

A question of time?

EEZI-FIT demonstrates its ease and speed of installation in a recent study conducted at the BRE

The PAM Ensign range just gets better and better with EEZI-FIT

Ensign's mechanically jointed system utilising high-performance ductile iron couplings assembled with nuts and bolts is the market-leading cast-iron drainage solution. In the main, specified for its superior fire resistance, its exceptional acoustic properties and its unrivalled long service life. However, when it comes to assembly, can be seen by installers unfamiliar with cast iron, as a specialist material and as such demands a higher level of skill and time needed to complete the installation.

Exploding the myth

Cast iron drainage systems are already one of the simplest materials to install – by having no extras (fire collars, expansion joints, thermal limiters, fewer brackets etc) – so to improve the speed and simplicity of its installation further would not only help lower total installation costs but also encourage installers more familiar with plastic systems to put aside these misconceptions.

Push-fit for speed and simplicity

To remove these reservations, Saint-Gobain PAM UK developed a brand new push-fit system aptly named EEZI-FIT. Featuring a range of socketed fittings and couplings, manufactured and tested to BS EN 877, new EEZI-FIT uses the standard Ensign double spigot pipe and is compatible with all Ensign 100mm and 150mm diameter fittings to cope with the most complex of installations.

Meeting and exceeding the standards

With BSI kitemark approval to BS EN 877 for the 0.5 bar accidental static pressure required for sanitary gravity applications, EEZI-FIT is the ideal drainage solution for soil and waste stacks. Suitably restrained, the 100mm coupling has in fact been tested to 2.0 bar pressure which far exceeds any other push-fit gravity system on the market.

Prestigious installations

Launched in late 2007, EEZI-FIT has already been successfully installed on many projects including the prestigious Saint David's Dewi Sant Shopping Centre in Cardiff and the Royal Arsenal Riverside, Woolwich, a mixed-use urban London development of new homes and luxury apartments. Although EEZI-FIT is an ideal choice for flats and apartments it has been used on a diverse range of buildings such as schools, hospitals, prisons, commercial and hotels like the Jury's Inn in Kensington.



Independent testing confirms EEZI-FIT advantages

At Saint-Gobain PAM UK we never expect the market to take our word alone for the superior qualities of cast iron products. That's why we always commission recognised independent bodies noted for their high quality research and absolute impartiality to endorse any claims we make. The study was conducted by Principal and Senior Consultants John Griggs and Martin White on behalf of the BRE.

Proof of fire and sound resistance

The superior fire resistance of cast iron over materials such as HDPE resulted from detailed testing at the MPA Dortmund Westphalia Laboratory and its unrivalled acoustic performance was measured under BS EN 14366 criteria at the IBP Fraunhofer Institute Laboratory, Stuttgart.

Comparing the difference

Consequently, to establish what installation benefits and potential cost savings EEZI-FIT can provide SG PAM commissioned the BRE to witness the installation of specimen waste pipe layouts. The objective of the study: to compare and contrast the installation speed and subsequent time of Ensign EEZI-FIT against other systems. Carried out under strict laboratory conditions, further investigation was also undertaken on real-life sites to add practical credibility to the laboratory results.



How was the study carried out?

A suitable building was identified within the BRE which allowed clear access to complete vertical and horizontal pipe systems parallel to each other. The systems to be included in the study were the new cast iron push-fit system EEZI-FIT a HDPE system assembled using fusion-welded couplings and a stainless steel push-fit jointed system. All systems were installed by the professional plumbing team, PJ Myers & Sons of Essex London, experienced installers of all drainage materials

For the purpose of the study P J Myers used 3 installers, two trained and one apprentice.

Fair Comparison

Each system installed on separate days involved the installation of a 9-metre vertical and 12-metre horizontal section supported by brackets mounted on pre-assembled rail systems which ensured the overall assembly times concentrated on:

- Joint assembly
- Pipe cutting to length
- Jointing preparation of pipes and fittings
- Transporting pipes, tools and fittings to and from installation point and access to installation points by cherry picker.

Identical waste pipe systems were installed for each system with a 3-floor vertical section using 150mm diameters on the ground floor and 100mm diameters on the second and third floors with provision for a WC and basin wastes.





Did EEZI-FIT match expectations?

EEZI-FIT proved to be a fast solution for vertical soil and waste stacks

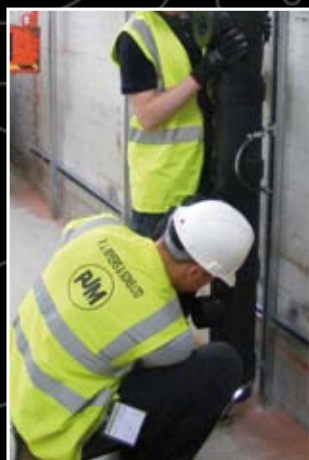
In a 9m vertical run the EEZI-FIT push-fit system in 100mm and 150mm diameters proved to be as quick to assemble as the stainless steel system but significantly quicker than the HDPE fusion-welded system. On the first floor, EEZI-FIT, steel and HDPE in 150mm diameters shared almost identical installation times.

The Ensign EEZI-FIT and steel push-fit systems were significantly faster to install than the HDPE system on floors two and three, which was slowed down due to its dependence on the one electro-fusion jointing machine used in this exercise.

Defined Operations	Timings for each task for each system installed (min)		
TASK	HDPE	Stainless steel	Ensign EEZI-FIT
Install vertical 9mm section to top bend	98	50	52

The study proved that EEZI-FIT can save TIME AND MONEY

- EEZI-FIT assembly is significantly quicker to install than the HDPE system fusion-welded system for vertical and soil waste stacks
- EEZI-FIT's ease and speed of installation has the potential to significantly bridge the material cost gap with HDPE to provide the safest, quietest, strongest, longest-lasting and most sustainable solution at a competitive cost
- EEZI-FIT is just as fast to install as stainless steel for the vertical soil stacks
- EEZI-FIT needs no specialist installation tools like HDPE and stainless steel which, over a number of weeks, generate significant add-on costs particularly when hired and must be allowed for when comparing different materials
- EEZI-FIT proved to be the best solution for retro-fit. A mechanical ensign coupling strategically positioned (example: with the access pipe) simplifies any future retro-fit task which would prove more difficult on a push-fit stack. A simple comparison was undertaken with the stainless steel system – and the EEZI-FIT system proved 33% quicker.



EEZI-FIT - potentially the 'lowest total installation cost'

Although total installation costs will depend on many factors ranging from the material itself, proprietary brackets and expansion joints to fire protection requirements, acoustic and accidental static pressure performance, in the BRE laboratory study scenario, based on the simple elements outlined ie Jointing, cutting pipes etc and the cost of the product EEZI-FIT proved the most inexpensive solution.

To express this in a simple context we have put together a table below based on the following:

1. Cost of the material - EEZI-FIT cast iron = 100 base
2. Installation time - EEZI-FIT cast iron = 100 base

	Material	Installation	Total
EEZI-FIT	100	100	300
HDPE	65	186	437
STEEL (A)	110	100	310
STEEL (B)	124	100	324

Total costs calculated on 1 x material plus 2 x installation time

EEZI-FIT cost breakdown

1. Material including jointing lubricant
2. Chopsaw for pipe cutting (standard equipment ie no cost)

HDPE cost breakdown

1. Material including expansion limiters and fire collars for each floor
2. Fusion-welding machine hire cost

Stainless Steel cost breakdown

1. Material
 2. Special cutting and bevelling machine hire cost
- STEEL (A) using Square Branches/Tees.
STEEL (B) using Radius Branches complying to BS EN 12056.

EEZI-FIT gains INSTALLER'S approval

When putting EEZI-FIT to the test for the first time, leading installer Mark Myers of PJ Myers confirmed where he can see the cost saving potential for Saint-Gobain's new push-fit cast iron system

- EEZI-FIT offers substantial savings on projects with long vertical soil stack runs within a riser
- EEZI-FIT's pipe strength and jointing system make it ideal for multi-floor installations where there may be access problems after installation
- EEZI-FIT's push-fit joints are very much 'fit and forget', that will save on testing time where installers historically may have allowed extended time with cast iron for nipping of mechanical coupling bolts
- EEZI-FIT has no hidden costs - as plumbing installers with experience of all available materials, we were quick to recognise the 'extra' costs associated with other materials which often make the difference between making or losing money on any installation.

From Study to reality!

13 Storeys installed and tested in one day

Following hot on the footsteps of the independent study confirming the many cost and timesaving advantages of EEZI-FIT, a major order was secured for the 150mm diameter EEZI-FIT system for a residential refurbishment project involving 4-13 storey tower blocks in Hastings, Sussex installed by United House.

EEZI-FIT was approved by consultant McCourts following extensive trials on a three-floor stack, which positively demonstrated the effectiveness and speed of installation.

John Ryan, Project Manager of United House, explained, "We selected the EEZI-FIT system from Saint-Gobain PAM because it provides a versatile platform for refurbishment of our tenants' buildings with far less complications than alternative materials."

The biggest issue for the project, concerned the re-installing of 13 storey's of new sanitary soil stacks which had to be completed and tested in one day. Unlike systems that require solvents for jointing and fusion welds, the installation of the EEZI-FIT system proved highly capable in trials and has since in practice shown successful on-site savings including the need for 'out of service' charges, as the refurbishment was undertaken with minimal disruption and was fitted whilst tenants remained in their properties.

With a life expectancy of 50 years, United House could be assured that the EEZI-FIT system not only provided an immediate cost-effective answer to their needs, but a long-term solution too.



Why installers should say yes to EEZI-FIT

- ✓ Fast and simple assembly – joints completed in seconds
- ✓ Joints completed when pipe and fittings meet central register
- ✓ No bevelling of the pipes is necessary after cutting.

But most importantly NO more add-ons

- ✓ NO special tool hire costs
- ✓ NO fire collars or other fire protection
- ✓ NO additional brackets
- ✓ NO special insulation for acoustic purposes.

For great-value drainage solutions, EEZI-FIT ticks all the boxes.

To compare EEZI-FIT for yourself, visit www.eezi-compare.com or call 01952 262 581.
Alternatively, e-mail innovations.soildrain.uk.pam@saint-gobain.com

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BS EN 877