Hospital solutions
What Works and Why
An informative guide to hospital sanitary assemblies
Working with Armitage Shanks

For almost 200 years Armitage Shanks has invested in design and production facilities throughout the UK and Europe. Our dedication to innovation, commitment to product development and belief in sustainable design is manifested in products whose scope, style and technical performance is unrivalled.

Healthcare solutions are a particular speciality of ours. Working closely with government agencies, architects and contractors, we have been at the forefront of sanitary healthcare product development for almost 50 years.

System21 is the latest result of these collaborations. It is a unique sanitary panel system developed in response to the stipulations of the new Performance Requirements for Building Elements Used in Healthcare Facilities (HBN) 00-10 Part C standard. Innovative design, and exclusive new materials, enable System21 to satisfy the increased sustainability and hygiene demands of (HBN) 00-10 Part C with an elegant, effective, integrated solution.

“\nInfection control and general hygiene are of paramount importance in healthcare. Sanitary fittings that are easy to clean and actively protect patients are vital.”

“I want products that are easy to use and deliver hot water safely, are hygienic and meet the latest performance standards.”
A Solution for Every Hospital and Care Facility

Specifying the appropriate sanitaryware assemblies and fittings for healthcare is a complex, detailed and important decision.

Through its work with government agencies, and other professionals, Armitage Shanks has helped to establish the functional requirements of healthcare sanitaryware and sanitary panel systems. Both Health Technical Memorandum 64 and its successor (in England), Health Building Note (HBn) 00-10 Part C: Sanitary assemblies are results of this long association. Together they address product selection and room layout in a range of healthcare applications and create a powerful tool in the on-going battle against healthcare acquired infections (HAI).

Contour21 is Armitage Shanks’ newest healthcare-specific range. The smooth, organically shaped sanitaryware is designed to improve hygiene by facilitating more effective cleaning and eliminating potential “dirt traps”, which can promote bacterial growth. Its sister range of Markwik21 brassware continues the fight against infection through the use of unique technologies such as thermal disinfection and patent-pending BioGuard Anti-Pseudomonas outlets.

Such intelligent product design is only part of the solution to new ‘super-bugs’, the overall execution of the hospital sanitary facility is equally important. Document HFn 30 outlines how facility layout can also help stop the spread of infection. Hygiene focused solutions must also possess a low carbon footprint and minimise lifetime costs. In response, Armitage Shanks has collaborated with leading sustainability experts to create System21, a state of the art sanitary panel system for the healthcare sector. This ultra-hygienic fully sustainable system is made from 100% recycled materials and can itself be fully recycled.

The following pages will outline the extensive Armitage Shanks healthcare range, summarise each relevant government standard and highlight the steps necessary to design a functional, hygienic and sustainable healthcare sanitary facility.
Q: Why is it important to keep up to date on healthcare legislation and guidance?

A: On-going research prompts new thinking on healthcare facility design, the Department of Health reflects this in revisions to its codes of practice.
“We all want to do the best we can for our patients and their treatment really is a team effort. Having sanitary facilities that are on hand and that just keep on working lets me spend more time on patient care.”

Catherine Young, Nurse
A key element within the provision of healthcare specifications is an understanding of the latest legislation and guidance. Over the next few pages the relevant Government & Healthcare publications are outlined.

HEALTH TECHNICAL MEMORANDA 64, SANITARY ASSEMBLIES (HTM 64)

HTM 64 remains in force throughout Scotland, Wales and Northern Ireland. It provides detailed sanitaryware assembly specifications for healthcare use. It then splits assemblies into two categories:
- General Pattern; used by patients, staff and visitors for non-clinical activities.
- Hospital Pattern; used by healthcare staff in connection with clinical procedures.

Basins provide a simple example of the difference. General Pattern basins facilitate hand washing in a water reservoir, so a plug is specified to allow this. In contrast, Hospital Pattern basins only allow hand washing under running water and so have a back outlet without a plug.

HTM 64 provides a comprehensive guide to General and Hospital Pattern sanitary assemblies and is the foundation upon which all other design decisions are made.
Legislation and Guidance

British Standard 6465-1:2006, Sanitary Installations, Part 1

BS 6465 provides general advice on the design of washrooms and the scale of sanitary provision in new buildings and those being refurbished.

While the Standard does not specifically cover healthcare facilities, the BS refers the specifier to the “information on the scale of provision, ergonomic data and the special requirements for sanitary appliances… found in the various guidance documents produced by the NHS, HTM 64 and HBN 00-02 amongst them”.

However, BS 6465 can provide scale of provision guidance for both staff and visitor non-clinical washrooms, facilities not covered by other publications. Section 6.4 of BS 6465 covers the design and size of sanitary facilities in the workplace and can be used to assess the non-clinical washroom needs of hospital staff and visitors.

Part M provides information on the design and number of disabled facilities that are appropriate for staff and visitor washrooms within healthcare facilities.

Section 5 of Part M regulates the “Sanitary Accommodation in Buildings other than Dwellings” for those who are either permanently or temporarily disabled. In healthcare buildings Part M will principally apply to non-clinical staff and visitor washrooms, its scale of provision requirements can be summarised as follows:

- In a healthcare building having only one toilet, it must be unisex and accessible by wheelchair users.
- In a healthcare building with several washrooms, a unisex wheelchair accessible toilet must be provided close to the location of each one.
- In every non-clinical washroom within a healthcare building, each range of WC cubicles must contain one Ambulant Disabled Cubicle.
- In every non-clinical washroom within a healthcare building that has four or more WC cubicles, one must be an Enlarged Cubicle. This is in addition to an Ambulant Disabled Cubicle.

Further information and sample layouts can be found in the Armitage Shanks Essential Specifiers Series Guide “Part M Solutions… What Works and Why”.

Health Building Note 00-02

HBN 00-02 provides specific sanitary facility layouts using the assemblies in HTM 64, for patient and medical areas.

Volume 1, Part B, Sanitary Spaces, of HBN 00-02 provides best practice guidance on the design of clinical sanitary facilities in healthcare buildings. It places the individual sanitary assemblies from HTM 64 in a room that is safe, accessible and fit for purpose. HBN 00-02 is applicable to all new build healthcare projects and, where practical, refurbishments. HBN 00-02 identifies four categories of clinical healthcare sanitary spaces:  
- Standard, for fully ambulant users.  
- Semi-Ambulant Accessible, for people who walk with difficulty.  
- Independent Wheelchair Accessible, for those who operate their own wheelchair.  
- Assisted, for those who need the help of two or more staff to use the facilities.

Within the document there are detailed layouts that cater for the unique needs of each category of user. HBN 00-02 focuses solely on patient facilities, it does not address non-clinical areas. It should also be noted that HBN 00-02 supersedes Part M of the Building Regulations within patient areas of healthcare buildings.

Health Building Note 00-02

Suitable sanitary facilities must be provided for patients, staff and visitors. The individual needs of each group should be assessed and provided for.”
Infection Control
Fighting Legionella & Pseudomonas Aeruginosa

The chain of infection which propagates and transmits bacteria in healthcare facilities can be broken by modern technology and common sense procedures.

**LESIONELLA**

Legionella bacteria are naturally occurring organisms present in many water systems that can cause the development of Legionnaires’ disease in people exposed to them. The water conditions liable to affect the growth of Legionella in water systems are varied, however HSE ACOP Document (Ref 4), states that:

- Legionella bacteria will not multiply at water temperatures below 20ºC.
- Legionella bacteria proliferate between water temperatures of 20ºC and 45ºC.
- Legionella bacteria will die at water temperatures above 60ºC.

Minimising the growth of Legionella is possible through water system design when supported by regular risk assessments carried out by qualified staff. The practices below are critical to the success of any anti-legionella program:

- Water distribution systems should be well maintained and kept in a hygienic condition.
- Water supplies should be distributed to the point of mixing at appropriate temperatures, below 20ºC for cold and above 55ºC for hot.
- Point of use thermostatic mixers are recommended. Mixing remotely and distributing warm water to multiple points should be avoided.
- Hot water should be stored at or above 60ºC. Water temperatures should be monitored throughout the building on a regular basis.

- Hot and cold supplies should be kept separate and properly insulated to maintain safe temperatures prior to mixing.
- In high risk areas specify fittings with a thermal disinfection facility, supported by a regular sanitisation regime.
- In very high risk areas special medical filters could be considered on all sanitary fittings. Filters must be changed regularly to maintain their protection.
- Markwik21 and Sensorflow21 include a duty flush system that automatically flush the fittings with clean water on a regular basis, helping to reduce biofilm build-up.

**PSEUDOMONAS AERUGINOSA**

Pseudomonas Aeruginosa is a common bacterium that can cause disease in humans. It is found in soil, water, skin flora, and most man-made environments throughout the World. Because it thrives on most surfaces, Pseudomonas can be found on, and inside, medical equipment such as catheters making it a leading cause of HAI:

- Pseudomonas usually infects people who are immune deficient or whose immune system is suppressed, such as hospital patients.
- Healthy people can usually fight off Pseudomonas very successfully before any symptoms become apparent.
- Pseudomonas can also survive in healthcare water systems. The bacterium has been found to colonise the last 2 metres of the water supply system before the outlet. In this scenario it is likely that pipes, isolation valves, strainers and the tap or mixer itself will all become infected. Such contamination may be caused by water that contains Pseudomonas or by the bacteria entering the system via contaminated hands, cloths or medical equipment contacting the outlet. To prevent the spread of Pseudomonas several actions are recommended:
  - Regularly check the water supply in all parts of the building for Pseudomonas.
  - Use all water fittings such as taps, mixers and showers frequently to eliminate “standing” water, either manually or by electronic duty flush.
  - Clean the outlets of all fittings correctly and often.
  - The use of medical filters in high-risk areas like intensive care units and oncology could be considered.
  - The use of an unrestricted outlet may be appropriate (see image below left).
  - Follow the guidelines in HTM 04-01: (The control of Legionella, hygiene, “safe” hot water, cold water and drinking water systems (Part A and Part B)), and HFN 30 (Infection Control in the Built Environment).
  - Implement infection control procedures in appropriate sanitary facilities.

“High levels of Pseudomonas bacteria are often found in the outlets of taps or mixers, especially those fitted with flow modifying devices.”

F960B47AA Markwik21 Bioguard Outlet

Breaking the chain of infection

1/ Infectious agent
   The bug that causes the disease

2/ Reservoir
   The place where the bug reproduces

3/ Portal of exit
   The means the bug uses to get inside the host

4/ Mode of transmission
   The way in which the bug moves from place to place

5/ Portal of entry
   The means the bug uses to leave the reservoir

6/ Susceptible host
   A sick patient unable to fight the bug

1) Infectious agent
2) Reservoir
3) Portal of exit
4) Mode of transmission
5) Portal of entry
6) Susceptible host
Advancements in Ceramics & Fittings Technology

Contour21 ceramics basins and WCs are specially designed and developed to help combat healthcare acquired infections (HAIs)

DESIGN-LED SOLUTIONS FOR PATIENT CARE

An American study found an 11% reduction in infection rates in a new private room facility compared to the more traditional layout of older buildings.

The American Institute of Architects changed its hospital design guidelines in July 2006 to recommend individual rooms. The biggest impact an architect can have on the spread of infection is to provide single occupancy rooms. In the UK, the NHS Confederation has gone even further; it suggests single rooms with en-suite facilities as a way of optimising infection control. The cost of such a design should be viewed in the long term.

In the UK, the NHS Confederation changed its hospital design guidelines in July 2006 to recommend individual rooms. The biggest impact an architect can have on the spread of infection is to provide single occupancy rooms. In the UK, the NHS Confederation has gone even further; it suggests single rooms with en-suite facilities as a way of optimising infection control. The cost of such a design should be viewed in the long term. The financial savings from efficient control are, according to a Philadelphia study, three times the cost of control measures.

In October 2006 the Department of Health published the ‘Code of Practice for the Prevention and Control of HAIs’. Section 4e states that: ‘An NHS body must... ensure adequate provision of suitable hand wash facilities’. Basins should be sited, in addition to washroom applications, in all patient areas, treatment rooms, sluices and kitchens. In clinical areas they should be fitted with wrist or elbow operated mixer taps or ideally a mixer with automatic ‘no touch’ operation.

Beyond building design and hand washing facilities, specifying products designed to break the chain of infection will produce a safer environment. The best way to stop HAIs is to eliminate the infectious agent or deny it a reservoir in which to grow. Armitage Shanks products are designed to do just that.

The Contour21 Basin

The Contour21 basin doesn’t have any tapholes, it doesn’t have an overflow, or a chain hole or a plug. What it has is concealed fixing brackets and an integral back outlet. There are virtually no ‘reservoirs’ in which water can promote the growth of bacteria.

The Rimless Contour21 WC

In most WCs the rim serves one function; to guide the flush water around the bowl. Unfortunately, it also provides a residence for bacteria. The rimless Contour21 WC has no rim. A single, easy to disinfect, outlet works with an internal bowl design to flush the WC. Performance and hygiene, by design.

Infection Control, Contour21, Markwik21 & Sensorflow21 Fittings

Armitage Shanks healthcare fittings are designed and regularly updated to take into account the latest research and knowledge.

FIGHTING HEALTHCARE ACQUIRED INFECTIONS (HAI)

Armitage Shanks’ range of Markwik21 and Sensorflow21 taps and mixers build on their successful past and utilise the latest technologies and materials to fight HAIs:

- Markwik21 has a unique thermal disinfection feature that enables hot water, at distribution temperature, to be flushed through both hot and cold sides of the fitting. This thermally cleanses the entire mixer including the outlet.
- Markwik21 electronic fittings feature an automated hygiene flushing system that can be set to flush water through the fitting every 6, 12, 24, 48 or 72 hours after the last use. Each flush lasts for 60 seconds and refreshes the water supply in hot and cold pipes and the fitting. This reduces the risk of bacterial growth in low use areas.
- Sensorflow21 electronic fittings feature an automatic purge facility (duty flush) where the tap or mixer can be set to run for an extended period during cleaning or maintenance. A run time of between 1 and 120 minutes will clear extensive pipe runs and outlets.
- Markwik21’s new anti-Pseudomonas Bioguard outlet that has no grid and a smooth copper lining (copper acts as a natural bacteria growth inhibitor). These outlets are also available for retro fittings.
- Armitage Shanks electronic mixers use nitrile diaphragms instead of the EDPM rubber used by many others.
- Sensorflow21 and Contour21 are supplied with copper tails instead of flexible hoses that are known to sometimes harbour bacteria.
- Markwik21’s optional purging kit facilitates quick removal of debris prior to commissioning, which can promote bacterial growth, from water supply pipes without damaging the fitting.
- Markwik21’s optional disinfection kit allows the tap to be thermally disinfected when a hot water supply temperature above 61°C is available.
- Markwik21 manual lever outlets can be converted to a battery operated electronic fitting with remote control operated automatic purge (duty flushing) – code reference: A963379AA.

“Markwik21’s new anti-Pseudomonas Bioguard outlet provides additional protection by reducing the chances of bio-film build-up.”
Our Healthcare Solutions
Introducing System21

Q: How does Armitage Shanks keep pace with the changing healthcare needs?

A: By working with healthcare professionals and experts such as bio-scientists, Armitage Shanks continually assesses and responds to the challenges of the sector.
Introducing System21
The Sustainable Panel Solution

New challenges require innovative solutions. Armitage Shanks’ unique understanding of the new (HBN) 00-10 healthcare legislation prompted the development of an exciting new healthcare range called System21.

Designed in response to the key differences between HTM64 and (HBN) 00-10, namely improved sustainability and infection control, System21 uses our vast experience of pre-plumbed panel systems, and innovative new materials, to fully satisfy the demands of (HBN) 00-10.

BREEAM’s Healthcare standard provides the mandated sustainability targets for (HBN) 00-10. Healthcare projects must meet BREEAM’s “excellent”, or “very good” sustainability rating for new builds and refurbishments respectively. Water efficient sanitary fittings alone may not be enough to reach these levels. However, specifying them pre-plumbed to System21’s sustainable panels will help create a sanitary facility that contributes to a healthcare project achieving its required standard.

Hygiene and infection control are fundamental to (HBN) 00-10. The standard requires any healthcare sanitary panel assembly to be “easy to clean, durable and impervious.” Traditional laminate-faced wooden-core panels are prone to water penetration, often the first step towards bacterial growth. In contrast System21’s “plastic” loadbearing panels resist all water ingress, even that from intensive cleaning and washing. Their material and construction effectively eliminate a common haven for bacteria.
Introducing System21

System21; A Complete Solution

System21 uses Armitage Shanks vast experience of panel systems and embraces new materials to fully satisfy the requirements of (HBN) 00-10.

**GENERAL FEATURES AND BENEFITS**

- **A Sustainable Solution**
  - Panels are made from 100% recycled materials.
  - Up to a 75% lower manufacturing carbon footprint.
  - Easy installation means it can be fitted by local labour.
  - Much longer life expectancy than traditional panel systems.
  - Panels are load bearing, ultra durable and easily repairable.
  - Contributes to an “excellent” BREEAM rating.
  - Old panels can be recycled back into new panels.
  - Direct to site delivery of complete pre-plumbed panel assemblies including sanitaryware.

- **A Hygienic Solution**
  - No hard to clean panel splits, fully sealed access system, eliminates potential infection control issues.
  - All panels are 100% waterproof, including the inner core.
  - Panels are resistant to commercial cleaning chemicals.
  - Panels can be recessed to meet vinyl flooring joints.
  - Grabrails can be provided that recess into panels without the need for flanges.

- **High Performing**
  - 36 dB acoustic performance for “Good” rated sound insulation.
  - Thermal conductivity of 0.068 W/mK.
  - Fire rated to BS 476 Class 1
  - Excellent chemical resistance to both acids and alkalis.
  - Solid material that is impervious to moisture.
  - Load bearing WC tested in excess of 400Kg requirement (WC is bolted directly to the panel - no need for additional brackets or support).

**PRODUCT COMPARISON**

<table>
<thead>
<tr>
<th>Feature</th>
<th>IPS System</th>
<th>System21</th>
</tr>
</thead>
<tbody>
<tr>
<td>No metal or wooden fixing frame needed</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>No panel splits - perfect for clinical application</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Material made from 100% recycled product</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Can be recycled into new panels</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>100% waterproof</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Single panel construction</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Easy fit (local installers can be used to reduce carbon footprint)</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Dispensers can be fixed and waterproof properties remain</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Panel can be recessed to accept vinyl flooring joints</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Supports Latest BREEAM &amp; LEED (Highest Ratings)</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Grabrails - no flange option available</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Panels can be easily repaired including holes left from dispensers etc.</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Panel is fully load bearing without additional support or wall bracket</td>
<td>X</td>
<td>✓</td>
</tr>
<tr>
<td>Sealed, hinged and lockable access panels</td>
<td>X</td>
<td>✓</td>
</tr>
</tbody>
</table>

System21 is the latest in a long line of innovative solutions combining our experience with expert advice and sustained research. Developed together with off-site specialists, this complete panel solution provides many key advantages over current IPS systems. Below you will find a summary of these:
Sustainability & Durability

Using a unique mix of recycled materials and a patented process, System21 is the most sustainable panel solution available today.

**LONG LIFE SUSTAINABLE PANEL SYSTEMS**

System21 is made using a patented process from 100% recycled material including items such as yoghurt pots and fridge liners. The panels can also be collected from site at the end of their life and recycled back into new panels, helping building owners to achieve the top scores in BREEAM, LEED and similar schemes whilst protecting the environment.

Part of the system's environmental responsibility is its durability. Each panel is load bearing and does not require additional timber or metal supports. They are 100% waterproof, eliminating the risk of core and facing materials delaminating during use or after cleaning. Even fixing holes for fixtures like soap dispensers can be repaired to maintain hygiene performance and extend working life.

System21 manufacturing process produces up to 75% less carbon emissions than existing IPS systems - providing the greenest panel solution available today.

An increasingly important aspect of every construction project is its sustainability and environmental performance. Healthcare projects are no exception, however the complex task of balancing sanitaryware performance against sustainability is made easier by the Armitage Shanks Eco Measures Calculator.

Part of the IdealSpec specification system, the Eco Measures Calculator provides the information needed to determine if a product meets target sustainability goals. Data on issues such as embodied energy, life cycle cost, water efficiency, Part G, BREEAM and LEED points are provided for all Armitage Shanks ware and fittings.
From Design To Installation

Design Service
Design is the key to every project we undertake; ensuring that all aspects of our work are correctly coordinated, dimensioned and detailed is essential to the successful execution of all aspects of System21.

Our design team has extensive technical knowledge relating to the manufacture and construction of all of our products and systems. The architectural details of each project are analysed and converted to detailed System21 assembly drawings.

All of our designers operate the latest version of AutoCAD and Inventor 3D design software. We are also able to offer 3D including BIM modelling to our clients.

Training Service
Although each System21 unit will be shipped fully assembled with only service connections and simple brackets to be installed on site, Armitage Shanks can provide a supply and training service.

The training package can be tailored to suit your needs, both from a time and cost point of view. For further information and to discuss your needs please contact Armitage Shanks Business Support on 0870 129 8587.

Off-Site Manufacture
All System21 panels are produced in the UK at a dedicated facility using UK sourced recycled materials. This large facility has the space needed for the off-site manufacture and assembly of panels. An adjacent storage facility enables the production team to manufacture whole projects in advance, and store panels ready for call off by the on-site project team.

The pre-plumbing of all panels in a clean off-site facility means that Armitage Shanks can guarantee consistent quality and provide significant risk reduction for building projects. System21 is designed and produced to suit individual project needs with both standard assemblies available and bespoke solutions.

BREEAM
Best practice in sustainable development

The Building Research Establishment set up BREEAM (Building Research Establishment Environmental Assessment Method) as a way to determine the environmental performance of buildings.

As the World’s longest established and most widely used assessment scheme, it “sets the standard for best practice in sustainable development” and measures each building’s level of achievement. BREEAM for healthcare projects has replaced the old NHS Environmental Tool (NEAT), as the government’s preferred environmental assessment and certification system for UK’s healthcare developments including:

- Teaching & Specialist Hospitals
- General Acute Hospitals
- Community & Mental Health Hospitals
- Health Centres & Clinics
- GP Surgeries

Under the BREEAM standard and (HBNI) 00-10, new healthcare builds are required to achieve an “excellent” rating and refurbishment projects must achieve a “very good” rating. Failing to do so will jeopardise Department of Health approval of the project. To ensure compliance BREEAM can be used at the initial design stage and post construction.

The benefits of a BREEAM healthcare building extend to both designer and client; the client receives a building that is economic to run, while the designer can clearly demonstrate compliance with environmental objectives.

<table>
<thead>
<tr>
<th>Credit Ref</th>
<th>BREEAM Description</th>
<th>How System21 helps BREEAM</th>
<th>Points available</th>
</tr>
</thead>
<tbody>
<tr>
<td>M20</td>
<td>Where evidence provided demonstrates that specifications for the building and the building services/systems and landscaping have considered ease and efficiency of maintenance in line with best practice</td>
<td>System21 has fewer joints than the systems it replaces and its surface can be easily maintained and repaired. Its design is in line with BSF best guidance and has been conceived in terms of whole life cost with emphasis on ease of maintenance</td>
<td>0.75</td>
</tr>
<tr>
<td>M21</td>
<td>Whole life costing</td>
<td>System21 does not require painting or grouting, is robust and easy to clean and designed to deter vandals. At end of life System21 is easily removed and replaced, there will be no landfill costs and the materials can be easily recycled into new product. System21 design is centred on whole life cost as indivisible from its environmental profile and conception</td>
<td>1.5</td>
</tr>
<tr>
<td>HW13</td>
<td>Where the design team will review and minimise the use of all finishes and fittings containing VOCs</td>
<td>Unlike Compact Grade Laminate or MDF, System21 does not use phenol resins or formaldehydes</td>
<td>0.83</td>
</tr>
<tr>
<td>MV01</td>
<td>Where at least 80% by area of the internal walls achieve an A rating in the Green Guide to Specification</td>
<td>System21 is a recycled product that actively removes unsold plastic waste from the environment. As a panel solution it contributes actively to the internal wall area. Armitage Shanks are applying for a Green Guide listing and we are confident of the strength of our environmental credentials</td>
<td>0.556</td>
</tr>
<tr>
<td>MV08</td>
<td>Where materials are used in structural and non-structural elements that are responsibly sourced – requirement that non timber products have EMS certification at either the process stage or the process and extraction phases</td>
<td>The System21 process has ISO140001 certification and System21 is sourced from previously unstable unsold plastic waste and plastic waste for which the market has collapsed and is being stockpiled</td>
<td>1.668</td>
</tr>
<tr>
<td>MV10</td>
<td>Where protection is given to vulnerable parts of the building such as areas exposed to high pedestrian traffic, vehicular and trolley movements</td>
<td>System21 is robust to a much greater degree than a painted surface or tiled one. Scruffs can be easily repaired and it is denser than a plasterboard wall and considerably stronger and will therefore be resistant to damage</td>
<td>0.556</td>
</tr>
</tbody>
</table>
Q : How can I be sure that I am specifying the right solutions for each room type?

A : The following pages detail sanitary assembly solutions that meet Government guidance and legislation.
WC H Ambulant

55508VD
Recessed panel NHS
General Pattern, 40cm
Portman21, WHB, 700
wide, 2400 high, basin
with Contour21 Lever
Operated and hinged
lockable mirror.

Comprising of:
52314601
PORTMAN21
40cm basin no overflow
or chain hole – one
right hand taphole.

A4169AA
CONTOUR21
Single lever one taphole
sequential thermostatic
basin mixer.

For complete technical
information please call
0870 129 8587

WC H Semi-Ambulant

55508VE
Recessed panel NHS
General Pattern, 40cm
Portman21, WHB, 700
wide, 2400 high, basin
with Contour21 Lever
Operated and hinged
lockable mirror.

S6454LJ
600mm grabrails for
System21 in grey x2.

Comprising of:
53070601
CONTOUR21
Rimless wall hung WC
pan – standard projection.

S6361LJ
Hinged support rail
650mm in grey x1.

For complete technical
information please call
0870 129 8587
WC HD Independent Wheelchair WC

**S5508VE**
Recessed panel NHS General Pattern, 40cm Portman21, WH, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

**S6454LJ**
600mm grabrails in grey x 2.

**S5532VE**
Recessed panel NHS Disabled, WC 70cm projection WH, 900 wide, 2400 high and access through access hatch.

**S6361LJ**
Hinged support rail 650mm in grey x 1.

**S6363LJ**
Toilet roll holder in grey x 1.

**S6481LJ**
Back rest rail for System21 x 1.

**SBB467**
Back rest cushion x 1.

**S6454LJ**
600mm grabrail in grey x 1.

For complete technical information please call 0870 129 8587

Figure #1
Independent wheelchair wc with 1x hinged arm support and 1x 600mm grab rail with 180mm projection.
WC HD Assisted Ambulant Disabled

Comprising of:

S5514VF
Recessed panel NHS General Pattern, 50cm Portman21, WHB, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

S6454LJ
600mm grabrails in grey x 2.

S5532VF
Recessed panel NHS Disabled, WC 70cm projection WH, 900 wide, 2400 high and access through access hatch.

S6361LJ
Hinged support rail 650mm in grey x 2.

S6363LJ
toilet roll holder in grey x 1.

S6363LJ
Back rest rail for System21 x 1.

S6363LJ
600mm grabrails in grey x 2.

S5532VF
Recessed panel NHS General Pattern, 50cm Portman21, WHB, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

S6454LJ
600mm grabrails in grey x 2.

S6363LJ
Back rest rail for System21 x 1.

Comprising of:

S307701
CONTOUR21
Rimless wall hung WC pan – 70cm projection.

S4066LJ
CONTOUR21
Top fix toilet seat only in grey.

For complete technical information please call 0870 129 8587
Ambulant Shower Room

Recessed panels
NHS, Corner Shower with diverter, 3 x 600mm rails and overhead shower.*

Comprising of:
A4129AA
CONTOUR21
Built in sequential shower mixer with 120mm long lever.
L7104AA
Shower handset.
S6477LJ
Adjustable handset holder.
E4745AA
Shower hose.
L6919AA
Shower diverter.
E4705AA
Shower wall elbow.
S9313AA
Anti vandal shower fixed shower head.
S6751AC
Shower curtain rail.
S675001
Shower curtain.
S6632XK
Shower seat in grey.

* Shower units available as non-standard product.

For complete technical information please call 0870 129 8587
Semi-ambulant Shower Room

**Semi-ambulant Shower Room**

For complete technical information please call 0870 122 8822

**Shaver socket**

**Coat hooks**

**Shower curtain rail**

**Contact us for more information**

**Recessed panel NHS WH Standard Projection 900 wide 2400 high - access through access hatch**

**S5514VD**
Recessed panel NHS
General Pattern, 50cm
Portman21, WHB, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

**S6454LJ**
600mm grabrails in grey x 2.

**S5542VD**
Recessed panel NHS WH
Standard Projection 900 wide 2400 high - access through access hatch

**S6361LJ**
Hinged Support Rail

**S6363LJ**
Toilet roll holder

Comprising of:

**S225401**
PORTMAN21
50cm basin no overflow right hand taphole.

**A4169AA**
CONTOUR21
Single lever one taphole sequential thermostatic basin mixer.

**S6477LJ**
Adjustable handset holder.

**S6632XK**
Shower seat in grey.

**E4745AA**
Shower hose.

**S675001**
Shower curtain.

**S6632XX**
Shower seat in grey. *Shower units available as non-standard product.*
Independent Wheelchair Shower Room

**S5508VB**
Recessed panel NHS
General Pattern, 40cm
Portman21, WHB, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

**S6454AC**
600mm grabrails in grey x 2.

**S6361LJ**
WC assembly hinged support rail 650mm in grey x 1.

**S6363LJ**
Toilet roll holder in grey x 1.

**S6454LJ**
600mm grabrail in grey x 1.

**S5532VC**
NHS Disabled WC
70cm projection WH 900 wide 2400 high - access through access hatch. Inc. back rest rail and cushion

Recessed panels NHS, Corner Shower with divertor and overhead shower.

**S6454AC**
600mm grabrails x 2.

**S6361LJ**
WC assembly hinged support rail 650mm in grey x 1.

Comprising of:

**A4129AA**
CONTOUR21
Built in sequential shower mixer with 120mm long lever.

**L7104AA**
Shower handset.

**E4745AA**
Shower hose.

**S6477LJ**
Adjustable handset holder.

**L6919AA**
Shower diverter.

**E4705AA**
Shower wall elbow.

**S5931AA**
Anti vandal shower fixed shower head.

**S6751LJ**
Shower curtain rail.

**S675001**
Shower curtain.

**S6632LJ**
Shower seat in grey.

**S6454LJ**
600mm grabrail in grey x 1.

* Shower units available as non-standard product.

For complete technical information please call 0870 122 8822

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**For complete technical information please call 0870 122 8822**

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**For complete technical information please call 0870 122 8822**
Assisted Shower Room

Comprising of:
Recessed panels NHS, Corner Shower with diverter and overhead shower.*
S6477LJ
Shower handset holder
S6622XX
Folding shower seat 650mm
S6635XX
Back support
S6454LJ
600mm grabrails in grey x 2.
S688467
Back rest cushion x 1.

Comprising of:
S645436
600mm grabrail x 1.
S5514VG
Recessed panel NHS General Pattern, 50cm Portman21, WHB 700, wide 2400, high basin, with Contour21 Lever Operated and hinged lockable mirror.
S6454LJ
600mm grabrails in grey x 2.

* Shower units available as non-standard product.

For complete technical information please call 0870 122 8822.

S5532VG
Recessed panel NHS Disabled, WC 70cm projection WH, 900 wide, 2400 high and access through flushplate Inc. back rest rail and cushion.
S6361LJ
Hinged support rail 650mm in grey x 2.
S6363LJ
Toilet roll holder in grey x 1.
S6454LJ
600mm grabrails in grey x 3.
S6481LJ
Back rest rail in grey x 1.
Semi-ambulant Bathroom

SSS14VD
Recessed panel NHS
General Pattern, 50cm
Portman21, WHB, 700
wide, 2400 high, basin
with Contour21 Lever
Operated and hinged
lockable mirror.

S645436
600mm grabrail.
Comprising of:
S323401
PORTMAN21
50cm basin no overflow
right hand taphole.

A4169AA
CONTOUR21
Single lever one taphole
sequential thermostatic
basin mixer.

SSS42VD
Recessed panel NHS
Disabled, WC WH
Standard Projection, 900
wide, 2400 high and access
through access hatch.

S636336
Toilet roll holder in blue x 1.
Comprising of:
S307601
CONTOUR21
Rimless wall hung WC
pan – standard projection.

S636136
Hinged support rail
650mm in blue x 1.

S406636
CONTOUR21
Top fix toilet seat
only in blue.

S645436
600mm grabrails in
blue x 3.

S169901
Nisa steel bath 1700mm x
700mm at 480mm height.

A4135AA
Contour 21 wall mounted
thermostatic bath mixer.

S647536
Angled grabrail in blue.

For complete technical
information please call
0870 122 8822
Independent Wheelchair Accessible Bathroom

For complete technical information please call 0870 122 8822

5SS14VD
Recessed panel NHS
General Pattern, 50cm Portman21, WHB, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

S645436
600mm grabrails for System21 in blue x 2.
Comprising of:
S225401 PORTMAN21 50cm basin no overflow or chain hole – one right hand taphole.
S645436 600mm grabrail in blue x 2.

A4169AA CONTOUR21 Single lever one taphole sequential thermostatic basin mixer – no waste.

5SS14VD
NHS General Pattern 50cm Portman 21WHB 700 wide 2400 high basin with Contour 21 Lever Operated, hinged lockable mirror.

S645436 600mm grabrails for System21 in blue x 2.
Comprising of:
S225401 PORTMAN21 50cm basin no overflow right hand taphole.

A4169AA CONTOUR21 Single lever one taphole sequential thermostatic basin mixer.

S5532VD
Recessed panel NHS Disabled, WC 70cm projection WH, 900 wide, 2400 high and access through access hatch.

Please note: To help with logistics on site WCs and seats will be supplied unfitted

5636336 Toilet roll holder in blue x 1.
5636136 Hinged support rail 650mm in blue x 1.
5688467 Back rest rail for System21 in blue x 1.
5688467 Back rest in blue x 1.
5645436 600mm grabrail for System21 in blue x 1.
Comprising of:
S307701 CONTOUR21 Rimless wall hung WC pan – 70cm projection.

S64036 CONTOUR21 Top fix toilet seat only with restraint lugs in blue.
S6632XX Shower seat in grey.
S169901 Nisa steel bath 1700mm x 700mm at 480mm height.
A4135AA Contour 21 wall mounted thermostatic bath mixer.
S647936 Angled grabrail in blue.
Assisted Bathroom

**S5508VD**
Recessed panel NHS
General Pattern, 40cm Portman21, WH, 700 wide, 2400 high, basin with Contour21 Lever Operated and hinged lockable mirror.

**S645436**
600mm grabrails in blue x 2.

Comprising of:

**S231401**
PORTMAN21
40cm basin no overflow or chain hole – one right hand taphole.

**A4169AA**
CONTOUR21
Single lever one taphole sequential thermostatic basin mixer.

**S645436**
600mm grabrail in blue x 1.

**S5532VD**
Recessed panel NHS Disabled, WC 70cm projection WH, 900 wide, 2400 high and access through access hatch.

**S636136**
Hinged support rail 650mm in blue x 2.

**S636336**
Toilet roll holder in blue x 1.

**S648136**
Back rest rail for System21 in blue x 1.

**S688467**
Back rest cushion x 1.

**S645436**
600mm grabrails in blue x 2.

**S636136**
Hinged support rail 650mm in blue x 2.

**S636336**
Toilet roll holder in blue x 1.

**S648136**
Back rest rail for System21 in blue x 1.

**S688467**
Back rest cushion x 1.

**S645436**
600mm grabrails in blue x 2.

For complete technical information please call 0870 122 8822.
Q: How can I be sure that the products I specify will meet the latest standards?

A: The following pages detail products that meet the necessary requirements of (HBN) 00-10 and HTM 64.
Janitorial Unit JU
Disposal Units DU H

**S6509MY**
Janitorial unit in stainless steel.

**B2809AA**
Monoblock mixer with swivel nozzle and lever handles.

**S5581VE**
Recessed panel NHs, DU H Slop Hopper LH, 1000 wide, 1800 high with hinged access position B.

**Comprising of:**

**S6564MY**
Stirling left hand slop hopper in stainless steel.

**S8270AA**
Markwik21 lever action bib taps.

**S8347AA**
100mm extension.

**S8336AA**
1/2” wall mount for concealed plumbing.

**Plaster Sinks PS H**

**S5562VE**
Recessed panel NHs, PS H Plaster RH Sink, 1350 wide, 1800 high.

**Comprising of:**

**S6557MY**
Clyde right hand plaster sink and work surface in stainless steel.

**S8270AA**
MARKWIK21 lever action bib taps.

**S8347AA**
100mm extension.

**S8336AA**
1/2” wall mount for concealed plumbing.

See www.thebluebook.co.uk for additional options.
Scrub-up Troughs
SU H

S5570VE
Recessed panel SU H Scrub Trough 2600 wide, 1800 high.
Comprising of:

S2877MY
Firth scrub-up trough 2400mm RH waste.

A6052AA
Markwik21 Sensor timed flow mixer tap.

S8270AA
MARKWIK21 Lever action bib taps.

S8347AA
100mm extension.

S8336AA
1/2’’ wall mount for concealed plumbing.

S5841MY
Doon sink, single bowl with right hand drainer, no tapholes and no overflow.

S8369AA
1/2’’ wall mount for concealed plumbing.

S8379AA
MARKWIK21 High neck sink pillar taps.

Clinical Sinks ST A
(hospital pattern)

Domestic Service Sinks
SK 1 (general pattern)
Clinical Basins (hospital pattern) LB H M

- **S5502VD**
  - Recessed panel NHS Clinical, WHB, 700 wide, 2400 high, 50cm
  - Contour21 basin with Markwik21 Lever Operated, hinged front
  - Access position A and position B.
  - Comprising of:
    - A6600AA MARKWIK21 Thermostatic sequential mixer.
    - S215401 CONTOUR21 50cm basin with back outlet, no overflow or tapholes.

Personal Washing Basins

- **S5514VD**
  - Recessed panel NHS General Pattern, 50cm Portman21, WHB, 700 wide, 2400 high, basin with
  - Contour21 Lever Operated and hinged lockable mirror.
  - Comprising of:
    - S225401 PORTMAN21 50cm basin without overflow and chain hole – one right hand taphole.
    - A4169AA CONTOUR21 Single lever one taphole sequential thermostatic basin mixer – no waste.

- **S5508VD**
  - Recessed panel NHS General Pattern, 40cm Portman21, WHB, 700 wide, 2400 high, basin, with
  - Contour21 Lever Operated and hinged lockable mirror.
  - Comprising of:
    - S231401 PORTMAN21 40cm basin no overflow or chain hole – one right hand taphole.
    - A4169AA CONTOUR21 Single lever one taphole sequential thermostatic basin mixer – no waste.

Hand Rinse Basins LB G L/M (general pattern) LB G S (general pattern)
Urinals (hospital pattern 1)

S611001
CONTOUR21
Urinal.

S628601
Back inlet spreader.

Urinals (hospital pattern 2 - waterless)

S632101
Ardian waterless urinal.
S612001
Vitreous china division.

Urinals HygenIQ

S611901
CONTOUR21
HygenIQ urinal.
S6286AA
Back inlet spreader.

A4854AA
SENSORFLOW21
Urinal flush valve - panel mounted.
Technical Information
Product Drawings, Specifications and Guarantees

Contents
60 Hospital Ceramics
64 Hospital Brassware
69 Hospital System21
84 Guarantee
Hospital Ceramics

Contour21 50cm basin with back outlet, no overflow or tapholes.
- Hospital pattern washbasin for clinical use.
- Large basin, for use with wall mounted mixer.
- Concealed supply and waste minimise bacteria traps.
- Non-reservoir basin improves hygiene.

Contour21 60cm basin with back outlet, no overflow or tapholes.
- Hospital pattern washbasin for clinical use.
- Large basin, for use with wall mounted mixer.
- Concealed supply and waste minimise bacteria traps.
- Non-reservoir basin improves hygiene.

Portman21 40cm basin, no overflow or chain hole
- one right hand taphole.
- General pattern washbasin for non-clinical use.
- Small compact size.
- Exposed supply and waste for easy maintenance.
- Smooth easy to clean shape.

Portman21 50cm basin, no overflow or chain hole
- one right hand taphole.
- General pattern washbasin for non-clinical use.
- Medium size for extra washing capacity.
- Exposed supply and waste for easy maintenance.
- Smooth easy to clean shape.

Portman21 60cm basin, no overflow or chain hole
- one right hand taphole.
- General pattern washbasin for non-clinical use.
- Medium size for extra washing capacity.
- Exposed supply and waste for easy maintenance.
- Smooth easy to clean shape.

Contour21 60cm accessible basin
- one centre taphole.
- General pattern washbasin for non-clinical use.
- Unique design allows use from wheelchair.
- Exposed supply and waste for easy maintenance.
- Reservoir design for easy use.
Hospital Ceramics

Contour21 Rimless wall hung WC pan – standard projection.

- Hospital pattern WC for clinical use.
- Rimless design eliminates potential bacteria hot spot.
- Wall hung for easier floor cleaning.
- Concealed cistern minimizes projection into the room.
- 4.5 litre water saving flush.

Contour21 Rimless wall hung WC pan – 70cm projection.

- Hospital pattern WC for clinical use.
- Rimless design eliminates potential bacteria hot spot.
- Padded back support for improved comfort.
- Easier transfer from wheelchair to WC.
- 4.5 litre water saving flush.

Contour21 Raised height rimless back-to-wall WC pan – standard projection.

- Hospital pattern WC for clinical use.
- Rimless design eliminates potential bacteria hot spot.
- Floor mounted, 46cm high for disabled users.
- Concealed cistern minimizes projection into the room.
- 4.5 litre water saving flush.

Contour21 Raised height rimless back-to-wall WC pan – 70cm projection.

- Hospital pattern WC for clinical use.
- Rimless design eliminates potential bacteria hot spot.
- Floor mounted, 46cm high for disabled users.
- Easier transfer from wheelchair to WC.
- 4.5 litre water saving flush.

For additional information, please see Ideal Specification.
Hospital Brassware

Markwik21 deck mounted sequential thermostatic mixer.
A6063AA
- Suitable for 15mm copper.
- Can be easily retro fitted on existing basins and sinks with 200mm tap centres.
- Easy access for maintenance.
- No need to remove panels.
- Horizontal spout.
- Cleansing feature.
- Insulate technology keeps fittings at body temperature and therefore safe.
- With Bioguard Anti-Pseudomonas outlet.

Markwik21 thermostatic sequential mixer.
A6060AA
- Suitable for 15mm copper.
- Single lever operation with large easy to use lever.
- 200mm tap centres.
- Easy access for maintenance.
- No need to remove panels.
- Horizontal spout.
- Cleansing feature.
- Insulate technology keeps fittings at body temperature and therefore safe.
- With Bioguard Anti-Pseudomonas outlet.

Markwik21 electronic thermostatic mixer with time flow sensor.
A6062AA
- Suitable for 15mm copper.
- Sensor operated means no hand touch.
- 200mm tap centres.
- Easy access for maintenance.
- No need to remove panels.
- Horizontal spout.
- Cleansing feature.
- Insulate technology keeps fittings at body temperature and therefore safe.
- With Bioguard Anti-Pseudomonas outlet.

Markwik21 high neck sink pillar taps.
SB265AA
- Deck mounted chrome plated taps with 15cm levers.
- Suitable for closed fist operation.

Markwik21 lever action bib taps, including wall mounts and extensions.
SB270AA, SB386AA, SB386AA
- Wall mounted chrome plated taps with 15cm levers.
- Suitable for closed fist operation.
- HTM 64 TB-H1.
Hospital Brassware

**Nuastyle pillar taps.**
- B8262AA
  - Suitable for 15mm copper.
  - Deck mounted chrome-plated brass taps with anti vandal indices.
  - Particularly suitable for continuous use.
  - Suitable for closed fist operation.
  - HTM 64 TPS.

---

**Contour21 wall mounted thermostatic bath mixer.**
- A4135AA
  - Single easy turn lever.
  - Sequential operation.
  - To ensure system hygiene and user safety the water is always drawn from first cold and then the hot supply.
  - 150mm tap centres.
  - Built in thermostat.

---

**Contour21 single lever one taphole sequential thermostatic basin mixer**
- no waste with copper tails.
- A4169AA
  - Basin mixer with extended easy use lever particularly suitable for closed fist operation.
  - Suitable for healthcare and less abled bathrooms.
  - HTM 64 TPS.
  - Integral thermostat set at 41ºC.
  - Sequential operation.
  - To ensure system hygiene and user safety the water is always drawn from first cold and then the hot supply.
  - Can be fitted in standard pillar taps hole.

---

**Sensorflow Spout 150 Compact.**
- A4846/47/49/50
  - Features an automatic purge facility (duty flush) where the tap can be set to run for an extended period during cleaning or maintenance. A run time of between 1 and 120 minutes will clear extensive pipe runs and outlets.
  - Available with a remote control for easy adjustment and activation of temporary flow stop for cleaning.
  - Downwards facing sensor to help eliminate false activation.
  - Fitted with water-saving 5 lpm outlet.

---

**Markwik21 purging kit for healthcare thermostatic mixers.**
- A4556AA
  - Built in cleansing feature.
  - Bridging hose connects hot and cold water inlets.
  - Tap can be hot water flushed, killing bacteria.
  - Flushes debris after installation.
  - Purging cartridge replaces maintenance cartridge.
  - Mixer can be flushed without affecting thermostat.

---

**Contour21 built in thermostatic sequential shower.**
- A4129AA
  - Suitable for 15mm copper.
  - Built in sequential shower.
  - Built in thermostat.
  - 120mm long lever suitable for closed fist operation.
  - Safety temperature stop.
  - Sequential operation.
  - To ensure system hygiene and user safety the water is always drawn from first cold and then the hot supply.
Hospital Brassware

**Thermostatic mixing valve.**

**A5900AA**

- Suitable for 15mm copper.
- Automatic shut off if cold supply fails.
- Multi-point usage.
- Precise temperature control.
- Anti-tamper shield.
- Thermostatic valve.
- Suitable for 2 tap hole basins.

**Thermostatic shower and mounting box.**

**S6933MY**

**Stainless Steel**

**S6933AC**

**White**

Features and benefits:

- Suitable for 15mm copper.
- Automatic shut off if cold water supply fails. Ensures safe usage, preventing accidental scaling.
- Mounting box for easier installation. Suitable for “first fix” fitting before units are finished. The shower can be plumbed from the top or bottom of the mounting box.
- Easy access for maintenance. The design of the mounting box means it is easy to remove, providing easy access to the plumbing.
- High quality fixings and robust build. The shower uses a high quality Tesvi CTV shower valve. High resistance against vandalism makes the shower suitable for use in public place.

Hospital System21

**Boxed-out NHS Clinical WH8 700 wide, 2400 high, 500mm Contour21 basin with Markwik21 lever tap operated and standard hinged side access. S5500**

**Technical Information**

Basins available with grab rails pre-fitted.

WCs available with hinged support rails, back support rail and cushion pre-fitted.

System21 is available in the above colours. Please see www.theflatbook.co.uk for further information.
Hospital System21

Boxed-out NHS General Pattern 40cm Portman21, WHB, 700mm wide, 2400mm high, basin with Contour21 lever tap operated and standard hinged side access.

SSS06

Boxed-out NHS General Pattern 50cm Portman21, WHB, 700mm wide, 2400mm high, basin with Contour21 lever tap operated and standard hinged side access.

SSS12

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted
System21 is available in the above colours, please see www.thebluebook.co.uk for further information
Hospital System21

Boxed-out panel NHS
Disabled, WC BTW 70cm projection, 900mm wide, 2400mm high with access through access hatch.

S5525

Boxed-out panel NHS, WC BTW raised height standard projection, 900mm wide, 2400mm high with access through access hatch.

S5555

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted
System21 is available in the above colours, please see www.thebluebook.co.uk for further information
Hospital System21

Boxed-out panel NHS
Disabled, WC WH 70cm projection, 900mm wide, 2400mm high with access through access hatch.

Boxed-out panel NHS, WC WH standard projection, 900mm wide, 2400mm high with access through access hatch.

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Our solutions for Hospital and Care Facilities

Boxed-out panel NHS

Hinged & lockable side access

Hinged & lockable side access

Colours:
- Cool Grey (VB)
- Storm Grey (VC)
- Barley yellow (VD)
- Powder Blue (VE)
- Mint Green (VF)
- Dusty Pink (VG)

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted

System 21 is available in the above colours, please see www.thebluebook.co.uk for further information
Recessed panel NHS Clinical WHB, 700mm wide, 2400mm high, 500mm Contour21 basin with Markwik21 lever operated tap.

SS502

Recessed panel NHS General Pattern 40cm Portman21, WHB, 700mm wide, 2400mm high, basin with Contour21 lever operated tap.

SS508

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted

System21 is available in the above colours, please see www.thebluebook.co.uk for further information
Hospital System21

Recessed panel NHS General Pattern 50cm Portman21, WHB. 700mm wide, 2400mm high, basin with Contour21 lever operated tap.

Recessed panel NHS Disabled, WC BTW 70cm projection, 900mm wide, 2400mm high with access through access hatch.

Contour 21 Seat for System21 S510436
System21 Back Rest Rail 40cm x 17cm S637636
System21 Padded Back Cushion S637677
System21 Hinged Support Rail Right Hand 65cm S637136
System21 Toilet Roll Holder for Hinged Support Rail S637436

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted
System21 is available in the above colours, please see www.thebluebook.co.uk for further information
Hospital System 21

Recessed panel NHS Disabled, WC WH 70cm projection, 900mm wide, 2400mm high with access through access hatch.

System21 is available in the above colours, please see www.thebluebook.co.uk for further information.

Baseline available with grab rails pre-fitted

WCs available with hinged support rails, back support rail and cushion pre-fitted

System21 is available in the above colours, please see www.thebluebook.co.uk for further information.

Recessed panel NHS, WC WH standard projection, 900mm wide, 2400mm high with access through access hatch.

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<th>Colour</th>
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<td>VC</td>
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<td>Barley yellow</td>
<td>VD</td>
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<td>Powder Blue</td>
<td>VE</td>
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<td>Mint Green</td>
<td>VF</td>
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<tr>
<td>Dusty Pink</td>
<td>VG</td>
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</table>

### Baseline

- Baseline available with grab rails pre-fitted
- WC available with hinged support rail, back support rail and cushion pre-fitted

### System21

- Available in above colours
- See www.thebluebook.co.uk for further information
Hospital System21

Recessed panel NHS, WC BTW raised height standard projection, 900mm wide, 2400mm high, with access through access hatch.

Contour 21 Seat for System21 5410436

Technical Information

Basins available with grab rails pre-fitted
WCs available with hinged support rails, back support rail and cushion pre-fitted
System21 is available in the above colours, please see www.thebluebook.co.uk for further information.

<table>
<thead>
<tr>
<th>VB</th>
<th>VC</th>
<th>VO</th>
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Our solutions for Hospital and Care Facilities
Guarantee

10 years on System21 panels
Lifet ime
all ceramic products

Our confidence in the quality and reliability of Armitage Shanks products enables us to guarantee many of them for a lifetime.

Our guarantee is offered on all products that have been used in the manner for which they were intended, and does not apply to any products that have been misused or abused in any way. Products must be installed and cared for in line with our fixing instructions and local water byelaws. In the unlikely event the product fails within the guarantee period, we offer a free replacement or replacement part (or nearest equivalent). We also reserve the right to repair the product. Liability is limited to individual products and does not cover consequential loss or damage on installation.

1. All ceramic products are guaranteed for a lifetime.
2. Idealized and Idealform acrylic baths are guaranteed for twenty-five years from date of purchase.
3. Showers, bath panels, furniture, mixers and taps (WCs, toilet seats, stainless steel units and cistern fittings are guaranteed for five years from date of purchase. (cistern seals are not included).
4. Parts (including push button flush valves) are guaranteed for five years and will be replaced if found to be faulty.
5. Cistern diaphragms, seals and shower seals are subject to normal wear and tear through usage and are therefore covered on all products for 5 years from installation. These parts will be charged thereafter. Thereafter, such parts are available for purchase through our parts supply service.

1. This guarantee applies only to products purchased and installed in the United Kingdom or the Republic of Ireland.
2. Proof of purchase is required in the event of a claim.
3. Provision of the barcode / serial number will be required to enable product identification.
4. We must be given the opportunity to inspect the product, if we request to do so. The product should not be removed or destroyed before inspection without our consent. We may request photographic evidence in any investigation.
5. The product must have been installed, used and cared for in accordance with our Instructions for installation and care. In addition, the products must have been installed in accordance with good plumbing practice.
6. Where our on-site investigation reveals that the reported fault was not due to manufacturing or materials defect a callout charge will be applied.
7. Where we are satisfied that a defect has arisen because of faulty manufacturing or materials we will, at our option, repair or replace the product free of charge to you. If you choose to replace the product and we no longer manufacture the identical model we will replace it with the nearest equivalent in our then current range.
8. The guarantee does not apply to general wear and tear or where, in our opinion, the product has been modified, misused, neglected or wilfully or accidentally damaged.
9. The guarantee does not cover consequential damages or loss.
10. This guarantee does not cover damage and or malfunction caused by inappropriate cleaning (please refer to our recommended care and maintenance guidelines).
11. Mildew build up, the effects of lime scale and corrosion are not covered under this guarantee.
12. Glass (including mirrors) breakage and any consequential damage. (All glass used conforms to EN12150-1 where applicable). Breakage of glass is not covered by the guarantee as glass by its very nature can shatter.
13. Warranty is not transferrable in cases where product is reinstalled in subsequent locations.
14. Non glass or metallic spare parts (excluding cistern diaphragms, seats and shower seals) are subject to normal wear and tear through usage and are therefore covered on all products for 2 years from installation. This guarantee does not affect your statutory rights.

Armitage Shanks pursues a policy of continuing improvement in design and performance of its products. The right is therefore reserved to vary specifications without notice. Colour reproduction is as accurate as possible within the limitations of the printing process.

Armitage Shanks MENA

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