IGLOOS®
WASHROOMS

IgPS

IGLOOS Plumbing Structure

a genuine alternative for commercial washrooms

IgPS Features and benefits

IgPS Frame

- **A substantial fully welded steel frame is at the core of each IgPS frame.**

  It is this steel frame that directly bears the huge loads demanded by legislation:
  - Wall hung WC pan **EN997** 400kg (approx 63 stone).
  - Wall hung washbasin **EN14668** 150kg (approx 24 stone).

- **IgPS is independently tested far in excess of these minimum standards.**

  This gives the specifier/ installer complete peace of mind in meeting this legislation.

- **Unlike similar systems IgPS has the sanitary ware bolted directly to the steel frame and does not rely on the panel/clip assembly for its strength.**

  This gives high strength and fit-and-forget reliability.

- **IgPS frames are limited in size to a standard 1200mm x 500mm module.**

  This allows safe manual handling by 1 person and transportation on standard pallets.

- **Base IgPS units are configured to accept sanitary ware and be capped off at shelf height. Alternatively, top IgPS frames can be used to extend the system to ceiling height.**

IgPS Wall fixing

- **The IgPS frame is tied back to wall with M10 studding and a top hat bracket.**

  This gives high strength and full adjustability for the installer.

- **The rigidity of the IgPS frame reduces the number of fixings necessary.**

  Installation is easier and quicker.

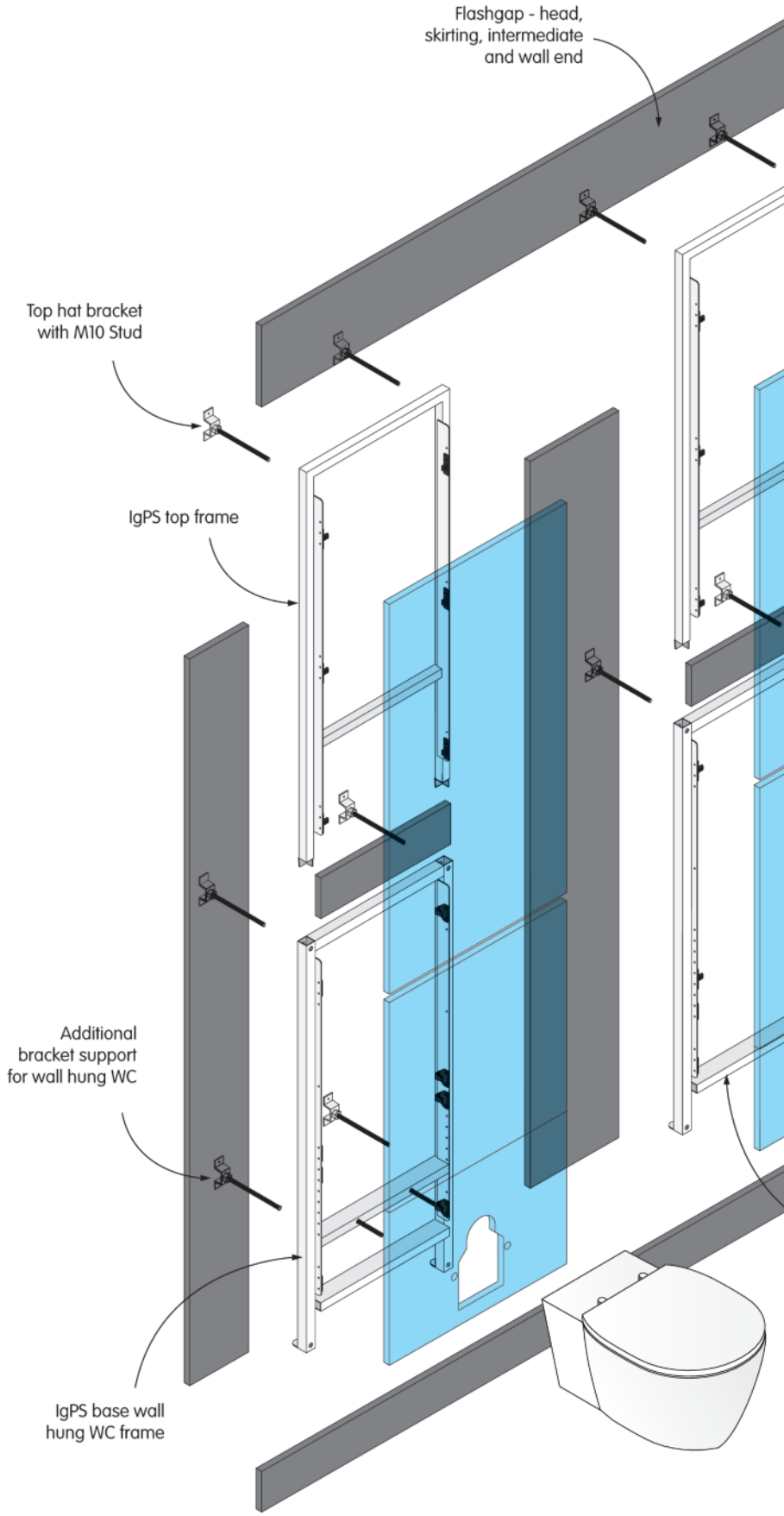
- **The rigidity of the IgPS unit allows the fixings in the standard top frame to be kept low.**

  This allows the installer to be stood safely on the ground.

IgPS Flashgaps

- **With standard width IgPS frames, it is the flashgap that provides the adjustability to suit range widths. Flashgap strips are supplied in oversize lengths to suit the project.**

  Flashgap strip are easily adjustable on site to take up any tolerances.



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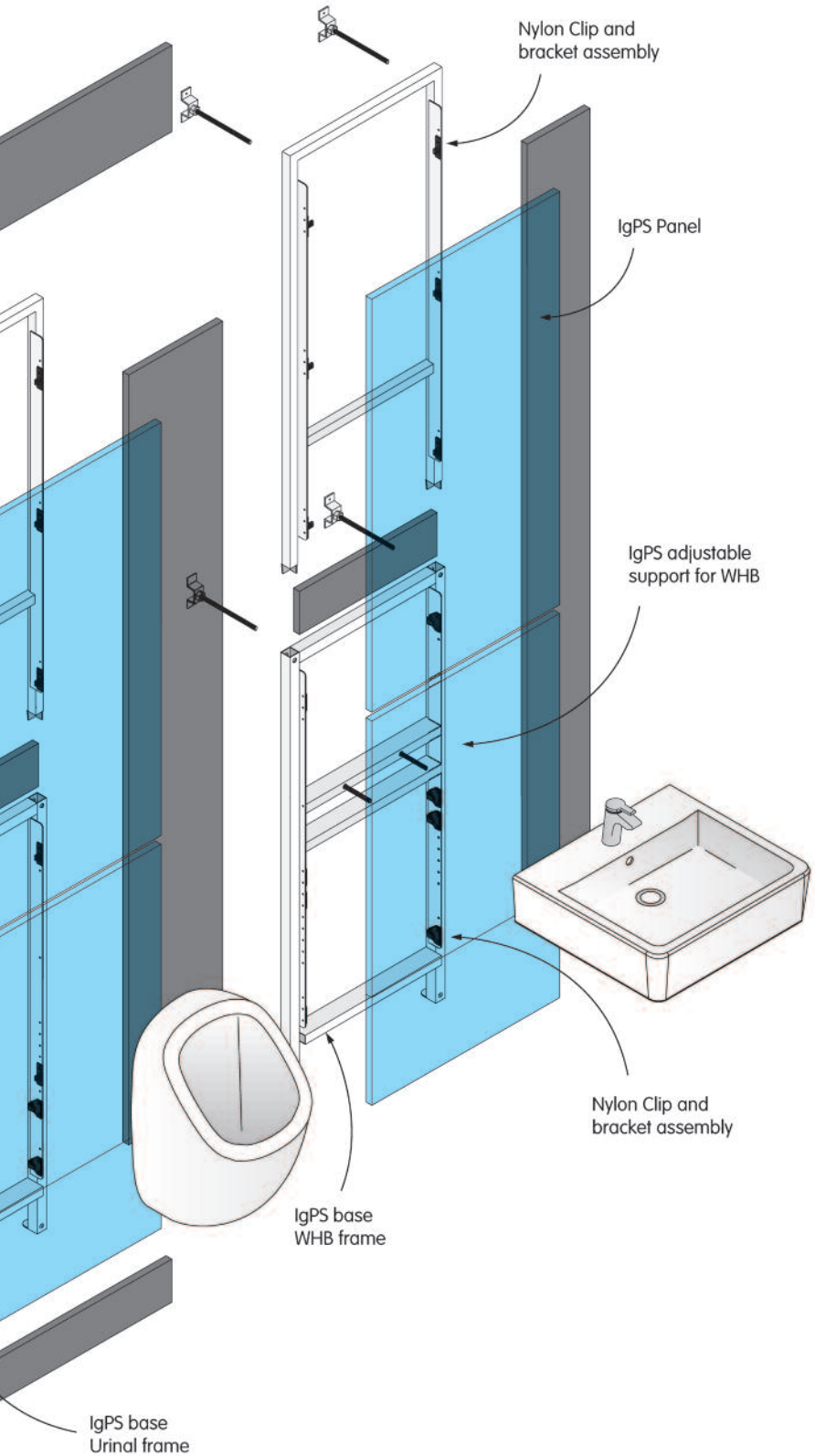


IgPS Panels

A full range of panel options is available to suit all specifications, budgets and demands:

- **19mm moisture resistant melamine faced chipboard (MR MFC).**
  For light duty, dry, economy use.
- **17mm moisture resistant chipboard faced either side with high pressure laminate.**
  For heavy duty, dry, design led use.
- **12.5mm compact solid grade laminate (SGL).**
  For heavy duty, wet, functional use.
- **With the high strength IgPS frame taking the sanitary ware load and not the panel and clip arrangement, non-standard design led panel materials can be used.**
  These include:
  Glass.
  Solid surface (Corian).
  Other bespoke surfaces on request.
- **Mounted on high strength nylon clips and brackets each panel section is fully demountable.**
  This provides full access to all concealed services.
- **All servicing of WC, washbasin and waterless/rim flush urinals can be made through bottom or middle panels.**
  No need to remove large top access panel for servicing – though this can be removed if needed.

Sanitary ware

- **Wall hung WCs are the specifier's choice. Easy to clean, space enhancing and modern, IgPS is particularly designed to cater for wall hung WCs:**
  - Simple and convenient to install.
  - Strong, with independent test certification.
  - Complete with full access for service.
- **These features also extend the same benefits to:**
  - Cantilevered vanity tops.
  - Wall hung washbasins.
  - Urinals and urinal dividers.
  - Plain panel systems for concealing services and plant.

IgPS Installation

Step 1

Supply...

A feature that is often overlooked, IgPS has been designed to fit neatly on to a standard 1200mm x 1000mm euro pallet, making transport and manual handling safe. Panels and flashgaps are similarly packaged.

Individual IgPS units weigh significantly less than 25 kg so can easily be handled and installed by 1 person.

IgPS is supplied to 3 specifications:

Specification 1:
Frames only with sanitary ware, panels and flashgap material supplied by others.

Specification 2:
As illustrated – frames, supplied separate to panels. Panels are routered and drilled for sanitary ware and clips and brackets but these are supplied separately for easy site assembly.

Specification 3:
As specification 2 but with panels already clipped to IgPS frames – ideal for smaller projects.

Please Note:
IgPS is not supplied as a pre-plumbed system – it is IGLOOS Washrooms opinion that this results in difficult transportation and improper manual handling. IgPS is designed and carefully assembled to facilitate safe, easy assembly on site.

Step 2

Fix frames securely to walls...

First fixing of plumbing (omitted for clarity) will have been installed prior to this point.

Top frame fixing:
Low top frame fixing, (2150mm as standard on floor to ceiling IgPS), reduces the need for steps.

Base frame fixing:
M10 stud and top hat bracket.

Frame assembly:
Push fit Base and Top frame to slot firmly together.

Floor fixing:
Pack as necessary to level and fix.

Step 3

Cut and fix flashgaps...

Flashgaps are supplied in full material length but can be cut to specific width. Length sized and trimmed as necessary by installing contractor.

Suspended ceiling:
Top horizontal flashgap extend above the ceiling line.

Solid ceiling:
Top horizontal flashgap is pushed up to the underside of the ceiling.

Uprights:
Vertical flashgaps are screwed into position through frame to give concealed fixing details.

Skirting:
Bottom horizontal flashgap is then glued into position.

Step 4

Locate panels into postition, fix and plumb sanitary ware into fittings...

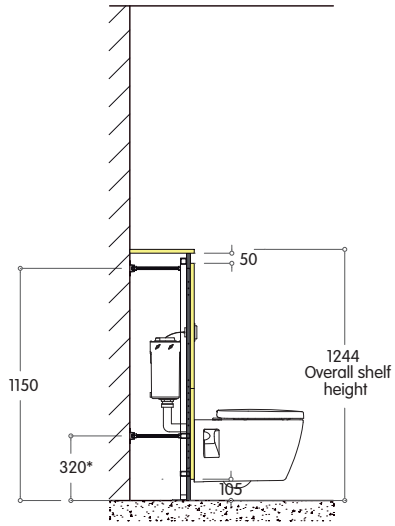
Panels clipped in place and sanitary ware and fittings securely fixed and plumbed in.

Ware and fittings:
Optional factory routered panels.
(Note: Ware and fitting not shown for clarity.)

Accessibility:
30mm horizontal flashgap allows removal of middle panel leaving heavy top panel in position.

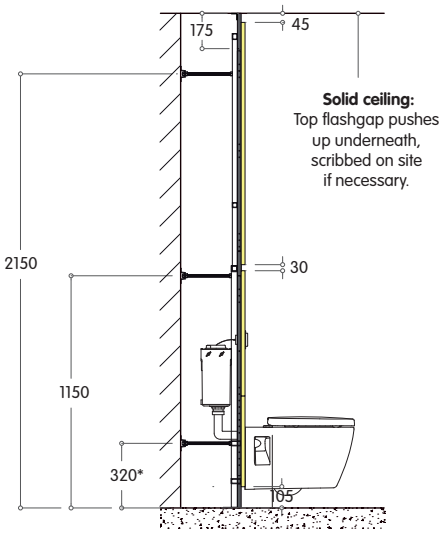
Specifying IgPS

Where supplied as a complete system, full layout drawings are provided by IGLOOS for approval prior to manufacture.



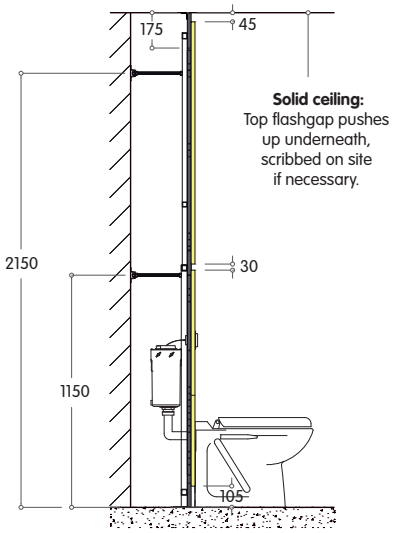
Shelf height IgPS and top at 1244mm with wall hung WC.

* Floor to centre of lower fixing bracket, (wall hung WC only).



Full height IgPS to solid ceiling with wall hung WC.

* Floor to centre of lower fixing bracket, (wall hung WC only).

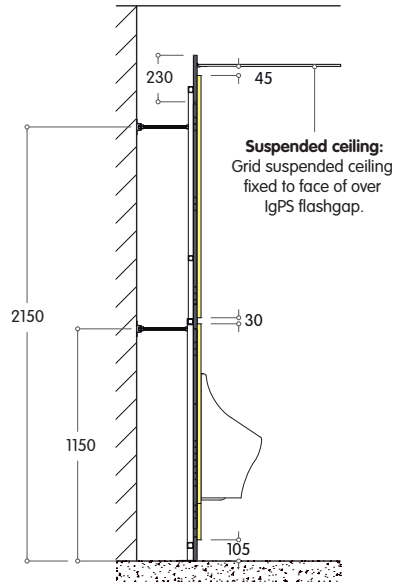


Full height IgPS to solid ceiling with back to wall WC.

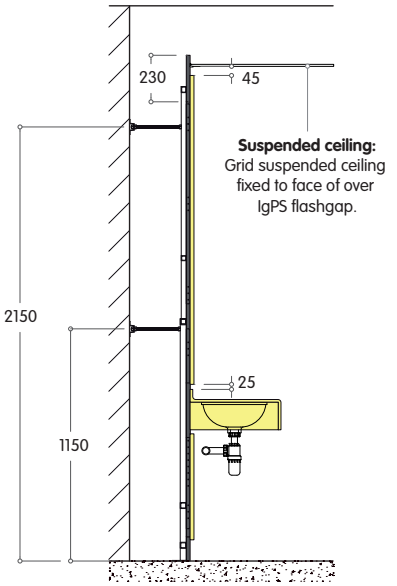
Modern, easy to clean, space enhancing, easy for floor laying and now with IGLOOS Plumbing Structure (IgPS) wall hung WC's are easy to install and tested for strength.

It's not just wall hung WC's that benefit from IgPS, the same benefits for wash basins and cantilevered vanity tops makes IgPS the ideal solution for cantilevered sanitary ware.

AutoCAD drawing blocks are available upon request.

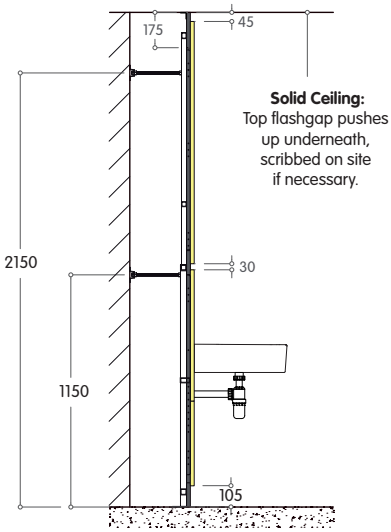


Full height IgPS to suspended ceiling with waterless urinal.



Full height IgPS to suspended ceiling with cantilevered vanity top.

450mm projection vanity top set on adjustable cantilever brackets integral to IgPS units.



Full height IgPS to solid ceiling with washbasin.

1 Introduction

This work, under contract TT//F10439 between TRADA Technology Ltd (TRADA) and Igloos Washrooms Ltd (Igloos) concerns load testing of wall hung Wash Basin and Water Closet (WC) frames to the principals of BS EN 14688 and BS EN 997 respectively.

2 Materials

Igloos supplied a single frame of each design to be tested, as described below.

2.1 Wash Basin Frame

The wash basin design consisted of steel frame 1200mm high connected to the floor via a single 6x50mm coach screw at each foot and connected back to the wall by two brackets each fastened using two 6x50mm coach screws and connecting to the frame approximately 50mm from the top via 10mm studding. A steel cross beam approximately 750mm above the floor was attached to the frame. Two M12 coach bolts were attached to this beam. These bolts went through the 18mm MDF facing attached to the front of the frame (see Figure 1). Loading was applied to the frame via two steel triangular brackets (supplied by Igloos) which were attached to these bolts by nylon nuts.

Figure 1 - Wash Basin Frame Front and Back

2.2 WC Design

The WC design consisted of a steel frame 1200mm high connected to the floor via a single 6x50mm coach screw at each foot and connected back to the wall by four brackets each fastened using two 6x50mm coach screws. Two brackets were connected to the frame approximately 50mm from the top via 10mm studding. Two further brackets were positioned 330mm off the ground each attached to the wall via two 6x50mm coach screws and connecting back to a steel crossbeam by 10mm

studding. Two M12 coach bolts were attached to this beam. These bolts went through the 18mm MDF facing attached to the front of the frame (see Figure 2). Loading was applied to the frame via two steel triangular brackets (supplied by Igloos) attached to these bolts by nylon nuts.

Figure 2 - WC Frame Front and Back

3 Methodology

A scaffold frame work was secured to the floor via 12mm rawl bolts and braced forward with further scaffold lengths to add extra support. Timber beams were attached to the frame work and the test frame was attached to these pieces by the brackets/coach screws on the 10mm studding.

Figure 3 - Scaffold Support Frame

respectively were installed on the 10mm studding (see figure 4). Two 50mm deep by 100mm wide strips, the other spanned the two brackets with a load cell directly under the point of load which was half way between the brackets at 280mm from the MDF face (see figure 5). In accordance with dimensions provided by Igloos. The 10kN load cell in line with the direction of loading. In a load of 1.5kN was applied to the frame and held for 5 minutes to the point of failure.

Figure 4 - Test Set up with Load cells attached to studding

were attached to the bottom two lengths of was secured in place. The load was applied to with the wash basin except the distance from The loading position was in accordance with of 4kN was applied and then removed.

5 Conclusions

5.1 Wash Basin

As can be seen from Figure 7 the wash basin held 1.5kN for 1 hour with no sign of damage or distress, which meets the requirements of Clause 5.2 of BS EN 14688. (Note these tests would normally be conducted with load applied to a wash basin rather than through the angle brackets used.)

The tensile load on the two load cells connected to the studding were 0.145kN and 0.234kN at an applied load of 4kN. The frame then supported up to 3.5kN as the load was increased, and at this point the measured load in the studs was 0.258kN and 0.420kN. The clips holding the MDF broke at this point and the basin mounting bar began to slide down the frame and the test was therefore stopped, as the load could not be maintained.

5.2 WC

Figure's 8 and 9 show the results from the two tests performed on the WC unit. With the load cells on the bottom studs (Figure 8) the loads in the studs at 4kN were 1.225kN and 2.490kN.

Figure 9 shows that the WC unit held 4kN for 1 hour with no damage, which meets the requirements of Clause 5.8.4 of BS EN 997. (Note these tests would normally be conducted with load applied to a WC rather than through the angle brackets used). The tensile load on the two load cells connected to the studding were 0.868kN and 0.917kN at an applied load of 4kN. The load was then increased and at just under 6kN, the frame began to bend and the brackets tilted forward and at this load the measured load in the studs was 1.299kN and 1.526kN. At this point the test was stopped to prevent damage to the equipment.

6 Authorisation

	Issued by:	Under the authority of:
Signature:	Ian Gentry	Vic Kearley
Name:	Mr Ian Gentry	Dr Vic Kearley
Title:	Graduate Engineer	Engineering and Product Services Section Leader

IGLOOS Plumbing Structure has been independently tested by TRADA technology, so you don't need to take our word for, it's fit-and-forget strength.

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