should be concealed/ducted. Typical requirements are:

- Long lever action taps
- Separate manual control of hot and cold water
- Flush-grated waste with no plug.

2.22 An illustration of typical clinical sink/sinktop assemblies is shown in Figure 2.

Figure 1 Examples of disposal units

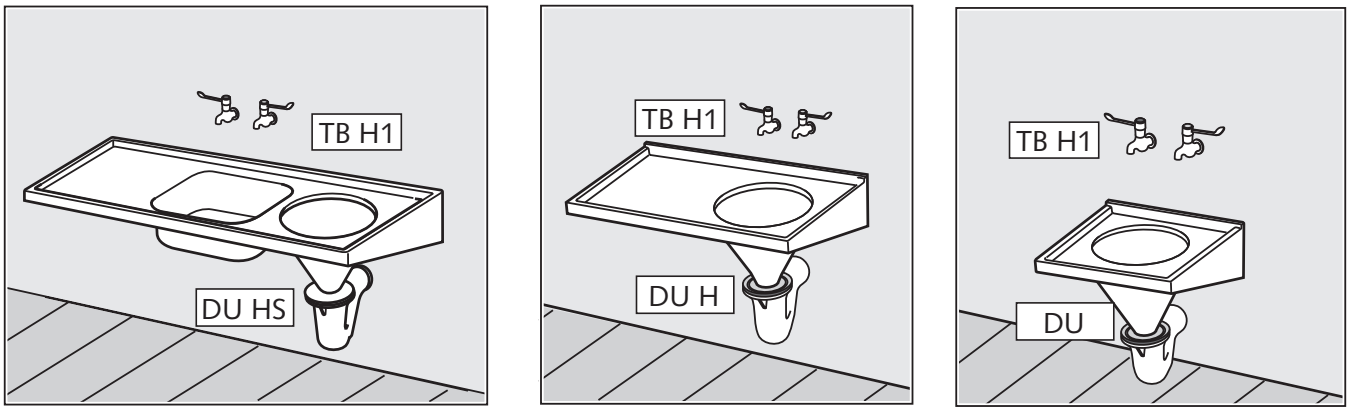
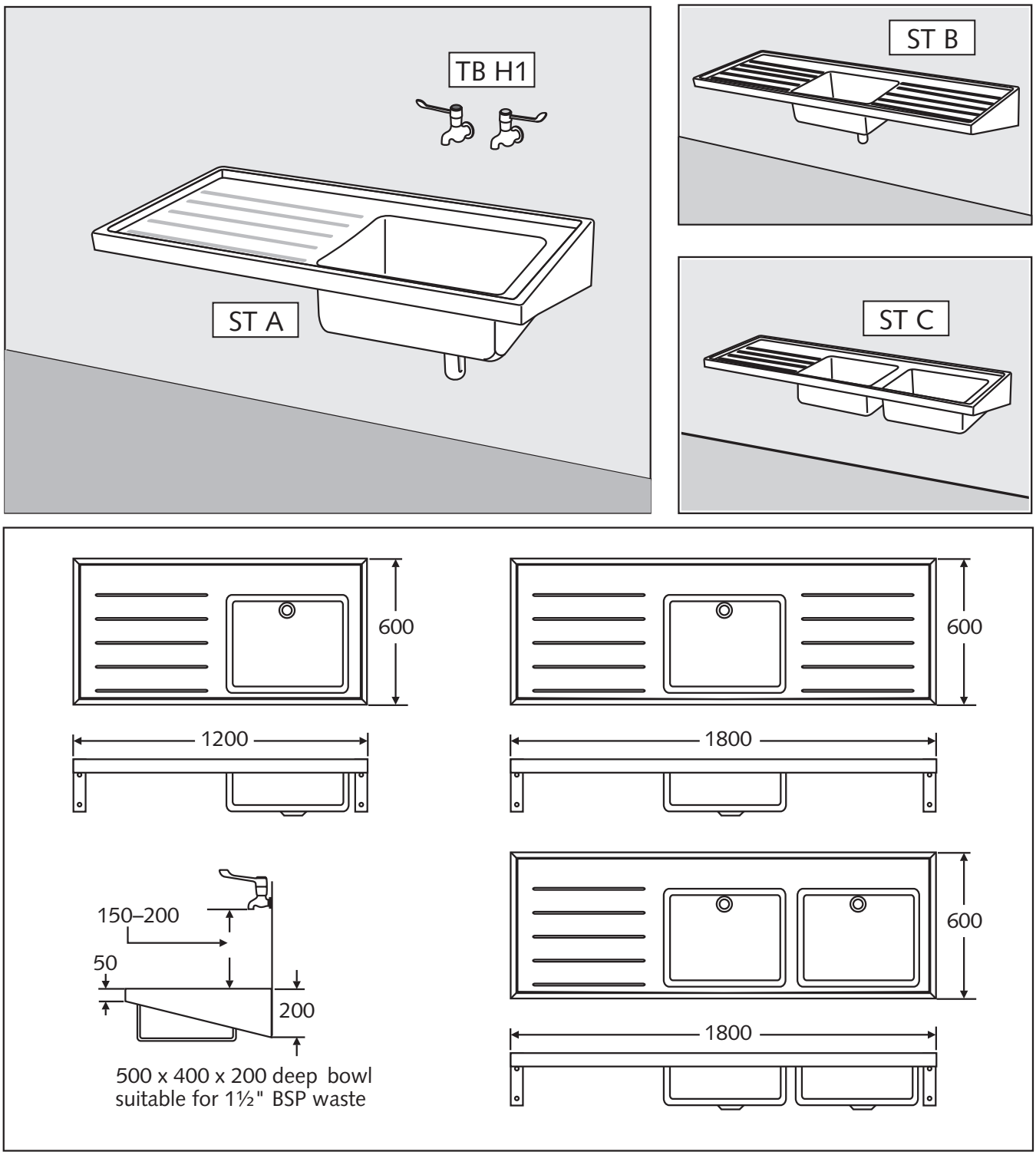


Figure 2 Typical clinical sink/sinktop assemblies



Non-clinical sinks

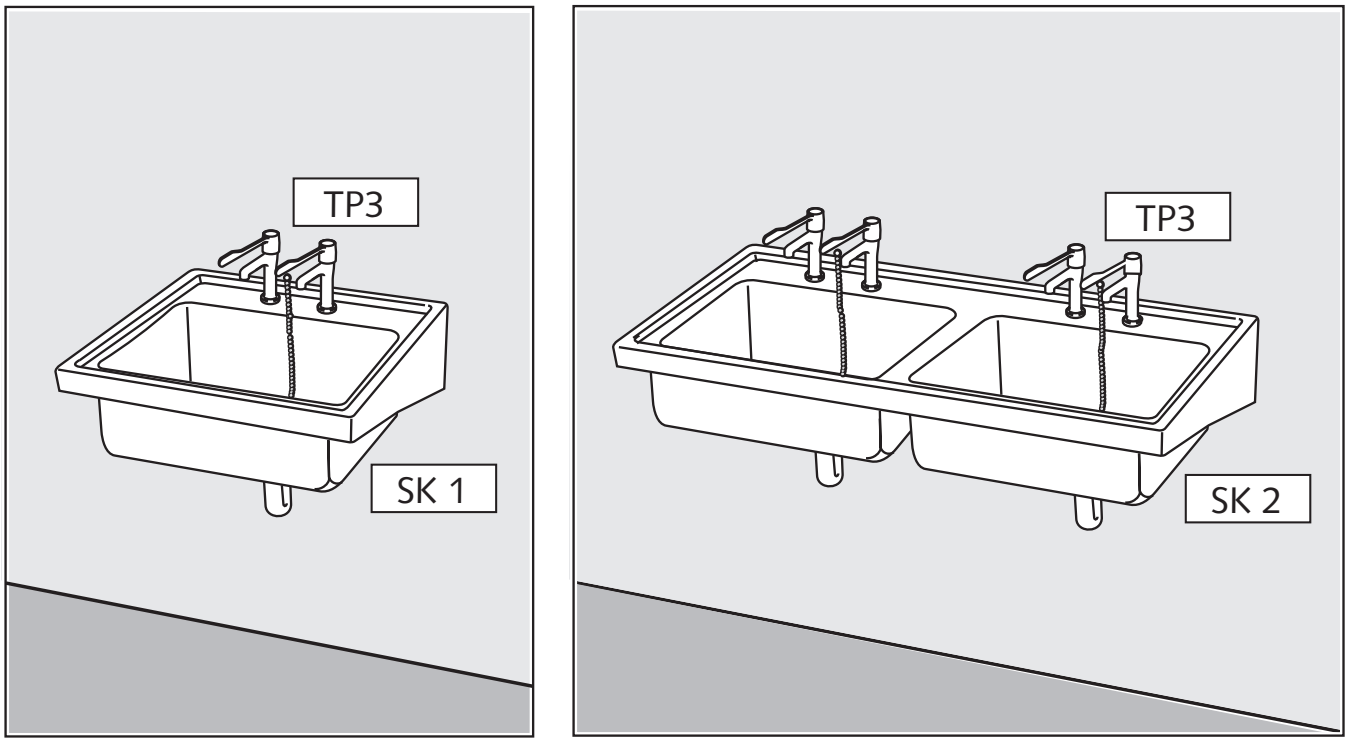
2.23 Sinks used in general use/domestic services, for example, in cleaners' rooms and kitchens, should have tap-holes for use with pillar taps. These sinks should take a plug with screw-stay to the panel. Typical requirements are:

- long lever action taps;
- separate manual control of hot and cold water;
- recessed grated waste with plug;
- open nozzle and flow straightener with minimal restriction.

2.24 Illustrations of typical non-clinical sink/sinktop assemblies are shown in Figure 3; sinks with drainers are optional.

2.25 Space requirements for non-clinical sinks are given in the ergonomic diagrams. See Figures 86 and 90 in WHBN 00-03 – 'Clinical and clinical support spaces'.

Figure 3 Typical non-clinical sink/sinktop assemblies



Plaster sinks

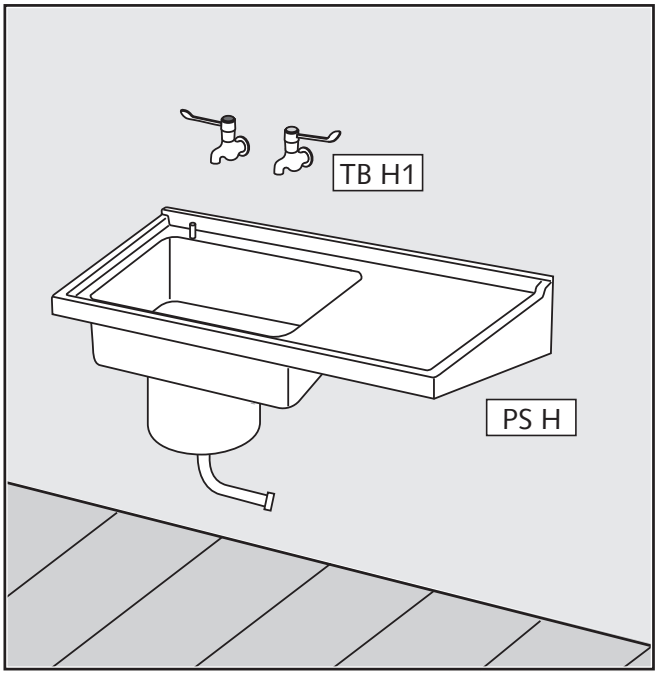
2.26 Plaster sinks in clinical areas should have a lift-out strainer basket and wall-mounted taps. Typical requirements are:

- long lever-action taps to avoid contamination;
- separate manual control of hot and cold water;
- open nozzle and flow straightener with minimal restriction;
- connection to concealed services.

2.27 An illustration of a typical plaster sink is shown in Figure 4.

2.28 Space requirements for a plaster sink are given in the ergonomic diagrams for a plaster room. See Figure 126 in WHBN 00-03 – 'Clinical and clinical support spaces'.

Figure 4 Typical plaster sink

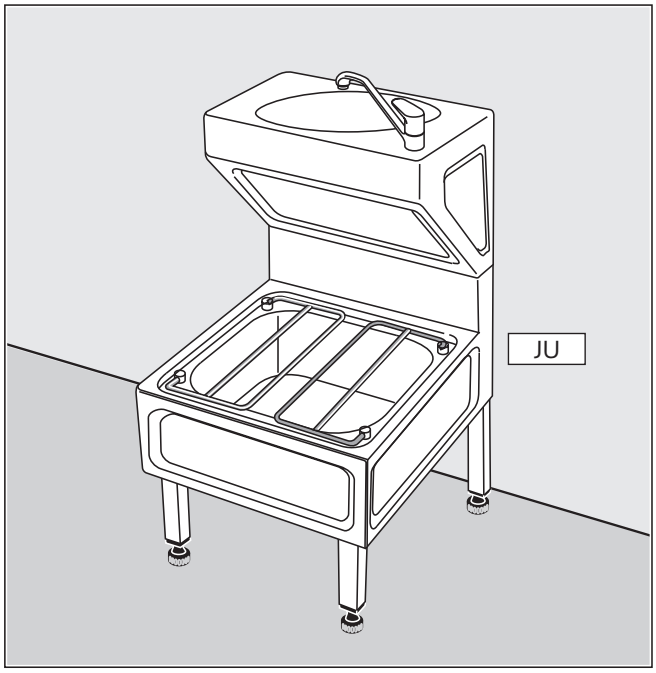


Janitorial units

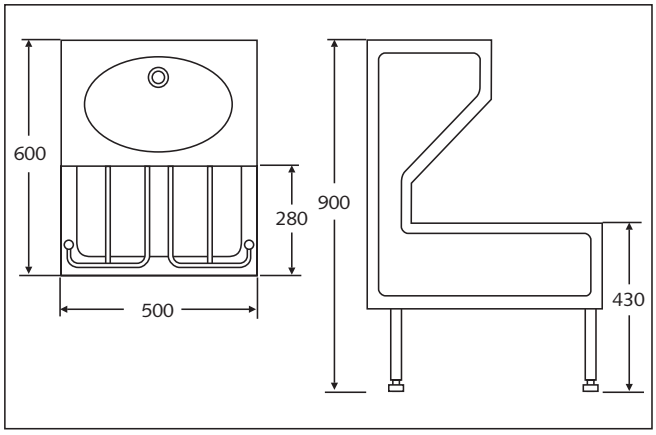
2.29 Janitorial units are a combination of bucket sink and wash-hand basin used by domestic services staff for the disposal of liquid waste. These units are beneficial where space restricts the installation of a separate sink and wash-hand basin.

2.30 An illustration of a typical janitorial unit is shown in Figure 5.

Figure 5 Typical janitorial unit



Janitorial unit



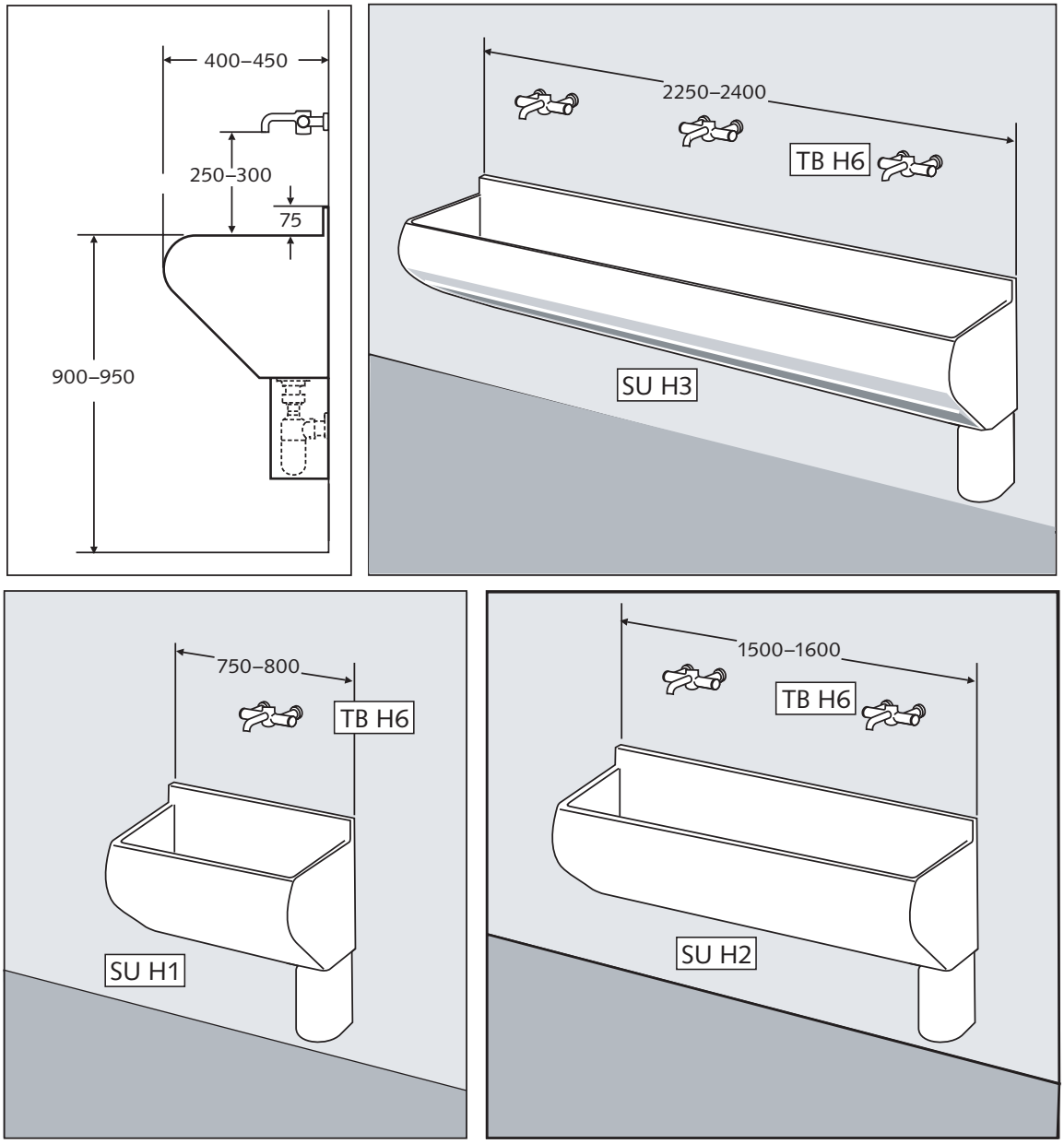
Scrub-up troughs

2.31 Scrub-up troughs should be provided to enable one or more surgeons and nurses to scrub their hands and forearms.

- Troughs should not take a plug, as washing takes place under running water.
- Troughs should be wall-hung and fitted with a single waste outlet.
- Water temperature should be controlled according to the requirements of WHTM 04-01.
- Taps should be wall-mounted and should have open nozzles and flow straighteners with minimal restriction.
- The point of discharge relative to the front rim of the trough is critical to ensure:
  - (i) that there is no water discharge/spillage outside the trough;
  - (ii) that water falls onto the inclined surface of the trough;
  - (iii) that users are able to operate lever/s;
  - (iv) that there is sufficient activity space for users to wash their hands and forearms under falling water.

2.32 Illustrations of typical single-, double- and triple-person scrub-up trough assemblies are shown in Figure 6.

Figure 6 Typical single-, double- and triple-person scrub-up trough assemblies



Basins

General

2.33 Basins should have a smooth form and easily cleaned surfaces. Overflows should not be provided for infection control reasons.

Wash-hand basins

2.34 The room layouts in this guidance illustrate a wash-hand basin 400 mm deep × 500 mm wide for ambulant/semi-ambulant use and 500 mm deep × 600 mm wide for wheelchair/seated use.

2.35 Wheelchair-accessible wash-hand basins should have a size and profile that maximises access and reduces obstructions. They should:

- be as shallow as possible, that is, tapered from the rim to a depth not exceeding 250 mm at the outlet, which in turn should be positioned as near the supporting wall as possible;
- preferably project 500 mm in order to provide adequate leg room underneath the basin.

2.36 Basin taps used in clinical areas and food preparation and laboratory areas are required to be operated without the use of hands.

2.37 Fittings actuated by a proximity sensor are an alternative to lever-action taps.

Clinical wash-hand basin

2.38 Clinical wash-hand basins should be installed in all clinical areas. Washing is carried out under running water, and therefore a medium or large integral back-outlet basin with no plug is recommended. Typical requirements are:

- integral back outlet;
- washing under running water, therefore no plug;
- wall-mounted single-lever-action or sensor tap with single self-draining spout;
- TMV3-approved thermostatic mixing valve fitted in accordance with WHTM 04-01;
- connection to concealed services.

2.39 An illustration of a typical clinical wash-hand basin is shown in Figure 7 with lever tap and with sensor tap.

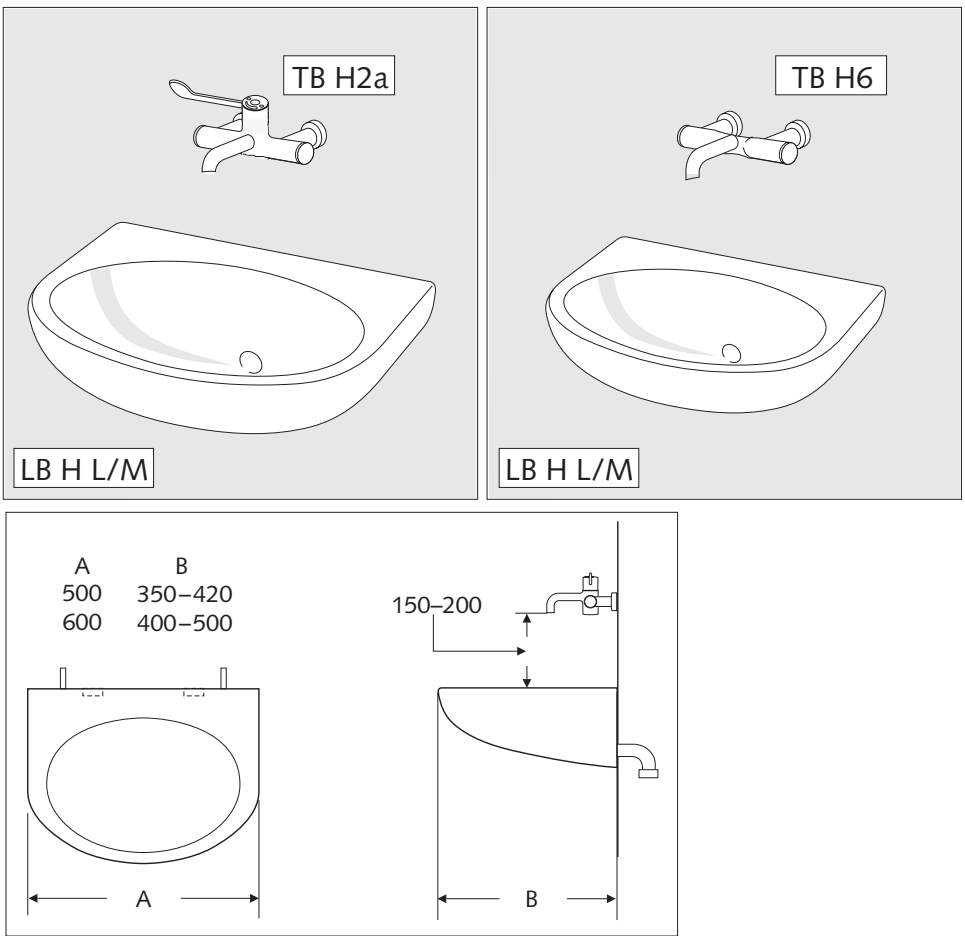


Figure 7 Typical clinical wash-hand basin, lever tap and sensor tap

Non-clinical wash-hand basin

2.40 Non-clinical wash-hand basins with tap-holes should be used for general areas/domestic services with TMV3-approved thermostatic mixing valve and concealed/ducted services.

2.41 Washing is carried out in a reservoir of water; therefore a bowl with plug is recommended. Plugs should be attached to an open-link chain, which should be panel-mounted. Typical requirements are:

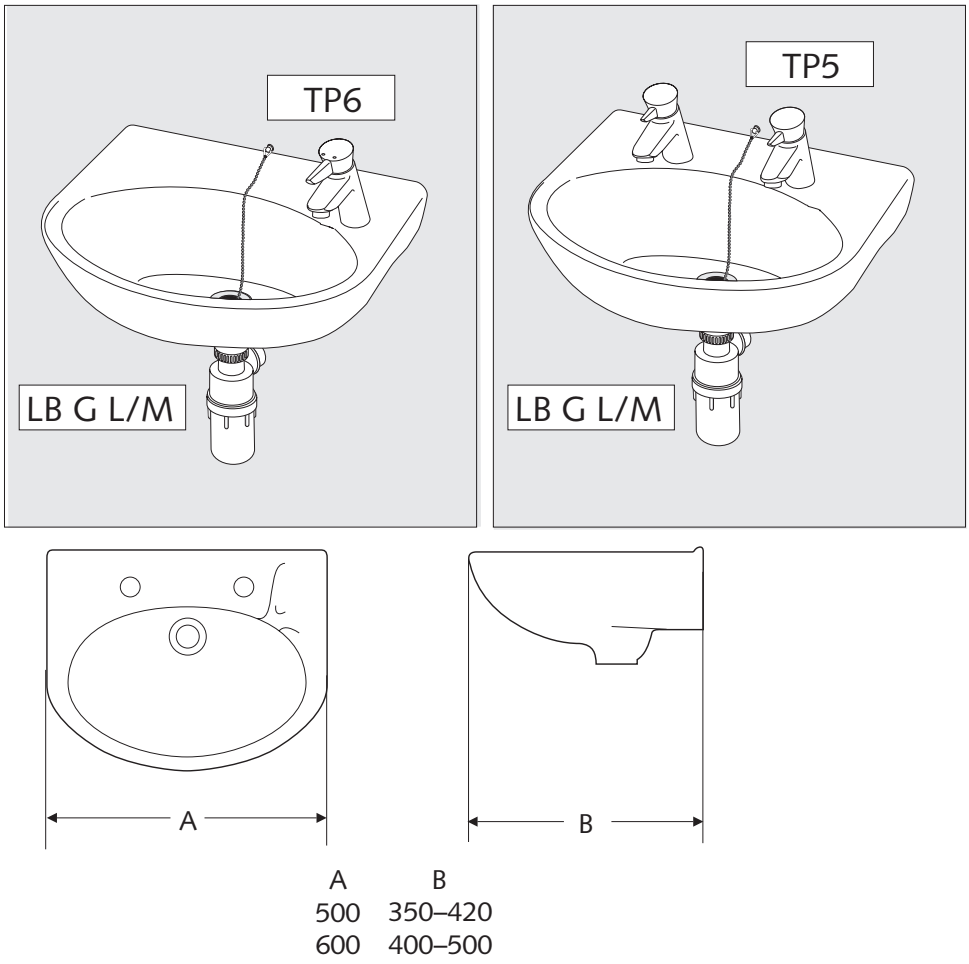
- washing in reservoir of water, therefore a basin with plug and chain with screw stay;
- combined or separate nozzle with flow straightener;
- lever-action taps.

2.42 An illustration of a typical non-clinical wash-hand basin is shown in Figure 8.

2.43 Example layouts for a clinical wash-hand basin are shown in Chapter 3 in WHBN 00-03 – 'Clinical and clinical support spaces'.

2.44 Room layouts for other wash-hand basins are shown in WHBN 00-02 – 'Sanitary spaces'.

Figure 8 Typical non-clinical wash-hand basin



A	B
500	350–420
600	400–500

Hand-rinse basins

2.45 Hand-rinse basins are approximately 300–350 mm deep and 400 mm wide. They are generally only suitable for rinsing hands under running water. The room layouts in this WHBN assume a hand-rinse basin of 300 mm deep. Where a larger hand-rinse basin, up to 350 mm deep, is used, the minimum internal room dimensions may need to increase to maintain the required activity space.

2.46 Typical assembly requirements include the following:

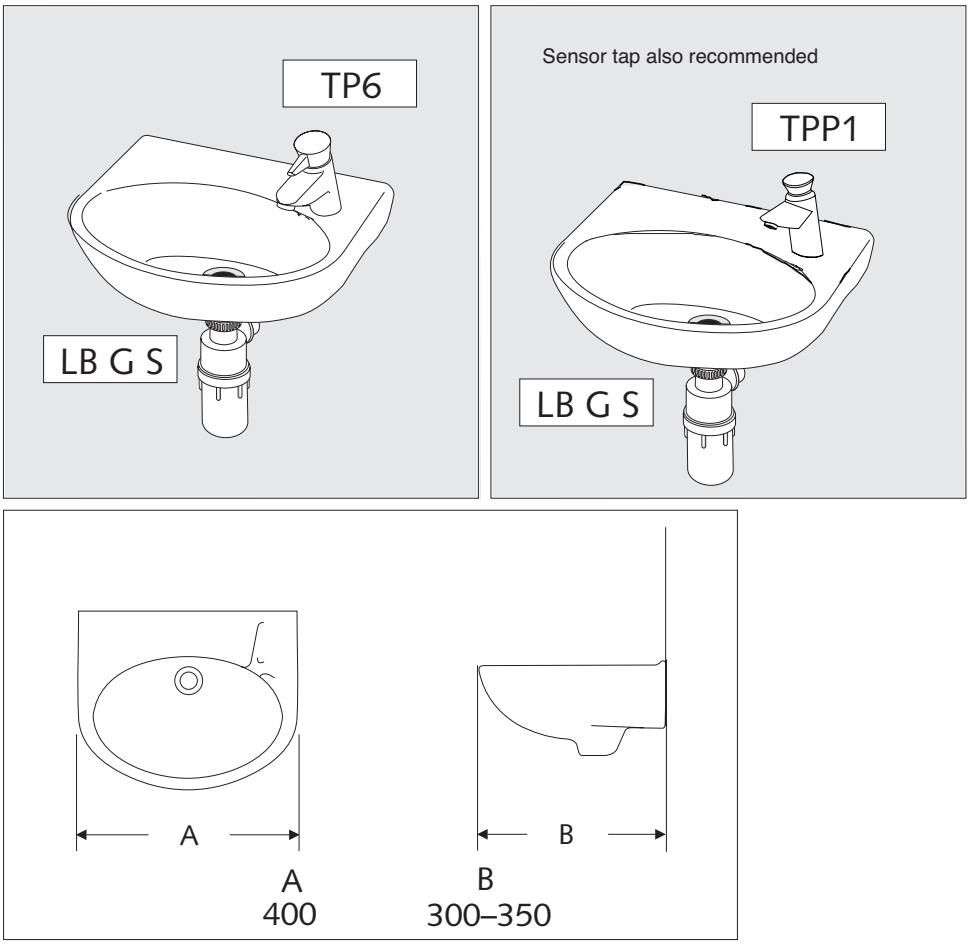
- washing takes place under running water; therefore the basin should not take a plug;
- combined manual control of flow and temperature of water or automatic control of thermostatically mixed water. Single flow spout;
- lever-action tap, press tap or sensor tap;
- TMV3-approved thermostatic mixer.

2.47 Recessed hand-rinse basins are not recommended for wheelchair users as they may restrict access to the basin.

2.48 An illustration of a typical hand-rinse basin is shown in Figure 9.

2.49 Example room layouts with hand-rinse basins are given in Figure 93 in WHBN 00-02 – 'Sanitary spaces'.

Figure 9 Typical hand-rinse basin



Fixing height of basins and associated fittings

2.50 Two heights are recommended:

- 780–800 mm for ambulant and semi-ambulant users, referred to as "ambulant" basins elsewhere in this WHBN;
- 680–700 mm for wheelchair and seated users, referred to as "wheelchair" basins elsewhere.

This guidance differs from Approved Document M (Diagram 20) and BS 8300 Figure 53 which sets the height for wheelchair users at 720–740 mm.

2.51 Wheelchair or adjustable-height basins should be used in assisted spaces.

2.52 For user safety, ambulant basins should project at least 250 mm beyond any fitting located above the basin to minimise the risk of tall users, over 1800 mm, hitting overhead fittings.

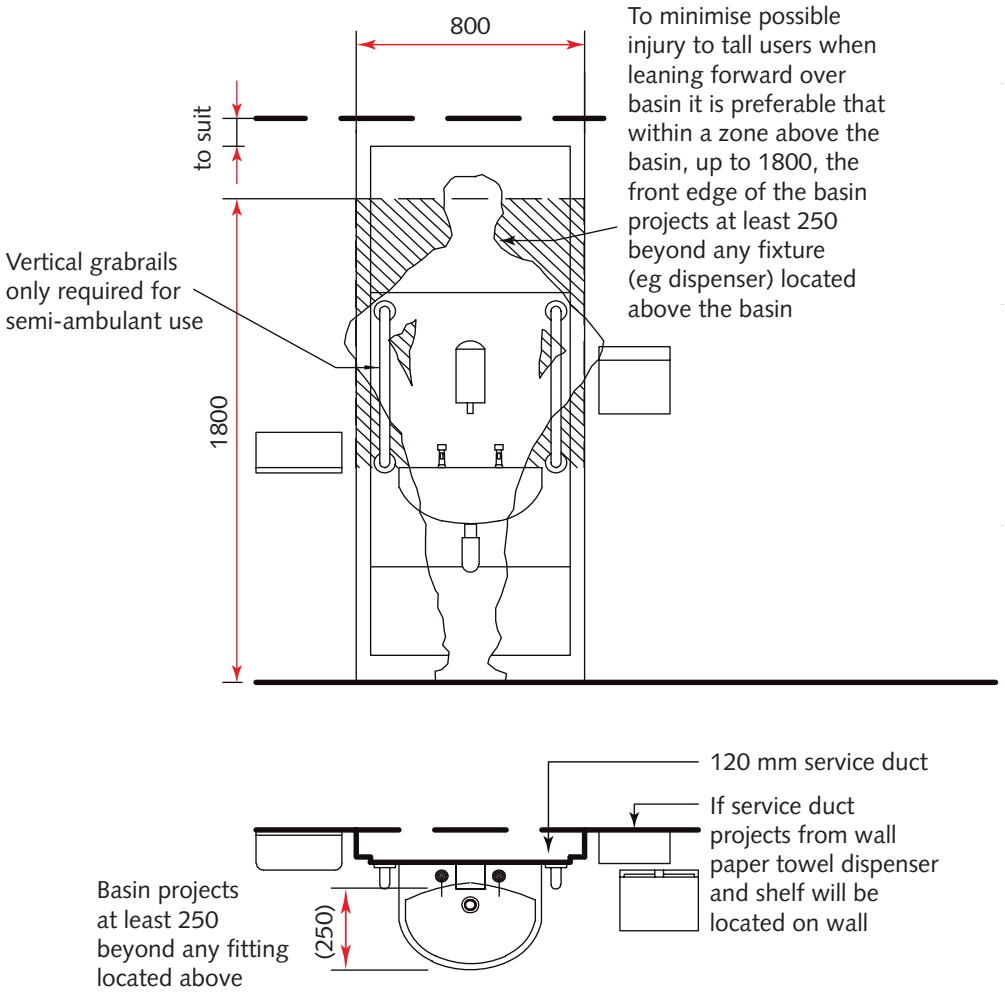
2.53 For comfortable reach, fixtures and fittings associated with ambulant basins should be located within a 750 mm zone, horizontally and symmetrically from the centreline of the basin.

2.54 Figure 10 illustrates the relationship of fittings in association with an ambulant wash-hand basin for:

- the safety of tall users when bending to use the basin;
- the use of either flush or projecting accessible panel systems.

2.55 Tall users, for basin safety, are defined as over 1800 mm because 5% of the male population is taller than 1869 mm and the corresponding figure for females is 1726 mm.

Figure 10 Relationship of fittings in association with ambulant wash-hand basin



Adjustable-height (two-height) wash-hand basins

2.56 In areas where wheelchair and semi-ambulant/ ambulant users may require access to a wash-hand basin, an adjustable-height (two-height) basin may be used.

2.57 Adjustable-height wash-hand basins should be limited to two heights:

- 780–800 mm for ambulant and semi-ambulant users;
- 680–700 mm for wheelchair and seated users.

2.58 In individual patient spaces, for example en-suite shower rooms, the basin height should be adjusted as necessary for each patient on admission. Within public/multi-user environments, the adjustment mechanism should be very easy to operate by the patient/user.

WCs

2.59 Two toilet pan lengths are recommended: 520–550 mm for ambulant and semi-ambulant use and 700 mm for wheelchair and assisted use. Approved Document M and BS 8300 recommend a 750 mm long toilet pan for independent wheelchair transfer. However, Robert Feeney Associates research, commissioned by the Department of Health, indicated that a 700 mm long toilet pan allows for independent wheelchair transfer and so is recommended.

2.60 A single toilet height of 475–480 mm is recommended for adult users.

2.61 Typical assembly requirements include the following:

- Hospital pattern WCs should be rimless, wash down pans and be of the "back to wall" or wall hung type with concealed cistern and services. Wall-hung pans are required to be tested to 63 stone or 400 kg or a force of 4 KN for an hour (BS EN 997).
- The pan fixing should be strong, and effective seat stabilisers should be provided.
- The use of sensor-operated flushes should be considered and the location of these should be carefully assessed so as not to cause unintentional flushing.
- WCs should have fully enclosed seat holes.
- The WC suite must fully comply with the WC Suite Performance specifications of the Water Supply (Water Fittings) Regulations 1999.
- The cistern, where used, should include a flushing arrangement (siphon) adjusted to deliver no more than 6 litres full flush and, if dual flush, smaller volume not to exceed two-thirds of full-flush volume.
- Flush systems may be pneumatic push or sensor operated rather than lever handle as illustrated on the drawings in this WHBN.
- Independent wheelchair and assisted toilets require a backrest for comfort and to aid transfer. The padded backrest should not project more than 50 mm behind the toilet seat hinge to allow the seat to be raised when required.
- WC seats should not have a cover. If covers are to be considered, consultation should take place with the control of infection team at the planning stage, although it must be noted that they are not recommended for independent wheelchair and assisted toilets, as they prevent the use of the backrest.
- Exposed surfaces should be smooth, easy to clean and maintain, and durable.
- The toilet seat should contrast visually with the background wall and floor finishes against which it is being viewed. See Approved Document M and BS 8300 for details.

2.62 Figure 11 shows an appropriate WC for ambulant and semi-ambulant users.

Figure 11 WC for ambulant and semi-ambulant users

2.63 Figure 12 shows a WC appropriate for assisted ambulant disabled/wheelchair users.

Figure 12 WC appropriate for assisted ambulant disabled/wheelchair users

2.64 Example room layouts with WCs are shown in WHBN 00-02 – 'Sanitary spaces'.

Baths

Unassisted baths

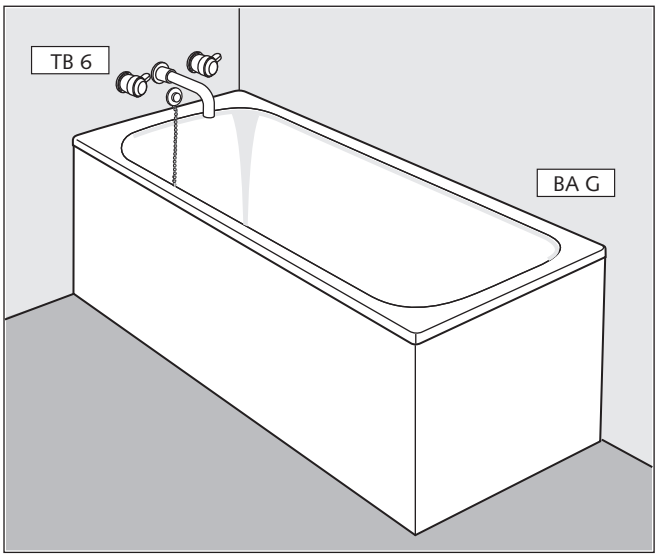
2.65 Baths for unassisted personal bathing, that is, baths suitable for independent wheelchair users and ambulant disabled people, have no tap-holes and should be used with wall-mounted mixer taps controlled by a TMV3-approved thermostatic mixing valve. Wall-mounted taps rather than the corner deck-mounted taps advocated in BS 8300 should be provided for reasons of infection control.

2.66 These baths are not recommended in clinical areas except where the patient group dictates, for example, in facilities for older people, and in maternity and dermatology departments. Typical requirements are:

- Taps should have open nozzles and flow straighteners with minimal restriction.
- The supply fitting should have a TMV3-approved thermostatic mixing valve.

2.67 An illustration of a typical general bath is shown in Figure 13.

Figure 13 Typical general bath



Sizes

2.68 A 700–800 mm wide and 1700 mm long bath is suitable for all unassisted use.

2.69 Narrow baths may be restrictive for larger adults. The minimum internal width of the bath should be 600 mm and this should be clear to within 100 mm of the bottom of the bath to allow for someone lying down.

2.70 The recommended minimum internal width of a bath of 600 mm relates to the widest part of the human body (the hips and shoulders) to enable users to comfortably fit within the bath. This is based upon an analysis of the following ergonomic data (source: Robert Feeney Associates).

2.71 Hip size:

- 95th percentile male – 381 mm, female – 397 mm
- 99th percentile male – 396 mm, female – 415 mm

2.72 Shoulder size:

- 95th percentile male – 486 mm, female – 478 mm
- 99th percentile male – 500 mm, female – 445 mm
- The bottom of the bath should be slip-resistant even when wet.

2.73 Semi-ambulant people and independent wheelchair users prefer baths next to walls as this offers a means of support (see Figure 13). The example layouts of bathrooms in WHBN 00-02 – 'Sanitary spaces' take account of this fact.

Assisted baths

2.74 Assisted variable-height baths are available in a large variety of sizes. The layouts of sanitary spaces in this WHBN assume a variable height bath 800 mm wide and 2400 mm long.

2.75 See 'Bathrooms: assisted' in WHBN 00-02 – 'Sanitary spaces'.

Showers

2.76 A concealed, wall-mounted TMV3-approved thermostatic mixing valve should be installed in all showers.

2.77 Temperature and volume control should be lever operated.

2.78 The showerhead should be height-adjustable and detachable from its bracket.

2.79 For *Legionella* risks, see WHTM 04-01.

Note

It is acknowledged that Approved Document M and BS 8300 recommend a shower head height that may differ from the guidance below. During user trials for en-suite shower facilities associated with adult in-patient accommodation it became apparent that some users may want to sit on the floor to shower, and others struggle to reach shower controls at 1200 mm when seated on the shower seat. A range of 900–1900 mm is recommended. This height accommodates standing users, seated users and those who may wish to sit on the floor.

2.80 Example room layouts with showers are given in WHBN 00-02 – 'Sanitary spaces'.

Note on shower curtains and shower controls

The location of shower curtains and shower controls on the room layouts and associated ergonomic drawings in this WHBN conflict with the recommendations in Approved Document M and BS 8300, and were informed by ergonomic studies and the mock-up trials for en-suite shower rooms.

Shower curtains may be used provided appropriate cleaning regimes are in place. Where used, they should reach the floor but not trail on it.

Low-level shower screens, rather than shower curtains, may be used in assisted shower rooms. However, they are not considered appropriate for independent wheelchair use.

Bidets

2.81 Bidets are generally used by patients in clinical areas, most commonly in maternity departments; but note that bidets are not considered appropriate for independent wheelchair users because of the difficulty in transferring between the wheelchair, toilets and bidet.

2.82 The appliance should be rimless with an over-rim supply, preferably with sensor operation. The water supply should be controlled by a TMV3-approved thermostatic mixing valve to prevent scalding. The waste should be flush-grated so that it cannot take a plug. All services should be concealed.

2.83 An illustration of a typical bidet is shown in Figure 14.

Figure 14 Typical bidet

2.84 Example room layouts with bidets are shown in Figures 1 and 2 in WHBN 00-02 – 'Sanitary spaces'.

Pre-plumbed assemblies

2.85 Panels should be easy to clean, durable and impervious.

2.86 Access panels should be hinged wherever possible for ease of maintenance access. These panels should have a simple lock device to prevent unauthorised opening.

2.87 Wherever possible, assemblies should not be installed on fire-walls. Where this is unavoidable, fire integrity should ideally be provided within the wall or partition itself with no reliance on the panel assembly. This is because of the difficulty of maintaining fire integrity where panels are removed for maintenance. Therefore, a boxed-out unit in front of the fire-wall is recommended in order to maintain its integrity.

2.88 All products used should comply with the requirements of the Water Supply (Water Fittings) Regulations.

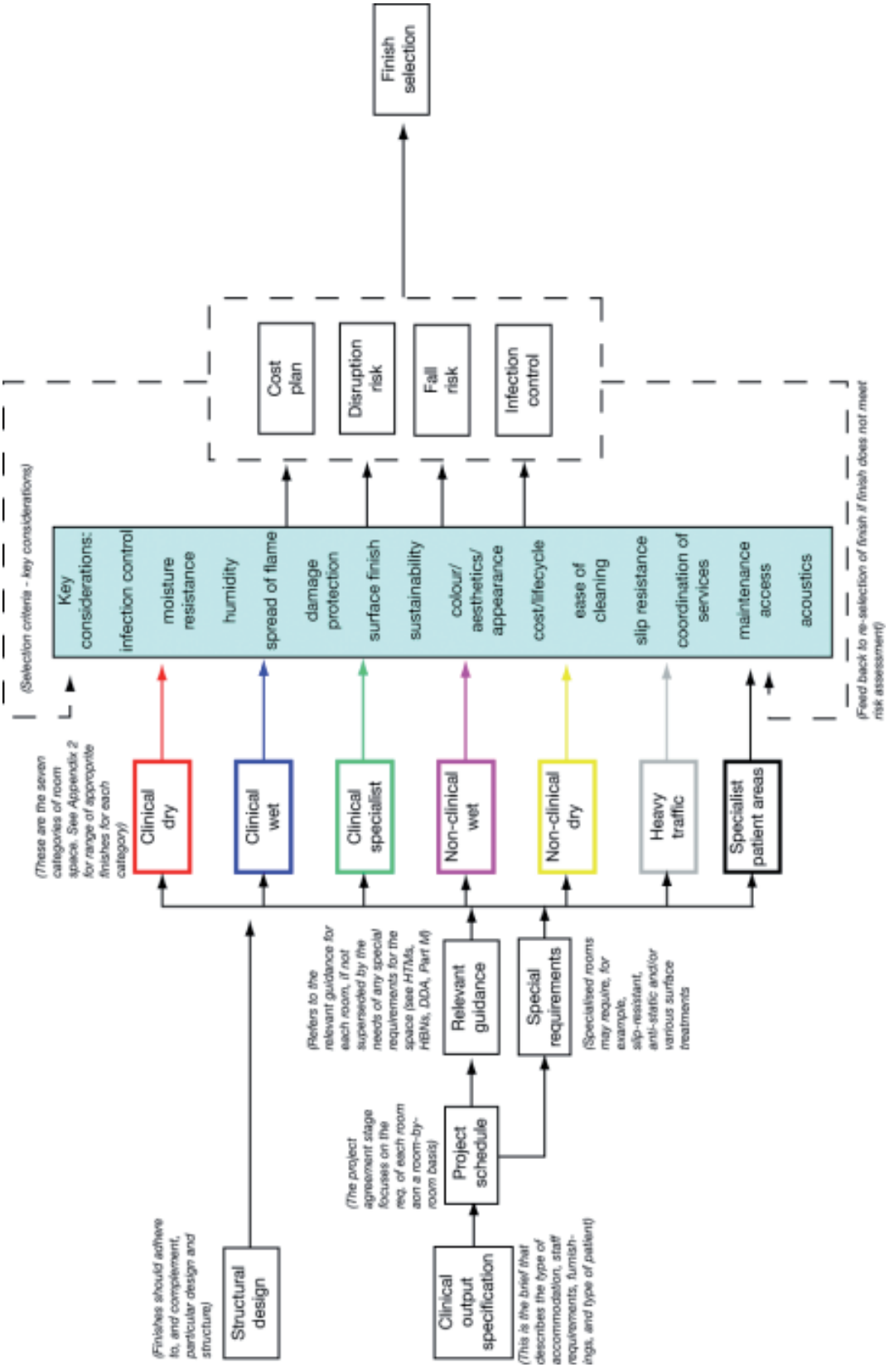
2.89 TMV3-approved thermostatic mixing valves should be used as an integral part of the fitting or as a separate component.

2.90 All units should be tested for leakage.

2.91 Room layouts and ergonomic drawings for various sanitary spaces are given in WHBN 00-02 – 'Sanitary spaces'.

2.92 Access to rear of I.P.S panels should be provided for routine temperature monitoring of blenders and hot water supply return pipe work. Furthermore, there should be unrestricted access to the removable elements of the panels. Grab rails, soap dispensers and paper towel dispensers should not be fixed through these panels; once the fixing screws have been removed several times the panels run the risk of becoming inoperable.

Appendix 1 Selection process for finishes



Appendix 2 Types of finish by room space

Category of room space (*see 'Selection process for finishes' section*)	Floor finish	Wall/partition finish	Ceiling finish[1]	Sanitaryware	Protection (potential risk of damage)
Clinical – dry For example: • Single-bed room • Multi-bed room • Consulting room • Clean utility	Sheet systems or Seamless finish systems	Emulsion or heavy duty emulsion	• **High clinical**: Jointless/smooth imperforate finish • **Moderate clinical**: Jointless or concealed grid/smooth imperforate finish or Jointed/concealed grid/smooth imperforate finish • **Light clinical**: Jointed/exposed grid/ textured perforated finish.	Clinical	Low risk Medium risk
Clinical wet For example: • Dirty utility • Assisted bathroom • Assisted shower	Sheet systems or Seamless finish systems Slip-resistant sheet systems	Heavy duty emulsion/PVC sheet	Moderate clinical: jointless or concealed grid/smooth imperforate finish or Jointed/concealed grid/smooth imperforate finish Both resistant to high humidity levels	Clinical	Medium to low risk
Clinical specialist For example: • **Theatre suite**	Sheet systems or Seamless finish systems	Thick film paint system (150–300 microns)	Jointless/smooth imperforate finish	Clinical	Medium to no risk
• **X-ray room**	Anti static sheet system	Heavy duty emulsion	Square-edged tile to suit unistrut ceiling	Clinical	Medium to no risk
• **Post-mortem room**	Slip resistant Sheet systems or Slip-resistant seamless finish systems	Thick film paint system (150–300 microns)	Concealed grid/smooth finish (power washable)	Clinical	Medium to no risk
• **Aseptic suite**	Sheet systems	Sheet vinyl	Sheet vinyl on jointless/smooth imperforate finish	N/A	Medium to no risk
Non-clinical wet For example: • WC/shower room (en-suite) • Cleaner's room	Slip resistant Sheet systems or Slip-resistant seamless finish systems	Humidity-resistant paint/ PVC sheet	Jointless concealed grid/smooth finish/resistant to humidity or Jointed/exposed grid/ smooth finish Both resistant to high humidity levels	Non-clinical	Low to no risk
Non-clinical dry For example: • Offices • Stores	Sheet systems or Seamless finish systems or Textile flooring	Paint	Jointed/exposed grid/textured finish	Non-clinical	Low to no risk
Heavy traffic For example: • Corridors • Entrances • Lift lobbies • Stairs • Plantrooms	Sheet systems or Seamless finish systems	Heavy duty emulsion or specialist floor paint	Jointed/exposed grid/textured finish Jointed/exposed grid/textured perforated finish	-	Medium to high risk
Specialist patient areas (areas where patients are at risk of self-harm)	Sheet systems or Seamless finish systems	Selection is dependent on an assessment of level of Clinical requirement	Jointless/smooth imperforate finish without potential ligature points Concealed grid/smooth imperforate finish	Selection is dependent on an assessment of level of clinical requirement	High risk
If a room from one category falls within a different category of room space, the higher criterion should be adopted					

Note:

[1] Selection is dependent on an assessment of level of clinical requirement, i.e in-patient accommodation is considered "light clinical"; a treatment room would be considered "moderate clinical"; and a theatre suite considered "high clinical".

References

Acts and Regulations

The acts and regulations shown below can be accessed from the www.legislation.gov.uk website

The Equality Act

Water Supply (Water Fittings) Regulations

British Standards Institution

http://shop.bsigroup.com/en/

BS 1125:1987 Specification for WC flushing cisterns (including dual flush cisterns and flush pipes)

BS 1189:1986 Specification for baths made from porcelain enamelled cast iron

BS 1212-3:1990 Float operated valves. Specification for diaphragm type float operated valves (plastics bodied) for cold water services only (excluding floats)

BS 1212-4:1991 Float operated valves. Specification for compact type float operated valves for WC flushing cisterns (including floats)

BS 1254:1981 Specification for WC seats (plastics)

BS 1344-1:1994 Methods of testing vitreous enamel finishes. Determination of resistance to thermal shock of coatings on articles other than cooking utensils and fabricated sheet steel components

BS 1390:1990 Specification for baths made from vitreous enamelled sheet steel

BS 1876:1990 Specification for automatic flushing cisterns for urinals

BS 2456:1990 Specification for floats (plastics) for float operated valves for cold water services

BS 3402:1969 Specification for quality of vitreous china sanitary appliances

BS 4751:2005 Mobile sanitary chairs

BS 5627:1984 Specification for plastics connectors for use with horizontal outlet vitreous china WC pans

BS 6340-1:1983 Shower units. Guide on choice of shower units and their components for use in private dwellings

BS 6340-2:1983 Shower units. Specification for the installation of shower units

BS 7181:1989 Specification for storage cisterns up to 500 L actual capacity for water supply for domestic purposes

BS 7942:2011 Thermostatic mixing valves for use in care establishments. Requirements and test methods

BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people. Code of practice

BS EN 33:2011 WC pans and WC suites. Connecting dimensions

BS EN 200:2008 Sanitary tapware. Single taps and combination taps for water supply systems of type 1 and type 2. General technical specification

BS EN 232:2012 Baths. Connecting dimensions

BS EN 263:2002 Sanitary appliances. Crosslinked cast acrylic sheets for baths and shower trays for domestic purposes

BS EN 274-1:2002 Waste fittings for sanitary appliances. Requirements

BS EN 274-2:2002 Waste fittings for sanitary appliances. Test methods

BS EN 274-3:2002 Waste fittings for sanitary appliances. Quality control

BS EN 198:2008 Sanitary appliances. Baths made from crosslinked cast acrylic sheets. Requirements and test methods

BS EN 816:1997 Sanitary tapware. Automatic shut-off valves PN 10

BS EN 997:2012 WC pans and WC suites with integral trap

BS EN 1057:2006+A1:2010 Copper and copper alloys. Seamless, round copper tubes for water and gas in sanitary and heating applications

BS EN 10088-1:2005 Stainless steels. List of stainless steels

BS EN 10088-2:2005 Stainless steels. Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes

BS EN 10088-3:1995 Stainless steels. Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes

BS EN 10217-7:2005 Welded steel tubes for pressure purposes. Technical delivery conditions. Stainless steel tubes

BS EN 1112:2008 Sanitary tapware. Shower outlets for sanitary tapware for water supply systems type 1 and type 2. General technical specification

BS EN 1113:2008+A1:2011 Sanitary tapware. Shower hoses for sanitary tapware for water supply systems of type 1 and type 2. General technical specification

BS EN 13310:2003 Kitchen sinks. Functional requirements and test methods

BS EN 13835:2012 Founding. Austenitic cast irons

BS EN ISO 1461:1999 Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods

BS EN ISO 28706-1:2011 Vitreous and porcelain enamels. Determination of resistance to chemical corrosion. Determination of resistance to chemical corrosion by acids at room temperature

BS EN ISO 9000:2005 Quality management systems. Fundamentals and vocabulary. British Standards Institution, 2005

PD 156865 Standardized method of life cycle costing for construction procurement: a supplement to BS ISO 15686-5 Buildings & constructed assets. Service life planning, Life cycle costing

BREEAM Healthcare

www.breeam.org/page.jsp?id=105

NHS Wales Shared Services Partnership – Facilities Services

The publications below are available from the NHS Wales Shared Services Partnership - Facilities Services websites
Intranet: howis.wales.nhs.uk/whe
Internet: www.wales.nhs.uk/whe

National Standards for Cleaning in NHS Wales, Revised October 2009

Welsh Health Building Note 00-02 – Sanitary spaces

Welsh Health Building Note 00-03 – Clinical and clinical support spaces

Welsh Health Building Note 00-09 – Infection control in the built environment

Welsh Health Building Note 03-01 – Adult acute mental health units

Welsh Health Technical Memorandum 04-01 – The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems

Welsh Health Technical Memorandum 07-04 – Water management and water efficiency

Welsh Health Technical Memorandum 07-07 – Sustainable health and social care buildings

Welsh Health Technical Memorandum 08-01 – Acoustics

Water Regulations Advisory Scheme (WRAS)

www.wras.co.uk/approval.asp

Welsh Government

www.wales.gov.uk

Building Regulations

http://wales.gov.uk/topics/planning/buildingregs/publications/?lang=en

Approved document M – Access to and use of buildings
http://wales.gov.uk/topics/planning/buildingregs/publications/part-m-access-and-use/?lang=en

Doing Well, Doing Better – Standards for Health Services in Wales
http://wales.gov.uk/docs/dhss/publications/100419standardsforhealthservicesen.pdf