



Section 4

Brackets – Technical

Ensign cast iron drainage – 1st choice for public buildings

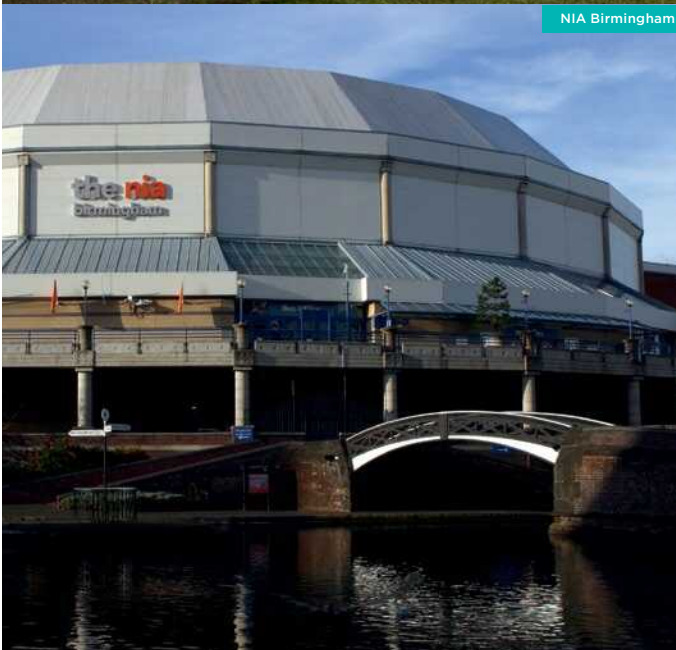
Ensign offers the safest and quietest solution for public buildings like libraries, and prisons.

- Fire resistance – its non-combustibility negates the threat of fire damage from combustible materials being placed down the system intentionally
- Acoustically the quietest material on the market
- Longevity – public buildings are built to last, and cast iron has the proven long life track record
- Public buildings need to be using sustainable materials to support Government targets. Cast iron is a natural material with a continual recycling system



Gartcosh Crime Campus

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NIA Birmingham



Manchester Town Hall

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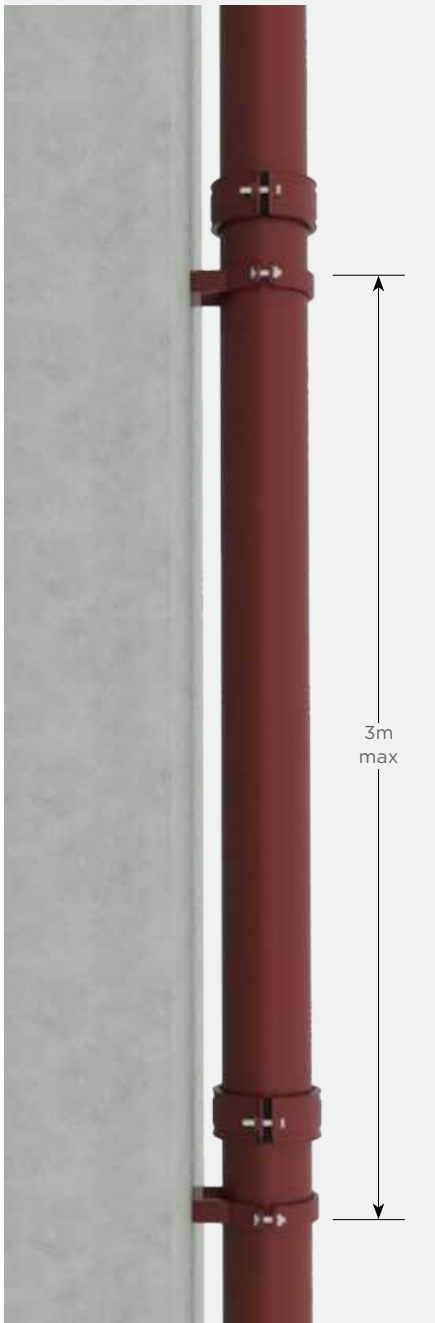
Acoustic Bracket Installation

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Fig. 1



Fig. 2



Pipe Support Brackets

The unique, all-purpose, lightweight, ductile iron bracket incorporates an elongated slot at the fixing point (see Fig. 1).

This allows both vertical and lateral adjustment without dismantling the pipe system.

Support For Vertical Pipework

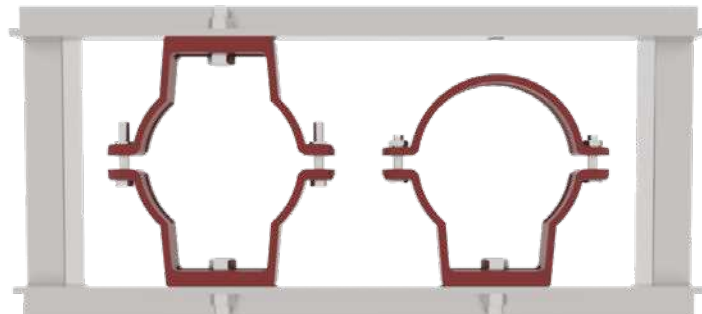
For vertical waste or rainwater stacks, it is recommended that a load-bearing bracket be fitted to each floor level, to carry the weight of the pipe and its contents. This is of particular importance on multi-storey applications.

These brackets should be tightened as the stack is built up, so that each floor height is self-supporting and undue pressure is not imposed upon the base of the stack.

Where rainwater and soil stacks (as Fig. 2) are located at standard distances from wall or column (see table below), one bracket EFO48 per length of pipe will be adequate within 600mm of the joint.

Ensign pipe diameters	50, 70	100, 150, 200
Stand distances from back of pipe wall face	32mm	38mm

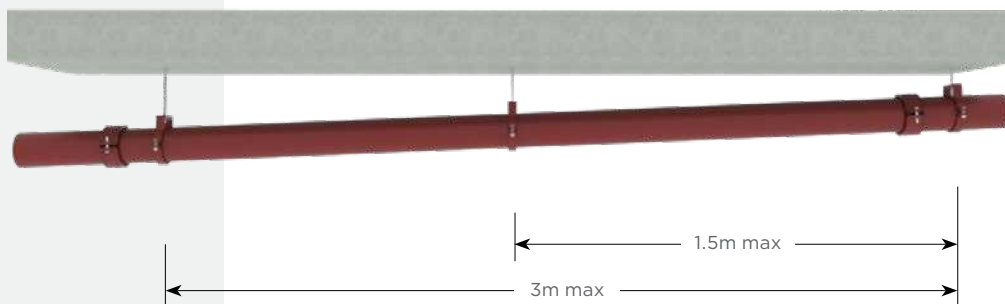
Additional brackets may be required where fittings are installed within the vertical stack, at the discretion of the designer.



Typical support arrangement for vertical pipework.

Support For Low Gradient Pipework

Fig. 3



Typical support arrangement for horizontal pipework



The distance between pipe supports should not exceed 3m, as advised in BS EN 12056-2 Code of Practice for Sanitary Pipework.

However, as shown in Fig. 3, to ease installation it is recommended that suspended Ensign pipework should have two bracket supports per 3m length.

Positioning of brackets as follows:

One bracket maximum of 300mm from joint. Second bracket positioned approximately centre of 3m length pipe, or as further guidance, 1.5m approximately from first bracket (see diagram).

Pipe weights kg per metre

Size (mm)	Empty	Full
50	4.4	6.5
70	6.0	10.0
100	8.5	17.8
125	11.9	24.6
150	14.3	32.5
200	23.3	54.8
250	33.5	87.9
300	43.6	121.3
400	59.3	176
500	81.6	278
600	107.3	391

Note: Design details within the catalogue are for gravity systems only or accidental pressure up to 1 bar (for pipe diameters 50-150mm). For systems which require higher accidental pressure (for pipe diameters >150) please telephone: Technical Helpline 01952 262562.

Brackets - components

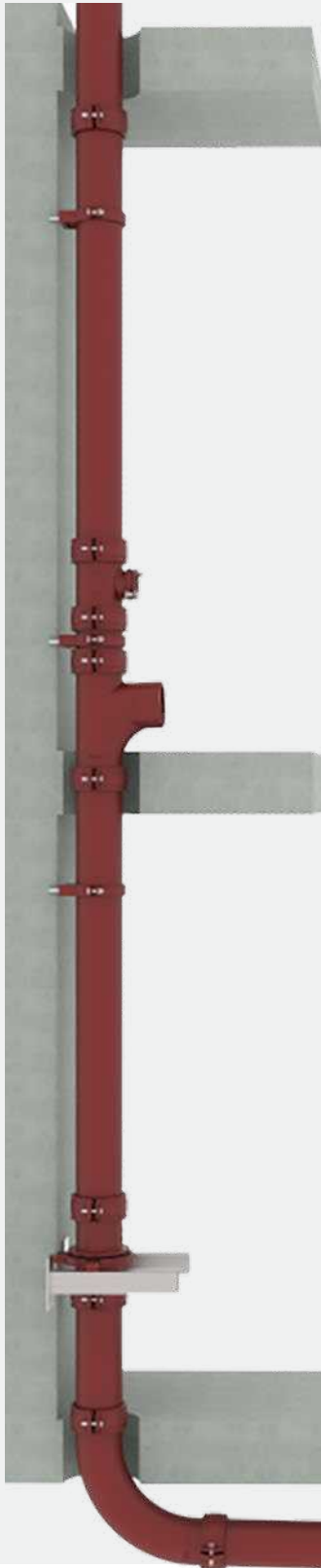
Bracket diameter (mm)	50	70	100	125	150	200	250	300
Threaded rods (recommended)	M10	M10	M10	M10	M12	M12	M12 (x 2)	M12 (x 2)

Maximum recommended length of threaded rod is 1m for single drop EF048, two drops recommended over 1m EF049 type bracket. Lateral movement brace may be required for horizontal pipework at 6m spacing.

Stack Support Pipe

The stack support pipe offers extra support to fittings and brackets.

Fig. 4



When to use stack support pipe/brackets	
If using standard ductile iron proprietary brackets EF048/EF049	NO
If using rubber lined steel brackets	YES
If using new acoustic brackets EF048AD	YES
If using mild steel fixing brackets	YES

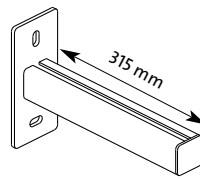
When stack support pipes/brackets are required, use on any building with an average of 2.5m between floors, positioning stack support pipe at the base of the first floor, and every subsequent fifth floor.

This should be typically fixed to a wall or column, as Fig. 4. The use of the new cantilever arm/console range EF052 is ideal for support and fixing of bracket.

IMPORTANT! A stack support pipe is not an alternative to bracketing, but an additional support bracket.

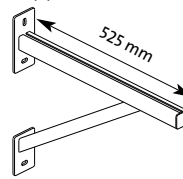
Wall bracketing system in mild steel, for use with stack support pipe and brackets are available.

Cantilever Arm EF052



Product Code 192329

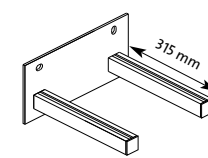
Cantilever Arm with support EF052



For stack support pipes 200-300mm dia.

Product Code 192330

Stack support console EF052



To suit 100mm stack support bracket and pipe only.

Product Code 192331

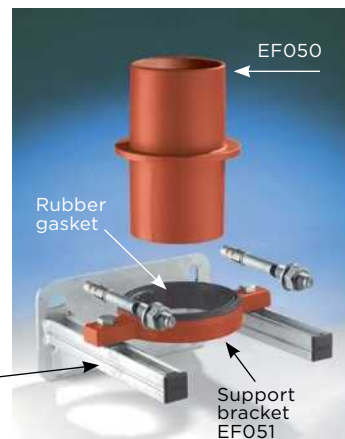
10mm Retaining Nut
To suit 192329/192331



Sits in the cantilever arm or console to retain the 10mm set screw, securing the bracket.

Product Code 192332

10mm retaining nut Product Code 192332
Sits in the cantilever arm or console to retain the 10mm set screw, securing the bracket.





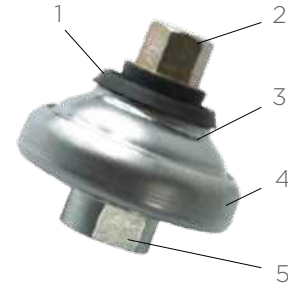
Acoustic Bracket Features

Developed to meet the increasing demand for buildings which require a high level of acoustic performance over and above the guidelines of BS 8233:1999 (UK Code of Practice for governing acoustics within buildings). Tested to BS EN 14366:2004 - see pages 5-6. Laboratory measurements of noise from waste water installations.

The EF048 ductile iron bracket fitted with the new acoustic dampener achieved an exceptionally low level of noise transmission.

Material

1. Dampener - elastomer EPDM
2. M8-M10 nut - galvanised-bichromated steel (will accept both threaded options)
3. Retainer cup - AISI 304 stainless steel
4. Small dish - AISI 304 stainless steel
5. M8-M10 tapped base - galvanised-bichromated steel



Markings
40-150
ww-yy
DEP

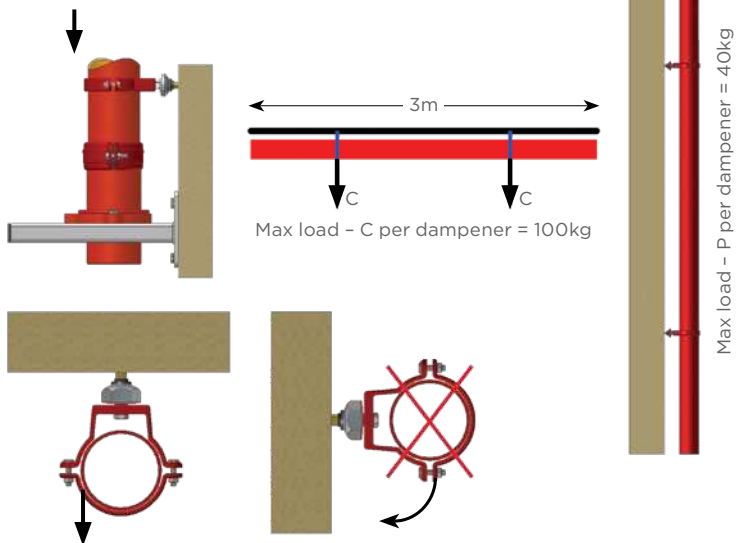


Size	50mm	70mm	100mm	150mm
Product Code	199881	199882	199883	199884

- Supplied fitted to EF048 bracket 50mm to 150mm
- EF048 bracket is manufactured in high strength ductile iron and red epoxy coated
- Dampener is connected to EF048 using M10 x 25 zinc and clear coated steel set screw with 2 x 25mm washers

Acoustic Bracket Installation

Vertical pipe stack - one acoustic bracket minimum per 3m. It is also recommended that the EF050/EF051 stack support is used every fifth floor.



Horizontal suspended pipework - two acoustic brackets minimum per 3m.

Horizontal pipework - fixing brackets on side as per diagram is not recommended, this will lead to product failure.

In every case of fixing - to obtain the best noise reduction, the elastomeric dampener must not be deformed or compressed!