| Uniclass G5811 : L7312 | | | |
|---|---|---|---|
| CI/SfB | (52) | | |

April 2012

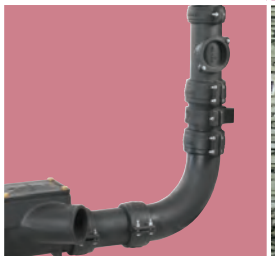
PAM

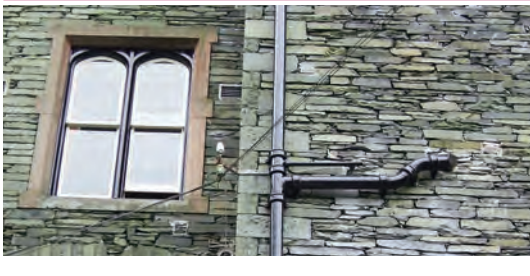
# Timesaver

## Specifier's Manual

COMPLETE CAST IRON
DRAINAGE SYSTEMS FOR
ABOVE AND BELOW GROUND
INCLUDING ROOF OUTLETS
AND FLOOR DRAINS

BS 437
BS 416





PAM SAINT-GOBAIN

**Head Office**
Lows Lane, Stanton-by-Dale, Ilkeston,
Derbyshire DE7 4QU
Tel: 0115 930 5000  Fax: 0115 932 9513

Email: sales.uk.pam@saint-gobain.com

www.saint-gobain-pam.co.uk (Click on Soil and Drain)

# Contents

# Introduction

Saint-Gobain PAM UK is the primary supplier of ductile iron pipes and fittings, manhole covers, gullies and grates, as well as being the leading producer of cast iron above and below ground drainage systems. Its markets include water and sewerage, telecommunications, highways, civil engineering, construction and housing.

Saint-Gobain PAM UK, specialises in the manufacture of cast iron above and below ground drainage systems and rainwater and gutter systems.

Saint-Gobain PAM UK maintains a programme of quality controls, licenced under BS EN ISO 9001 Quality Assurance as recognition of its high standard of production competence.

The Timesaver system was first launched in 1973, for use on above ground soil and ventilating installations.

In 1980 a below ground Timesaver system was launched to complement the soil range, and together they became market leaders in cast iron drainage. Both systems were recognised for their quality performance, and were awarded the highly coveted BSI Kitemark in 1982.

## Product ranges

Other products manufactured by Saint-Gobain PAM UK:

**Ensign BS EN 877 :** Cast iron above and below ground drainage system. Kitemark approved to the product standard BS EN 877, fully meeting ISO 6594, and holds full BBA Agrément Certification 95/3125 (4TH edition).

**Ensign EEZI-FIT BS EN 877 :** A new push-fit range of cast iron fittings and couplings in 100mm and 150mm diameter for gravity sanitary installations.

**EPAMS:** A complete siphonic rainwater system, consisting of steel siphonic roof outlets and cast iron pipework BBA certificate 06/4328

**Classical:** Traditional ranges of cast iron rainwater downpipes and fittings and gutter systems produced in accordance with BS 460. The only cast iron system to be awarded a British Board of Agrément Certificate 97/3434 for its standard range of half round gutter systems and circular downpipe range.

**Classical 'Plus':** Cast Iron rainwater gutter systems available in a factory applied finished coat (Polymer powder alloy) for immediate installation. Black supplied as standard, other colours available to order.

**Classical Express:** Double spigot half round gutter system in 125mm size with higher capacity jointed by mechanical clips, available in primer or plus finish. Quick and easy to install – cost effective against cast aluminium.

**Technical advisory service:** In support of Saint-Gobain PAM UK extensive manufacturing resources, an advisory service department is available to customers to provide technical assistance and guidance on soil, rainwater and below ground drain installations, including free take off service. Full syphonic rainwater design, and technical support can also be provided.

**Telephone Technical Helpline: 01952 262529**.

**Website: www.saint-gobain-pam.co.uk**
The website contains all the product literature for the brands Ensign, Timesaver and Classical including Ensign CAD drawings.

**Other information includes:**
Soil and Drain training centre which includes interactive training modules for Soil and Rainwater systems.

Technical centre and all the latest press information.

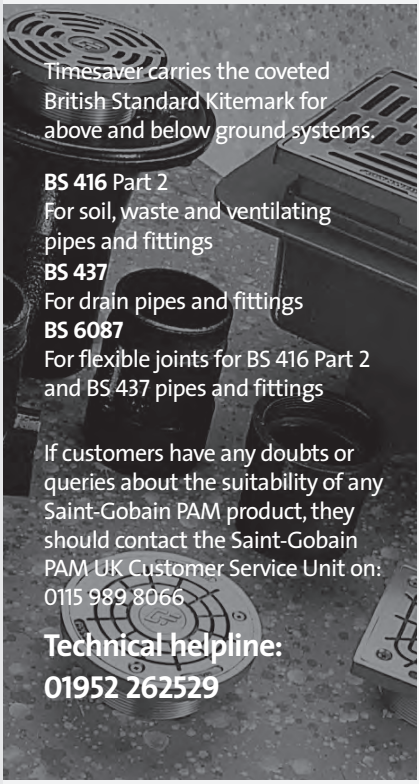


**Liability**
The Timesaver manual is written for general guidance only. Therefore no responsibility can be accepted for any errors, omissions or incorrect assumptions.

Saint-Gobain PAM do not accept liability for any complaints on installations where components not manufactured by Saint-Gobain PAM are responsible. Whilst every care has been taken to ensure that the information contained in this catalogue is correct, Saint-Gobain PAM or its agents do not accept responsibility for any errors herein.

Our policy is one of continuous improvement. We therefore also reserve the right to change or alter the specification of any product without notice.

# Quality assurance




**BS EN ISO 9001:2008 – Registered No: FM12908**
Products included in this manual are manufactured under the BS EN ISO 9001 Quality Assurance Scheme.

Timesaver systems carry the BS Kitemark, providing the highest guarantee of product quality, reliability and safety.

A strict quality control system is maintained throughout the company from purchasing of raw materials to the inspection and testing of products. Spontaneous checks made throughout the year by the BSI Inspectorate, ensure that the set standards are not allowed to fall.

Kitemark licences can only be secured when quality control systems, as laid down in BS EN ISO 9001, have been implemented and approved by the BSI.

BS EN ISO 9001 legislates for Quality Assurance and may be chosen as an alternative 'third party guarantee'. It also provides a means of underwriting the quality of products which lie outside the scope of product standards such as BS 416 and BS 437.

On occasions, owing to pressure on normal production units, it may be necessary to manufacture certain components outside the confines of the BS EN ISO 9001 Quality Assurance Licence. Such items will be produced, however, to a quality in keeping with that of accredited manufacturing units.

Components so produced will be identified on the order acknowledgement.

**Commitment to quality**
Saint-Gobain PAM UK is committed to satisfying its customers' needs in both quality products and services.

It recognises the necessity for continual improvement in all disciplines throughout the organisation, and clearly states this objective to its employees at all levels.

As a basis for this objective, the company is committed to operating strict quality management systems in accordance with BS EN ISO 9001. It also recognises the responsibility of the company's employees in meeting the quality objectives and is conscious of their training and development needs.

**Environment Standard BS EN ISO 14001: 2004**
Saint-Gobain PAM UK manufacturing sites, including Sinclair at Telford, have been awarded the 'Manufacturing to Environmental Standards' accreditation BS EN ISO 14001: 2004 which was developed to help manufacturers maintain and improve their management of environmental responsibilities and assist them in ensuring compliance with environmental laws and regulations.

Saint-Gobain PAM UK operates Integrated Pollution and Preventative Control (IPPC) regulations, and have implemented comprehensive environmental management systems throughout its manufacturing sites.

**CEMARS certification**
(Certified Emissions Measurement And Reduction Scheme)

Saint-Gobain PAM UK Ltd has been awarded certification to the world class, ISO-accredited CEMARS (Certified Emissions Measurement And Reduction Scheme) standard by the Achilles carbonReduction programme.

CEMARS certification demonstrates the company's commitment to measuring, managing and reducing greenhouse gas emissions in a robust and credible way.

It confirms the company has measured its greenhouse gas emissions in compliance with ISO 14064-1:2006 and has committed to managing and reducing its emissions in respect of all operational activities across its Water & Sewer, Municipals and Soil & Drain business units.

Saint-Gobain PAM UK Ltd has achieved CEMARS for its operational carbon footprint for the period 2011–2014.

# Benefits of cast iron

**Superior strength**

Exceptional crush resistance - vastly superior to other materials

- Timesaver BS437 150KN/m
- Clay 40KN/m
- PVC 6KN/m
- The strongest soil and drain system – no contest
- Exceptional crush resistance – vastly superior to HDPE and PVC
- Exceptional resistance to over vigorous rodding
- No. 1 choice for exposed areas ie. car parks, shopping centres, inner cities – which are accessible to damage by accidental impact or vandalism
- Used in areas where ground is unstable or the trenches are shallow
- Less bedding required.

**Non-combustible**

- Cast iron provides up to 4 hours fire integrity
- Cast iron has no calorific values (ie. substances which actually fuel the fire) and therefore will not assist the spread of fire
- Cast iron will not emit toxic fumes unlike PVC-u and sooty smog like HDPE, which is often the cause of death during the first 30 minutes of a fire
- The cast iron system will not collapse under the intense heat, unlike PVC-u and HDPE which can be life threatening to occupants and rescue teams
- No fire protection required when penetrating floors in accordance with document B.

**Noise reduction (the silent solution)**

- Cast iron is the quietest system with exceptional sound deadening qualities (proven)
- Tests carried out in a laboratory in Germany to BS EN 14366 show cast iron up to 10dB(A) quieter than most other materials.

**Sustainable (the environmental choice)**

- 100% recyclable – produced from virtually 100% recyclable scrap
- Greenpeace recommended – no greater approbation
- Cast iron should never be a candidate for landfill
- Production creates no toxic waste
- Best drainage solution on land reclamation sites
- Less bedding, less supports, less insulation – less is more when it comes to safeguarding natural resources
- Life time promise – not uncommon to exceed 100 years – minimal environmental impact.

**Ease of installation**

- Simple mechanical couplings or push-fit couplings
- No special tools like butt fusion machines needed to install HDPE at substantial cost or rental
- Installation cast iron has no added complications: fire collars/cladding, additional brackets, sound insulation, expansion joints, thermal limiters etc. unlike PVC-u and HDPE.

**Cost effective**

- No. 1 choice for PFI projects
- Fit and forget – minimal maintenance for lease period
- Lifetime expectancy
- Can often be the most cost effective option when total installed cost is measured, expected maintenance required and a full risk assessment carried out – ie. the consequential cost of failure in the system.

**No expansion joints**

- The coefficients of linear expansion for cast iron and concrete are almost identical
- This makes cast iron a highly suitable material where drainage systems are required to pierce concrete floor slabs

# Benefits of cast iron


- No special jointing to allow for differential expansion is needed. In contrast, PVC-u piping requires an expansion joint every 3m, as well as expensive thermal limiters.

**Longevity**

- There are two elements of an above ground drainage system that should be designed and specified to last the lifetime of the building:

  1. the internal rainwater pipes

  2. the soil discharge stacks

Even when a building is modernised every 15 or 20 years, these elements along with the structure will likely remain. If the toilet or kitchen area is refurbished, the branch discharge pipes will often be renewed and therefore it may be appropriate to specify other materials for that element. But if the main stacks are to be specified to last the lifetime of a building, perhaps 50-70 years or more, the appropriate material is mechanical jointed cast iron, for it is one of few materials you can reasonably fit and forget, as recognised by specifiers on many of the new PFI-type projects.

# Why specify Timesaver

**Proven drainage system for nearly 40 years**

The Timesaver system, was first launched in 1973, for use on above ground soil and ventilating installations.

In 1980 a below ground Timesaver system was launched to complement the soil range, and together they became market leaders in cast iron drainage.

Both systems were recognised for their quality performance, and were awarded the highly coveted BS Kitemark in 1982.

**Refurbishment**

Prestigious commercial buildings built in the 1970's to the mid 90's which are serviced by cast iron soil stacks, will most likely be Timesaver. If the building is to be refurbished and changes are required, the latest Timesaver range is best suited to connect to the original pipework.

# Why specify Timesaver

### Timesaver Heritage couplings give traditional appearance

The Timesaver range contains push-fit couplings that turns a mechanical pipe system into a system with a traditional socket appearance of yesteryear, as depicted in BS 416 Part 1.

Its primer black coating makes it easy to overpaint for external soil stacks, and is the perfect solution for listed buildings and those situated in areas of conservation. Pipes are available in 3m lengths or in the traditional 1.8m (6ft) length, in 75 and 100mm diameter and by using the Timesaver Heritage couplings, waste is minimised and installation time, compared to the old socket/spigot caulking method, is significantly reduced.

The Timesaver Heritage couplings have been accepted by recognised bodies for all grade listed properties ie. National Heritage, English Heritage etc.

### Strength

Timesaver is recognised as the strongest of all the drainage systems in any material, in particular for below ground applications. The substantial section thickness of BS 437, makes it the first choice for under building drainage, especially on commercial buildings where fit and forget is a high priority and provides peace of mind.

Also in areas where the drainage is to be installed in unstable ground, or ground containing methane gases, the strength of Timesaver puts it out on its own.

The above ground soil range with its increased section thickness, can provide further strengths in areas where impact can occur ie. externally on the building fabric and car parks.

### British Standard designs

The Timesaver ranges are based on British Standards BS 416 Part 2 for above ground and BS 437 for below ground and as such, contain fittings and diameters appropriate to those standards. In particular the below ground range contains an extensive range of traps/raising pieces and inspection chambers in 100, 150 and 225mm diameters.

### Extensive access fittings

One of the main traits of British design was not only its attention to maintaining the drainage flow with swept branches, but also making sure sufficient access to the system was provided to ensure any blockages could be easily cleared. As a result, the Timesaver range carries more access fittings than any cast iron system on the market, for above and below ground.

### Connections to waste systems

Timesaver offers a number of fittings to be able to connect to waste pipes to the mainstack ie. boss pipes, push-fit or threaded (BSPT) but also includes the 'strap-on-boss' fitting which enables connection cutting into the pipe.




# Section 1

## Drain Pipes and Fittings

# Jointing method

A. Pipe or fitting
B. Pipe or fitting
C. Synthetic rubber gasket
D. Coupling
E. Stainless steel set screws and nuts

All couplings have four set screws and nuts.

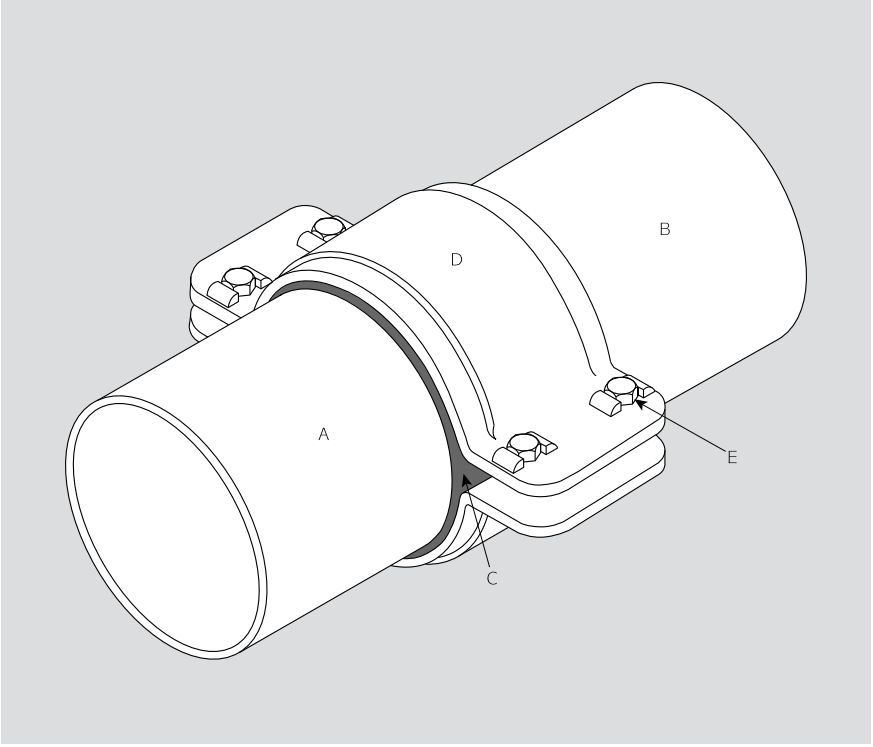
**Couplings are supplied ready assembled**

1. Slacken bolts to fullest extent.
2. Place synthetic rubber gasket on end of pipe or fitting A, and slide loosely assembled coupling over pipe B.
3. Fit pipe B into gasket ensuring both A and B are butting against the internal central register.
4 Slide coupling over gasket ensuring that it is centrally located and tighten bolts alternately so that the gap between coupler halves is even on both sides. When hand tight check alignment of assembly.
5 Complete tightening operation by use of a Ratchet Spanner – EF100 and Deep Socket – EF101 until a suitable resistance is achieved (min 20Nm).

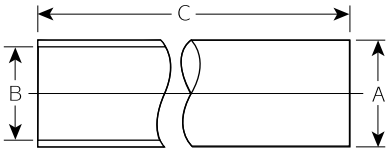
Joints may be deflected up to 5° without affecting the sealing properties.

The Timesaver couplings meet the performance requirements of BS 6087:1990 and incorporate synthetic rubber gaskets conforming to BS EN 681-1/ISO 4633 and stainless steel set screws and nuts conforming to BS 970 Part 2. A Ratchet Spanner – EF100 is the recommended tool required to tighten the stainless steel set screws which give a 'for all time seal' water and airtight installation.

**Saint-Gobain PAM UK do not accept liability for any complaints on installations where components not manufactured by Saint-Gobain PAM UK are included.**



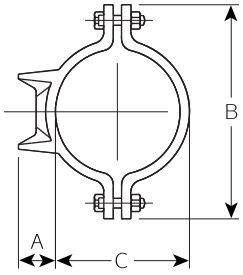
# Pipes double spigot




| Product code | Dia | A Max o/dia | B Min i/dia | Min section | C Metre lengths available | Nominal wt per meter kg |
|---|---|---|---|---|---|---|
| **Pipe – TD00** | | | | | | |
| 156568 | 100 | 119 | 99 | 7 | 3 | 18.7 |
| 156832 | 150 | 173 | 150 | 8 | 3 | 31.7 |
| 157042 | 225 | 256 | 225 | 10 | 3 | 60.0 |

*Pipes are internally lined with a two part epoxy paint (ochre colour). Externally coated with black acrylic paint and stencilled every metre with blue marking.*

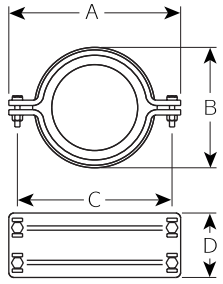
# Brackets fixing




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Wall fixing or hanging brackets – TD640** | | | | | |
| 191358 | 100 | 40 | 205 | 130 | 2.3 |
| 191359 | 150 | 40 | 255 | 175 | 2.8 |
| 192374 | 225 | 18 | 358 | 260 | 4.0 |

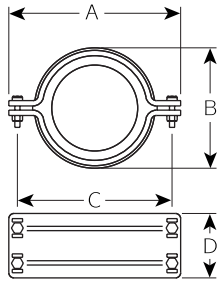
*Fixing hole in bracket is plain without BSPT thread (see page 34).*
*225 bracket is manufactured from mild steel-coated in a red anti-rust primer.*

# Couplings standard and transitional




**Standard**
Ductile iron coupling with stainless steel nuts and set screws and synthetic rubber gasket for jointing Timesaver drain to Timesaver drain (black gasket with identity marking).

| Product code | Dia | A | B | C | D | *E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Two-piece ductile iron coupling – TD01** | | | | | | | |
| 191294 | 100 | 203 | 140 | 180 | 75 | 5 | 2.8 |
| 191295 | 150 | 252 | 195 | 230 | 75 | 5 | 3.6 |
| 191296 | 225 | 345 | 290 | 320 | 100 | 5 | 7.8 |

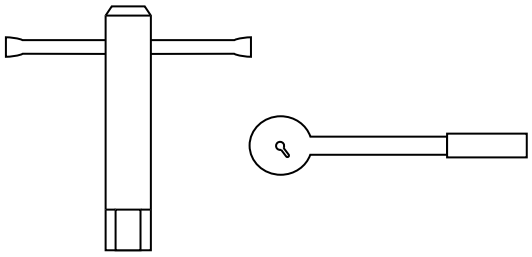



**Transitional**
Ductile iron coupling with stainless steel nuts and set screws and synthetic rubber gasket for jointing Timesaver drain to Timesaver soil or Ensign soil (black gasket with identity marking). *Electrical continuity clips are available supplied separately in standard quantity bags of 25 number (see ref table page 43).*

| Product code | Dia | A | B | C | D | *E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Two-piece ductile iron coupling – TD02** | | | | | | | |
| 191297 | 100 | 203 | 140 | 180 | 75 | 5 | 2.8 |
| 191298 | 150 | 252 | 195 | 230 | 75 | 5 | 3.6 |

*Four set screws are supplied on all couplings TD01/TD02.*
*Electrical continuity clips are available supplied separately in standard quantity bags of 25 number (see ref table page 43).*
**Minimum allowance (E) to accommodate gasket register (for guidance only).*

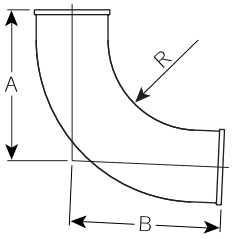
# Tools



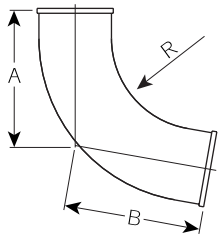
**Ratchet spanner – EF100: product code 191201**
A ratchet spanner is the recommended tool required to tighten the stainless steel screws, used in conjunction with a deep socket – EF101: product code 191202.

**'T' box spanner – EF098: product code 191200**
13mm A/F, dual purpose, for use with Timesaver and Ensign systems.

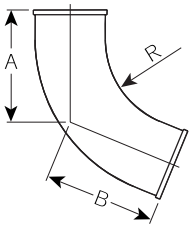
# Bends medium radius



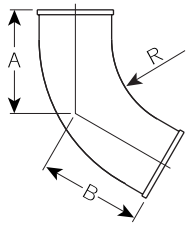

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Medium radius – TD06** | | | | | |
| 191219 | 100 | 250 | 250 | 150 | 8.8 |
| 191225 | 150 | 275 | 275 | 150 | 16.0 |
| 191229 | 225 | 335 | 335 | 150 | 41.5 |



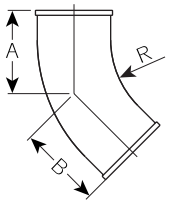

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **80° Bend • Medium radius – TD06** | | | | | |
| 191218 | 100 | 225 | 225 | 150 | 8.1 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **67½° Bend • Medium radius – TD06** | | | | | |
| 191217 | 100 | 190 | 190 | 150 | 7.0 |
| 191224 | 150 | 205 | 205 | 150 | 10.9 |

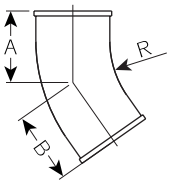



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **60° Bend • Medium radius – TD06** | | | | | |
| 191216 | 100 | 170 | 170 | 150 | 6.0 |

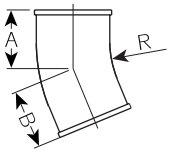



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend • Medium radius – TD06** | | | | | |
| 191215 | 100 | 135 | 135 | 150 | 5.8 |
| 191223 | 150 | 145 | 145 | 150 | 11.0 |
| 191228 | 225 | 215 | 215 | 150 | 31.8 |

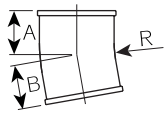
# Bends medium radius



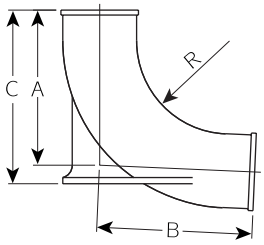

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **35° Bend • Medium radius – TD06** | | | | | |
| 191214 | 100 | 115 | 115 | 150 | 4.3 |
| 191222 | 150 | 125 | 125 | 150 | 9.1 |



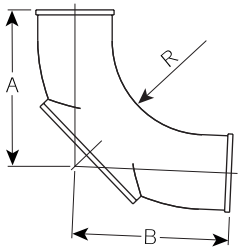

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **22½° Bend • Medium radius – TD06** | | | | | |
| 191213 | 100 | 95 | 95 | 150 | 3.6 |
| 191221 | 150 | 95 | 95 | 150 | 7.1 |
| 191227 | 225 | 120 | 120 | 150 | 18.4 |



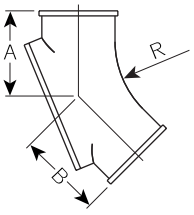

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **10° Bend • Medium radius – TD06** | | | | | |
| 191212 | 100 | 70 | 70 | 150 | 3.1 |
| 191220 | 150 | 70 | 70 | 150 | 4.5 |
| 191226 | 225 | 85 | 85 | 150 | 13.0 |



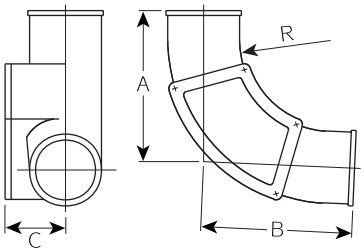

| Product code | Dia | A | B | C | R | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Bend with heel rest • Medium radius – TD07** | | | | | | |
| 191230 | 100 | 250 | 250 | 255 | 150 | 9.4 |
| 191231 | 150 | 275 | 275 | 310 | 150 | 19.4 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with access rear • Medium radius – TD08** | | | | | |
| 191233 | 100 | 250 | 250 | 150 | 12.0 |
| 191235 | 150 | 275 | 275 | 150 | 21.3 |
| 191237 | 225 | 335 | 335 | 150 | 57.8 |



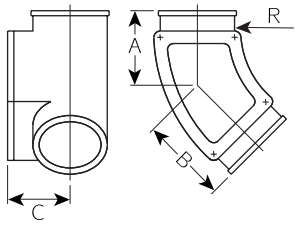

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend with access rear • Medium radius – TD08** | | | | | |
| 191232 | 100 | 135 | 135 | 150 | 8.6 |
| 19234 | 150 | 145 | 145 | 150 | 25.9 |
| † 191236 | 225 | 215 | 215 | 150 | 46.8 |




| Product code | Dia | A | B | C | R | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Bend with access side • Medium radius – TD09** | | | | | | |
| 191239 | 100 | 250 | 250 | 100 | 150 | 13.1 |
| 191241 | 150 | 275 | 275 | 120 | 150 | 20.5 |
| † 191243 | 225 | 335 | 335 | 190 | 150 | 57.5 |

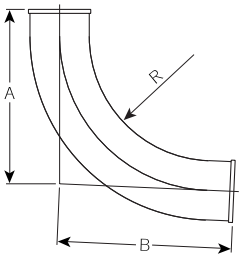
†*Made to order.*

# Bends medium radius

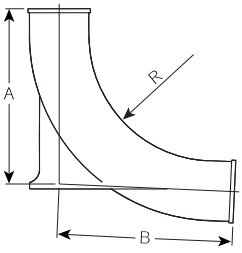



| Product code | Dia | A | B | C | R | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **45° Bend with access side • Medium radius – TD09** | | | | | | |
| 191238 | 100 | 135 | 135 | 100 | 150 | 10.0 |
| 191240 | 150 | 145 | 145 | 120 | 150 | 26.6 |
| † 191242 | 225 | 215 | 215 | 190 | 150 | 46.8 |

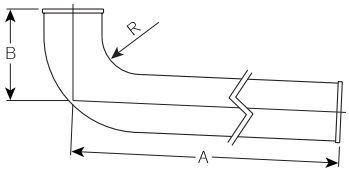
# Bends long radius



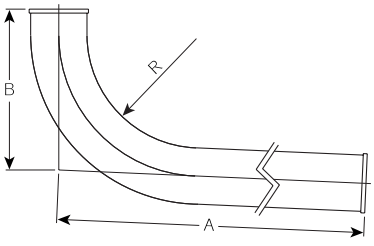

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Long radius – TD15** | | | | | |
| 191244 | 100 | 350 | 350 | 250 | 13.2 |
| 191245 | 150 | 375 | 375 | 250 | 25.0 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with heel rest• Long radius – TD22** | | | | | |
| 191246 | 100 | 350 | 350 | 250 | 15.0 |
| 191247 | 150 | 375 | 375 | 250 | 28.0 |

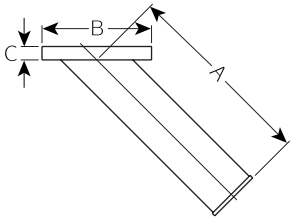



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Long tail – TD102** | | | | | |
| 191289 | 100 | 815 | 180 | 90 | 18.6 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Long tail – TD104** | | | | | |
| 197173 | 100 | 850 | 650 | 230 | 33.0 |
| 192699 | 150 | 850 | 650 | 203 | 54.0 |

# Bends clearing arm

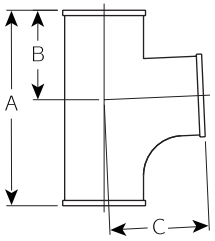



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend • Clearing arm – TD425** | | | | | |
| 191292 | 100 x 45° | 405 | 235 | 35 | 12.5 |

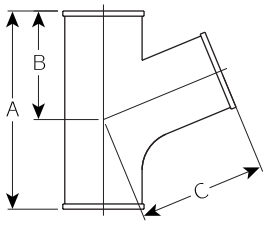
*Can be used with gratings and covers – TD612/TD616 and raising pieces – TD525.*

†*Made to order.*

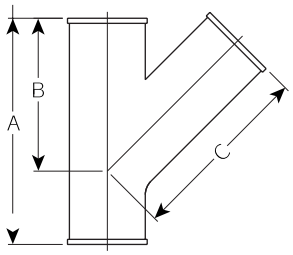
# Branches



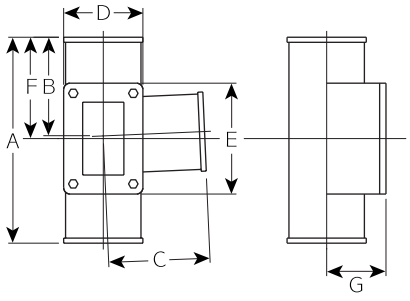

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch • Radius curve – TD37** | | | | | |
| 191250 | 100 x 100 | 295 | 130 | 150 | 7.8 |
| 191252 | 150 x 100 | 370 | 135 | 235 | 16.1 |
| 191254 | 150 x 150 | 445 | 170 | 255 | 19.1 |
| 191256 | 225 x 100 | 390 | 155 | 275 | 40.0 |
| 191258 | 225 x 150 | 460 | 185 | 295 | 46.3 |
| 191260 | 225 x 225 | 590 | 225 | 365 | 58.5 |



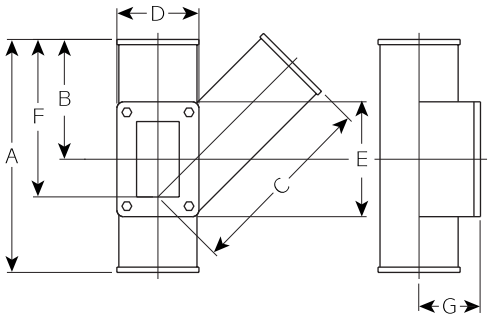

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **67½° Branch • Radius curve – TD37** | | | | | |
| 191249 | 100 x 100 | 305 | 165 | 195 | 8.8 |




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Branch – TD37** | | | | | |
| 191248 | 100 x 100 | 355 | 245 | 290 | 11.3 |
| 191251 | 150 x 100 | 365 | 280 | 325 | 15.4 |
| 191253 | 150 x 150 | 435 | 315 | 355 | 24.4 |
| 191255 | 225 x 100 | 390 | 340 | 395 | 42.0 |
| 191257 | 225 x 150 | 460 | 375 | 410 | 45.8 |
| 191259 | 225 x 225 | 590 | 445 | 510 | 64.4 |



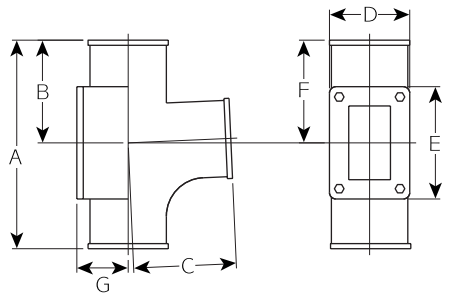

| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **87½° Branch with access side RH • Radius curve – TD51** | | | | | | | | | |
| 191262 | 100 x 100 | 325 | 160 | 160 | 205 | 215 | 160 | 105 | 14.2 |
| 191264 | 150 x 100 | 370 | 140 | 235 | 175 | 175 | 140 | 135 | 20.9 |
| † 191267 | 225 x 150 | 590 | 225 | 295 | 260 | 260 | 250 | 190 | 67.3 |
| † 191269 | 225 x 225 | 590 | 225 | 365 | 260 | 260 | 250 | 190 | 79.5 |



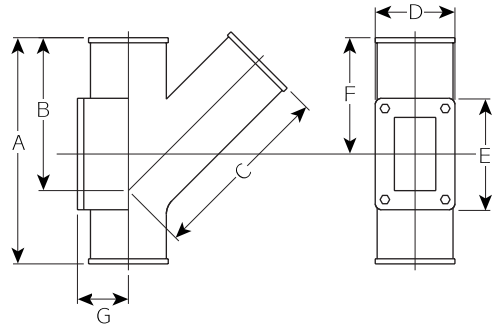

| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **45° Branch with access side RH – TD51** | | | | | | | | | |
| 191261 | 100 x 100 | 355 | 245 | 290 | 125 | 175 | 245 | 105 | 14.2 |
| 191263 | 150 x 100 | 420 | 300 | 325 | 175 | 175 | 200 | 135 | 21.9 |
| † 191265 | 225 x 100 | 590 | 445 | 330 | 260 | 260 | 350 | 190 | 62.8 |
| † 191266 | 225 x 150 | 590 | 445 | 355 | 260 | 260 | 350 | 190 | 66.8 |
| † 191268 | 225 x 225 | 590 | 445 | 510 | 260 | 260 | 350 | 190 | 85.4 |

†*Made to order.*

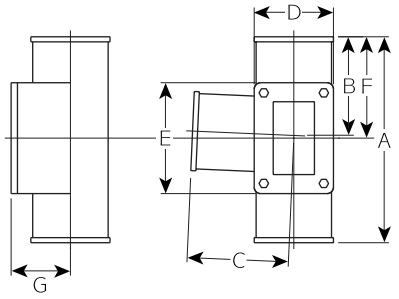
# Branches



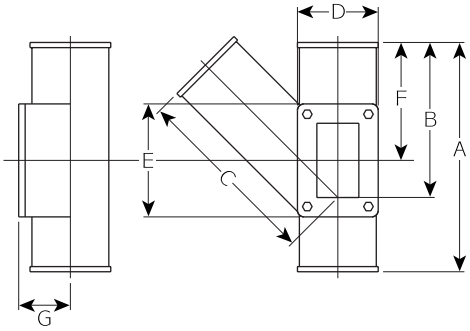

| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **87½° Branch with access rear • Radius curve – TD52** | | | | | | | | | |
| 191271 | 100 x 100 | 325 | 160 | 160 | 205 | 215 | 160 | 80 | 13.4 |
| 191273 | 150 x 100 | 370 | 140 | 235 | 175 | 175 | 140 | 110 | 22.9 |
| † 191275 | 225 x 100 | 590 | 225 | 275 | 260 | 260 | 250 | 190 | 60.0 |
| † 191276 | 225 x 150 | 590 | 225 | 295 | 260 | 260 | 250 | 190 | 62.4 |
| † 191278 | 225 x 225 | 590 | 225 | 365 | 260 | 260 | 250 | 190 | 79.5 |




| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **45° Branch with access rear – TD52** | | | | | | | | | |
| 191270 | 100 x 100 | 355 | 240 | 290 | 205 | 215 | 185 | 80 | 16.1 |
| 191272 | 150 x 100 | 420 | 300 | 325 | 175 | 175 | 200 | 110 | 22.9 |
| † 191274 | 225 x 100 | 590 | 445 | 330 | 260 | 260 | 350 | 190 | 63.0 |
| † 191277 | 225 x 225 | 590 | 445 | 510 | 260 | 260 | 350 | 190 | 84.4 |

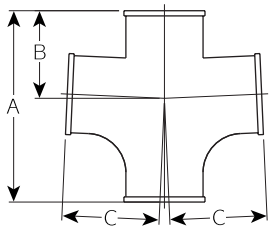



| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **87½° Branch with access side LH • Radius curve – TD53** | | | | | | | | | |
| 191280 | 100 x 100 | 325 | 160 | 160 | 205 | 215 | 160 | 105 | 14.2 |
| 191282 | 150 x 100 | 370 | 140 | 235 | 175 | 175 | 140 | 135 | 21.2 |
| † 191284 | 225 x 100 | 590 | 225 | 275 | 260 | 260 | 250 | 190 | 61.0 |
| † 191286 | 225 x 150 | 590 | 225 | 295 | 260 | 260 | 250 | 190 | 67.3 |
| † 191288 | 225 x 225 | 590 | 225 | 365 | 260 | 260 | 250 | 190 | 79.5 |




| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **45° Branch with access side LH – TD53** | | | | | | | | | |
| 191279 | 100 x 100 | 355 | 245 | 290 | 125 | 175 | 245 | 105 | 14.2 |
| 191281 | 150 x 100 | 365 | 280 | 325 | 175 | 175 | 200 | 135 | 21.9 |
| † 191283 | 225 x 100 | 590 | 445 | 330 | 260 | 260 | 350 | 190 | 62.8 |
| † 191285 | 225 x 150 | 590 | 445 | 355 | 260 | 260 | 350 | 190 | 66.8 |
| † 191287 | 225 x 225 | 590 | 445 | 510 | 260 | 260 | 350 | 190 | 85.4 |

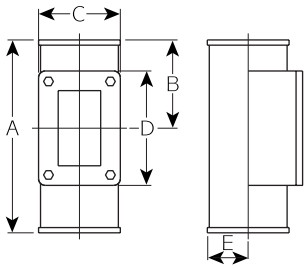
# Branches double




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Double branch • Plain – TD447** | | | | | |
| 191293 | 100 x 100 | 325 | 160 | 160 | 11.6 |

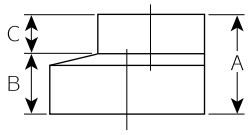
†*Made to order.*

# Pipes access




| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Rect door – TD56** | | | | | | | |
| 191344 | 100 | 270 | 135 | 125 | 175 | 95 | 9.7 |
| 191345 | 150 | 270 | 135 | 175 | 175 | 125 | 15.4 |
| 191346 | 225 | 590 | 250 | 260 | 260 | 190 | 62.6 |

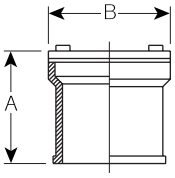
# Pipes taper




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Pipes • Diminishing – TD41** | | | | | |
| 191333 | 150 x 100 | 100 | 47 | 43 | 3.5 |
| 191334 | 225 x 100 | 210 | 160 | 50 | 13.6 |
| 191335 | 225 x 150 | 210 | 160 | 50 | 13.4 |
| 191336 | *225 x 200 | 100 | 60 | 40 | 6.2 |
| NEW 192431 | †225 x 250 | 152 | 82 | 70 | 9.8 |

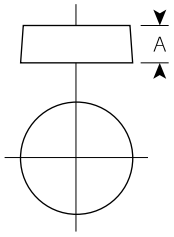
**Connects 225 Timesaver drain to 200 Ensign soil/drain.*
*†Connects 225 Timesaver drain to 250 Ensign soil/drain.*

# Socket ferrules




| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **Socket ferrule with cast iron cap – TD36** | | | | |
| 191330 | 100 | 120 | 130 | 3.8 |
| 191331 | 150 | 135 | 185 | 6.5 |
| † 191332 | 225 | 165 | 270 | 15.4 |

# Blank ends

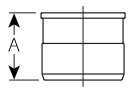



| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Blank ends – TD34** | | | |
| 191326 | 100 | 40 | 1.3 |
| 191327 | 150 | 40 | 2.6 |
| 191328 | 225 | 75 | 10.7 |

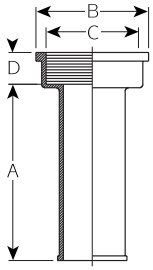
*If you require blank ends drilled to accommodate 50mm waste – use GT71 (see page 53) with TD02 stepped coupling.*

*†Made to order.*

# Pipes transitional

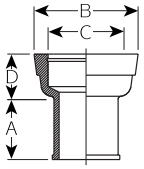



| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Adaptor from Timesaver drain to supersleve – TD118** | | | |
| 191350 | 100 | 100 | 2.2 |
| 191351 | 150 | 125 | 5.1 |




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Socket for clayware – TD42** | | | | | | |
| 191338 | 150 | 305 | 250 | 215 | 65 | 16.4 |
| † 191339 | 225 | 120 | 355 | 305 | 65 | 22.7 |

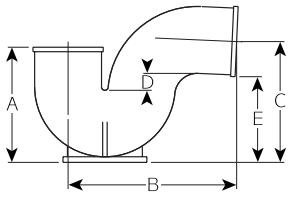
*100mm use alternative Ensign product EF059 product code 156650 see page 47



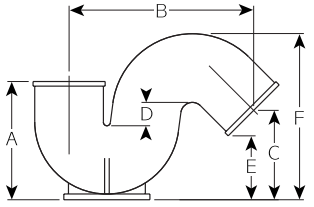

| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Socket for cast iron to suit BS 437 – TD47** | | | | | | |
| 191341 | 100 | 100 | 185 | 135 | 75 | 8.0 |
| 191342 | 150 | 80 | 240 | 190 | 90 | 11.8 |
| † 191343 | 225 | 120 | 355 | 275 | 115 | 31.3 |

*Note: Transitional pipe for wc (see soil page 47).*

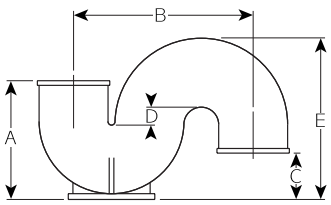
# Gully traps




| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **87½° Gully trap – TD60** | | | | | | | |
| 191399 | 100 | 205 | 300 | 215 | 50 | 165 | 12.4 |
| 191400 | 150 | 295 | 400 | 295 | 50 | 220 | 24.4 |



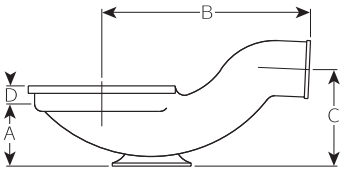

| Product code | Dia | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **45° Gully trap – TD60** | | | | | | | | |
| 191398 | 100 | 205 | 320 | 155 | 50 | 120 | 275 | 13.2 |




| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Vertical gully trap – TD60** | | | | | | | |
| 191397 | 100 | 205 | 310 | 80 | 50 | 275 | 13.2 |

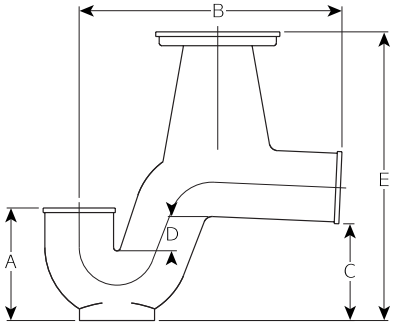
†*Made to order.*

# Gully traps

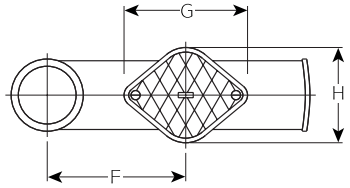



| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Gully trap with 225mm inlet – TD64** | | | | | | |
| 191401 | 100 | 130 | 450 | 220 | 43 | 24.0 |

*Can be used with raising pieces – TD678 and TD108/TD111.*

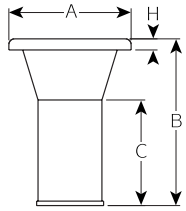



| Product code | Dia | A | B | C | D |
|---|---|---|---|---|---|
| **87½° Gully trap with surface access – TD107** | | | | | |
| 191402 | 100 | 195 | 455 | 230 | 75 |



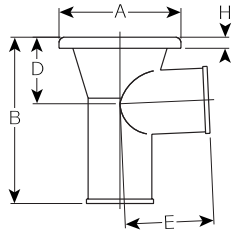

| | Dia | E | F | G | H | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Gully trap with surface access – TD107** | | | | | | |
| | 100 | 500 | 240 | 215 | 165 | 23.3 |

# Gully inlets bellmouth



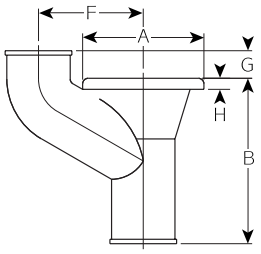

| Product code | Dia | A | B | C | H | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Gully inlet • Plain – TD500** | | | | | | |
| 191301 | 100 | 220 | 300 | 190 | 17 | 8.6 |

*Can be used with gratings and covers – TD612/TD616 and raising pieces – TD525.*




| Product code | Dia | Branch | A | B | D | E | H | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **Gully inlet with single branch – TD105** | | | | | | | | |
| 191299 | 100 | 100 | 220 | 300 | 120 | 160 | 17 | 11.8 |

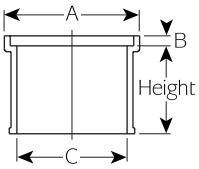
*Can be used with gratings and covers – TD612/TD616 and raising pieces – TD525.*




| Product code | Dia | Branch | A | B | F | G | H | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **Gully inlet with vertical branch – TD106** | | | | | | | | |
| 191300 | 100 | 100 | 220 | 300 | 190 | 50 | 17 | 13.7 |

*Can be used with gratings and covers – TD612/TD616 and raising pieces – TD525.*

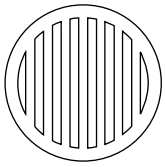
# Raising pieces




| Product code | Height | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Raising piece – TD525** | | | | | |
| 191303 | 150 | 220 | 17 | 190 | 9.1 |
| 191305 | 305 | 220 | 17 | 190 | 11.3 |

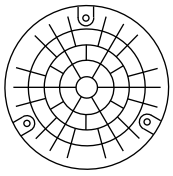
*To suit Bellmouth – TD500/TD105/TD106.*
*Can be used with gratings and covers – TD612/TD616.*
*Raising pieces require caulking into above listed components.*
*See p35 for details on caulking compound.*

# Gratings and covers



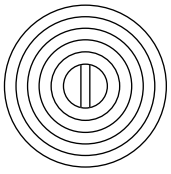
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grating plain – TD612** | | |
| 191385 | 200 | 1.8 |

*Maximum load 2.0 tonnes.*



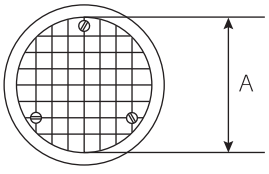
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Solid cover – TD613S** | | |
| 191386 | 200 | 2.0 |

*Maximum load 2.0 tonnes.*



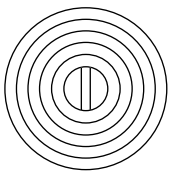
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grating hinged and locking – TD614** | | |
| 191387 | 200 | 1.8 |

*Maximum load 2.0 tonnes.*




| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Sealed plate and frame – TD615** | | | |
| 191388 | 200 | 180 | 2.7 |

*Maximum load 2.0 tonnes. Sealed with rubber seal three screws.*

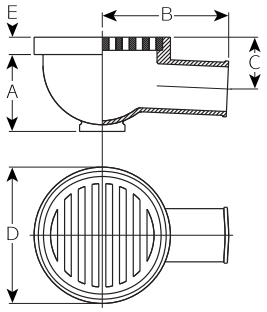


| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grease sealed cover and frame – TD616** | | |
| 191389 | 200 | 2.2 |

*Maximum load 2.0 tonnes. Three screws to fix.*

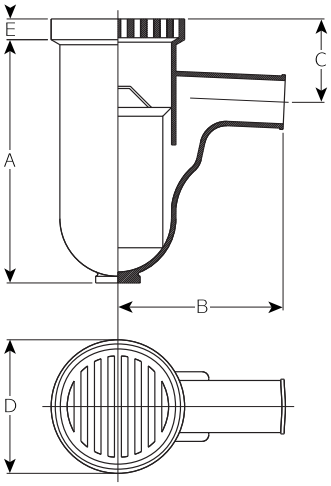
*TD612/TD616 can be used in conjunction with raising pieces – TD525.*
*Bellmouths – TD500/TD105/TD106 and clearing arm bends – TD425.*
*Gratings – TD614/TD615/TD616 require caulking into above listed components. See p35 for details on caulking compound.*

# Gully traps



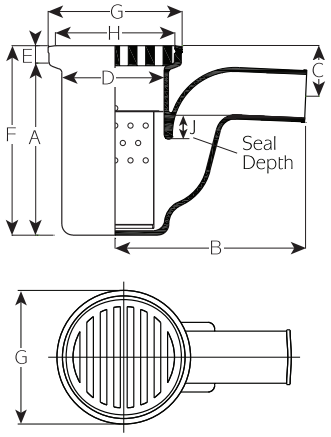

| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **87½° Trapless gully trap • 230 diameter inlet – TD467** | | | | | | | |
| 191403 | 100 | 225 | 280 | 130 | 305 | 43 | 17.7 |

*Can be used with raising pieces – TD678 and TD108/TD111.*
*Can be fitted with covers and gratings – TD650/TD653 and TD661/TD662.*



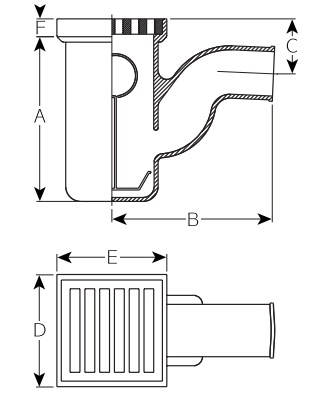

| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **87½° Deans gully trap • 230 diameter inlet – TD550** | | | | | | | |
| 191407 | 100 | 560 | 380 | 190 | 305 | 43 | 55.4 |

*Can be used with raising pieces – TD678 and TD108/TD111.*
*Can be fitted with covers and gratings – TD650/TD653 and TD661/TD662.*
*Can be supplied with Galvanised Sediment Pan: product code 191181.*
*If used with Galvanised Sediment Pan this fitting can only be fitted with TD650 or TD651 gratings.*



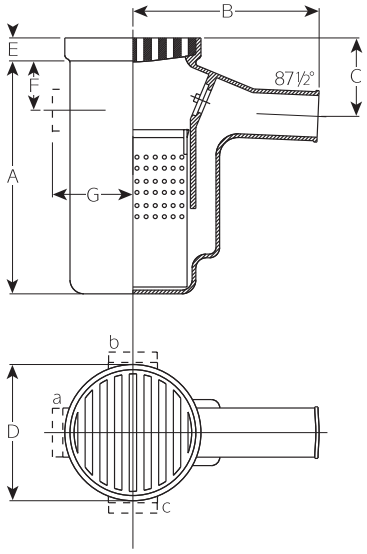

| Product code | Dia | A | B | C | D | E | F | G | H | J | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **87½° Gully trap • 230 diameter inlet – TD551** | | | | | | | | | | | |
| 191408 | 100 | 395 | 437 | 117 | 225 | 40 | 435 | 308 | 274 | 56 | 30.8 |

*Can be used with raising pieces – TD678 and TD108/TD111.*
*Can be fitted with covers and gratings – TD650/TD653 and TD661/TD662.*
*Can be supplied with Galvanised Sediment Pan: product code 191182.*
*If used with Galvanised Sediment Pan this fitting can only be fitted with TD650 or TD651 gratings.*



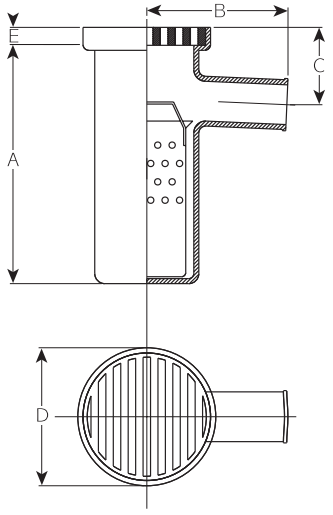

| Product code | Dia | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **87½° Gully Trap • 230 x 230 Inlet – TD553** | | | | | | | | |
| 191381 | 100 | 380 | 370 | 125 | 255 | 250 | 35 | 26.8 |

*Can be supplied with Galvanised Sediment Pan: product code 191183.*
*Can be supplied with Grating: product code 191380.*
*Maximum load 2.0 tonnes.*



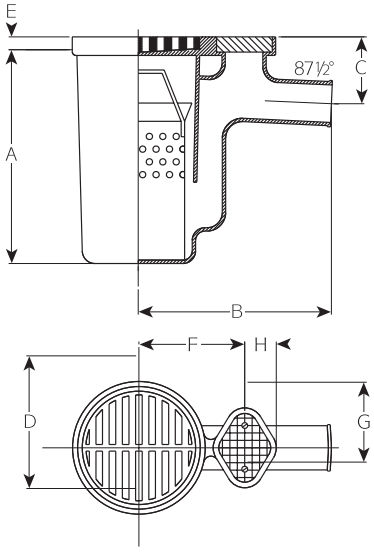

| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **87½° Garage gully trap • 305 diameter inlet – TD554** | | | | | | | | | |
| 191410 | 100 | 478 | 363 | 168 | 380 | 67 | 101 | 210 | 58.4 |

*Can be supplied with raising pieces – TD559.*
*Can be supplied with Galvanised Sediment Pan: product code 191184.*
*Can be supplied with grating: product code 191382.*
*Maximum load 7.5 tonnes.*
*100 Inlets can be cast on in positions a, b, or c to order.*
*Product code 02712 191411 Inlet at a*
*02715 191414 Inlet at b*
*02716 191415 Inlet at c*
*02713 191412 Inlet at a and b*
*02714 191413 Inlet at a and c*
*191416 Inlets a, b and c.*




| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **87½° Trapless gully trap • 230 diameter inlet – TD556** | | | | | | | |
| 191409 | 100 | 570 | 335 | 185 | 300 | 45 | 45.4 |

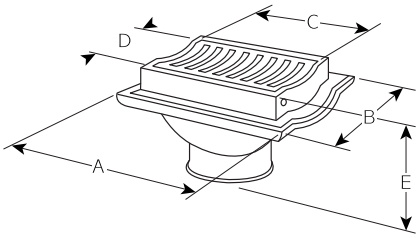
*Can be used with raising pieces – TD678 and TD108/TD111.*
*Can be fitted with covers and gratings – TD650/TD653 and TD661/TD662.*
*Can be supplied with Galvanised Sediment Pan: product code 191181.*
*If used with Galvanised Sediment Pan this fitting can only be fitted with TD650 or TD651 gratings.*




| Product code | Dia | A | B | C | D | E | F | G | H | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **87½° Garage gully trap • 330 diameter inlet – TD558** | | | | | | | | | | |
| 191418 | 100 | 560 | 520 | 180 | 405 | 50 | 285 | 215 | 85 | 75.5 |

*Can be supplied with Galvanised Sediment Pan: product code 191185.*
*Can be supplied with Grating: product code 191383.*
*Maximum load 7.5 tonnes.*

# Yard gully

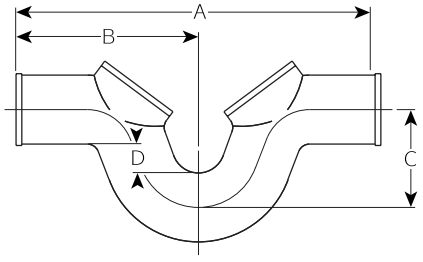



**Heavy roadway hinged grating and frame.**
Grating dished 25mm deep for channel or flat.

| Product code | Outlet dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Gully trap with luting flange – TD561** | | | | | | | |
| 191357 | 225 | 445 | 375 | 335 | 265 | 205 | 44.0 |

*For use with traps – TD550/TD551 and TD556.*
*Raising pieces – TD678 and TD108/TD111 and tapered inlet gullies – TD684 and TD120/TD123.*
*Grating maximum load 7.5 tonnes.*
*Requires caulking into fittings.*
*See p35 for details on caulking compound.*

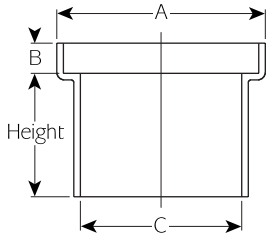
# Running traps




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Running trap with double access – TD475** | | | | | | |
| 191404 | 100 | 413 | 206 | 150 | 50 | 14.2 |
| 191405 | 150 | 775 | 370 | 215 | 50 | 55.4 |
| 191406 | 225 | 1200 | 600 | 325 | 100 | 144.0 |

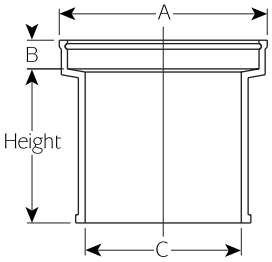
*225 diameter comes supplied with foot.*
*100 and 150 diameter have round accesses.*
*225 diameter has rectangular accesses.*

# Raising pieces




| Product code | Height | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Raising piece – TD559** | | | | | |
| 191354 | 75 | 380 | 50 | 305 | 12.7 |
| 191356 | 150 | 380 | 50 | 305 | 20.4 |
| 191355 | 300 | 380 | 50 | 305 | 37.0 |

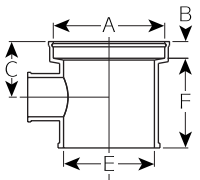
*For use with gully trap – TD554.*
*Requires caulking into gully trap.*
*See p35 for details on caulking compound.*



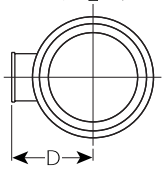

| Product code | Height | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Raising pieces • 225 inside diameter • Plain – TD678** | | | | | |
| 191363 | 75 | 305 | 43 | 225 | 9.5 |
| 191365 | 115 | 305 | 43 | 225 | 11.6 |
| 191364 | 150 | 305 | 43 | 225 | 13.5 |
| 191366 | 225 | 305 | 43 | 225 | 17.0 |
| 191367 | 300 | 305 | 43 | 225 | 21.5 |

# Raising pieces

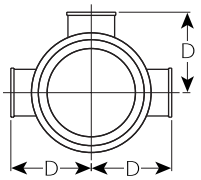
TD108/111




TD108




TD111



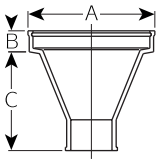

| Product code | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Raising piece with 100 inlet branch – TD108** | | | | | | | |
| 191347 | 305 | 43 | 140 | 205 | 225 | 225 | 19.0 |

| Product code | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Raising piece with 100 inlet branches – TD111** | | | | | | | |
| 191348 | 305 | 43 | 140 | 205 | 225 | 225 | 23.1 |

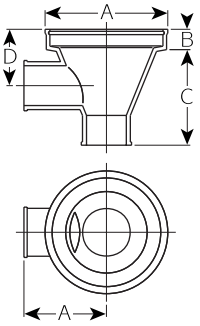
*Raising pieces – TD678 and TD108/TD111 can be used in conjunction with gully traps – TD64/TD467/TD550/TD551/TD556 and tapered gully inlets – TD684 and TD120/123.*
*Can also be used with grating and covers – TD650/TD653 and TD661/TD662.*
*Raising pieces require caulking into Gully Traps.*
*See p35 for details on caulking compound.*

# Tapered gully inlets

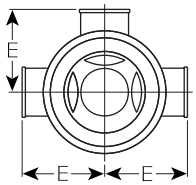
TD684




TD120




TD123




| Product code | Outlet dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Tapered gully inlet • 225 inside diameter • Plain – TD684** | | | | | |
| 191368 | 100 | 305 | 43 | 245 | 12.9 |
| 191369 | 150 | 305 | 43 | 225 | 12.3 |

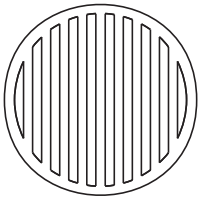
| Product code | Outlet dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Tapered gully inlet with 100 inlet branch – TD120** | | | | | | | |
| 191352 | 100 | 305 | 43 | 245 | 140 | 205 | 14.2 |

| Product code | Outlet dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Tapered gully inlet with 100 inlet branches – TD123** | | | | | | | |
| 191353 | 100 | 305 | 43 | 245 | 140 | 205 | 20.3 |

*Tapered gully inlets – TD684 and TD120/TD123 can be used in conjunction with raising pieces – TD678 and TD108/TD111 and can be used with gratings and covers – TD650/TD653 or TD661/TD662.*

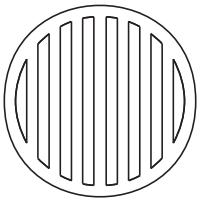
# Gratings and covers

For gully traps, raising pieces and tapered gully inlets 265 diameter to suit TD678 and TD108/TD111 raising pieces, TD684 and TD120/TD123 tapered gully inlets, and gully traps TD467/TD550/TD551/TD556.



| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Light grating – TD650** | | |
| 191390 | 265 | 3.6 |

*Maximum load 2.0 tonnes.*

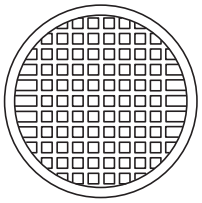


| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **BS heavy grating – TD651** | | |
| 191391 | 265 | 8.0 |

*Maximum load 7.5 tonnes.*

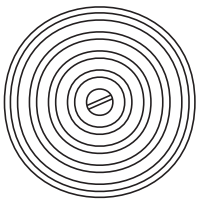
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Hinged and locking grating and frame – TD653** | | |
| 191360 | 265 | 5.3 |

*Maximum load 2.0 tonnes.*



| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Sealing plate and frame fitted with two screws – TD661** | | |
| 191361 | 265 | 5.0 |

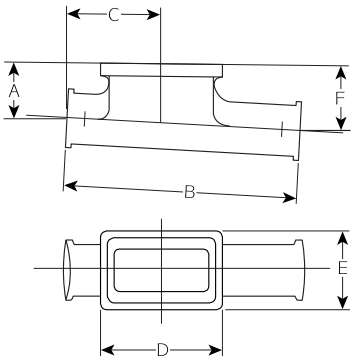
*Maximum load 7.5 tonnes.*



| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grease seal cover and frame fitted with two screws – TD662** | | |
| 191362 | 265 | 3.6 |

*Maximum load 2.0 tonnes.*
*Requires caulking into above listed gully traps, raising pieces and tapered gully inlets. See p35 for details on caulking compound.*

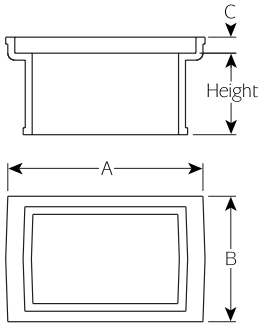
# Rainwater shoes




| Product code | Dia | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **Rainwater shoe with horizontal inlet – TD114** | | | | | | | | |
| 191349 | 100 | 125 | 530 | 215 | 280 | 180 | 147 | 15.5 |

*Can be used with gratings and covers – TD790 to TD795.*
*Can be used with raising pieces – TD793.*

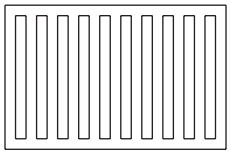
# Raising pieces



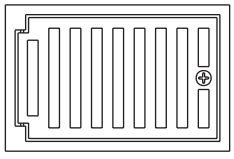

| Product code | Height | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Raising piece – TD793** | | | | | |
| 191378 | 305 | 280 | 180 | 25 | 15.4 |

*For use with TD114.*
*Can be used with gratings and covers – TD790 to TD795.*
*Raising pieces require caulking into rainwater shoes.*
*See p35 for details on caulking compound.*

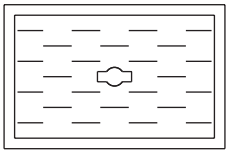
# Gratings and covers



| Product code | Dimensions | Nominal wt/kg |
|---|---|---|
| **Grating – TD790** | | |
| 191374 | 240 x 140 | 2.4 |

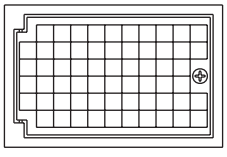


| Product code | Dimensions | Nominal wt/kg |
|---|---|---|
| **Hinged and locking grating and frame – TD791** | | |
| 191375 | 240 x 140 | 3.2 |



| Product code | Dimensions | Nominal wt/kg |
|---|---|---|
| **Grease seal cover and frame – TD792** | | |
| 191376 | 240 x 140 | 2.4 |

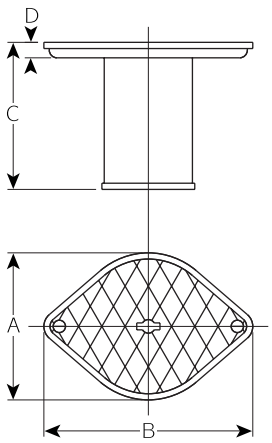
*Fitted with two screws if required.*



| Product code | Dimensions | Nominal wt/kg |
|---|---|---|
| **Hinged and locking cover and frame – TD795** | | |
| 191379 | 240 x 140 | 3.2 |

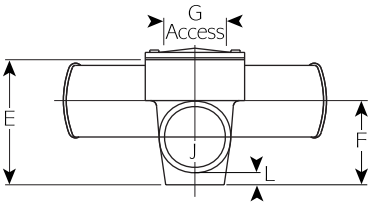
*The above gratings and covers are for use with rainwater (drain) shoes – TD114 and raising pieces – TD793. Gratings – TD791/TD795 require caulking into above listed components.*
*See p35 for details on caulking compound.*

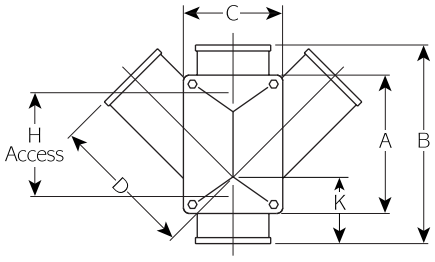
# Airtight inspection eye covers




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Airtight inspection eye covers – TD724** | | | | | | |
| 191394 | 100 | 215 | 270 | 190 | 35 | 10.0 |
| 191395 | 150 | 260 | 320 | 180 | 30 | 16.2 |

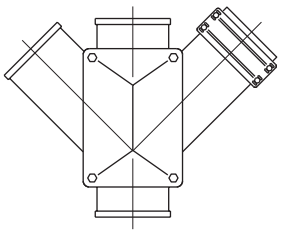
# Chambers




| | Product code | Dia | A | B | C | D | E | F | G | H | J | K | L | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chamber • Double branch – TD14** | | | | | | | | | | | | | | |
| | 191306 | 100 x 100 | 230 | 330 | 165 | 240 | 210 | 140 | 100 | 170 | 65 | 110 | 20 | 19.6 |
| | 191307 | 150 x 100 | 210 | 300 | 215 | 285 | 250 | 170 | 150 | 150 | 90 | 55 | 25 | 24.7 |
| | 191308 | 150 x 150 | 285 | 380 | 215 | 330 | 300 | 200 | 150 | 225 | 95 | 105 | 25 | 38.6 |
| † | 191309 | 225 x 100 | 500 | 910 | 280 | 400 | 370 | 220 | 226 | 450 | 110 | 320 | 62 | 100.0 |
| † | 191310 | 225 x 150 | 500 | 910 | 280 | 450 | 370 | 220 | 226 | 450 | 85 | 320 | 62 | 110.0 |
| † | 191311 | 225 x 225 | 500 | 910 | 280 | 565 | 370 | 220 | 226 | 450 | 45 | 320 | 62 | 174.0 |

*L and J are dimensions to invert.*



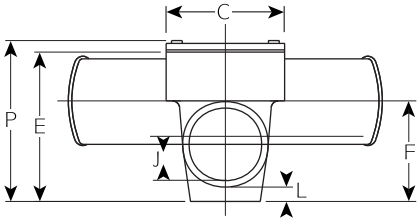
**Single branch arm:**
*if only one branch arm is required, blank off unused arm using TD34 Blank End with TD01 coupling.*

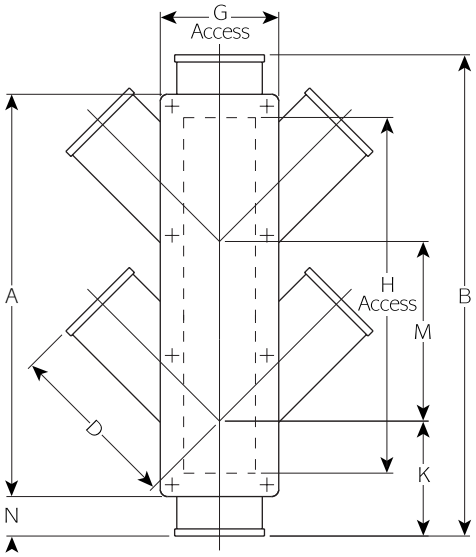
# Chambers

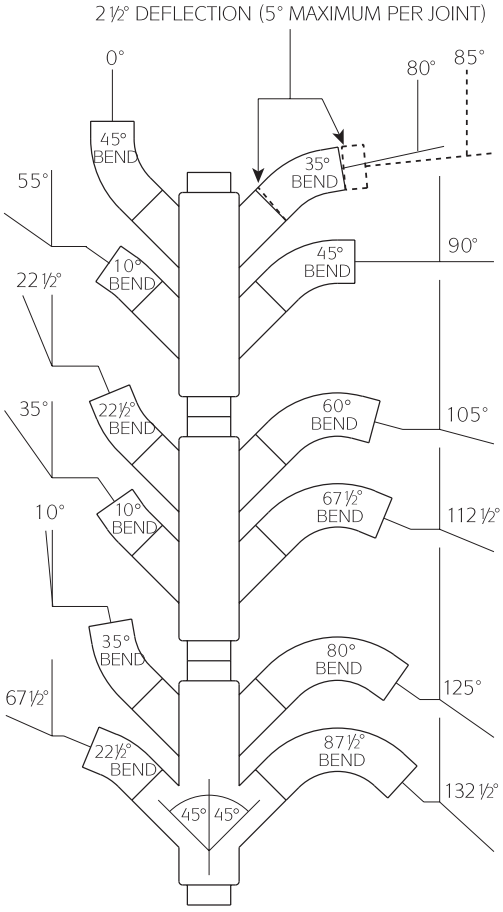
| Product code | Dia | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chamber – TD17** | | | | | | | | | | | | | | | | |
| 191312 | 100 x 100 | 560 | 670 | 140 | 250 | 210 | 140 | 100 | 520 | 65 | 160 | 20 | 250 | 55 | 240 | 40.2 |
| 191313 | 150 x 100 | 560 | 670 | 190 | 285 | 245 | 165 | 150 | 520 | 90 | 160 | 25 | 250 | 55 | 280 | 55.9 |
| 191314 | 150 x 150 | 700 | 810 | 190 | 330 | 300 | 195 | 150 | 660 | 95 | 135 | 25 | 360 | 55 | 335 | 87.2 |
| † 191315 | 225 x 100 | 500 | 1460 | 280 | 400 | 370 | 220 | 226 | 450 | 110 | 210 | 62 | 250 | 235 | 410 | 210.0 |
| † 191316 | 225 x 150 | 1050 | 1460 | 280 | 450 | 370 | 220 | 226 | 1000 | 85 | 320 | 62 | 550 | 235 | 410 | 220.0 |
| † 191317 | 225 x 225 | 1050 | 1460 | 280 | 565 | 370 | 220 | 226 | 1000 | 45 | 320 | 62 | 550 | 235 | 410 | 240.0 |

*L and J are dimensions to invert.*

†*Made to order.*




## Inspection chambers

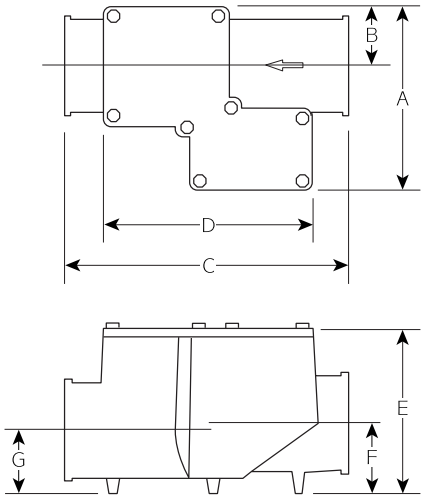
Inspection chamber branch arm entries are all at 45° to conform with BS 437 and Codes of Practice BS EN 12056 Parts 2 and 3.

Where other angles of entry are necessary these can be achieved by the use of standard bends as shown. The Timesaver joint having at 5° deflection capability enables other angles to be achieved eg. 10° gap from 80° to 90° deflect each joint of 35° bend according to angle required. An 85° angle is illustrated.

The diagram assumes that the branch drains have a fall of 1 in 40 or less. Falls steeper than this will alter the bend apparent angle in plan.

†*Made to order.*

# Eureka anti-flooding trunk valves




Jones 'Eureka' anti-flooding trunk valves and interceptors for disconnecting chambers and tidal outfalls.

These valves consist of a cast iron body, stainless steel flap faced with rubber seal, separate cast iron valve seating, polystyrene float fixed to a brass pivot rod, and a bolted cover with rubber seal.

The valve and float are fixed to the same brass spindle in adjoining chambers separated by baffles which allow water to enter but excludes solids. Under normal circumstances the valve hangs clear of the flowing sewage, but when the flood water rises the float rises with it and closes the valve.

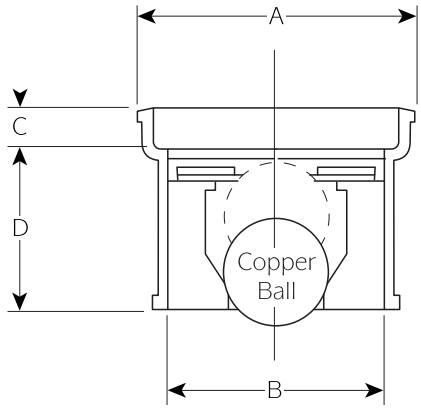
When flood water subsides the float falls, the valve is raised and the rush of pent up water cleans the valve.

| Product code | Dia | A | B | C | D | E | F | G | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **Anti-flooding trunk valve 'Eureka' – TD750** | | | | | | | | | |
| 191420 | 150 | 330 | 105 | 490 | 365 | 285 | 115 | 105 | 50.0 |

*100, 225, 300mm diameter are currently available in traditional socket and spigot specification (see page 30).*
*225 and 300mm diameter are made to order.*

Note: 1" BSP float vent is supplied plugged. Plug should be removed and a vent pipe carried upwards to such a height and so positioned as not to transmit foul air in such a manner as to become prejudicial to health or a nuisance. These valves are sold at customers' risk only without guarantee. They are checked before despatch and no liability can be accepted after installation. It is recommended that these valves are serviced before the start of each wet season or a least twice a year.

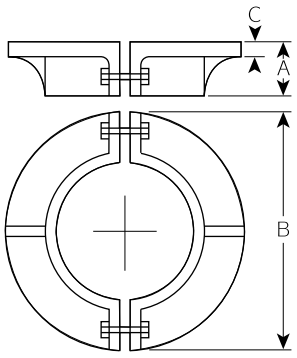
# Ball valve anti-flooding




| Product code | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|
| **Anti-flooding ball valve – TD756** | | | | | |
| 191421 | 305 | 225 | 43 | 180 | 21.8 |

*Can be used with grating – TD650.*
*Can be used in conjunction with TD64/TD467/TD550/TD551/TD678 and TD684.*
*Not recommended for use in foul drain systems.*
*This valve is sold at customers' risk only without guarantee.*
*They are checked before despatch and no liability can be accepted after installation.*
*It is recommended that these valves are serviced before the start of each wet season or a least twice a year.*

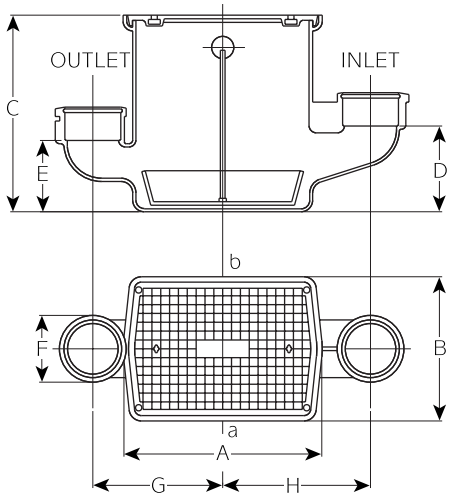
# Flanges loose puddle




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Flange – TD777** | | | | | |
| 191371 | 100 | 50 | 220 | 13 | 3.9 |
| 191372 | 150 | 65 | 275 | 13 | 5.6 |
| 191373 | 225 | 65 | 360 | 13 | 8.6 |

*This collar is in two halves which can be bolted around the pipe even when pipe is in position.*
*Can also be used as a firestop.*
*Due to manufacturing tolerances it is recommended that the puddle flange is bedded on Denso tape or similar material.*

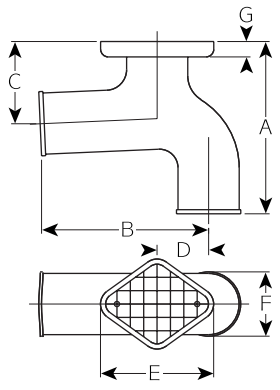
# Grease traps




For use inside and outside building.
Inside dimensions for TD706: 455 x 305 x 545.

| Product code | Dia | A | B | C | D | E | F | G | H | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|---|---|
| **Grease trap – TD706 with grease seal cover** | | | | | | | | | | |
| 191419 | 100 | 545 | 400 | 545 | 250 | 210 | 185 | 360 | 410 | 113.1 |

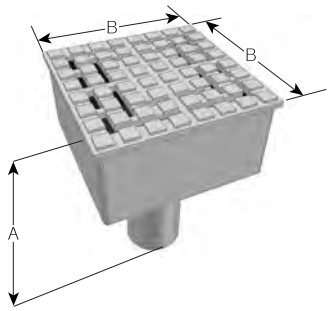
*Single seal cover: product code 191393*
*Can be used with Galvanised Sediment Pan: product code 191187.*
*Can be used with Bellmouth – TD105 and TD106 on Inlet.*
*Can used with TD708 on outlet.*
*Can be tapped 1½" BSPT for vent at a or b to order.*
*It is recommended that if an appliance, which has its own water seal is connected directly to the grease trap, the waste pipe should be vented and this should be positioned as close to the grease trap as possible.*



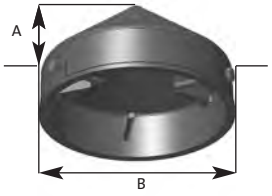

| Product code | Dia | A | B | C | D | E | F | G | Nominal. wt/kg |
|---|---|---|---|---|---|---|---|---|---|
| **Grease trap outlet for TD706 grease trap – TD708** | | | | | | | | | |
| 191370 | 100 | 330 | 330 | 155 | 100 | 220 | 175 | 30 | 17.1 |

# SOCKET AND SPIGOT DRAIN FITTINGS TO BS 437

## Inlets fresh air

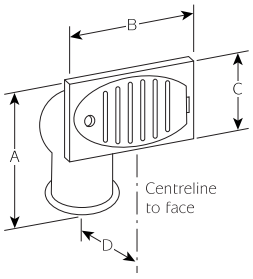



| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **'CREGEEN' with hinged cover – 585** | | | | |
| 191590 | 100 | 343 | 305 | 22.2 |




| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **Ventilating head with three GM screws – 589** | | | | |
| 191591 | 100 | 178 | 292 | 8.8 |

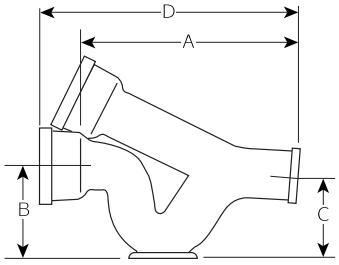
*To fit 100 drain pipe socket or 150 drain pipe spigot.*



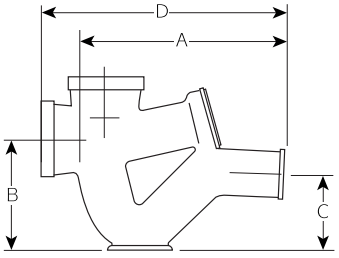

| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Fresh air inlet – 591** | | | | | | |
| 191592 | 100 | 315 | 255 | 175 | 115 | 10.0 |

*Without flap valve.*
*With locking grill.*

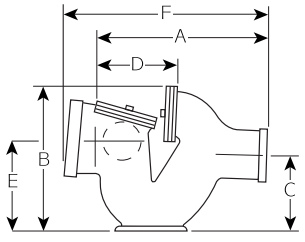
## Traps




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Intercepting trap – 477** | | | | | | |
| 191602 | 100 | 530 | 230 | 220 | 582 | 34.0 |
| 191603 | 150 | 660 | 300 | 290 | 740 | 66.0 |




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Intercepting trap – 479** | | | | | | |
| 191605 | 100 | 580 | 290 | 220 | 660 | 47.0 |




| Product code | Dia | A | B | C | D | E | F | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **Intercepting trap – 481** | | | | | | | | |
| 191607 | 100 | 530 | 240 | 230 | 240 | 235 | 660 | 44.0 |
| 191610 | 150 | 610 | 485 | 290 | 290 | 320 | 700 | 68.0 |

*100 and 150mm dia with 100 dia FAI.*
*Can be supplied with fresh air inlet LH or RH.*
*100 LH 191608 100 RH 191609 150 LH 191611 150 RH 191612.*

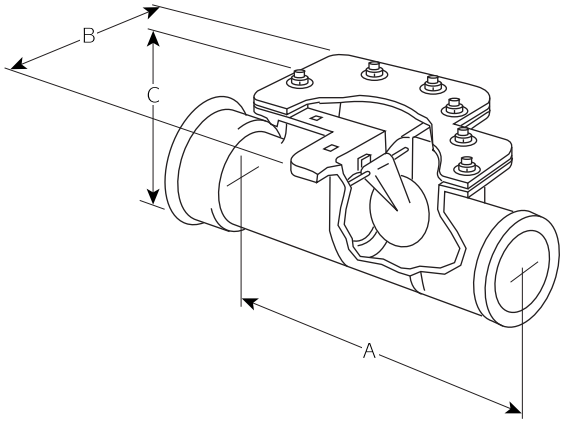
# Eureka anti-flooding trunk valves

Jones 'Eureka' anti-flooding trunk valves and interceptors for disconnecting chambers and tidal outfalls.

These valves consist of a cast iron body, stainless steel flap faced with rubber seal, separate cast iron valve seating, polystyrene float fixed to a brass pivot rod, and a bolted cover with rubber seal.

The valve and float are fixed to the same brass spindle in adjoining chambers separated by baffles which allow water to enter but excludes solids. Under normal circumstances the valve hangs clear of the flowing sewage, but when the flood water rises the float rises with it and closes the valve.

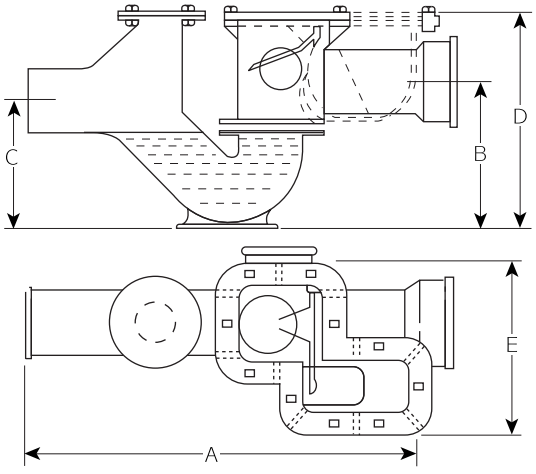
When flood water subsides the float falls, the valve is raised and the rush of pent up water cleans the valve.




Note: 1" BSP float vent is supplied plugged. Plug should be removed and a vent pipe carried upwards to such a height and so positioned as not to transmit foul air in such a manner as to become prejudicial to health or a nuisance. These valves are sold at customers' risk only without guarantee. They are checked before despatch and no liability can be accepted after installation. It is recommended that these valves are serviced before the start of each wet season or a least twice a year.

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Anti-flooding trunk valve 'Eureka' – 750** | | | | | |
| 191593 | 100 | 597 | 356 | 241 | 51.0 |
| †191594 | 225 | 889 | 610 | 406 | 120.0 |
| †191870 | 300 | 1035 | 748 | 540 | 350.0 |

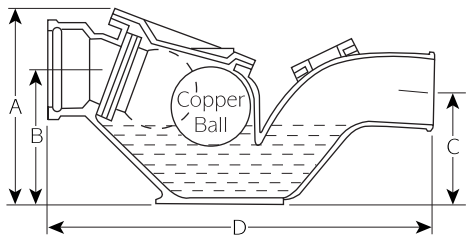
*150mm diameter (see page 27).*




| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Anti-flooding trunk valve 'Eureka' – 752** | | | | | | | |
| †191595 | 100 | 845 | 299 | 267 | 396 | 343 | 105.0 |
| †191596 | 150 | 978 | 355 | 305 | 546 | 406 | 145.0 |
| †191597 | 225 | 1372 | 559 | 432 | 800 | 584 | – |

Note: 1" BSP float vent is supplied plugged. Plug should be removed and a vent pipe carried upwards to such a height and so positioned as not to transmit foul air in such a manner as to become prejudicial to health or a nuisance. These valves are sold at customers' risk only without guarantee. They are checked before despatch and no liability can be accepted after installation. It is recommended that these valves are serviced before the start of each wet season or a least twice a year.

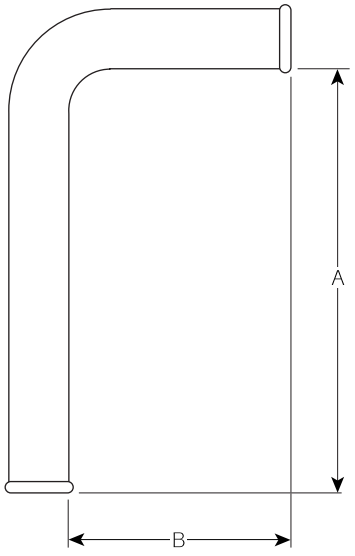
# Ball valve anti-flooding




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Anti-flooding ball valve – 755** | | | | | | |
| † 191598 | 100 | 350 | 240 | 185 | 660 | 53.5 |
| † 191599 | 150 | 460 | 315 | 260 | 820 | 98.9 |
| † 191600 | 225 | 616 | 438 | 383 | 1219 | – |

*Not recommended for use in foul drain systems.*
*These valves are sold at customers' risk only without guarantee. They are checked before despatch and no liability can be accepted after installation.*
*It is recommended that these valves are serviced before the start of each wet season or a least twice a year.*
*These valves should be set horizontally with the aid of a spirit level.*

# Petrol intercepting bends




| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **Petrol intercepting bends – 695** | | | | |
| 191588 | 100 | 380 | 760 | 29.5 |
| 191589 | 150 | 380 | 760 | 45.5 |

*Dimensions to BS 437.*

†*Made to order.*

# Design recommendations

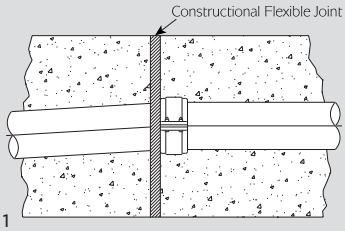


Fig. 1

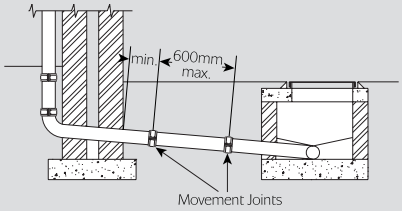
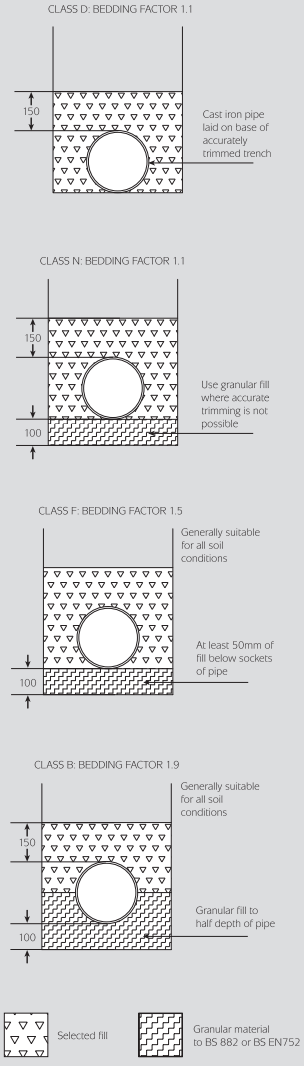


Fig. 2

## Backfilling for rigid pipes




### Trench preparation

Timesaver drain may be laid directly into a naturally trimmed trench allowing 50mm clearance at each joint between coupling and trench bottom. The trench bottom should be flat to give continuous support to the pipework.

If the subsoil can't be accurately trimmed with a spade, the trench should be excavated to a depth of 100mm below the pipe invert and a granular bed laid. This also should allow 50mm clearance at each joint between the coupling and the granular bed. Where Timesaver drain is to be set in concrete, the trench should be prepared as described above to allow a minimum of 100mm of concrete under the pipe.

The pipe should be supported on a compressible material (eg. expanded polystyrene), either side of each joint. The concrete should have a suitable flexible joint at intervals not greater than 5m in order to reduce the natural rigidity of the concrete. This should be made of a compressible material (eg. expanded polystyrene), which should be placed next to a pipe joint, and conform to the full cross section of the concrete (see Fig. 1).

Haunching and surround should not be carried out until the pipework has been tested and inspected.

### Differential movement

Timesaver couplings allow up to 5° deflection at each joint.

Pipelines leaving buildings, manholes or other structures which are likely to be subject to settlement, should have a minimum of two joints a maximum of 600mm apart, thereby allowing a short length of pipe to act as a 'rocker pipe'. The joint nearest the structure should be as close to it as possible and in areas where large settlement is expected, more than one 'rocker pipe' may be required (see Fig. 2).

### Minimum depth of pipework

Timesaver drain can be installed with a minimum cover of 75mm under building without further protection. Where Timesaver drain is installed under roads and yards, subject to normal usage, protection need only be considered if the cover is less than 300mm. However, in areas that are subject to special loadings or abuse, extra protection should be considered.

### Minium bedding – limits of cover

The choice of bedding and backfilling depends on the depth at which the pipes are to be laid and the size and strength of the pipes. Rigid pipes like cast iron are more robust than flexible plastics pipes and backfilling can therefore be simpler. The Building Regulations specify the limits of cover for rigid pipes as follows:

**Limits of cover for standard strength rigid pipes in any width of trench (as per BS EN 752)**

| Pipe size | Bedding class | Fields and gardens | | Light traffic roads | | Heavy traffic roads | |
|---|---|---|---|---|---|---|---|
| | | Min metres | Max metres | Min metres | Max metres | Min metres | Max metres |
| 100 | D or N | 0.4 | 4.2 | 0.7 | 4.1 | 0.7 | 3.7 |
| | F | 0.3 | 5.8 | 0.5 | 5.8 | 0.5 | 5.5 |
| | B | 0.3 | 7.4 | 0.4 | 7.4 | 0.4 | 7.2 |
| 150 | D or N | 0.6 | 2.7 | 1.1 | 2.5 | – | – |
| | F | 0.6 | 3.9 | 0.7 | 3.8 | 0.7 | 3.3 |
| | B | 0.6 | 5.0 | 0.6 | 5.0 | 0.6 | 4.6 |

### Backfill sequence

Trenches should be backfilled in stages, and at least 150mm of earth free from stones larger than 40mm, lumps of clay over 100mm and vegetable matter should cover the pipe before tamping down. Further 300mm thick layers of selected fill should be tamped down until the trench is full.

### Falls

Pipework gradients should be chosen to obtain a self-cleaning action under normal discharge conditions. For flows of less than 1 litre/sec a gradient of 1 in 40 for 100mm pipe and 1 in 60 for 150mm pipe, are usually sufficient and for practical purposes, the gradients should not be less than 1 in 80 for 100mm pipe and 1 in 150 for 150mm pipe.

# Design recommendations

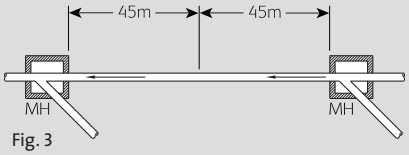


Fig. 3

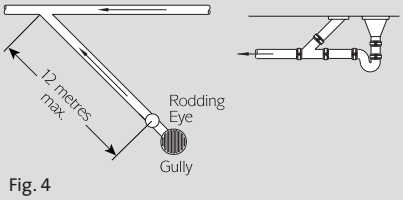


Fig. 4

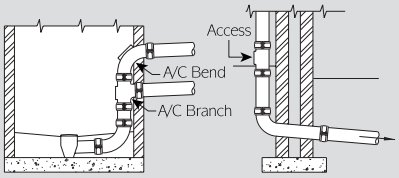


Fig. 6

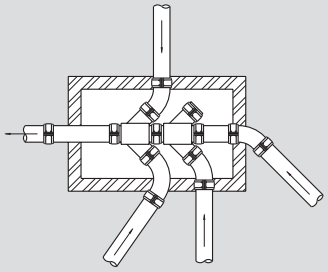


Fig. 8

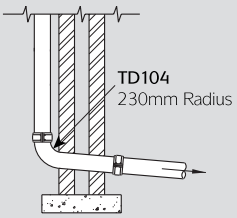


Fig. 9

### Access

Access is required on all pipelines to facilitate the rodding and clearing of debris and can be provided by manholes, chambers, access fitting or rodding eye – the latter allowing downstream access only.

Generally, no part of a drain should be further from a manhole than 45m and the distance between manholes should not exceed 90m (see Fig. 3).

Where a drain connects with another drain without the provision of an inspection chamber or manhole, access should be provided on the branch drain within 12m of the junction (see Fig. 4 and Fig. 5).

It is recommended that access to the pipework is installed each time the drain changes direction either horizontally or vertically by the inclusion of an access fitting (see Fig. 6 and Fig. 7).

### Inspection chambers

Inspection chamber branch arm entries are all at 45° to conform with BS 437 and BS EN 12056 Parts 2 and 3.

Where other angles of entry are necessary these can be achieved by the use of standard bends as shown above. The Timesaver joint having at 5° deflection capability enables other angles to be achieved, eg. 10° gap from 80° to 90° deflect each joint of 35° bend according to angle required. An 85° angle is illustrated (see Fig.10).

The diagram assumes that the branch drains have a fall of 1 in 40 or less. Falls steeper than this will alter the bend apparent angle in plan.

### Use of bends

Bends in drains should be kept to a minimum. Wherever possible bends should be at or near to manholes or in a position which will allow ease of rodding (see Fig. 8).

At the base of soil and rainwater stacks, it is recommended that long or large radius bends be used (see Fig. 9).

### Use of branches

Branches or junctions on drains should be, where possible, at access points, such as manholes, to facilitate rodding.

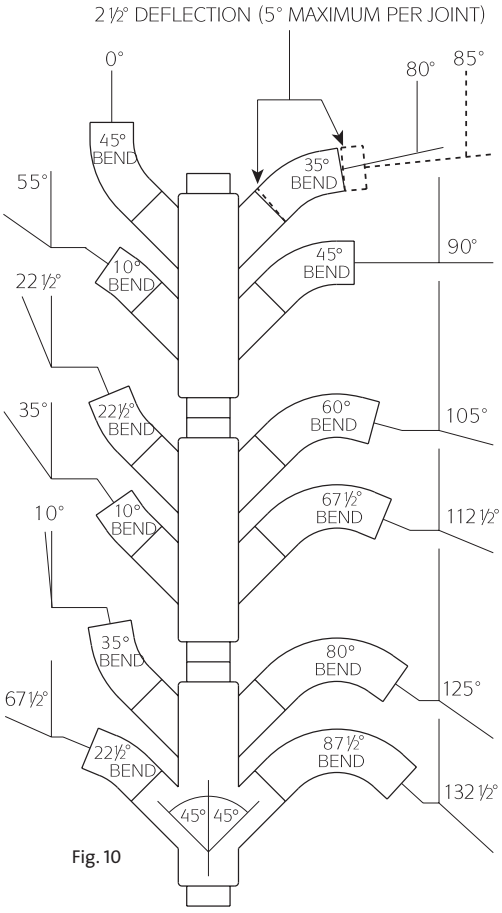


Fig. 10

# Design recommendations

TD777

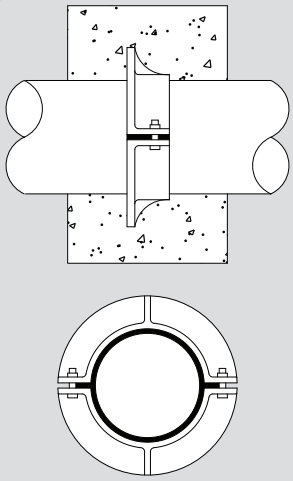


Fig. 11

### Gullies, floor drains and traps

A drainage gully is a fitting that enables wastewater to enter the drainage system without allowing smells or sewer gases to escape. A variety of designs have been developed to suit different situations, for example – back inlet gully, which is used to connect rainwater pipes and waste pipes from ground floor sinks.

### Ventilation of drains

It is important to allow a passage of air through the drainage system to enable any foul gases to escape. This is achieved by providing air inlets at the low point and vent pipes that terminate at high level, and also at the head of the drain. Convection currents cause a slow flow of air through the system. Also, if the air pressure in the drain was reduced, say by the pipes flowing full, the trap seals of gullies and WC's would be lost and the sewer gases would be able to enter the building.

### Puddle flanges

Where pipes pass through external walls, a puddle flange may be required to prevent water from entering where the pipe is below the natural ground water table, or methane gas from entering the building from made-up ground. Loose, two-piece flanges should be bedded onto 'Denso' tape and tightened into position (see Fig.11).

# Support recommended for suspended drainage

It is important that all suspended horizontal pipework is adequately supported by brackets and fixings of sufficient strength to support the pipes and their maximum contents.

The distance between pipe supports should not exceed 3m (BS EN 12056-2 Code of Practice for Sanitary Pipework'). However, as shown in Fig. 12, it is recommended that suspended BS 437 pipes should have two bracket supports per 3m length.

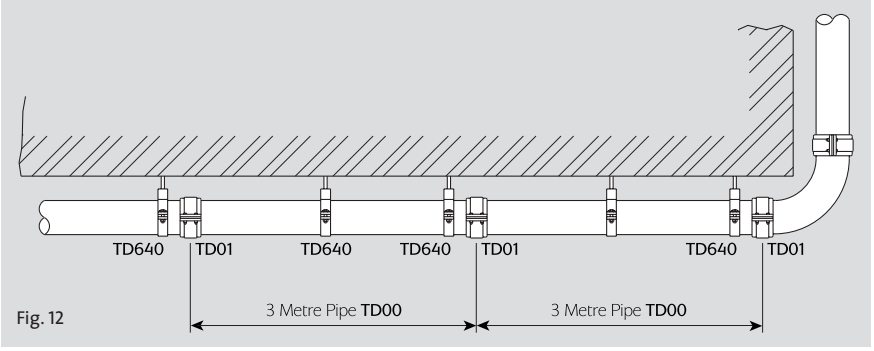
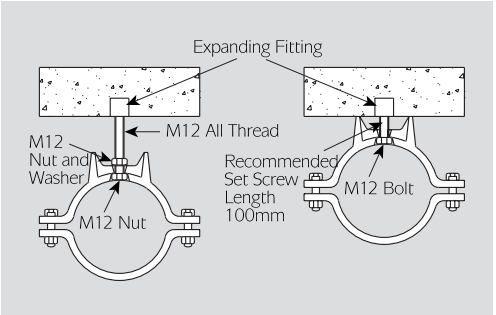



Fig. 12



# Connection to other systems

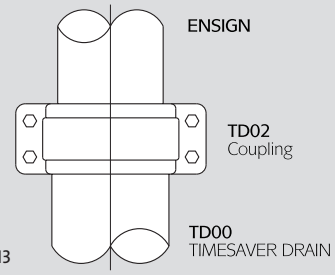


Fig. 13

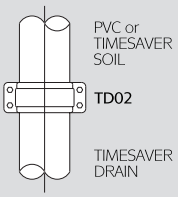


Fig. 14

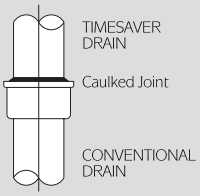


Fig. 15

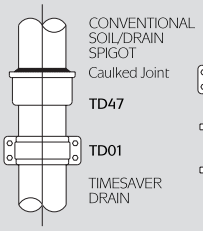


Fig. 16

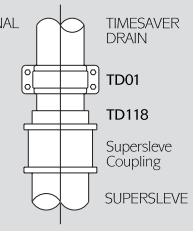


Fig. 17

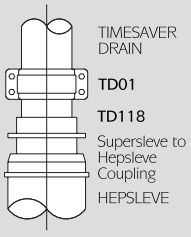


Fig. 18

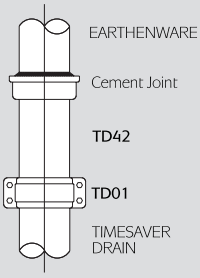


Fig. 19

**A. Timesaver drain dimensions**
Most materials can be connected to Timesaver drain by using a TD01 coupling if their dimensions conform to the following table:

| Timesaver drain nominal dia | Min o/dia | Max o/dia |
|---|---|---|
| 100 | 116 | 119 |
| 150 | 170 | 173 |
| 225 | 250 | 256 |

or by using a TD02 coupling if their dimensions conform to the following table:

| | Other material | |
|---|---|---|
| Timesaver drain nominal dia | Min o/dia | Max o/dia |
| 100 | 110 | 114 |
| 150 | 161 | 165 |

**B. Ensign**
Couple directly to Ensign using a TD02 transitional coupling (see Fig. 13). Four bolt, two piece coupling to BS 6087.

**C. Timesaver soil**
Timesaver soil can be connected directly to Timesaver drain using a TD02 coupling (see Fig. 14).

**D. Conventional drain/soil**
To connect Timesaver drain/soil into a conventional drain socket use a traditional caulked joint (see Fig. 15).

If connecting to a conventional drain/soil spigot use a TD47 with a caulked joint and a TD01 at the spigot of the TD47 (see Fig. 16).

**E. Hepworth clayware**
100 and 150 Supersleve can be connected to Timesaver drain by using a TD118 adaptor and a TD01 coupling (see Fig. 17).

100 and 150 Hepsleve can be connected to Timesaver Drain by using a TD118 adaptor and a TD01 coupling in conjunction with a Supersleve to Hepsleve transitional coupling manufactured by Hepworth (see Fig. 18).

**F. Earthenware**
Timesaver drain can be connected to an earthenware socket using a traditional cement joint.

If connecting to an earthenware spigot use a TD42 and a TD01 coupling with a traditional cement joint at the socket of the TD42 (see Fig. 19).

**Advice on cold caulking**
For products which require to be caulked ie socketed BS437 fittings or raising pieces we recommend the following:

Resin product code: W251A

Hardener product code: W252

Supplied by:
John Winter & Co. Ltd
Foundry & Dental Supplies
P.O. Box 21
Washer Lane Works
Halifax
HX2 7DP

Tel: 01422 363 213 Fax: 01422 330 493

# Quality control procedures and tests

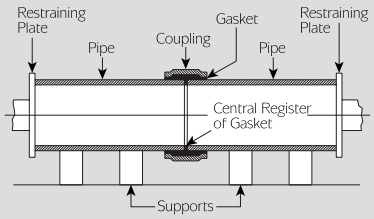


Fig. 20

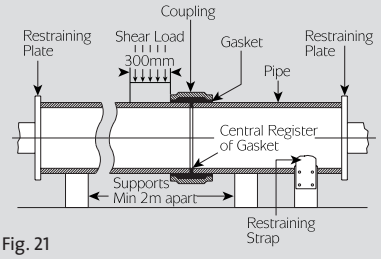


Fig. 21

It is recommended that these technical notes should be read in conjunction with the following British Standards:

1. BS EN 12056-2: Code of Practice for Sanitary Pipework (inside the building).
2. BS EN 12056-3: Code of Practice for Drainage of Roofs and Paved Areas (inside the building).
3. BS EN 752: Drains and Sewers Outside Buildings.
4. BS 8301: Code of Practice for Building Drainage (now obsolete).

All pipes, fittings and couplings are subjected to tests in accordance with the requirements of the relevant British Standard prior to despatch from works.

## Pipes and fittings

### A. Hydrostatic test

Pipes and fittings, after coating, conform to the hydrostatic pressure requirements of BS 437:

| | | |
|---|---|---|
| Pipes | 345kPa | (3.45 Bars) |
| Fittings | 170kPa | (1.70 Bars) |

The test pressure is applied internally and maintained for not less than 15 seconds and up to a maximum of one minute.

### B. Crushing test

Pipes and, where applicable, fittings conform to the BS 437 requirements of being capable of withstanding a test load of 150kN per metre run.

## Couplings

### A. Deflection test procedure

Fully engage pipe ends into joint assembly. Align them axially with one pipe restrained from movement and the other pipe completely free to move. Separate the pipes axially by 5mm on either side of central register.

Angularly deflect one pipe with respect to the other, to an angle of 3° with the fulcrum on the centre line of the pipes within the joint. Apply and maintain a hydrostatic pressure of 1 bar for period of five minutes without leakage.

### B. Drain testing

It is normal practice to carry out two soundness tests on drainage systems. The first, before back filling the trench, followed by a second test after back filling which may be required to be witnessed by the local building control officer.

**Methods of testing –** two methods of soundness testing are possible: a water test or an air test.

**Water test –** to carry out a water test the length of drain to be tested is blocked off at its lower end by means of a drain stopper. Another stopper is fitted at the top of the run of drain with an up-stand pipe of 1.5m height attached. The drain is then filled with water and the joints can then be inspected for leaks. It is recommended that the total head of water should not exceed 4m so it may be necessary to test the drain in sections.

**Air test –** the air test is quicker to carry out and more searching than the water test, and should be used in preference. To carry out the test, drain stoppers are filled to any open ends, and gullies have their traps filled with water. A length of hose is then passed through a trap and air is gently blown into the drain until a pressure of 100mm is indicated on a manometer. Provided a pressure of a least 75mm remains after 5 minutes of the test, the drain can be considered sound. Where traps or gullies are connected the drain should withstand a pressure of 50mm water gauge and this should not fall by more than 12.5mm in a 5-minute period.

### C. Straight draw test procedure

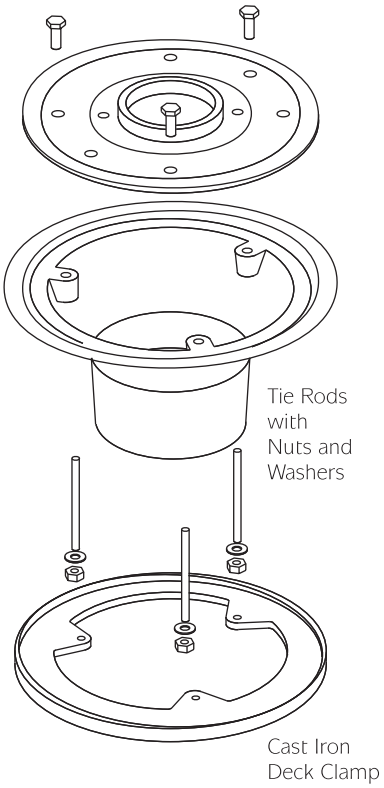
Fully engage the pipes in the joint assembly, as Fig. 20. Align them axially. Separate the pipes axially by 5mm on either side of the central register. Prevent further longitudinal movement. Apply and maintain a hydrostatic pressure of 1 bar for a period of five minutes without leakage.

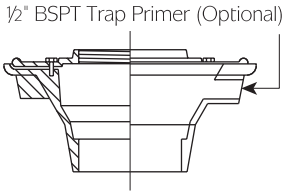
### D. Shear loading test procedure

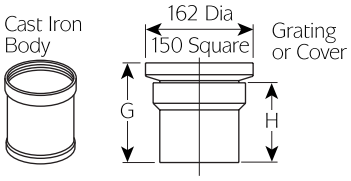
Fully engage the pipes in the joint assembly and align them axially on supporting structure, as Fig. 21. Separate the pipes axially by 5mm on either side of central register. Prevent further longitudinal movement. Apply a shear load of 0.025kN x nominal pipe diameter in mm, inclusive of the mass of the pipe and contents, uniformly over a length of 300mm adjacent to the coupling, as Fig. 21.

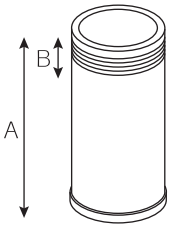
Apply and maintain a hydrostatic pressure of 1 bar for a period of five minutes without leakage.

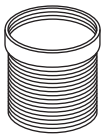
# Floor drains adjustable



**Adjustable height for use with waterproof membrane**

**Body options**

| Product code | Part no. | Nominal. bore | Nominal wt/kg |
|---|---|---|---|
| **TD810 floor drain body with adjustable clamp plate** | | | |
| 191613 | TD810 | 100 | 8.2 |

| Product code | Part no. | Nominal. bore | Nominal wt/kg |
|---|---|---|---|
| **TD813 floor drain body with adjustable clamp plate D/T for deck clamp (TD811)** | | | |
| 191616 | TD813 | 100 | 8.2 |

| Product code | Part no. | Nominal. bore | Nominal wt/kg |
|---|---|---|---|
| **TD811 cast iron deck clamp complete with nuts, washers and bolts. Used with TD813** | | | |
| 191614 | TD811 | – | – |

*Coating: floor drains are coated in a black water based primer.*

*Connections to pipework: connection achieved from the extension piece TD812, transitional coupling. To connect to Ensign drain use TD02.*

*Suspended soil pipework: to connect to Ensign and Timesaver BS 416 use TD02 coupling.*

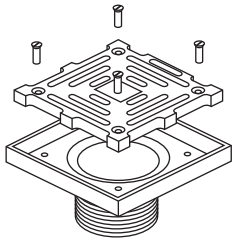
**Alternative for use with non-membrane floors**

| Product code | Dia | G min | G max | H | Nominal wt/kg |
|---|---|---|---|---|---|
| **TD824 Cast Iron Body Threaded for use with Grating TD826 – TD829** | | | | | |
| 191618 | 100 | 150 | 175 | 120 | 2.6 |

| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **TD812 Screwed Outlet Extension Pieces** | | | | |
| 191615 | 100 | 215 | 35 | 4.2 |

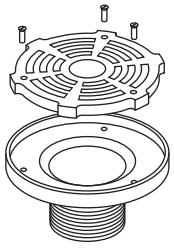
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **TD822 Cast Iron Screw Inlet Extension Piece for use with Grating TD826 – TD829** | | |
| 191617 | 100 | 2.6 |

# Floor drains adjustable

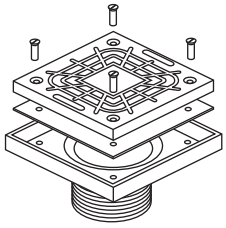


**Gratings for use with TD810/TD813/TD822/TD824**

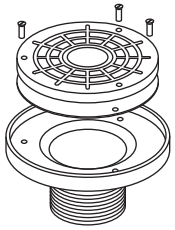
| Product code | Size | Nominal wt/kg |
|---|---|---|
| **TD826 nickel bronze grating and frame** | | |
| 191194 | 150 x 150 | 2.2 |



| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **TD827 nickel bronze circular grating and frame** | | |
| 191195 | 162 | 2.0 |

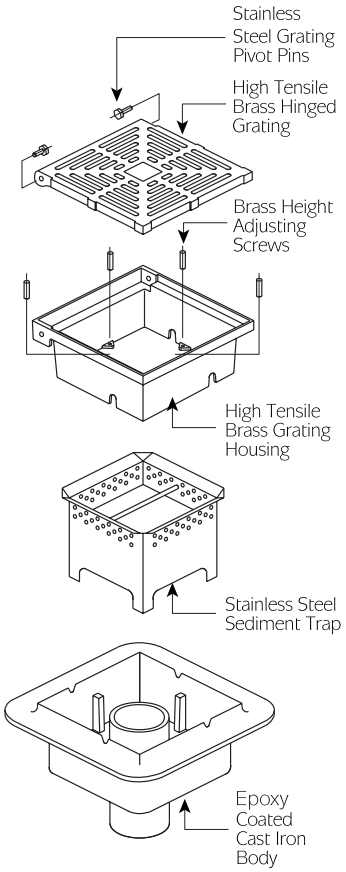


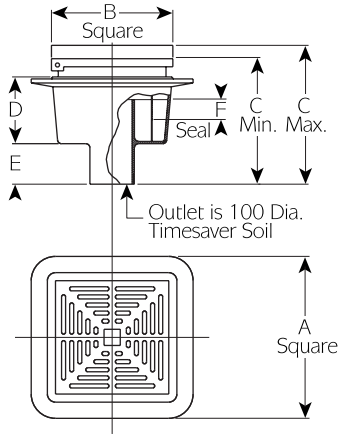
| Product code | Size | Nominal wt/kg |
|---|---|---|
| **TD828 nickel bronze square inspection cover (sealed)** | | |
| 191197 | 150 x 150 | 2.5 |

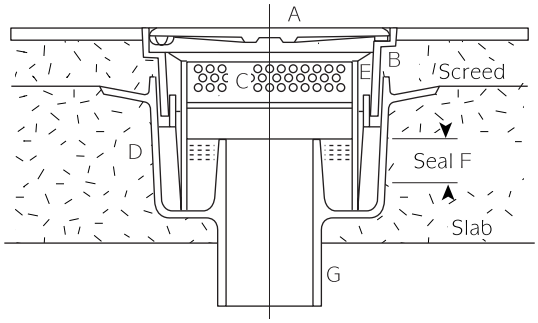


| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **TD829 nickel bronze circular inspection cover (sealed)** | | |
| 191196 | 162 | 2.3 |

# Floor drains technical




**Adjustable height for use with non-membrane floors**

**TD950 square trapped floor drain**

This trapped floor drain has been found useful in brewery installations.

| Weights | kg |
|---|---|
| Body | 20.6 |
| Sediment trap | 2.8 |
| Grating housing | 5.3 |
| Grating | 5.2 |

| Product code | Dia | A | B | C min | C max | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 191396 | 100 | 400 | 300 | 310 | 335 | 160 | 100 | 50 |

Outlet is 100 Timesaver soil.
To connect to Ensign use standard GT01 coupling.

**Adjustable height for use with non-membrane floors**

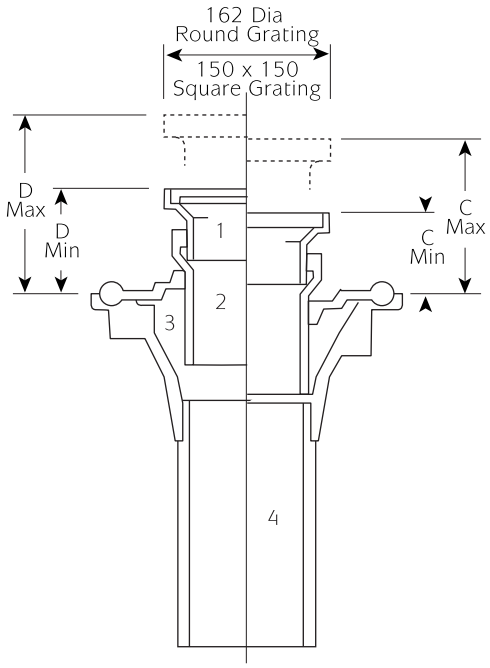
**TD950 typical installation**

A. Hinged grating manufactured in high tensile brass to BS 1400 HTBI.
B. Grating housing manufacture in high tensile brass to BS 1400 HTBI.
C. Sediment trap manufactured in stainless steel.
D. Drain body manufactured in epoxy coated cast iron to BS EN1561 grade EN-JL1020.
E. Height adjusting and levelling screws (4 No.) in brass.
F. 50 seal height.
G. Drain body outlet to suit 100 Ensign/Timesaver 416 soil.
To connect to Ensign use GT01 coupling.
To connect to Timesaver 416 soil use GT01 coupling.
To connect to Timesaver 437 drain use TD02 coupling.
This trapped floor drain has been found useful in brewery installations.

**Free areas of floor drain grates in sq. mm.**

TD950 floor drain
Square grate 11250mm²

# Floor drains technical

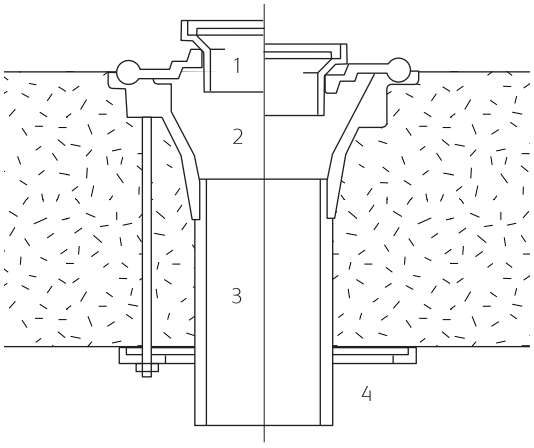



**Inspection covers and gratings with grating housing extension**

| C min | C max | D min | D max |
|---|---|---|---|
| 65 | 130 | 90 | 155 |

The difference between C and D dimensions is obtained by reversing the clamp ring. Round grating and frame is 162 diameter square grating and frame is 150 square.

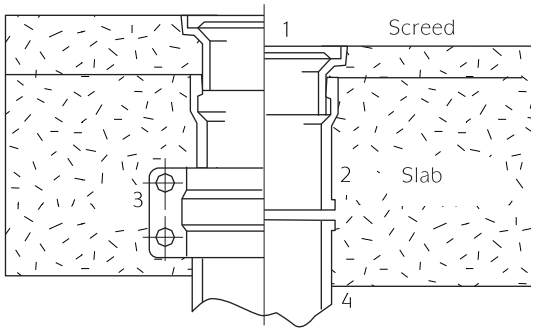
1. Grating TD826/TD829
2. TD822 extension piece
3. TD810 floor drain
4. TD812 screwed extension piece.




**Adjustable height for use with waterproof membrane**

Deck clamp comes supplied with M10 brass allthread x 150 long, nuts and washers.

1. Grating TD826/TD829
2. TD813
3. TD812 screwed extension piece
4. TD811 deck clamp.




**Adjustable height for use with non-membrane floors**

**TD824 typical Installation**

1. Grating or cover and frame in nickel bronze complete with stainless steel set screws.
2. Drain body manufactured in cast iron to BS EN1561 grade EN-JL1020.
3. TD02 transitional coupler if connecting to Ensign soil and drain/Timesaver 416 fittings or TD01 coupler if connecting to Timesaver 437 drain pipe or fittings.
4. Ensign pipe or fitting or Timesaver 416/437 pipe or fitting.

**Free areas of floor drain grates in sq. mm**

TD810 and TD824 floor drains
Round grate 5900mm² square grate 7050mm².



# Section 2

## Soil Pipes and Fittings

# Jointing method

A. Pipe or fitting
B. Pipe or fitting
C. Synthetic rubber gasket
D. Coupling
E. Set screws and nuts

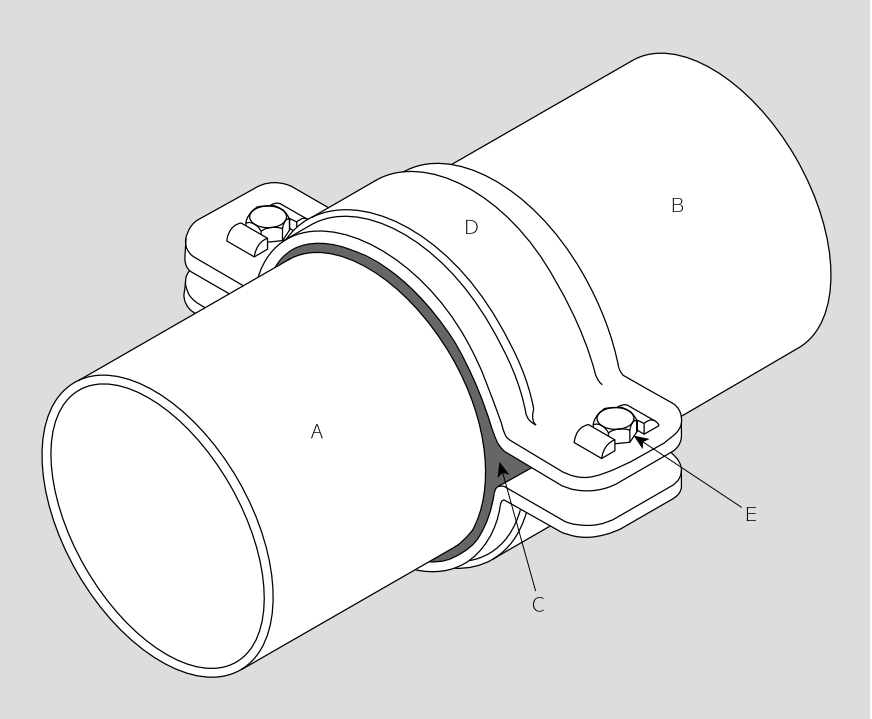
50, 75 and 100 diameter couplings have two set screws and nuts. 150 couplings have four set screws and nuts.

**Couplings are supplied ready assembled**

1. Slacken bolts to fullest extent.
2. Place synthetic rubber gasket on end of pipe or fitting A, and slide loosely assembled coupling over pipe B.
3. Fit pipe B into gasket ensuring both A and B are butting against the internal central register.
4. Slide coupling over gasket ensuring that it is centrally located and tighten bolts alternately so that the gap between coupler halves is even on both sides. When hand tight check alignment of assembly.
5. Complete tightening operation by use of a Ratchet Spanner – EF100 with Deep Socket – EF101 until a suitable resistance is achieved (min 20Nm).

Joints may be deflected up to 5° without affecting the sealing properties.
The Timesaver couplings meet the performance requirements of BS 6087:1990 and incorporate synthetic rubber gaskets conforming to BS EN 681-1/ISO 4633 and set screws and nuts. A Ratchet Spanner – EF100 is the recommended tool required to tighten the set screws which give a 'for all time seal' water and airtight installation.

**Saint-Gobain PAM does not accept liability for any complaints on installations where components not manufactured by Saint-Gobain PAM are included.**



# Electrical continuity

Designed for use in situations where equipotential bonding (earthing) has been specified, the Timesaver electrical continuity clips are available for use with Timesaver soil and Timesaver drain systems.

The Timesaver electrical continuity clip fits a standard Timesaver coupling. Only one electrical continuity clip is required per coupling. Note: The electrical continuity test should be carried out in accordance with BS 6087.

**Continuity clips**
These are supplied separately to the coupling in standard quantity bags of 25 number.

| Coupling | Product code | Ref no. |
|---|---|---|
| To suit 50, 75, 100, GT01 | 191189 | GT965 |
| To suit 150 GT01, 100, 150TD01 | 191190 | GT96L |
| To suit 100 TD02 | 191191 | GT96T |
| To suit 150 TD02 | 191192 | GT96T6 |
| To suit 225 TD01 | 191193 | GT968 |

**Assembly instructions:**

1. Slacken bolts to fullest extent.
2. Place synthetic rubber gasket C on pipe or fitting A and slide loosely assembled coupling over pipe B.
3. Fit pipe B into gasket ensuring both A and B are butting up to central register.
4. Fit continuity clip D centrally by peeling back one edge of the gasket and slipping it into the Continuity clip.
5. Repeat for other edge of gasket, so the gasket is held within the continuity clip D.
6. Position clip at 90° to gasket ears and in the direction of the pipe run.
7. Slide coupling over gasket and tighten bolts alternately so that the gap is even on both sides. When hand tight check alignment.
8. Complete tightening operation by use of a ratchet spanner – EF100 and deep socket – EF101 (min 20Nm).

Note: Use one continuity clip per coupling joint. Continuity clip must not be reused after tightening.

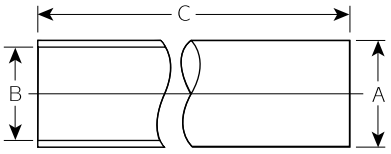
The installation should be tested to BS EN12056 for a soil installation or to BS EN752 for a drain installation and to IEE Regulations on equipotential bonding (earthing).

Provided that the Timesaver electrical continuity coupling is assembled and installed as recommended in our instructions, and the pipework is bonded to the main electrical earth or similar earth, it is considered that the Timesaver electrical continuity coupling will satisfy the IEE Regulations.

It is recommended that the installation is regularly checked for equipotential bonding (earthing) in case of accidental damage, unauthorised pipework modifications, etc.

If a Timesaver electrical continuity installation is to be modified for any reason Timesaver electrical continuity couplings must be used and the installation re-tested for equipotential bonding (earthing).

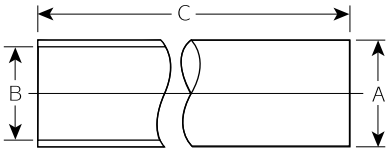
# Pipes double spigot




| Product code | Nom dia | A Max o/dia | B Min i/dia | Min section | C Metre lengths available | Wt per mt kg |
|---|---|---|---|---|---|---|
| **Pipe – GT00** | | | | | | |
| 156366 | 50 | 63 | 50 | 4 | 3 | 6.4 |
| 156456 | 75 | 89 | 75 | 4 | 3 | 8.3 |
| 156567 | 100 | 112 | 101 | 4 | 3 | 9.3 |
| 156831 | 150 | 165 | 152 | 4 | 3 | 15.7 |

*Pipes are internally lined with a two part epoxy paint (ochre colour). Externally coated with black acrylic paint and stencilled every metre with silver marking.*

# Pipes double spigot – Heritage

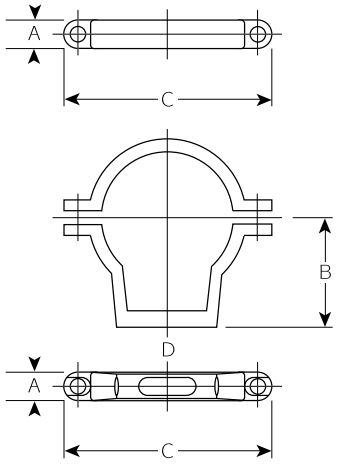



NEW

| Product code | Nom dia | A Max o/dia | B Min i/dia | Min section | C Metre lengths available | Wt per mt kg |
|---|---|---|---|---|---|---|
| **Pipe – GT00 – Timesaver Heritage** | | | | | | |
| 192423 | 100 | 112 | 101 | 4 | 1.8 | 9.3 |
| 206854 | 75 | 89 | 75 | 4 | 1.8 | 8.3 |

*1.8 (6ft) pipe coated internally/externally in a black water based primer, for use with Timesaver Heritage couplings.*

# Brackets



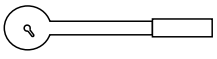

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Ductile iron bracket • Elongated slot at fixing point (D) to ease fixing – GT48** | | | | | |
| 191720 | 50 | 27 | 64 | 110 | 0.3 |
| 191721 | 75 | 27 | 75 | 140 | 0.5 |
| 191722 | 100 | 27 | 90 | 166 | 0.6 |
| 191723 | 150 | 30 | 115 | 214 | 0.8 |

*50-100 brackets suit M10 fixing.*
*150 bracket suit M12 fixing.*

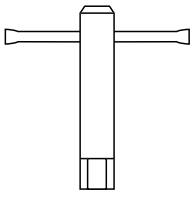
*Can be fitted with a new acoustic dampener for exceptional sound deadening performance (see page 59).*
*Contact technical department 01952 262529 for information.*

# Tools

EF100



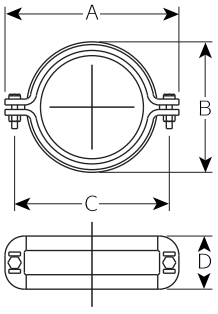
EF098



**Ratchet spanner – EF100: product code 191201**
A ratchet spanner is the recommended tool required to tighten the set screws, used in conjunction with a deep socket – EF101: product code 191202.

**'T' box spanner – EF098: product code 191200**
13mm A/F, dual purpose, for use with Timesaver and Ensign systems.

# Couplings

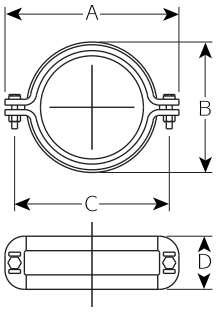



**Standard**

Ductile iron coupling with synthetic rubber gasket for jointing Timesaver soil to Timesaver soil (black gasket).

| Product code | Dia | A | B | C | D | *E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Two-piece ductile iron coupling – GT01** | | | | | | | |
| 191691 | 50 | 126 | 85 | 105 | 55 | 5 | 0.8 |
| 191692 | 75 | 158 | 110 | 130 | 55 | 5 | 1.0 |
| 191693 | 100 | 185 | 135 | 160 | 55 | 5 | 1.4 |
| 191694 | 150 | 250 | 190 | 220 | 75 | 5 | 2.8 |

*Two set screws are supplied on 50, 75, 100 couplings.*
*Four set screws are supplied on 150 couplings.*
*Electrical continuity clips are available supplied separately in standard quantity bags (see ref table page 43).*




**Transitional**

Ductile iron coupling with synthetic rubber gasket for jointing Timesaver soil to conventional soil (black gasket with identity marking).

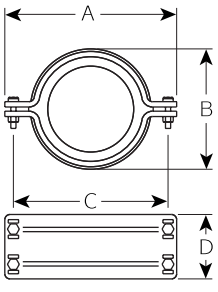
| Product code | Dia | A | B | C | D | *E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Two-piece ductile iron coupling – GT12** | | | | | | | |
| 191695 | 65-75 | 158 | 110 | 130 | 55 | 5 | 1.0 |
| 191429 | †70-75 | 158 | 110 | 130 | 55 | 5 | 1.0 |
| 191696 | 90-100 | 185 | 135 | 160 | 55 | 5 | 1.4 |

*Two set screws are supplied on GT12 couplings.*
*Designed for connecting:*
*65 (2½") conventional soil to 75 Timesaver soil.*
*90 (3½") conventional soil to 100 Timesaver soil.*
*†Connects 75mm Timesaver soil with 70mm Ensign.*
**Minimum allowance (E) to accommodate gasket register (for guidance only).*

**Allowable pipe diameters when using the GT12 coupling**

| Coupling | Conventional pipe dia. | | Timesaver pipe dia. | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| 65-75 | 72 | 76 | 85 | 89 |
| 90-100 | 97 | 101 | 110 | 114 |

*For connection to other materials see page 60.*



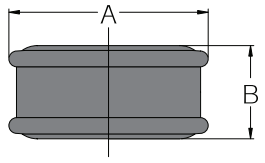

**Transitional**

Ductile iron coupling with stainless steel nuts and set screws and synthetic rubber gasket for jointing Timesaver drain to Timesaver soil (black gasket with identity marking).

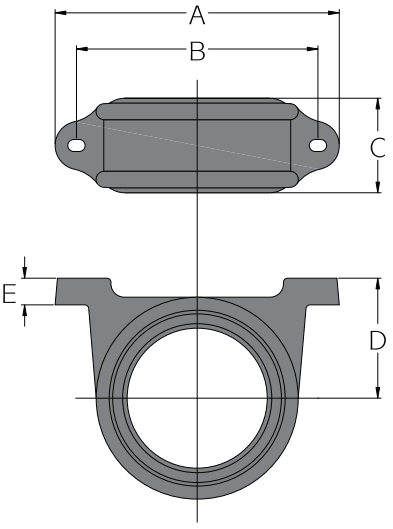
| Product code | Dia | A | B | C | D | *E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Two-piece ductile iron coupling – TD02** | | | | | | | |
| 191297 | 100 | 203 | 140 | 180 | 75 | 5 | 2.8 |
| 191298 | 150 | 252 | 195 | 230 | 75 | 5 | 3.6 |

*Four set screws are supplied on TD02 couplings.*
*Electrical continuity clips are available supplied separately in standard quantity bags (see ref table page 43).*
**Minimum allowance (E) to accommodate gasket register (for guidance only).*

# Heritage couplings




| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **Joint • Plain no ears – GT05P** | | | | |
| 192418 | 50 | 99 | 73 | 0.9 |
| 206855 | 75 | 128 | 73 | 1.4 |
| 192421 | 100 | 152 | 73 | 1.8 |




| Product code | CAD Ref | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|---|
| **Joint • With fixing ears – GT05E** | | | | | | | | |
| 192417 | | 50 | 146 | 114 | 73 | 62 | 20 | 1.4 |
| 206856 | | 75 | 178 | 146 | 73 | 76 | 20 | 2.0 |
| 192420 | | 100 | 213 | 181 | 73 | 90 | 20 | 2.6 |

| Product code | Dia | A | B | C | D | E | Nominal wt/kg |
|---|---|---|---|---|---|---|---|
| **Joint • Slip – GT05S with reduced central register** | | | | | | | |
| 192419 | 50 | 146 | 114 | 73 | 62 | 20 | 1.4 |
| 206836 | 75 | 178 | 146 | 73 | 76 | 20 | 2.0 |
| 192422 | 100 | 213 | 181 | 73 | 90 | 20 | 2.6 |

*To connect Timesaver Heritage couplings – 100mm diameter to 90mm traditional soil utilise reducing gasket: product code 156132 (see page 62, Fig. 39).*

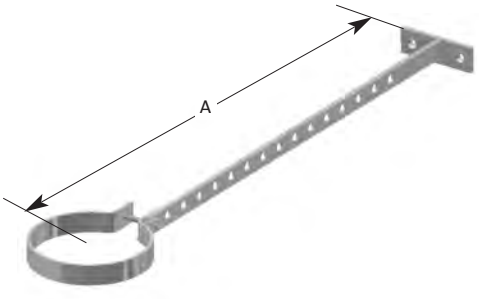
Reducing Gasket

| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Cast iron wall spacer** | | |
| 192424 | 50 | 0.2 |
| 206838 | 75 | 0.2 |
| 192425 | 100 | 0.3 |

*To suit eared PFJ GT05E.*

| Product code | Dia | Nominal. wt/kg |
|---|---|---|
| **Mild steel restraining bracket – EF053** | | |
| 192333 | 100 | 0.5 |

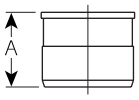
*To suit 100mm Timesaver Heritage* coupling with ears GT05E.




| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Mild steel restraining bracket – EF053A** | | | |
| 192363 | 100 | 450 | 0.5 |

*To suit 100mm diameter Timesaver Heritage pipework (see page 63 for typical installation).*

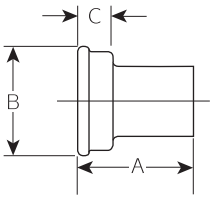
# Pipes transitional




| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Adaptor from Timesaver drain to supersleve – TD118** | | | |
| 191350 | 100 | 100 | 2.2 |
| 191351 | 150 | 125 | 5.1 |

*Use in conjunction with TD02 connect to Timesaver soil to supersleve.*

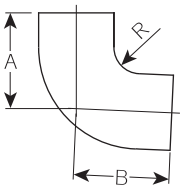
# Connectors wc



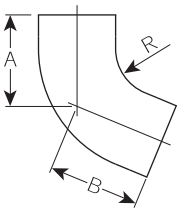

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Transitional EF059** | | | | | |
| 156650 | 100 | 155 | 176 | 80 | 2.9 |

*To connect, earthware, WC, stoneware, traditional, soil/drain etc.*
*Note: Ensign product red epoxy coated.*

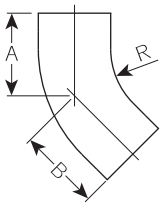
# Bends short radius



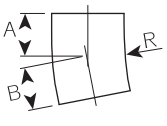

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Short radius – GT02** | | | | | |
| 191620 | 50 | 115 | 115 | 40 | 1.4 |
| 191622 | 75 | 135 | 135 | 40 | 2.9 |
| 191631 | 100 | 145 | 145 | 40 | 2.3 |
| 191634 | 150 | 145 | 145 | 15 | 3.9 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **67½° Bend • Short radius – GT02** | | | | | |
| 191625 | 100 | 135 | 135 | 70 | 4.0 |

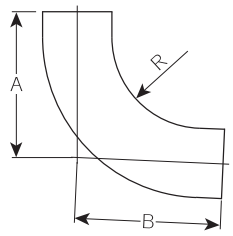



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend • Short radius – GT02** | | | | | |
| 191619 | 50 | 50 | 50 | 15 | 0.6 |
| 191621 | 75 | 115 | 115 | 70 | 2.3 |
| 191626 | 100 | 135 | 135 | 150 | 3.5 |
| 191632 | 150 | 90 | 90 | 15 | 3.0 |

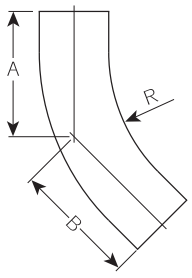



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **11° Bend • Short radius – GT02** | | | | | |
| 191628 | 100 | 35 | 55 | 30 | 1.6 |

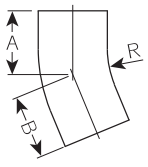
# Bends long radius



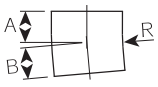

| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend • Long radius – GT02L** | | | | | |
| 191623 | 75 | 230 | 230 | 150 | 4.5 |
| 191630 | 100 | 269 | 269 | 180 | 4.3 |
| 191635 | 150 | 274 | 274 | 150 | 10.1 |




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend • Long radius – GT02L** | | | | | |
| 191627 | 100 | 205 | 205 | 275 | 6.1 |

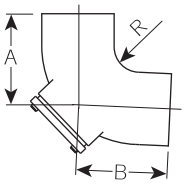



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **22½° Bend • Long radius – GT02L** | | | | | |
| 191624 | 100 | 90 | 90 | 180 | 1.7 |
| 191633 | 150 | 140 | 140 | 150 | 4.8 |

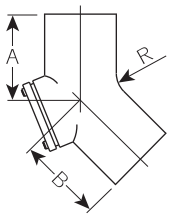



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **5° Bend • Long radius – GT02L** | | | | | |
| 191629 | 100 | 50 | 50 | 230 | 1.5 |

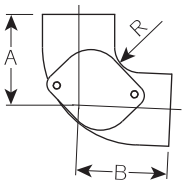
# Bends short radius with oval access doors




| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with access rear • Short radius – GT03** | | | | | |
| 191636 | 50 | 115 | 115 | 40 | 1.9 |
| 191638 | 75 | 135 | 135 | 40 | 3.6 |
| 191642 | 100 | 145 | 145 | 40 | 3.3 |
| 191644 | 150 | 145 | 145 | 15 | 6.1 |

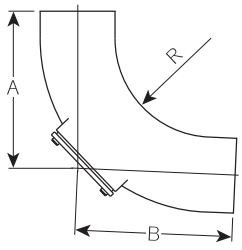



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Bend with access rear • Short radius – GT03** | | | | | |
| 191637 | 75 | 115 | 115 | 70 | 3.5 |
| 191640 | 100 | 130 | 130 | 120 | 5.0 |
| 191643 | 150 | 150 | 150 | 120 | 7.4 |

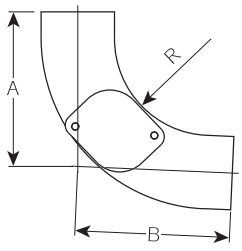



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with access side • Short radius – GT04** | | | | | |
| 191646 | 100 | 145 | 145 | 40 | 4.8 |

# Bends medium and long radius with oval access doors

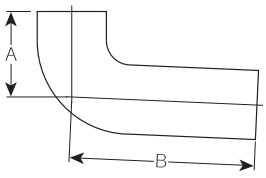



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with access rear • Long and medium radius • GT03L** | | | | | |
| 191639 | 75 | 230 | 230 | 150 | 5.3 |
| 191641 | 100 | 269 | 269 | 180 | 7.4 |
| 191645 | 150 | 274 | 274 | 150 | 11.7 |

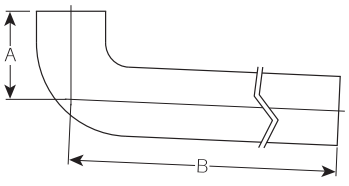



| Product code | Dia | A | B | R | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Bend with access side • Long radius – GT04L** | | | | | |
| 191647 | 100 | 250 | 250 | 180 | 7.4 |

# Bends long tail

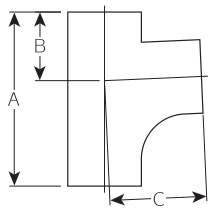



| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **87½° Bend • Long tail – GT43** | | | | |
| 191688 | 100 | 110 | 250 | 4.6 |

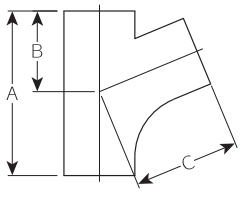



| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **87½° Bend • 815 long tail – GT55** | | | | |
| 191689 | 100 | 165 | 815 | 13.9 |

# Branches

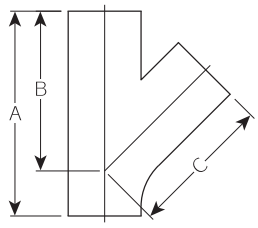



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch – GT06** | | | | | |
| 191649 | 50 x 50 | 145 | 66 | 80 | 1.0 |
| 191651 | 75 x 50 | 205 | 75 | 125 | 2.6 |
| 191653 | 75 x 75 | 245 | 85 | 145 | 3.2 |
| 191655 | 100 x 50 | 204 | 90 | 120 | 2.4 |
| 191657 | 100 x 75 | 245 | 90 | 145 | 4.1 |
| 191660 | 100 x 100 | 270 | 102 | 150 | 3.5 |
| 191662 | 150 x 100 | 300 | 117 | 202 | 7.6 |
| 191664 | 150 x 150 | 375 | 145 | 215 | 10.7 |



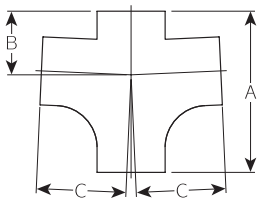

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **67½° Branch – GT06** | | | | | |
| 191658 | 100 x 100 | 265 | 130 | 170 | 5.0 |

# Branches

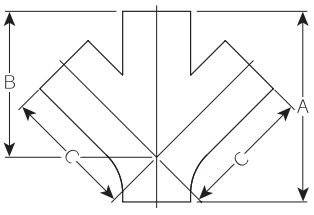



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Branch – GT06** | | | | | |
| 191648 | 50 x 50 | 185 | 135 | 135 | 1.4 |
| 191650 | 75 x 50 | 250 | 190 | 170 | 3.5 |
| 191652 | 75 x 75 | 285 | 220 | 185 | 4.5 |
| 191654 | 100 x 50 | 200 | 165 | 165 | 2.4 |
| 191656 | 100 x 75 | 290 | 225 | 210 | 4.9 |
| 191659 | 100 x 100 | 275 | 205 | 205 | 3.8 |
| 191661 | 150 x 100 | 295 | 240 | 240 | 6.1 |
| 191663 | 150 x 150 | 355 | 265 | 265 | 9.0 |

# Branches double

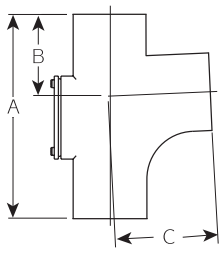



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Double branch – GT10** | | | | | |
| 191681 | 75 x 75 | 245 | 85 | 145 | 4.7 |
| 191683 | 100 x 100 | 270 | 102 | 150 | 4.2 |
| 191684 | 150 x 100 | 300 | 115 | 200 | 10.9 |

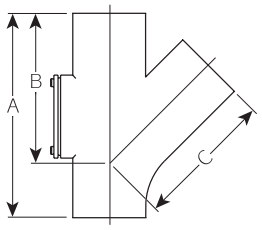



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Double branch – GT10** | | | | | |
| 191682 | 100 x 100 | 260 | 190 | 190 | 4.0 |

# Branches with access doors

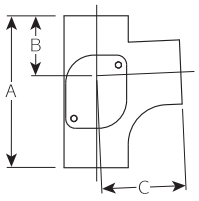



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch with access rear – GT07** | | | | | |
| 191665 | 50 x 50 | 195 | 75 | 110 | 2.4 |
| 191666 | 75 x 50 | 205 | 75 | 125 | 3.7 |
| 191668 | 75 x 75 | 245 | 85 | 145 | 4.2 |
| 191670 | 100 x 50 | 204 | 90 | 120 | 3.0 |
| 191672 | 100 x 75 | 245 | 90 | 145 | 5.3 |
| 191674 | 100 x 100 | 270 | 102 | 150 | 4.3 |
| 191676 | 150 x 100 | 300 | 117 | 202 | 10.4 |
| 191678 | 150 x 150 | 400 | 140 | 260 | 13.9 |

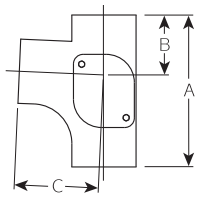



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **45° Branch with access rear – GT07** | | | | | |
| 191673 | 100 x 100 | 320 | 245 | 220 | 7.6 |
| 191675 | 150 x 100 | 370 | 305 | 255 | 10.8 |

# Branches with oval access doors

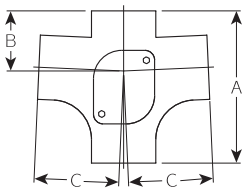



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch with access right – GT08** | | | | | |
| 191679 | 100 x 100 | 270 | 100 | 150 | 6.6 |



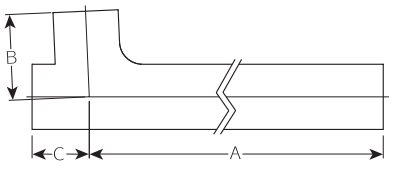

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch with access left – GT09** | | | | | |
| 191680 | 100 x 100 | 270 | 100 | 150 | 6.6 |

# Branches double with oval access doors



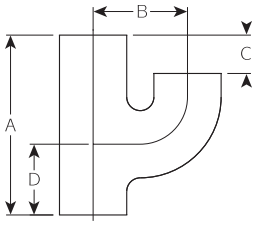

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Double branch with access door – GT11** | | | | | |
| 191685 | 100 x 100 | 265 | 109 | 150 | 7.0 |

# Branches 915 long



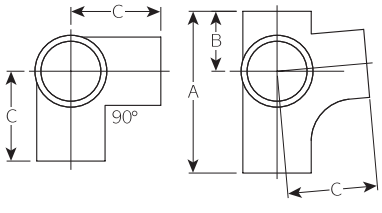

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch • 915 long tail – GT56** | | | | | |
| 191690 | 100 | 815 | 165 | 100 | 15.0 |

# Branches parallel



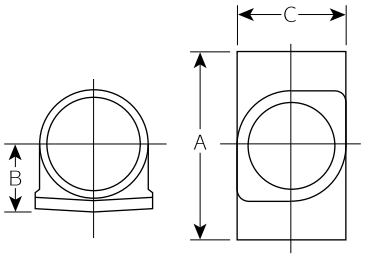

| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Branch • Parallel – GT32** | | | | | | |
| 191686 | 100 x 100 | 305 | 160 | 65 | 125 | 7.4 |

# Branches corner

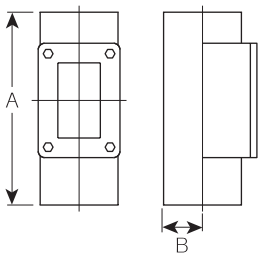



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **87½° Branch • Corner – GT35** | | | | | |
| 191687 | 100 x 100 | 270 | 100 | 150 | 6.2 |

# Pipes access

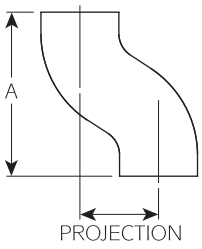



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Pipe with oval access door – GT14** | | | | | |
| 191697 | 75 | 280 | 100 | 90 | 4.1 |
| 191698 | 100 | 250 | 80 | 116 | 3.1 |
| 191699 | 150 | 280 | 110 | 170 | 6.2 |



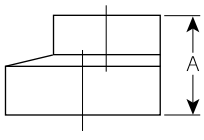

| Product code | Dia | A | B | Nominal wt/kg |
|---|---|---|---|---|
| **Pipe with rectangular access door – GT15** | | | | |
| 191700 | 100 | 320 | 80 | 6.7 |
| 191701 | 150 | 395 | 105 | 12.2 |

# Offsets



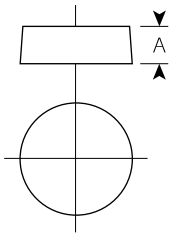

| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Offsets – GT24** | | | |
| **75 Projection** | | | |
| 191702 | 75 | 200 | 2.2 |
| 191705 | 100 | 215 | 2.9 |
| **115 Projection** | | | |
| 191704 | 75 | 220 | 3.2 |
| 191709 | 100 | 235 | 3.4 |
| **150 Projection** | | | |
| 191703 | 75 | 235 | 3.5 |
| 191706 | 100 | 250 | 4.4 |
| **230 Projection** | | | |
| 191707 | 100 | 280 | 5.0 |
| **305 Projection** | | | |
| 191708 | 100 | 310 | 6.1 |

# Pipes taper

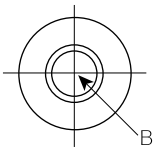



| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Pipes • Diminishing – GT28** | | | |
| 191710 | 75 x 50 | 70 | 0.8 |
| 191711 | 100 x 50 | 80 | 0.9 |
| 191712 | 100 x 75 | 80 | 1.0 |
| 191713 | 150 x 100 | 105 | 1.9 |

# Blank ends




| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Blank ends – GT70** | | | |
| 191724 | 50 | 30 | 0.4 |
| 191725 | 75 | 35 | 0.8 |
| 191726 | 100 | 40 | 0.8 |
| 191727 | 150 | 50 | 2.0 |

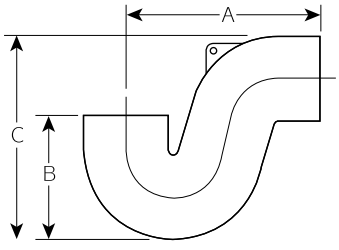



| Product code | Dia | A | Nominal wt/kg |
|---|---|---|---|
| **Blank ends – GT71** | | | |
| 191728 | 75 | 35 | 0.8 |
| 191729 | 100 | 40 | 1.0 |
| 191731 | 150 | 50 | 2.0 |

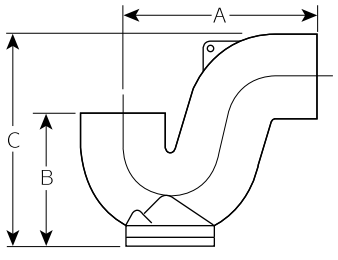
*B – Push-fit adaptor to accommodate 54/56mm o/dia PVC/copper waste.*
*Note: 50 x 56mm connector available (see Ensign product code 155759).*

| **Blank ends – GT71T drilled and tapped 50mm BSPT** | | | |
|---|---|---|---|
| 191730 | 100 | 40 | 1.0 |

# Traps 'P'



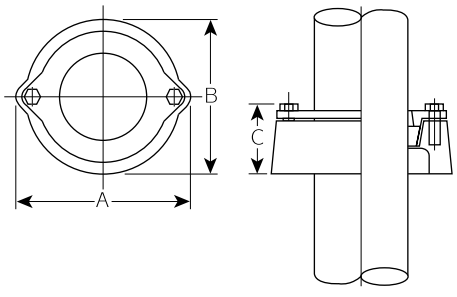

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **'P' trap • Plain – GT34** | | | | | |
| 191714 | 100 | 255 | 160 | 263 | 4.5 |




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **'P' trap with access bottom – GT37** | | | | | |
| 191715 | 50 | 160 | 115 | 167 | 2.0 |
| 191716 | 75 | 265 | 210 | 203 | 6.3 |
| 191717 | 100 | 255 | 175 | 270 | 5.2 |
| 191718 | 150 | 350 | 240 | 370 | 12.1 |

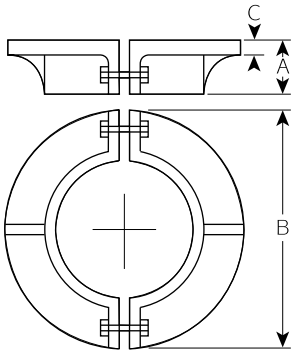
*50mm and 75mm do not have support lug as shown on drawing.*

# Connectors roof




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Roof connectors for asphalt – GT73** | | | | | |
| 191733 | 100 | 185 | 170 | 72 | 2.1 |

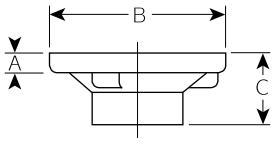
# Flanges loose puddle




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Flange – ED078 supplied grey epoxy coated only** | | | | | |
| 191829 | 100 | 50 | 220 | 12 | 4.6 |

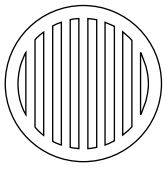
*This collar is in two halves which can be bolted around the pipe even when pipe is in position. Can also be used as a firestop. Due to manufacturing tolerances it is recommended that the puddle flange is bedded on Denso tape or similar.*

# Gully inlets Bellmouth



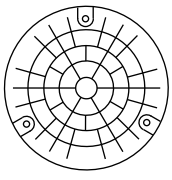

| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Gully inlet – GT483** | | | | | |
| 191737 | 100 | 25 | 215 | 90 | 2.5 |

# Gratings and covers



| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grating plain – TD612** | | |
| 191385 | 200 | 1.8 |

*Maximum load 2.0 tonnes.*



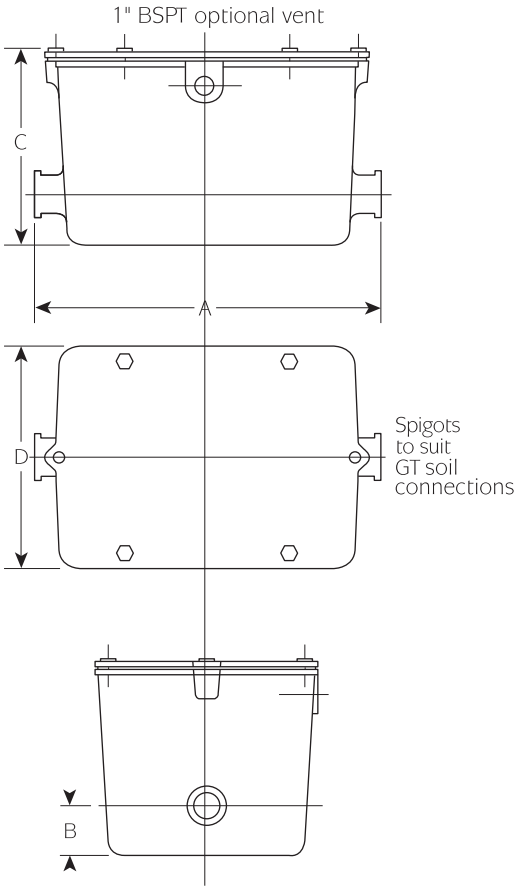
| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Solid cover – TD613S** | | |
| 191386 | 200 | 2.0 |

*Maximum load 2.0 tonnes.*

| Product code | Dia | Nominal wt/kg |
|---|---|---|
| **Grating hinged and locking – TD614** | | |
| 191387 | 200 | 1.8 |

*Maximum load 2.0 tonnes.*

# Grease trap




| Product code | Dia outlet/inlet | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **Grease trap – GT707 with sealed cover fitted with six hexagonal set screws** | | | | | | |
| 191734 | 50 | 580 | 85 | 330 | 365 | 60.0 |

*Inside measurements (approx only) 450 x 300 x 300.*
*Can be supplied with Galvanised Sediment Pan: product code 191188.*
*Can be tapped 1" BSPT for optional vent.*
*The cover incorporates a synthetic rubber gasket to seal.*

### Recommendations regarding the location of the grease trap

1. Grease traps should be installed, whenever possible, well away from areas where food is prepared or cooked.
2. The GT707 grease trap involves manual maintenance ie. emptying of grease build-up inside the trap, and therefore if overlooked, could possibly become blocked. It is recommended that waste disposal units are not allowed to discharge into the grease trap.
3. It is important that waste from vegetable peelers etc, is filtered prior to entering the trap.
4. Care should be taken that the trap is not located so as to cause inconvenience during manual maintenance.
5. As individual situations differ, it is not possible to specify an optimum distance between the last fixture and the trap this is influenced by the type of discharge, its temperature, rate of flow etc. It is, however, recommended that not more than 6m of pipework should run from the last fixture.

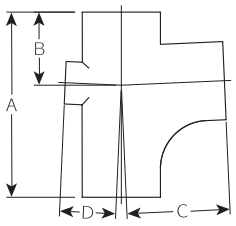
### Maintenance

It is recommended that as the GT707 grease trap requires manual maintenance, the trap should be emptied of collected grease waste a minimum of twice per week, after initial installation, which should be adjusted in line with grease build up in the trap. It is recommended that maintenance is carried out at least once a month.

### Where would you use it?

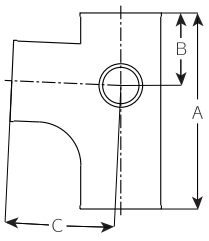
The GT707 grease trap has been widely used in kitchens, hospitals, hotels, restaurants and processing plants throughout the country.

# Boss branches



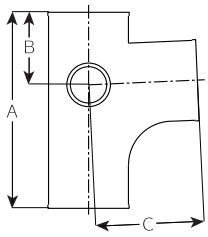

| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87 Boss branch • Back – GT06** | | | | | | |
| 191743 | 100 x 100 | 270 | 100 | 150 | 75 | 5.4 |

*Available with 50mm BSPT boss only.*




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Boss branch • Left hand – GT06** | | | | | | |
| 191744 | 100 x 100 | 270 | 100 | 150 | 75 | 5.4 |

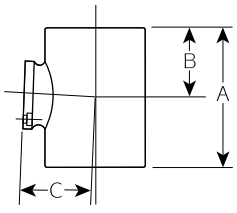
*Available with 50mm BSPT boss only.*



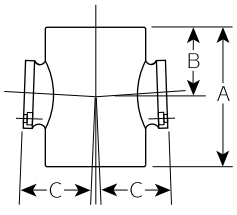

| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Boss branch • Right hand – GT06** | | | | | | |
| 191745 | 100 x 100 | 270 | 100 | 150 | 75 | 5.4 |

*Available with 50mm BSPT boss only.*

# Boss pipes

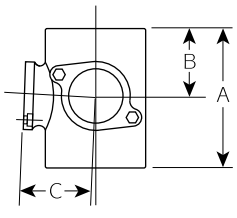



| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Boss pipe • Single 'O' ring rubber compression boss – GT106** | | | | | |
| 192236 | 50 | 150 | 75 | 55 | 1.2 |
| 192237 | 100 | 155 | 75 | 75 | 2.1 |
| 192239 | 150 | 175 | 87 | 105 | 3.8 |
| **Boss pipe • Drilled • Tapped 50mm BSPT** | | | | | |
| 191739 | 75 | 150 | 75 | 63 | 2.0 |
| 192238 | 100 | 155 | 75 | 75 | 2.1 |




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Boss pipe • Double 'O' ring rubber compression boss (opposed) – GT109** | | | | | |
| 192240 | 100 | 155 | 75 | 75 | 2.5 |
| 192360 | 150 | 175 | 87 | 105 | 4.2 |

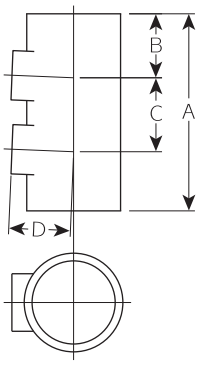
100mm Boss pipe • Drilled • Tapped 50mm BSPT available upon request.




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **90° Boss pipe • Double 'O' ring rubber compression boss – GT115** | | | | | |
| 192241 | 100 | 155 | 75 | 75 | 2.5 |

100mm boss pipe • Drilled • Tapped 50mm BSPT available upon request.

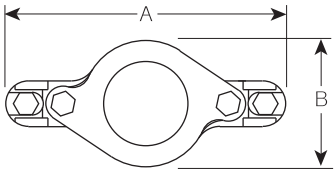
# Boss pipes




| Product code | Dia | A | B | C | D | Nominal wt/kg |
|---|---|---|---|---|---|---|
| **87½° Boss pipe • – GT132** | | | | | | |
| 191742 | 100 | 240 | 75 | 90 | 75 | 4.1 |

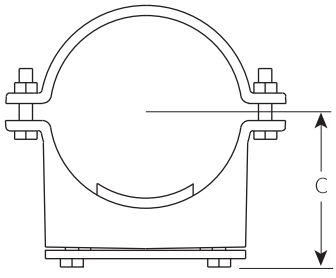
*50mm push-fit connections.*

# Strap-on boss fitting




| Product code | Dia | A | B | C | Nominal wt/kg |
|---|---|---|---|---|---|
| **Strap-on boss – GT133** | | | | | |
| 192323 | 100 | 166 | 76 | 100 | 1.4 |

*Insertion depth = 30mm.*




The strap-on boss provides a simple solution for fitting a 50mm copper or waste pipe to an existing 100mm cast iron soil pipe to BS 416 (pipe outside diameter min/max 109/114mm).

### Installation

- Simply determine where the waste pipe is to be positioned.
- Cut a 64mm hole into the cast iron soil pipe with a hole saw (the metal from the hole remains in the cutter – see tools below).
- Mechanically fit the boss strap in position (do not forget the rubber washer) tighten until fully secure.
- Insert in the waste pipe until fully seated in the boss.
- Tighten the boss plate to grip the rubber 'O' ring on the outside of the waste pipe.

### Tools required

- A 64mm hole saw: product code 192326.
- Arbour: product code 192327.
- 1/4" pilot drill: product code 192328.
- 13mm socket EF101: product code 191202.

  or
- 13mm spanner for mechanically fitting the boss adaptor EF098: product code 191200.

# Support for vertical pipework

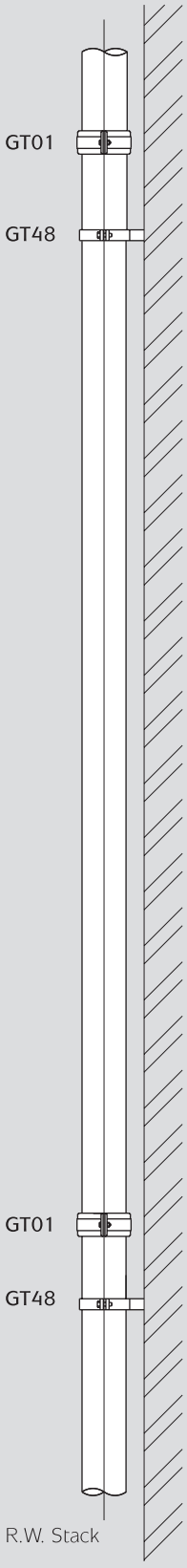



Fig. 22

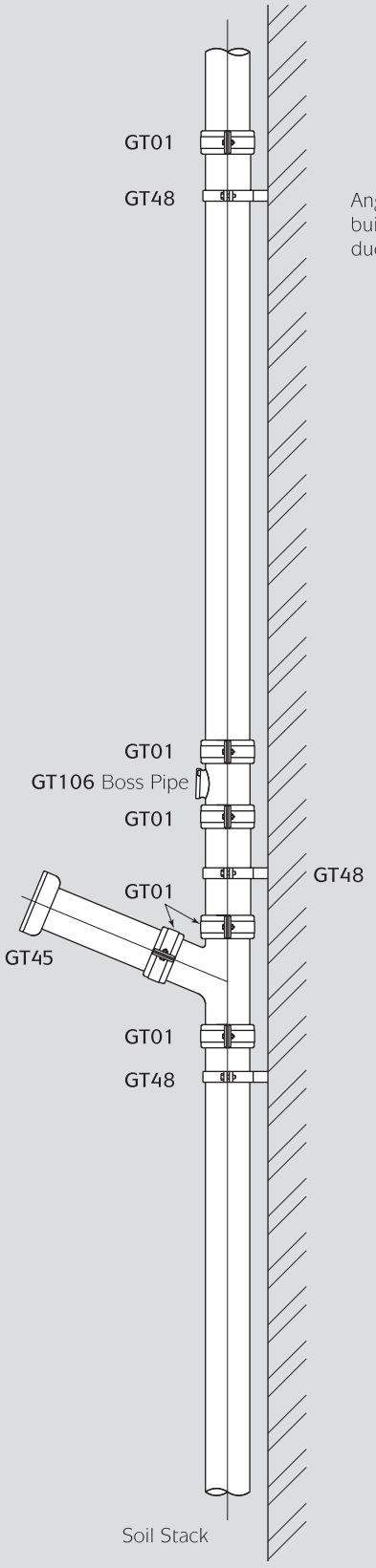



Fig. 23

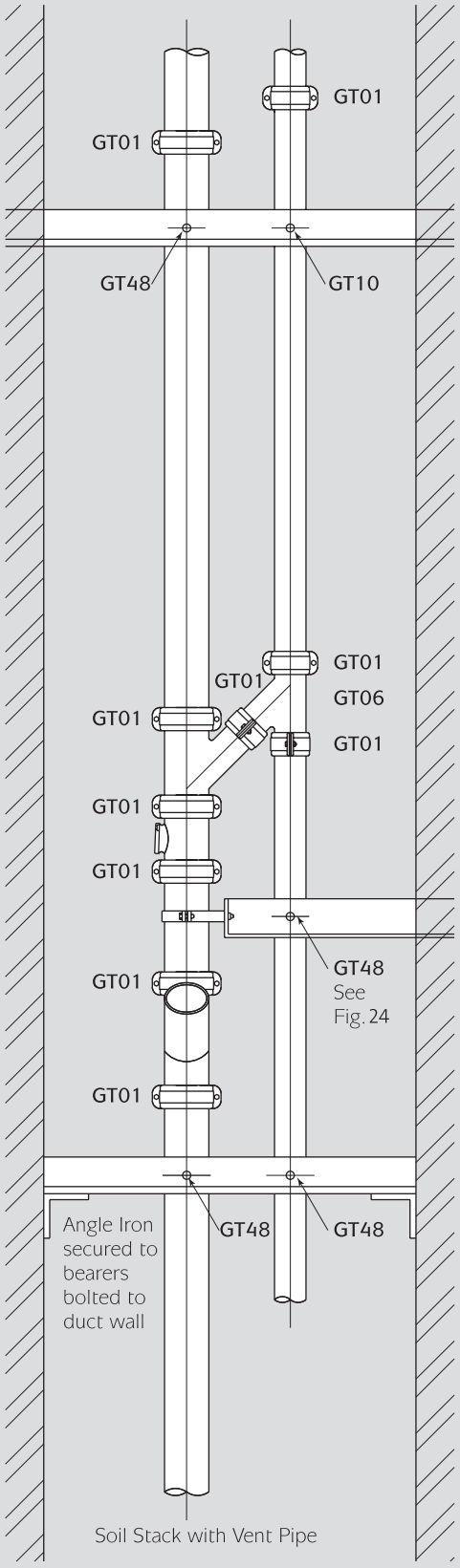



Fig. 23a

# Support for vertical pipework

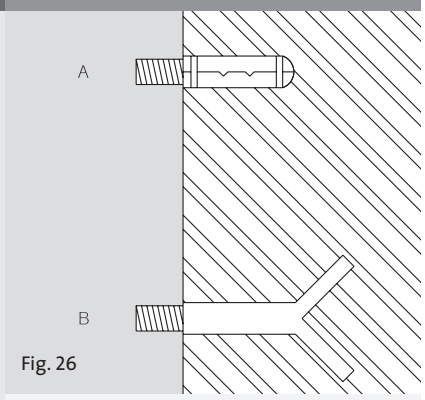


Fig. 26

**Suggested fixing methods**
A. Expanding type fixing with stud
B. Build in or drive in type fixing

**Support for vertical pipework**
For vertical soil or rainwater stacks, it is recommended that a load bearing bracket be fitted to each floor level to carry the weight of the soil stack. 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 on the base of the stack.

Where stacks are located at standard distances from wall or column, ie. 32 from back of pipe to wall face, 50 and 75 diameters and 38 for 100, 150 diameters. RW stacks, (Fig. 22), one bracket GT48 per length will be adequate. Soil stacks, (Fig. 23) may require an extra bracket on or adjacent to the boss pipe in order to ensure correct alignment of stack.

Fig. 24

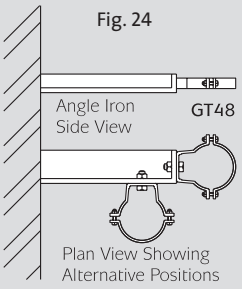
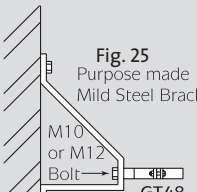



Fig. 25
Purpose made
Mild Steel Bracket




# Support for low gradient pipework

The distance between pipe supports should not exceed 3m. Supports should be adjacent to joints and adequate to carry the weight of pipe plus contents. Where the layout requires shorter lengths than the maximum, support distances should be adjusted to suit.

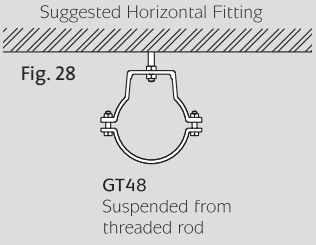


Fig. 28

GT48
Suspended from
threaded rod

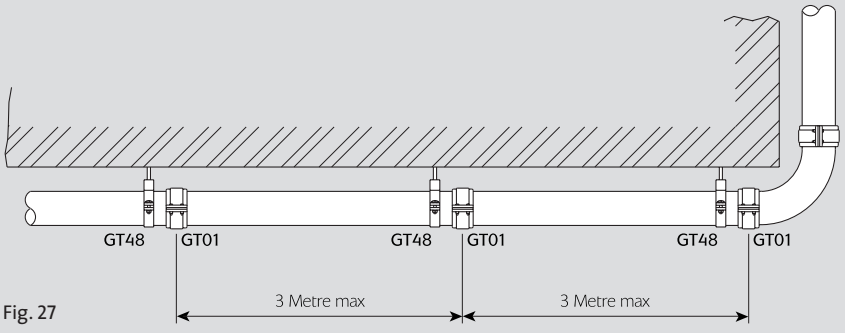
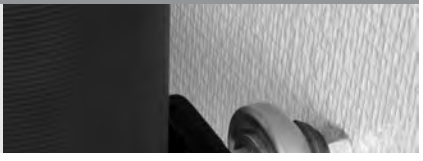


Fig. 27

# Acoustic bracket



The GT48 ductile iron bracket fitted with the new acoustic dampener achieves an exceptionally low level of noise transition (see table). The dampener fits all GT48 bracket sizes (50-150mm) and is supplied assembled.

| | Airborne sound pressure level dB(A) | | Structure borne sound characteristic level dB(A) | |
|---|---|---|---|---|
| Flow rate (l/s) | 2.0 | 4.0 | 2.0 | 4.0 |
| Ductile iron bracket fitted with acoustic dampener | 45 | 47 | 5 | 11 |

Vertical pipe stack – one acoustic bracket per 3 metre
Horizontal suspended pipework – two acoustic brackets minimum per 3 metre

# Connection to other materials

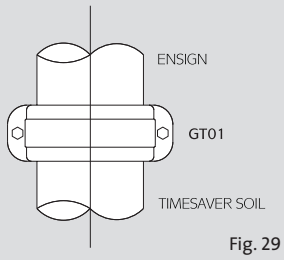


Fig. 29

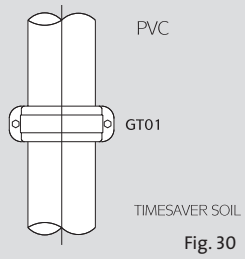


Fig. 30

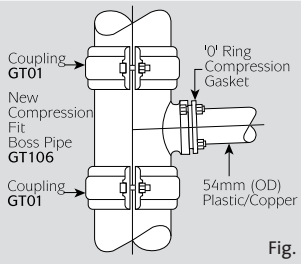


Fig. 31

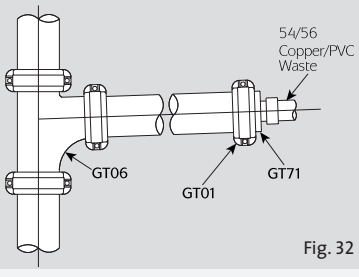


Fig. 32

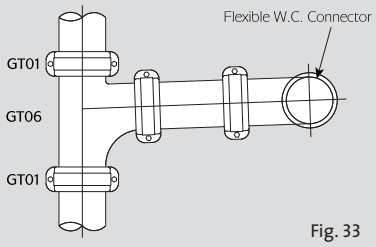


Fig. 33

### A. Timesaver soil dimensions

Most materials can be connected to Timesaver soil by using a GT01 coupling if their dimensions conform to the following table:

| Timesaver soil nominal dia | Min o/dia | Max o/dia |
|---|---|---|
| 50 | 59 | 63 |
| 75 | 85 | 89 |
| 100 | 109.5 | 114 |
| 150 | 160 | 165 |

### B. Ensign

Couple directly to Ensign using a standard coupling GT01, two piece coupling to BS 6087. (see Fig. 29)

### C. PVC pipe

100 and 150 PVC can be connected directly to Timesaver soil using a GT01 coupling. (see Fig. 30)

50 PVC can be connected using either the compression boss pipe GT106 (see Fig. 31), or a GT71 (see Fig. 32), both of which are push-fit connection. Alternatively a traditional drilled and tapped boss pipe with 50mm BSPT is available in 100mm diameter.

### D. Waste pipes (copper, plastic etc)

These can be connected via a compression boss pipe (see Fig. 31), or a GT71 (see Fig. 32), both of which are push-fit connection. Traditional drilled tapped 50 BSPT options also available.

### E. WC connections

Can be achieved directly by using a flexible WC connector (see Fig. 33), or Transitional Connector EF059 (see page 47).

The WC connector requires a caulked joint.

### F. Aluminium and stainless steel

If the outside diameter of these fittings conform to Timesaver dimensions a GT01 coupling can be used (see above for dimensions).

# Connection to other materials

Fig. 34

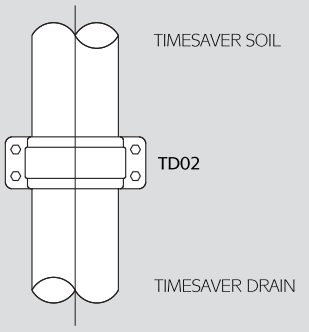



Fig. 35

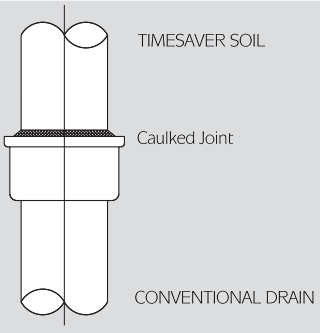



Fig. 36

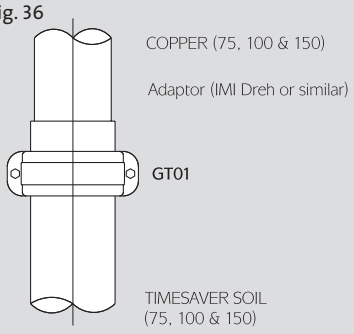



Fig. 37

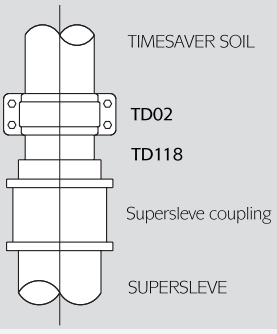
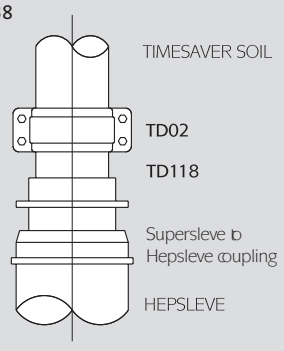



Fig. 38




**G. Timesaver drain**
Couple directly to Timesaver soil using a TD02 coupling (see Fig. 34).

**H. Conventional drain**
To connect into a conventional drain socket use a caulked joint (see Fig. 35).

**I. Copper**
75, 100 and 150 copper can be connected directly to Timesaver soil by using an adaptor available From IMI Dreh or similar and a GT01 coupling (see Fig. 36).

54/56 copper may be connected by a boss pipe (see Fig. 31), or a GT71 (see Fig. 32), both of which are push-fit connection.

**J. Hepworth clayware**
100 and 150 Supersleve can be connected to Timesaver soil by using a TD118 adaptor and a TD02 coupling (see Fig. 37).

100 and 150 hepsleve can be connected to Timesaver soil by using a TD118 adaptor and a TD02 coupling in conjunction with a supersleve to hepsleve transitional coupling manufactured by Hepworth (see Fig. 38).

# Heritage jointing method

1. Apply a small amount of lubricant (ie. silicone grease) on the lip of the rubber gaskets, both ends, to ease insertion of pipe/fittings.

2. Push coupling over the end of pipe/fitting, ensuring the central register is abutted against the spigot edge evenly. If the coupling is eared, fix to wall using anti-corrosion coach screws or similar.

3. Push the second pipe or fitting into the gasket again ensuring that the spigot is abutted against the central register. Timesaver Heritage couplings eared/plain can be fitted to most fittings within the 50, 75 and 100 diameter ranges *(see table page 64)*.

Three joints used on branches can be very close fitting, in some cases they virtually touch. To accommodate this, the plain joint is designed with a flat area which should be lined up with the adjoining socket, to give maximum clearance (see Fig. 39).

Generally when plain sockets are used, ensure flat area is positioned at the rear of the pipe (nearest the wall) away from view.

**Existing systems**

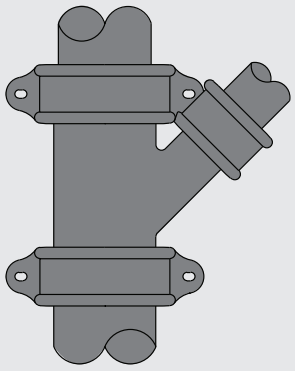
If breaking into an existing Timesaver system, a slip joint should be ordered which is designed with a reduced central register. The joint is made by slipping the whole socket onto the pipe, positioning the new fitting then sliding the socket into the desired position.

**Connection to conventional soil**

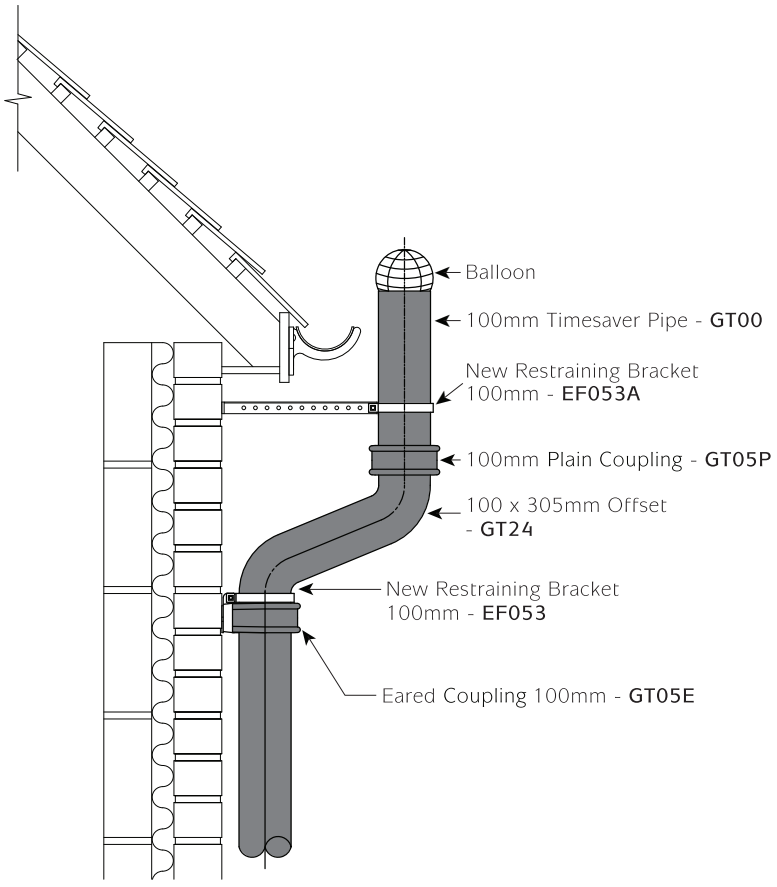
Timesaver can connect directly to 90mm (3½") conventional soil by inserting a traditional gasket into the Timesaver Heritage coupling, product code 156132, replacing one of the standard gaskets.

Lubricate the spigot of the 90mm pipe, and push coupling over the pipe inserting 35mm only. Ensure the 90mm pipe is securely fixed to prevent slipping into new pipework.

Fig. 39



# Heritage design recommendations



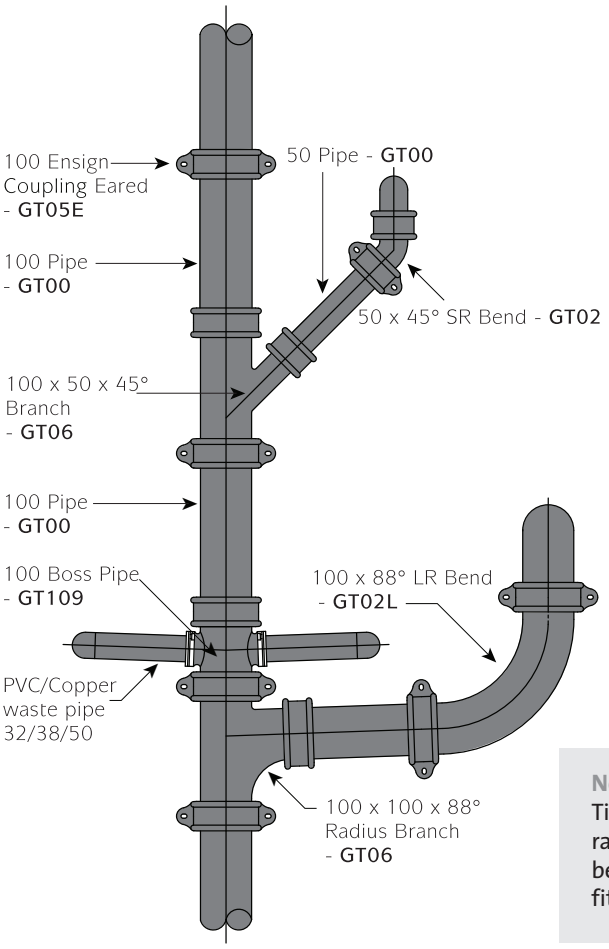

When designing a stack using the new push-fit joint, all fittings require at least one eared socket, to anchor the system to the building. Taking branches as an example, eared joints could be used at the top and bottom of the vertical section to anchor the system, with a plain joint used on the branch arm.

The rubber seals are factory fitted to the socket, and a suitable lubricant (silicone grease) is recommended to ease assembly.

**On-site protection**

The coating for the Timesaver system is regarded as a primer protection. Therefore when specified for external soil stacks, must be overpainted in accordance with manufacturers recommendations *(see page 68)*.

New restraining brackets EF053 and EF053A. These brackets are designed to give support to the system in an offset situation. See typical installation opposite.




New restraining bracket EF053 code 192333

To suit 100mm eared coupling GT05E

New restraining bracket EF053A code 192363

**Note:**
Timesaver soil fittings were traditionally supplied with a raised bead on the spigot ends, which over the years have been removed. The Heritage couplings can only be used on fittings without the bead.

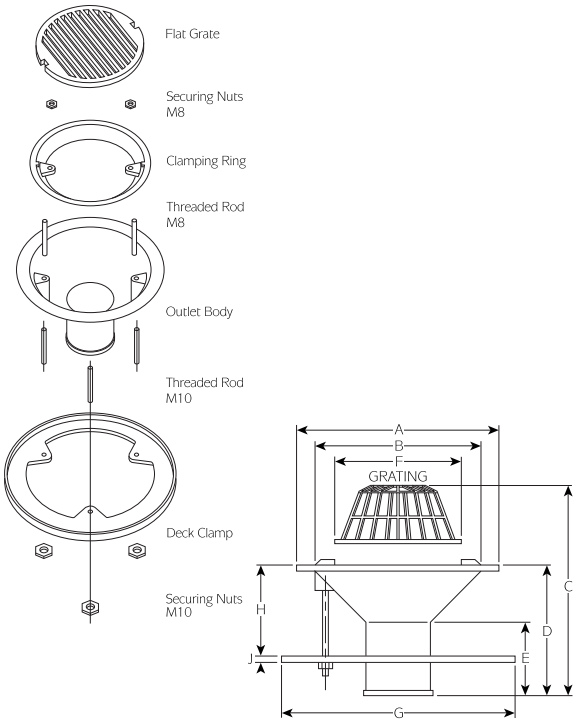
# Heritage Product range compatibility

**Timesaver Heritage – product range**
List of products within the Timesaver soil range, which can be used with the Timesaver Heritage couplings

| Pipe products | | Code | 50mm Dia. | 75mm Dia. | 100mm Dia. |
|---|---|---|---|---|---|
| Pipe double spigot | | GT00 | | | |
| 3m long | | | ● | ● | ● |
| 1.8m long | | | | ● | ● |
| Bends – Short radius plain | 67½° | GT02 | | | ● |
| | 87½°, 45° | | ● | ● | ● |
| Bends – Short radius door back | 87½° | GT03 | ● | ● | ● |
| | 45° | | | ● | ● |
| Bends – Short radius door side | 87½° | GT04 | | | ● |
| Bends – Large radius plain | 87½°, 45° | GT02L | | ● | ● |
| | 22° | | | | ● |
| Bends – Large radius door back | 87½° | GT03L | | ● | ● |
| Bends – Large radius door side | 87½° | GT04L | | | ● |
| Bends – Long tail | 87½° | GT43 | | | ● |
| Branches – Plain single equal | 87½°, 45° | GT06 | ● | ● | ● |
| Branches – Plain single reducing | 87½°, 45° x 50 | GT06 | | ● | ● |
| | x 75 | | | | ● |
| Branches – Single door back equal | 87½° | GT07 | ● | ● | ● |
| Branches – Single door back reducing | 87½° x 50 | GT07 | | ● | ● |
| | 87½° x 75 | GT07 | | | ● |
| Branches – Single door side | 87½° | GT08/GT09 | | | ● |
| Branches – Double plain | 87½° | GT10 | | ● | ● |
| Branches – Double with door | 87½° | GT11 | | | ● |
| Access Pipes – Oval door | 87½° | GT14 | | ● | ● |
| Access Pipes – Rectangle door | 87½° | GT15 | | | ● |
| Offset projection | 75mm | GT24 | | ● | ● |
| | 115mm | | | ● | ● |
| | 150mm | | | ● | ● |
| | 225mm | | | | ● |
| | 305mm | | | | ● |
| Taper pipe | x 50 | GT28 | | ● | ● |
| | x 75 | | | | ● |
| 'P' Trap – Plain | | GT34 | | | ● |
| 'P' Trap – with door | | GT37 | ● | ● | ● |
| Blank end – Plain | | GT70 | ● | ● | ● |
| Blank end – 50mm push-fit | | GT71 | | ● | ● |
| Blank end – 50mm BSPT | | GT71T | | | ● |
| Boss pipe – 50mm single push-fit | | GT106 | ● | | ● |
| Boss pipe – 50mm single BSPT | | GT106T | | ● | ● |
| Boss pipe – 50mm double boss opposed – push-fit | | GT109 | | | ● |
| Boss pipe – 50mm double boss @90 – push-fit | | GT115 | | | ● |

New bracket EF053/EF053A to suit 100mm eared coupling GTO5E: product code 192333/192363 *(see page 46)*.
New 100mm reducing gasket to 3½" (90mm) conventional soil pipe now available 156132 *(see page 46)*.

# Roof outlets asphalt or felt




### GT9306 Circular roof outlet

This outlet incorporates the following important features:

- The clear throat of the outlet gives an unobstructed flow of water, providing maximum discharge rate.
- The grating is secured by means of locating the two notches on the grate under lugs on the clamping ring. The grate is then turned 90° on the seating until it is firmly locked in place.
- There are only four working parts.
- Uniform outside diameter of spigot permits cutting and still allows jointing by Timesaver/Ensign or run-lead joint.
- This outlet can be connected to Ensign by using a Timesaver coupling GT01.

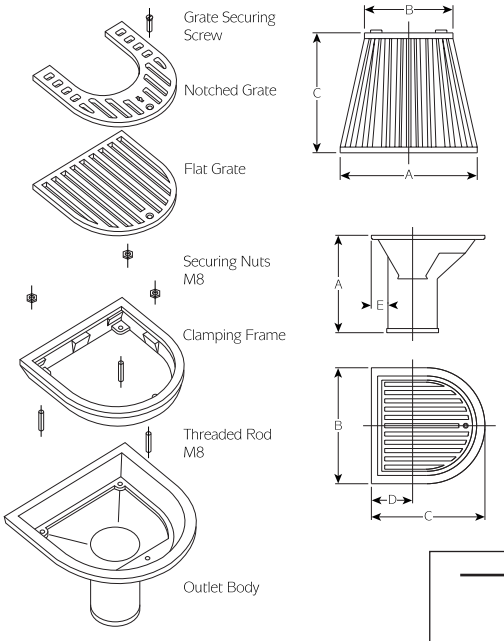
| | Product code | Nominal bore 100 wt/kg |
|---|---|---|
| Body and clamping ring | 191749 | 9.0 |
| Domical grate | 191750 | 2.2 |
| Flat grate | 191751 | 1.6 |
| Deck clamp | 191738 | 7.6 |

*Note: Deck clamp for roof outlet has four M10 threaded rods and four M10 securing nuts.*
*Deck clamp for 100 roof outlets is in two halves and has four M10 threaded rods and four M10 securing nuts.*

| | Nominal bore 100 |
|---|---|
| A | 355 |
| B | 290 |
| C | 335 |
| D | 230 |

| | Nominal bore 100 |
|---|---|
| E | 130 |
| F | 240 |
| G | 410 |
| H min | 40 |

| | Nominal bore 100 |
|---|---|
| H max | 140 |
| J | 18 |




### GT9307 Grating for 'inside-out' roof

| Product code | Nominal bore | A | B | C wt/kg | Nominal bore |
|---|---|---|---|---|---|
| 191752 | 100 | 240 | 145 | 210 | 5.6 |

*Note: GT9307 can be used with roof outlets GT9306 100 nominal bore only.*

### GT9310 Balcony outlet

| Product code | | Nominal bore 100 wt/kg |
|---|---|---|
| 191735 | **Body and clamping frame fitted with flat grate** | 9.7 |
| 191736 | **Body and clamping frame fitted with notched grate** | 9.7 |

| | Nominal bore 100 |
|---|---|
| A | 235 |
| B | 280 |
| C | 275 |

| | Nominal bore 100 |
|---|---|
| D | 75 |
| E | 40 |

# Chemical resistance

**Suitability of Timesaver materials – cast iron, EPDM rubber and nitrile rubber**

A – RECOMMENDED
X – NOT RECOMMENDED
ND – NO DATA

The information contained in this table has been extracted with permission from Robert Jenkins Systems Ltd. Corrosion Chart.

| | | COUPLING GASKETS IN EPDM RUBBER | | | CAST IRON | | | COUPLING GASKETS IN NITRILE RUBBER | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CHEMICAL | TEMPERATURE°C | 20° | 60° | 100° | 20° | 60° | 100° | 20° | 60° | 100° |
| ACETALDHYDE | | A | A | ND | A | ND | ND | X | X | X |
| ACETIC ACID (10%) | | A | X | X | X | X | X | X | X | X |
| ACETIC ACID (GLAC. & ANH.) | | X | X | X | X | X | X | X | X | X |
| ACETIC ANHYDRIDE | | ND | ND | ND | A | A | A | X | X | X |
| ACETO-ACETIC ESTER | | A | A | X | X | X | X | ND | ND | ND |
| ACETONE | | X | X | X | A | A | A | X | X | X |
| ACETONITRILE | | ND | ND | ND | X | X | X | ND | ND | ND |
| ACETYLENE | | ND | ND | ND | A | A | A | A | ND | ND |
| ACETYL SALICYLIC ACID | | A | A | ND | X | X | X | A | ND | ND |
| ALCOHOLS (MOST FATTY) | | X | X | X | A | A | A | A | A | A |
| ALIPHATIC ESTERS | | X | X | A | A | A | X | X | X | |
| ALUM | | A | A | A | X | X | X | A | A | A |
| ALUMINIUM CHLORIDE | | A | A | A | X | X | X | A | A | A |
| ALUMINIUM SULPHATE | | A | A | A | A | A | A | A | A | A |
| AMMONIA AQUEOUS | | A | A | A | A | A | X | A | A | X |
| AMMONIUM CHLORIDES | | A | A | A | A | X | X | A | A | A |
| ANILINE | | X | X | X | A | A | A | X | X | X |
| AQUA REGIA | | X | X | X | X | X | X | X | X | X |
| ASCORBIC ACID | | ND | ND | ND | X | X | X | ND | ND | ND |
| BEER | | A | A | A | A | A | ND | A | A | A |
| BENZALEHYDE | | A | ND | ND | X | X | X | X | X | X |
| BENZENE PURE | | X | X | X | A | A | A | X | X | X |
| BENZOIC ACID | | A | A | A | X | X | X | A | A | A |
| BENZOYL PEROXIDE | | ND | ND | ND | X | X | X | ND | ND | ND |
| BORIC ACID | | A | A | A | X | X | X | A | A | A |
| BRINES (SATURATED) | | A | A | A | A | A | A | A | A | A |
| BROMIDE (SOLUTION) | | A | A | A | X | X | X | A | X | X |
| BROMINE | | ND | ND | ND | X | X | X | X | X | X |
| BUTYL ACETATE | | X | X | X | X | X | X | X | X | X |
| CALCIUM CHLORIDE | | A | A | A | A | A | X | A | A | A |
| CARBON DISULPHIDE | | X | X | X | A | A | A | A | ND | ND |
| CARBONIC ACID | | A | A | A | X | X | X | A | A | A |
| CAUSTIC SODA & POTASH | | A | A | A | A | A | X | A | A | A |
| CELLULOSE PAINT ND | | ND | ND | A | A | ND | X | X | X | |
| CHLORATES OF Na, K & Ba | | A | A | A | X | X | X | ND | ND | ND |
| CHLORINE | | X | X | X | X | X | X | X | X | X |
| CHLORIDES OF Na, K & Mg | | A | A | A | X | X | X | A | A | A |
| CHLOROACETIC ACIDS | | X | X | X | X | X | X | X | X | X |
| CHLOROBENZENE | | X | X | A | A | A | X | X | X | |
| CHLOROFORM | | X | X | X | A | A | X | X | X | X |
| CHROMIC ACID | | X | X | X | X | X | X | X | X | X |
| CITRIC ACID | | A | A | A | X | X | X | A | A | A |
| CRESYLIC ACID | | ND | ND | ND | X | X | X | X | X | X |
| CYCLOHEXANE | | X | X | X | A | A | A | A | A | A |
| DETERGENTS | | A | A | A | ND | ND | ND | A | A | A |
| EMULSIFIERS | | ND | ND | ND | ND | ND | ND | A | A | A |
| ETHER | | X | X | X | A | A | A | A | X | X |
| FATTY ACIDS (>C6) | | X | X | X | X | X | X | A | X | X |
| FERRIC CHLORIDE | | A | A | A | X | X | X | A | A | A |
| FERROUS SULPHATE | | A | A | A | X | X | X | A | A | A |
| FLUOSILIC ACID | | A | A | A | X | X | X | ND | ND | ND |
| FORMALDEHYDE | | X | X | X | A | X | X | A | X | X |
| FORMIC ACID | | X | X | X | X | X | X | A | X | X |
| FRUIT JUICES | | X | X | X | X | X | X | A | A | A |
| GELANTINE | | A | A | X | A | A | A | A | A | A |
| GLYCERINE | | A | A | A | A | A | A | A | A | A |
| GLYCOL ETHYLENE | | A | A | A | A | A | A | A | A | A |
| GLYCOLLIC ACID | | A | A | A | X | X | X | ND | ND | ND |
| HEXAMINE | | ND | ND | ND | X | X | X | ND | ND | ND |
| HYDRAZINE | | A | ND | ND | ND | ND | ND | A | X | X |
| HYDROBROMIC ACID (50%) | | A | A | ND | X | ND | ND | A | X | X |

# Chemical resistance

**Suitability of Timesaver materials – cast iron, EPDM rubber and nitrile rubber**

A – RECOMMENDED
X – NOT RECOMMENDED
ND – NO DATA

The information contained in this table has been extracted with permission from Robert Jenkins Systems Ltd. Corrosion Chart.

| | | COUPLING GASKETS IN EPDM RUBBER | | | CAST IRON | | | COUPLING GASKETS IN NITRILE RUBBER | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CHEMICAL | TEMPERATURE°C | 20° | 60° | 100° | 20° | 60° | 100° | 20° | 60° | 100° |
| HYDROCHLORIC ACID (10%) | | A | A | A | X | X | X | A | A | X |
| HYDROCHLORIC ACID (CONC) | | A | X | X | X | X | X | X | X | X |
| HYDROCYANIC ACID | | A | A | A | X | X | X | A | X | X |
| HYDROFLUORIC ACID (75%) | | X | X | X | X | X | X | X | X | X |
| HYDROGEN PEROXIDE (30%) | | X | X | X | X | X | X | A | X | X |
| HYDROGEN SULPHIDE | | A | A | A | A | X | X | X | X | X |
| HYPOCHLORITES | | A | A | ND | X | X | X | X | X | X |
| LACTIC ACID | | A | A | ND | X | X | X | A | A | X |
| LIME (CaO) | | A | A | A | A | A | A | A | A | A |
| MEAT JUICES | | A | A | A | ND | ND | ND | A | A | A |
| MERCURIC CHLORIDE | | A | A | A | X | X | X | A | A | A |
| MERCURY | | A | A | A | A | A | A | A | A | A |
| METHANOL | | X | X | X | A | A | A | A | A | A |
| MILK AND ITS PRODUCTS | | X | X | X | ND | ND | ND | A | A | A |
| MOLASSES | | ND | ND | ND | A | A | A | A | ND | ND |
| NITRIC ACID (>25%) | | X | X | X | X | X | X | A | X | X |
| NITROBENZENE | | A | A | ND | A | A | A | X | X | X |
| OILS, DIESEL | | X | X | X | A | A | A | A | A | A |
| OILS, LUBRICATING | | X | X | X | A | A | A | A | A | A |
| OIL, MINERAL | | X | X | X | A | A | A | A | A | A |
| OILS, VEGETABLE & ANIMAL | | X | X | X | A | A | A | A | A | A |
| OXALIC ACID | | ND | ND | ND | X | X | X | A | A | X |
| PARAFFIN | | A | A | ND | A | A | A | A | A | A |
| PETROLEUM SPIRIT | | X | X | X | A | A | A | A | A | A |
| PHOSPHORIC ACID (20%) | | A | A | A | X | X | X | A | A | ND |
| SEA WATER | | A | A | A | A | X | X | A | A | A |
| SILICONE FLUIDS | | ND | ND | ND | A | A | A | A | A | A |
| SODIUM PEROXIDE (10%) | | A | A | ND | A | A | A | A | X | X |
| STARCH | | A | A | A | A | A | A | A | A | A |
| SUGAR, SYRUP, JAMS | | X | X | X | A | A | ND | A | A | A |
| SULPHATES (Na, K Mg. Ca) | | A | A | A | A | A | A | A | A | A |
| SULPHURIC ACID (>50%) | | A | A | A | X | X | X | A | X | X |
| SULPHURIC ACID (70%) | | X | X | X | A | X | X | X | X | X |
| SULPHURIC ACID (90%) | | X | X | X | A | A | X | X | X | X |
| TANNIC ACID (10%) | | A | A | A | X | X | X | A | A | X |
| TARTARIC ACID | | A | A | A | X | X | X | A | A | X |
| TRICHLORETHYLENE | | X | X | X | A | A | X | X | X | X |
| VINEGAR | | X | X | X | X | X | X | A | A | A |
| WATER | | A | A | A | A | A | A | A | A | A |
| WETTING AGENTS (UP TO 5%) | | X | X | X | X | X | X | A | A | A |
| YEAST | | ND | ND | ND | A | A | X | A | ND | ND |
| ZINC CHLORIDE | | A | A | A | X | X | X | A | A | ND |

The information given is intended as a guide only and in every case we would wish to know detailed working conditions before advising the suitability of cast iron or our Timesaver coupling gasket.

Care must be taken when more than one of these chemicals is being discharged as interreaction may occur and it is the customer's own responsibility to ensure that the application is suitable. Most of the above should be treated as dangerous wastes and should either be treated before discharging into a sewer or disposed of by other means.

Please note: nitrile gaskets are available to order.

It is recommended that nitrile rubber gaskets be used when the installation is in contact with petrol and oil-based waste substances eg. garages, petrol stations etc.

# General technical details

**Testing**
It is recommended that pipework installations are tested in sections rather than waiting to complete this in one operation.

**Fire proofing**
Cast iron has been traditionally used as a pipework material for passing through fire-break partition walls and floors. The TIMESAVER SYSTEM furthers this traditional use. Unlike plastic materials it does not need special protection.

**Stoppages and access**
In spite of precautions being taken, stoppages may occur and will then require clearing. Ample provision must therefore be provided for access. It is often advantageous to be able to gain access at or near bends including, if possible, the bends leading from the stack to the drain. It is recommended that with a 100 stack, access should be provided at each floor level above or on the WC connection in addition to that at the foot of the stack. With 150 stacks there is less risk of stoppages so it is recommended that access be provided at say every three floors, in addition to that at the foot of the stack. With vented schemes, access should be provided at or near the foot of the stack and at intervals of not more than five floors in height for the purpose of periodic testing.

**Coating**
All 3m Timesaver pipes are coated externally in black alkyd paint, and internally coated with a two part epoxy paint (ochre colour).

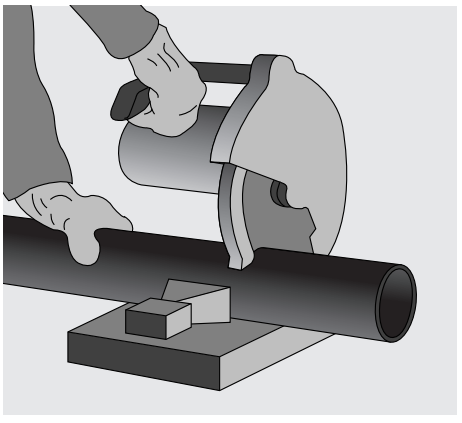
Fittings are coated internally and externally in a black water based paint.

The Timesaver coating shall accept overcoating with alkyd and water based acrylic paints normally used on metallic structures.

Timesaver roof outlets and floor drains are coated in a black water based paint.

**Cutting pipes**
Timesaver pipe can be readily cut by the use of a powered disc cutter, and wheel cutters.

A chain cutter/snap cutter is not recommended to adequately serve this purpose.



**Technical references**
It is recommended that these and other listed technical advice, within this manual, are read in conjunction with the following Codes of Practice:

BS EN 12056 Gravity Drainage Systems Inside Building:
Part 2 – Sanitary Pipework
Part 3 – Roof Drainage

BS EN 752 Drains and Sewers Outside Building.

BS 437 and BS 416 Part 2.

# Standard specification

## Timesaver standard specification and clauses

1.1 Above ground soil, waste, vent and rainwater pipework.

1.2 Cast iron pipes and fittings

a) The systems shall be designed and installed in accordance with BS EN 12056 code of practice for gravity drainage systems inside buildings and the relevant sections of the Building Regulations.

b) Soil, waste, vent and rainwater pipework of nominal diameters, 50mm to 150mm shall be installed using cast iron socketless pipe and fittings which fully comply with requirements of product standard BS 416 part 2 with Kitemark third party approval.

### Brackets

c) Pipework shall be supported true to line by methods strictly in accordance with the manufacturer's recommendations. Proprietary adjustable ductile iron hanging brackets such as GT48 shall be used or brackets as recommended by the manufacturer's standard guidelines.

d) If required, soil, waste, vent and rainwater pipework shall be supported by acoustic brackets that ensure the pipework will not exceed 47dB (A) airborne noise and 11dB (A) structure-borne noise at 4 L/s (litres per second), without insulation as recommended by the manufacturer's standard guidelines.

### Jointing

**Standard couplings**

e) Pipes and fittings shall be jointed by two part ductile iron couplings capable of withstanding up to 5bar (accidental static water pressure) when suitably restrained with support brackets. Couplings to be fitted with EPDM rubber gasket as supplied.

f) Couplings shall be fitted with steel continuity clips (supplied separately) if equipotential bonding (earthing) has been specified. Coupling colour shall match the pipes and fittings.

### Push-fit Heritage couplings

g) Pipes and fittings shall be jointed by Timesaver Heritage push-fit couplings incorporating 2 EPDM gaskets that give the appearance of a traditional socket as depicted in BS 416 part 1.

### Fittings

h) Where possible all 88 degree branches shall be radius curve entry (conforming to BS EN 12056-2:2000).

i) Small diameter waste pipes in plastic or copper to be connected to the main soil pipework using either mechanical compression-fit or BSP threaded boss pipes or blank ends.

### Cutting pipes

j) Where pipes are cut on site, ends shall be cut clean and square with all burrs removed. In most cases it is not necessary to re-coat the pipe ends with 'touch up paint'. However, where there may be aggressive materials passing through the drainage system (i.e. Coca-Cola; acid rain; acids or strong alkaline or similar substances), it is necessary to protect the cut ends of the pipework to the same standard as the internal coating of the pipe. (as recommended by the manufacturer.

### Coating

k) 3 metre pipes shall be externally coated with a black alkyd primer paint. Internally coated with a two-part epoxy coating, ochre in colour, with an average thickness of 130 microns.

l) 1.8 metre (6ft) Heritage pipes shall be coated internally and externally with a black water based paint.

m) Fittings/couplings/brackets shall be protected internally and externally with a black water based paint.

## Timesaver standard specification

1.1 Below ground buried foul and stormwater pipework.

1.2 Cast iron pipes and fittings

a) The systems shall be designed and installed in accordance with BS EN 12056 code of practice for gravity drainage systems inside buildings, BS EN 752-1 for drain and sewer systems outside buildings and the relevant sections of the Building Regulations.

b) Foul and stormwater pipework of nominal diameters, 100, 150 and 225mm shall be installed using cast iron socketless pipe and fittings which fully comply with all requirements of product standard BS 437 with kitemark third party approval.

### Brackets

c) Pipework shall be supported true to line by methods strictly in accordance with the manufacturer's recommendations. Proprietary adjustable ductile iron hanging brackets as TD 640 shall be used or brackets as recommended by the manufacturer's standard guidelines.

### Jointing

**Standard couplings**

d) Pipes and fittings shall be jointed by ductile iron couplings capable of withstanding up to 5bar (accidental static water pressure) when suitably restrained with support brackets. Coupling colour shall match the pipes and fittings, and incorporate stainless steel socket cap screws and nuts wax coated.

### Fittings

e) Junctions between pipes should use the proprietary cast iron chamber, or standard branch type fittings as recommended by the manufacturer.

### Cutting pipes

f) Where pipes are cut on site, ends shall be cut clean and square with all burrs removed. In most cases it is not necessary to re-coat the pipe ends with 'touch-up paint'. However, where there may be aggressive materials passing through the drainage system (i.e. Coca-Cola; acid rain; acids or strong alkaline or similar substances), it is necessary to protect the cut ends of the pipework to the same standard as the internal coating of the pipe (as recommended by the manufacturer).

### Coating

g) Pipes shall be externally coated with a black alkyd primer paint. Internally coated with a two-part epoxy coating, ochre in colour, with an average thickness of 250 microns.

h) Fittings/couplings/brackets shall be protected internally and externally with a black water based paint.

Other products and services available from Saint-Gobain PAM UK:

## Natural™

A range of potable water pipeline products available DN80 to DN800 with a new revolutionary system of external protection, fully compliant with the requirements of BS EN 545.

## Large diameter water pipes

Large diameter water pipeline products available DN900 to DN2000, fully compliant with the requirements of BS EN 545.

## Integral and Integral Plus™

A complete range of sewerage pipeline products available from DN80 to DN2000, fully compliant with the requirements of BS EN 598.

## Directional

A ductile iron pipe solution for horizontal directional drilling applications. Available from DN100 to DN700 and fully compliant with BS 545 and BS 598.

## Couplings and flange adaptors

Accommodating a wide range of external diameters and pipe materials in accordance with British, European Standards and ISO 9001 requirements. A diversified range from wide tolerance fittings to dedicated products.

## Valves

A comprehensive range of valves and accessories suitable for water and sewerage applications. All valves are supplied in compliance with WRAS requirements where applicable, and manufactured in accordance with ISO 9001.

- Gate valves, resilient and metal faced DN50 to DN300
- Non return valves DN80 to DN300
- Tidal flap valves DN80 to DN600
- Air valves
- Fire hydrants
- Butterfly valves DN50 to DN2000
- Control valves

## RapidFlange™

A business unit dedicated to offering fast and flexible service to M&E and pump market sectors – specialising in providing high quality flanged products and offering technical support and rapid response.

## Induct Plus™

An installation accreditation scheme, designed to give peace of mind and confidence to water utilities and contractors in the knowledge that the ductile iron pipeline that they have purchased will be installed effectively and in its optimum condition.

## Ensign™

Cast iron above and below ground drainage system BSI Kitemark approved to BS EN 877. Used for soil and waste, rainwater, suspended, buried and bridge drainage applications, providing lifetime service for commercial and public buildings.

## Ensign EEZI-FIT™

A new range of cast iron push-fit fittings and couplings in 100, and 150mm diameter, Kitemarked to BS EN 877 for gravity sanitary installations.

## Timesaver™

Cast iron above ground system BSI Kitemark approved to BS 416 part 2, used for soil and waste refurbishment, and external soil stacks for traditional appearance. Cast iron below ground system BSI Kitemark approved to BS 437, favoured for under building drainage, and unstable ground conditions due to its superior strength performance.

## Classical – Classical Plus™

Cast iron rainwater and gutter systems to BS 460 BBA certified. Eight gutter profiles and circular, square and rectangular downpipes systems supplied in a black primer coat. Classical Plus is a standard range of gutters and downpipes available in a factory applied semi-gloss black finished coat for immediate installation.

## EPAMS™

A complete syphonic rainwater system, consisting of steel syphonic roof outlets and cast iron pipework to BS EN 877 BBA certified.

## Access covers and gratings

A comprehensive range of ductile iron access covers and gratings. For high performance products which meet the increasing demands from traffic to a purpose designed range for low density applications, Saint-Gobain PAM access cover products provide targeted solutions for the key civil engineering, utility and infrastructure sectors.

Your local stockist is:

## Quality Assurance

Quality Management Systems BS EN ISO 9001:2008
(Registered firm: 12908)

## Environmental Standard

Environmental Management Systems BS EN ISO 14001:2004

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of our brochures

Technical Enquiries
Tel: +44 (0)1952 262529
Fax: +44 (0)1952 262592
Email: technical.soildrain.uk.pam
@saint-gobain.com

Sales Enquiries
Tel: +44 (0)115 930 0681
Fax: +44 (0)115 930 0648
Email: sales.uk.pam@saint-gobain.com

Head Office
Lows Lane
Stanton-by-Dale
Ilkeston
Derbyshire
DE7 4QU
Tel: +44 (0)115 930 5000
Fax: +44 (0)115 932 9513

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