Introduction

The benefits of clay

Hepworth manufactures clay drainage systems in sizes 100mm to 600mm for a wide range of domestic, commercial, adoptable and civil applications.

Sustainability

- The clay raw material is sourced locally to the factory – reduced transportation of raw materials
- Hepworth Drainage operates an Environmental Management System to BS EN ISO 14001
- Clay pipes are mainly manufactured in roller kilns using less energy than previous methods
- Clay Drainage can demonstrate the use of reduced and recycled aggregates
- The pipe material itself can be recycled and reused in manufacture
- Clay has already stood the test of time, it is a known and dependable material

Quality

- Most Hepworth Drainage products are Kite-marked (where standards exist)
- Process control is strictly monitored during and post manufacture by product testing
- Regular third party inspections by UK, EU and RoW Q.A. Inspectors
- No restrictions regarding product use have been implemented by any UK Water Company
- Where BS Standards are not available BBA Certificates are obtained
- When neither BS nor BBA is applicable products are manufactured under a quality management system which is approved to BS EN ISO 9001:2000

Strength

- The pipeline is not dependent on the bedding material for structural support
- The pipe provides nearly all of the strength that is required in the ground
- This strength does not change over time and is certified in the factory
- Clay has the ability to withstand high imposed loads

Jetting Resistance

- Clay drainage has a high resistance to high pressure jetting methods and equipment
- Clay has higher jetting pressure limits than other drainage and sewer materials
- More blockages will be cleared first time with reduced risk
- All Hepworth pipes carry the Lifetime Jetting Guarantee* (*See Literature)

Durability

- Lifetime expectancy in excess of 100 years
- The ability to use long replacement cycles give a low lifetime cost
- Minimisation of disruption to buildings and services in the future due to longer replacement cycles
- Reduced risk of failure in service due to high pipe strength and jetting resistance

Introduction

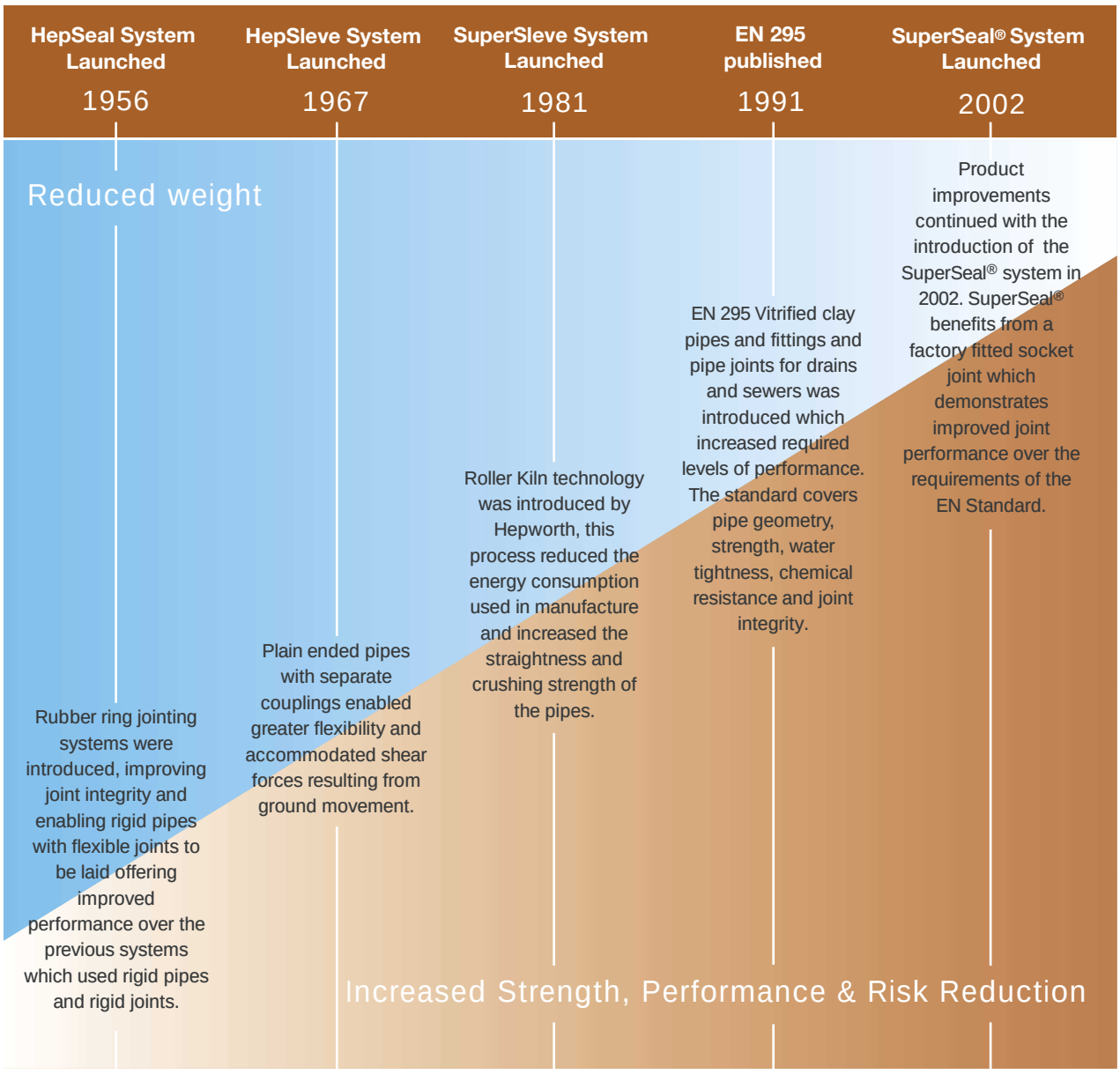
The development of clay drainage

Over the last 50 years the design and manufacture of Vitrified Clay Drainage Systems has continued to develop and improve to provide the modern sustainable product. Clay has become lighter, stronger and easier to use, and is manufactured in line with British and European standards which ensures consistent quality, giving reliability for both specifiers and installers.

The diagram below shows the major milestones in clay's development, which have increased quality whilst also reducing the weight.

Vitrified Clay Drainage Systems have a history of continuous improvement unrivalled by any other drainage material, in terms of product design, manufacturing efficiency and installation techniques. They are well placed to continue to evolve to meet the needs of the drainage and sewerage industries in both product performance and the increasingly important sustainability issues.

The milestones in the development of the modern clay drainage pipe



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Introduction

Manufacture

Clays are won from six local quarries and blended in the quarry before being moved to site for incorporation into a 40 layer stockpile. The clays are crushed at this stage to a particle size of less than 50mm. This ensures a homogeneous mixture of constituent parts for consistent further processing.

The blended stockpile is then further reduced to less than 2mm maximum particle size via a grinding mill. This clay can then be used directly for tunnel kiln production or for further processing to produce a fast fire blend for roller kiln production.

The clay destined for the roller kilns is first subjected to a heat treatment (calcining) process to reduce the organic content which would not have time to burn out in the rapid firing of a roller kiln. The particle size is then reduced further to a maximum particle size of 0.25mm to produce the high strength and fine ceramic quality of SuperSleve.

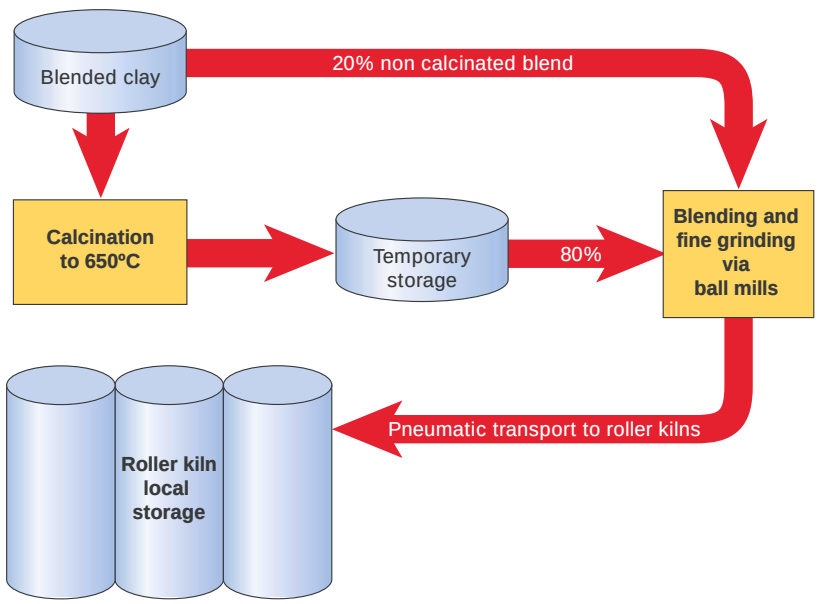
The calcined material is then mixed with 18% water and extruded at pressures up to 30 bar under high vacuum to produce a uniform pipe barrel. The extruded barrel is then trimmed to length and chamfered for ease of jointing.

The finished green clay pipe is then transferred to the roller dryer where drying conditions are carefully controlled. Through the dryer the pipe moisture is reduced from 18% to less than 0.5%. The product is then suitable for loading into the kiln.

During the firing process the product is heated to in excess of 1100°C and rolled on the kiln floor to ensure the product is kept round and straight. This firing creates a vitrified matrix to make the product strong and durable.

Subsequent 100% inspection is carried out by our experienced operators before loading into packs for transportation.

Preparation of the clay



Introduction

The Hepworth clay drainage range

Foul and surface water systems

- **SuperSleve HouseDrain 100mm**
  A system with a choice of plain ended or factory fitted couplings for bends and junctions, each having plain ended pipes with additional push-fit flexible couplings for around the house and general building drainage
- **SuperSleve 150mm**
  A plain ended system of pipes, bends and junctions, with additional push-fit flexible couplings for use in adoptable sewers, commercial or industrial construction, highways and general building drainage
- **SuperSleve 225mm and 300mm**
  A system incorporating factory fitted couplings on pipes, bends and junctions, with additional push-fit flexible couplings for use in adoptable sewers, commercial and industrial including highways, and general building drainage
- **SuperSeal® 150 to 300mm**
  A fully interchangeable pipe system with push-fit factory fitted SuperSeal® sockets on pipes, bends and junctions, especially suitable for use on brownfield sites, adoptable sewers, including commercial and industrial developments
- **HepSeal 400 to 600mm**
  A system of large diameter spigot and socket pipes, bends and junctions, with push-fit flexible joints for use in adoptable sewers, commercial and industrial developments including, highway drainage
- **Unjointed 150 to 300mm**
  Traditional spigot and socket pipes, bends, junctions and terminal fittings for use in repair and maintenance work

Clay channels

- A range of plain ended or socketed channel fittings for use in foul and surface water manholes also as a dry weather channel in combined sewers

Land drainage

- **HepLine 100 to 450mm**
  A dual purpose system for the collection of surface and ground water from areas with a high water table. Also for use as a dispersal line from septic tanks and small sewage treatment plants
- **Land Drain 75 to 225mm**
  For use in sports field drainage, agriculture and general ground water control

Ducting

- **HepDuct 100 to 225mm**
  For communication and power cable ducting

Supporting products

- **Gullies**
- **Gratings and metalwork**
- **Universal Grease Trap**
- **HepTape**
- **Clayware Accessories**

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Introduction

Standards and Regulations

<table>
<tr><th>System</th><th colspan="2">Relevant British and European Standards</th><th colspan="2">Other standards and regulations</th></tr>
<tr><td>SuperSleve</td><td rowspan="3">SuperSleve, SuperSeal® and HepSeal Drainage Systems comply with all relevant clauses of BS EN 295-1: 1991 Vitrified clay pipes and fittings and pipe joints for drains and sewers, Requirements.

Elastomeric sealing rings comply with BS EN 681-1: 1996 Elastomeric seals: Material requirements for pipe joint seals used in water and drainage applications.</td><td rowspan="3">All systems are capable of meeting the design, layout, construction, testing and maintenance requirements in BS EN 752: Parts 1 to 4: 1996 to 1998 Drain and sewer systems outside buildings and BS EN 1610: 1998 Construction and testing of drains and sewers.</td><td rowspan="3">The SuperSleve, SuperSeal® and HepSeal systems have been designed to meet the provisions laid out in Sewers for Adoption – a design and construction guide for developers.

Sewers for Adoption – Combined Addendum

Individual water companies have additional stated requirements</td><td>The SuperSleve system is covered by Agrément Certificate, No 02/3884 The Hepworth DN100 and DN150 SuperSleve Underground Drainage System.

The SuperSleve system is in all ways capable of satisfying the relevant requirements of The Building Regulations 2000 Drainage and waste disposal (2002 Edition) Approved Document H and The Building Standards (Scotland) Regulations 1990, as amended.</td></tr>
<tr><td>SuperSeal®</td><td rowspan="2"></td></tr>
<tr><td>HepSeal</td></tr>
<tr><td>Unjointed Systems</td><td rowspan="2">Unjointed Systems comply with BS 65: 1991 Specification for vitrified clay pipes, fittings and ducts, also flexible mechanical joints for use solely with surface water pipes and fittings.</td><td rowspan="2"></td></tr>
<tr><td>Channels</td></tr>
<tr><td>HepLine</td><td colspan="2">Complies with all relevant clauses of BS EN 295-5: 1994 Vitrified clay pipes and fittings and pipe joints for drains and sewers. Requirements for perforated vitrified clay pipes and fittings.</td><td colspan="2" rowspan="4"></td></tr>
<tr><td>Land Drain</td><td colspan="2">Complies with BS 1196: 1989 Specification for clayware field drain pipes and junctions.</td></tr>
<tr><td>HepDuct</td><td colspan="2">Complies with BS 65: 1991 Specification for vitrified clay pipes, fittings and ducts, also flexible mechanical joints for use solely with surface water pipes and fittings.</td></tr>
<tr><td>Metalwork</td><td colspan="2">Metalwork items in the Hepworth range complies with BS EN 124: 1994 Gully tops and manhole tops for vehicular and pedestrian areas. Design requirements, type testing, marking, quality control.</td></tr>
</table>

Performance

General

The following performance information relates to all Hepworth Clay Drainage and Duct Systems including the relevant European and British Standards which the products and systems must comply with.

The products meet all the relevant performance levels necessary to comply with the BS EN and BS requirements, with the consistency of manufacture required to meet the expectations of **BS EN ISO 9001: 2000** *Quality management systems, Requirements.* Individual items function within their specified criteria. However, in many instances Hepworth Clay Drainage products have a design performance far in excess of the specified requirements. This has been achieved through many years of research and development and the subsequent technical advancements that Hepworth as a manufacturer have taken advantage of.

For each of the sections which follow, the minimum performance levels and criteria have been specified and all products, where necessary, meet these requirements.

Joint Flexibility

Joint assemblies are required to satisfy angular deflection and shear resistance tests to safeguard against both infiltration into and exfiltration from the drainage system.

Joint flexibility is tested in two ways in order to demonstrate resistance to leakage.

These are:

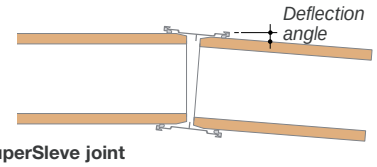
(a) Angular deflection (**BS EN 295-1: 1991**)

(b) Shear resistance (**BS EN 295-1: 1991**)

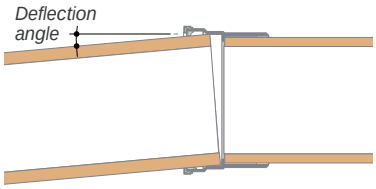
An effective seal must be maintained under internal and external pressures of 5 kPa (0.05 bar) and 50 kPa (0.5 bar) for the specified length of time without visible leakage to meet **BS EN 295-1: 1991** requirements.

(a) Angular Deflection

BS EN 295-1: 1991 states deflection limits for the jointing of clay pipes regardless of the type of joint. These are given in Table 2A.1. The assembly is required to stand the relevant test pressures for 5 minutes with no visible leakage. This test simulates the effect of subsidence or subsequent ground movement.



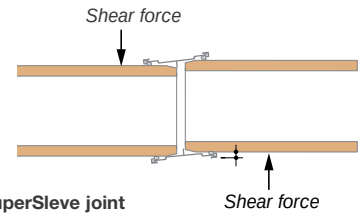
SuperSleve joint



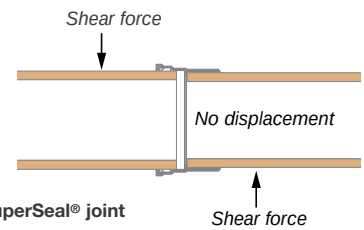
SuperSeal® joint

(b) Shear Resistance

BS EN 295-1: 1991 requires that a vertical load of 25 N per mm of nominal pipe size (eg 250 kg for DN100, 1000 kg for DN400) is applied to the joint assembly with no visible leakage. The assembly is required to stand the relevant test pressure for 15 minutes with no visible leakage.



SuperSleve joint



SuperSeal® joint

Table 2A.1 – Angular deflection

Nominal size (mm)	BS EN 295-1: 1991
100-200	80mm/m (4.75°)
225-500	30mm/m (1.75°)
600	20mm/m (1.25°)

• Deflection is measured in mm per metre deflected pipe length

Joints which pass the shear load tests are considered to be resistant to root penetration. This test simulates the effect of differential settlement at manholes or structures.

SuperSleve and SuperSeal® meet the requirements of the standard and are suitable for all applications.

Note that differential movement can occur when pipes enter buildings or connect with an inspection chamber, manhole, wall or other structure. This movement must be allowed for. Details and instructions are given in Section 11 Sitework.

Strength

Nominal performance parameters are laid down in Table 2A.2. All Hepworth pipes meet the criteria specified, and in many cases are well in excess of the stated level of performance.

Abrasion Resistance

Erosion of vitrified clay pipes in use is minimal and seldom needs to be considered during design. For special circumstances of application the values of average abrasion resistance can be determined from the test methods of **BS EN 295-3: 1991**.

Flow Characteristics

The flow properties of all clay pipes have been assessed using the Colebrook-White formula shown in **BS EN 752: 1999**. Recommended roughness values (ks) are:

Foul and combined sewers:

ks = 1.5mm at velocity less than 1 m/s.

ks = 0.6mm at velocity greater than 1m/s

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Performance

Surface water sewers:

ks = 0.6mm

All pipes and fittings have a low hydraulic roughness.

Further information on hydraulic design can be found on page 7 in Section 9, Design.

Watertightness of Pipe Bends and Junctions

Hepworth clay pipes are tested for impermeability using an air and water test.

BS EN 295: 1991 Air Test: The pipes, bends and junctions are subjected to an initial air pressure of 100mm water gauge, which may not drop below 75mm water gauge in 5 minutes.

Water Test: The pipes, bends and junctions are required to withstand an internal water pressure of 50 kPa (0.5 bar) for 15 minutes without leakage.

Bond Strength

Where fittings are made up by assembling fired clay parts together, **BS EN 295: 1991** requires the bending tensile strength of both the adhesive and the adhesive/clay interface to be tested. Neither the adhesive nor the adhesive/clay interface should fracture under a bending tensile stress of 5 N/mm^2.

Loading

Pipes specified in **BS EN 295: 1991** are resistant to fatigue from pulsating loads.

Durability

Properly designed, constructed, operated and maintained systems incorporating Hepworth Clay Drainage products have a design life expectancy well in excess of 100 years.

The wide range of products and systems offer the designer products that are capable of withstanding most structural situations combined with trouble-free performance in the most arduous of conditions.

Table 2A.2 – Crushing strength and bending moment resistance

Range	Nominal Diameter (mm)	Crushing Strength (kN/m)	BS EN 295 Class No.	Bending Moment Resistance (kNm)
SuperSleve	100	40	–	2.00
	150	40	–	5.00
	225	45	200	9.00
	300	72	240	–
SuperSeal®	150	40	–	5.00
	225	45	200	9.00
	300	72	240	–
HepSeal	400	64	160	–
	450	54	120	–
	500	60	120	–
	600	57	95	–
HepLine	100	28	–	–
	150	28	–	–
	225	36	–	–
	300	48	–	–
	400	48	–	–
	450	54	–	–
HepDuct	100	40	–	–
	150	40	–	–
	225	28	–	–

SuperSleve

Introduction

SuperSleve comprises a range of vitrified clay pipes, bends, junctions and fittings. SuperSleve is available in 100mm, 150mm, 225mm and 300mm diameters.

SuperSleve HouseDrain 100mm system is designed as the solution to 'around the house' drainage situations. It is also suitable for industrial and commercial applications.

SuperSleve 150mm, 225mm and 300mm are designed for use in adoptable and public sewers, commercial and industrial, including highways and general building projects for both foul and surface water drainage.

SuperSleve 225mm and 300mm have factory fitted couplings.

SuperSleve combines inherent strength, reliability, durability and dimensional accuracy to give confidence during installation and reassurance in service.

SuperSleve drainage systems comply with BS EN 295-1: 1991: *Vitrified clay pipes and fittings and pipe joints for drains and sewers: Requirements* which are classified as Joint System E.

For Design considerations, see Section 9.

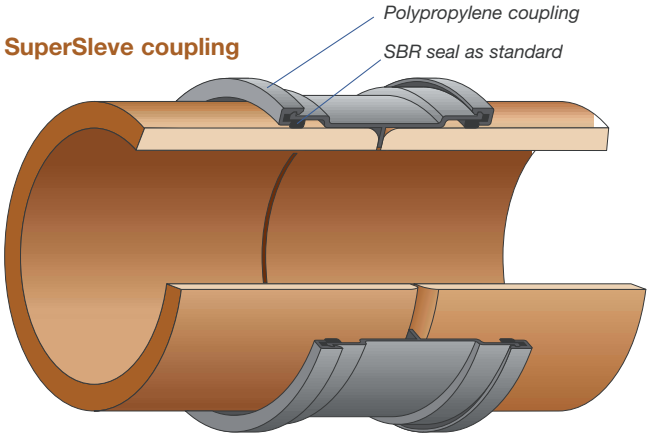
For Application details, see Section 10.

For Sitework instructions, see Section 11.

Benefits and features

- Economical to purchase, install and maintain
- A sustainable drainage product with a lower embodied CO_2 value than other drainage materials
- Jointing is quick and easy using the push fit polypropylene flexible couplings
- Available with EPDM for acid/alkali and Nitrile rings for hydrocarbons
- Suitable for direct connection to the inspection and access chambers in Section 3, Access Systems
- Comprehensive range of fittings and gullies
- Suitable for laying directly on the trench bottom or onto a minimum regulating bed
- Excellent design performance in excess of European and British Standards

SuperSleve coupling



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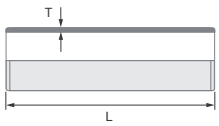
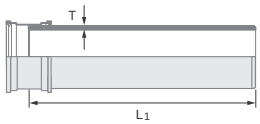
SuperSleve



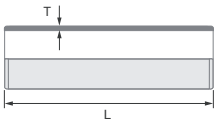
Plain ended pipe

Nominal diameter	100	150	225	300
L Overall length	1600	1750	1750	2000
T Wall thickness	11	14	19	29
Weight (kg)	14.9	30.7	59.5	145.1
Code (Plain ended)	**SP1**	**SP2**	**SP175/4**	**SP7**



Socketed pipe

Nominal diameter	225	225	225	225	300	300	300	300
L_1 Effective length	300	600	1000	1750	300	600	1000	2000
T Wall thickness	19	19	19	19	29	29	29	29
Weight (kg)	11.0	21.2	34.8	60.3	23.0	44.8	73.7	146.3
Code (Socketed)	**SP030/5S**	**SP060/5S**	**SP100/5S**	**SP175/4S**	**SP030/7S**	**SP060/7S**	**SP100/7S**	**SP7S**



Rocker pipes

Nominal diameter	150	150	150	225	225	225	300	300	300
L Overall length	300	600	1000	300	600	1000	300	600	1000
T Wall thickness	14	14	14	19	19	19	29	29	29
Weight (kg)	4.6	9.2	15.4	10.2	20.4	34.0	21.8	43.6	72.5
Code (Plain ended)	**SP030/2**	**SP060/2**	**SP100/2**	**SP030/5**	**SP060/5**	**SP100/5**	**SP030/7**	**SP060/7**	**SP100/7**

Coupling – Polypropylene

Nominal diameter	100	150	225	300
S Socket depth	45	55	75	100
Weight (kg)	0.16	0.38	0.81	1.2
Code (Standard SBR Seal)	**SCI/1**	**SCI/2**	**SC1/5**	**SC1/7**
Code (EPDM Seal)	**SC2/1**	**SC2/2**	**SC2/5**	**SC2/7**
Code (Nitrile Seal)	**SC3/1**	**SC3/2**	**SC3/5**	**SC3/7**

Cut end protector

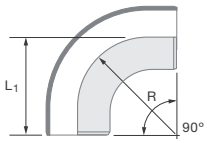
Nominal diameter	225	300
E External diameter	263	360
F Wall thickness	0.5	0.5
Weight (kg)	0.10	0.12
Code	**SEP5**	**SCEP7**

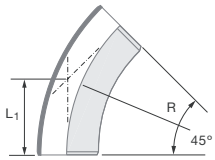
- Fits over end of pipe before jointing for extra protection

All dimensions are in mm

All weights are per pipe or fitting

SuperSleve



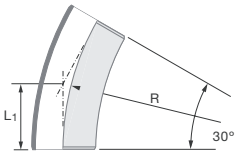


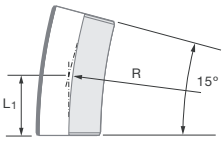
Bends

Bend	90°				45°			
Nominal diameter	100	150	225*	300*	100	150	225*	300*
L_1 Effective length	195	285	335	470	107	150	200	286
R Radius	150	230	235	320	150	230	235	700
Weight (kg)**	2.6	5.9	17.5	33.7	2.2	4.8	12.5	34.7
Code (Plain ended)	**SBI/1**	**SBI/2**	**–**	**–**	**SB2/1**	**SB2/2**	**–**	**–**
Code (Single socket)	**SDB1/1S**	**–**	**SB1/5S**	**SB1/7S**	**SDB2/1S**	**–**	**SB2/5S**	**SB2/7S**

* SuperSleve 100, 225 and 300 have factory fitted couplings

** Weight for plain ended bend



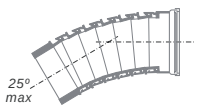


Bends

Bend	30°				15°			
Nominal diameter	100	150	225*	300*	100	150	225*	300*
L_1 Effective length	95	117	160	230	90	100	130	195
R Radius	150	230	235	900	150	230	235	1459
Weight (kg)**	2.2	4.2	20.3	37.4	1.9	3.9	12.5	32.6
Code (Plain ended)	**SB3/1**	**SB3/2**	**–**	**–**	**SB4/1**	**SB4/2**	**–**	**–**
Code (Single socket)	**SDB3/1S**	**–**	**SB3/5S**	**SB3/7S**	**SDB4/2**	**–**	**SB4/5S**	**SB4/7S**

* SuperSleve 100, 225 and 300 have factory fitted couplings

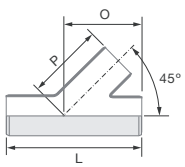
** Weight for plain ended bend



Flexible bend

Nominal diameter	100
Effective length (when straight)	300
Weight (kg)	1.4
Code	**SFB1/1**

- Bends between 0 and 25°



45° Oblique junction

Nominal diameter	100x100	150x100	150x150	225*x100	225*x150	225*x225	300*x100	300*x150	300*x225	300*x300
L Overall length	350	450	450	450	450	650	600	600	800	800
O Offset	250	300	340	360	375	475	485	485	600	600
P Projection	250	300	340	320	375	450	450	500	500	600
Weight (kg)**	3.6	7.2	9.7	18.1	18.5	28.6	37.0	42.7	53.6	75.1
Code (Plain ended)	**SJI/1**	**SJI/2**	**SJI/3**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
Code (Single socket)	**–**	**–**	**–**	**SJ1/7S**	**SJ1/8S**	**–**	**SJ1/14S**	**SJ1/15S**	**–**	**–**
Code (Double socket)	**SDJI/1D**	**–**	**–**	**–**	**–**	**SJ1/9D**	**–**	**–**	**SJ1/17D**	**SJ1/19D**

* SuperSleve 100, 225 and 300 have factory fitted couplings

** Weight for plain ended junction

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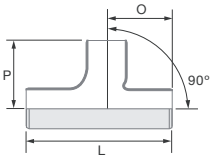
SuperSleve

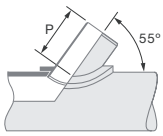


90º Curved square junction

Nominal diameter	100x100	150x100	150x150	225*x100	225*x150	225*x225	300*x100	300*x150	300*x225	300*x300
L Overall length	350	450	450	450	450	650	600	600	600	800
O Offset	175	225	225	225	225	475	300	275	300	400
P Projection	175	185	210	215	220	360	310	320	290	400
Weight (kg)**	3.5	5.9	8.3	21.2	22.0	28.0	38.0	38.8	50.9	51.9
Code (Plain ended)	**SJ2/1**	**SJ2/2**	**SJ2/3**	–	–	–	–	–	–	–
Code (Single socket)	–	–	–	**SJ3/7S**	**SJ3/8S**	–	**SJ3/14S**	**SJ3/15S**	–	–
Code (Double socket)	**SDJ2/1D**	–	–	–	–	**SJ2/9D**	–	–	**SJ3/17D**	**SJ3/19D**

* SuperSleve 100, 225 and 300 have factory fitted couplings

** Weight for plain ended junction

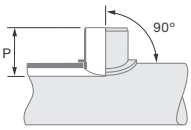


Oblique saddle

Nominal diameter	100	150	225	300
P Projection	150	190	330	625
Weight (kg)	2.8*	5.0*	10.1	40.7
Code (Small)	**SJSI/1**	**SJSI/2**	–	–
Code (Large)	**SJS2/1**	**SJS2/2**	**SJS2/5**	**SJS2/7**

- Small for pipes up to and including 300mm diameters
- Large for pipes larger than 300mm diameters

* Weight for large saddle

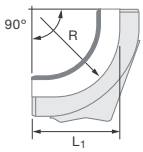


Square saddle

Nominal diameter	100	150	225	300
P Projection	100	120	210	230
Weight (kg)	1.7*	3.3*	10.1	28.4
Code (Small)	**SJS4/1**	**SJS4/2**	–	–
Code (Large)	**SJS5/1**	**SJS5/2**	**SJS5/5**	**SJS5/7**

- Small for pipes up to and including 300mm diameter
- Large for pipes larger than 300mm diameter

* Weight for large saddle

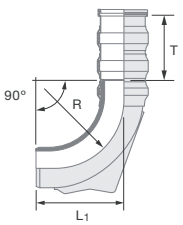


Rest bend – 90º

Nominal diameter	100	150	225*	300*
L_1 Effective length	255	270	330	470
R Radius	215	235	230	470
Weight (kg)	4.2**	8.2**	20.0	60.0
Code (Plain ended)	**SBR1**	**SBR2**	–	–
Code (Single socket)	**SDBR1**	–	**SBR5S**	**SBR7S**

* SuperSleve 225 and 300 have factory fitted couplings

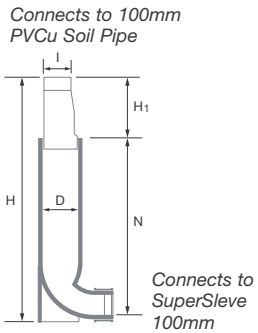
** Weight for plain ended bend



Telescopic rest bend

Nominal diameter	100
T Telescopic length	190
L_1 Effective length	255
R Radius	215
Weight (kg)	4.2
Code	**SBRT1**

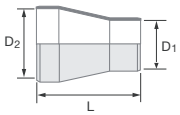
SuperSleve



Rat barrier

Nominal diameter	100
H Overall height	1125
I Inlet diameter	110
D Internal diameter	175
H_1 Effective height	280
N Depth to invert	810
Weight (kg)	25.5
Code	**RAT/FM**

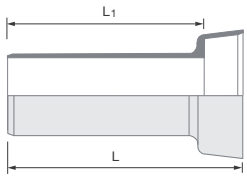
- The Hepworth Rat Barrier prevents rats from entering domestic or commercial premises via the drainage system. The Rat Barrier is used in place of a rest bend at the base of each soil and ventilation stack.



Taper pipe

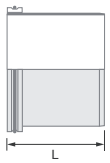
Nominal diameter	100-150	150-225	225-300
L Overall length	250	450	550
D_1 Main bore inlet	100	150	225
D_2 Main bore outlet	150	225	300
Weight (kg)	3.2*	15.5	41.2
Code (Plain ended)	**ST2/1**	**ST3/2**	**ST4/3**
Code (Single socket)	**SDT2/1**	**–**	**–**

* Weight for plain ended taper



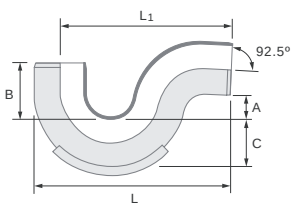
Socket adaptor

Nominal diameter	100	150	225	300
L Overall length	370	365	670	680
L_1 Effective length	310	305	600	600
Weight (kg)	3.8	6.0	16.7	30.7
Code	**SA1/1**	**SA1/2**	**SA1/5**	**SA1/7**



Adaptor to HepSeal

Nominal diameter	100	150	225	300
L Overall length	310	305	197	300
Weight (kg)	6.0	10.8	9.4	12.0
Code	**SA2/1**	**SA2/2**	**SA2/5**	**SA2/7**



Low-back P-trap

Nominal diameter	100	150
L Overall length	460	555
L_1 Effective length	400	470
A Trap depth	50 min	50 min
B Neck length	120min	120min
C Trap diameter	100	150
Weight (kg)	5.5*	10.8
Code (Plain ended)	**SG1/1**	**SG1/2**
Code (Single socket)	**SDG1/1**	**–**

* Weight for plain ended p trap

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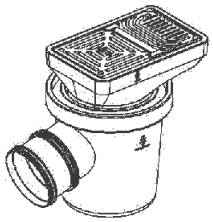
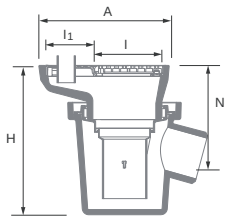
SuperSleve

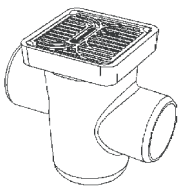




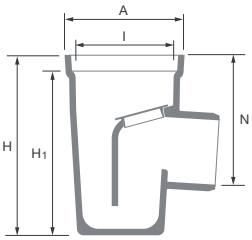
Inlet gully

Outlet diameter	100	Weight (kg)
H Overall height	345	
A Top size	300x195	
I Inlet (grid) size	150x150	
I_1 Inlet (vertical) size	150x90	
N Top to invert	245	
Code	**SDG3/1**	6.6
Code (Horizontal back inlet)	**SDG3/2**	6.7
Code (Grid and back inlet)	**SDG10**	0.4
Code (Sealed cover plate)	**SDG2/4**	0.5
Code (Metal grid)	**SDG2/5**	1.0
Code (Hopper c/w grid)	**SDG2/8**	1.0
Code (Dip tube trap)	**SDC6**	0.3
Code (Vertical back inlet blanking piece)	**SDC8**	0.5

SG2/1

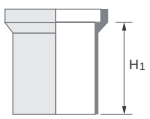


SG2/2



Square gully

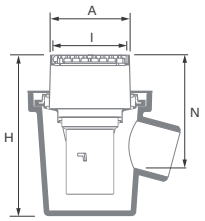
Outlet diameter	100	Weight (kg)
H Overall height	280	
H_1 Effective height	255	
A External to size	188	
I Internal top size	159	
N Top to invert	200	
Code	**SG2/1**	8.2
Code (With horizontal back inlet)	**SG2/2**	8.3
Code (Square polypropylene grid)	**SG2/5**	0.5



Square raising piece

Nominal size	150x150	150x150	150x150	150x150
H_1 Effective height	75	150	225	300
Weight (kg)	2.1	3.5	4.0	5.0
Code	**RRS2/1**	**RRS2/2**	**RRS2/3**	**RRS2/4**

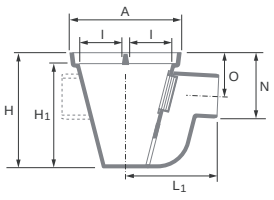
• To fit square gully SG2/1, SH1 and SH2



Paved area gully

Outlet diameter	100	Weight (kg)
H Overall height	345	
A Top size	168	
I Inlet (grid) size	150x150	
N Top to invert	245	
Code	**SDG2/1**	4.2
Code (Horizontal back inlet)	**SDG2/3**	1.0
Code (Top assembly)	**SDG2/2**	1.0
Code (Sealed cover plate)	**SDG2/4**	0.5
Code (Metal grid)	**SDG2/5**	1.0

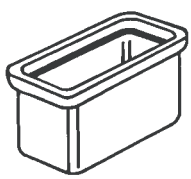
• Raising piece (150 SuperSleve and 150 coupling)

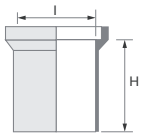


Access gully

Outlet diameter	100	Weight (kg)
H Overall height	315	
H_1 Effective height	290	
L_1 Effective length	270	
A External to size	305x160	
I Inlet size	105x105	
N Top to invert	175	
O Offset	125	
Code	**SG3/1**	9.6
Code (With horizontal back inlet)	**SG4/1**	10.6
Code (Spare polypropylene grid)	**IG1P**	0.2
Code (Spare bridge)	**QB1**	0.2

• Can accept 110mm round or 110x110mm square rainwater pipes



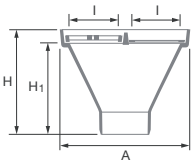


Access raising piece

Nominal height	75	150	225	300
H Overall height	75	150	225	300
I Inlet size	265x120	265x120	265x120	265x120
Weight (kg)	2.8	4.5	5.7	7.4
Code	**SRP5**	**SRP6**	**SRP7**	**SRP8**

• To fit access gully SG3/1and SG4/1

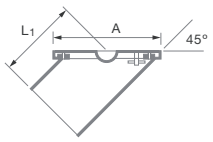
SuperSleve



Rectangular hopper – with plastic grid and inlet

Outlet diameter	100	150
H Overall height	245	230
H_1 Effective height	215	205
I Inlet size	105 x 105	155 x 155
A Top size	305 x 160	410 x 210
Weight (kg)	4.0	7.9
Code	**SH3/1**	**SH3/2**
Code (Spare polypropylene grid)	**IG1P**	**IG1P**
Code (Spare bridge)	**QB1**	**QB2**

- Alloy Sealing Plates (ISI) and Alloy Hinged Grates and Frames (IHI) can be supplied to fit SH3/1 the rectangular Hopper
- The back inlet will accept waste and rainwater downpipes up to 100mm

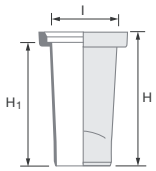


Rodding point – oval

Outlet diameter	100	150
L_1 Effective length	130	180
A Top plate size	190 x 140	270 x 200
Weight (kg)	2.0*	5.0
Code	**SRP1/1**	**SRP1/2**
Code (with airtight seal)	**SRP2/1**	**–**

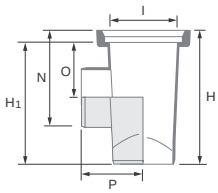
- Rodding points are supplied complete with aluminium oval sealing plate. Type SRP1/1 is also supplied with a safety valve. When located internally, type SRP2/1 should be used
- Rodding points may be directly connected to SuperSleve pipes with a polypropylene coupling

* Weight of SRP1/1



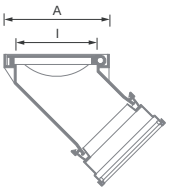
Square hopper – plain

Outlet diameter	100
H Overall height	270
H_1 Effective height	245
I Inlet size	135 x 135
Weight (kg)	3.7
Code	**SH1**



Square hopper – with horizontal outlet

Outlet diameter	100
H Overall height	270
H_1 Effective height	245
I Inlet size	135 x 135
P Projection	140
O Offset	110
N Top to invert	185
Weight (kg)	4.2
Code	**SH2**

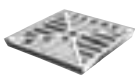


Rodding point – square

Outlet diameter	100
A Top size	164 x 164
I Inlet size	120 x 90
Weight (kg)	0.7
Code	**SRPS1/1**

- Cover plate will withstand a 1.0 tonne wheel load
- The cover and frame incorporates an airtight seal making it suitable for use internally

Grids and gratings for use with SuperSleve gullies

Grating	Gully size	Grid/frame size	Code Alloy	Code Cast iron	Suitable for gully types SH1	SH2	SH3/1	SH3/2	SG2/1	SG3/1	SG4/1
Square grid 	100	120	IG1	IG1C	–	–	✔	✔	–	✔	✔
	150	150	IG2	IG2C	✔	✔	–	–	✔	–	–
Rectangular grid	–	265x120	IG5	–	–	–	✔	–	–	✔	✔
Hinged grating and frame -square 	100	120	IH1	–	–	–	✔	✔	–	✔	✔
	150	150	IH2	IH2C	✔	✔	–	–	✔	–	–
Sealing plate and frame -square 	–	120	IS1*	IS1C	–	–	✔	–	–	✔	✔
	–	150	IS2*	IS2C	✔	✔	–	–	✔	–	–

* Sealed versions available

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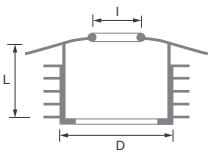
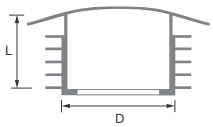


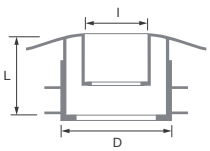
Internal drain connector to waste pipes

Nominal diameter	100	100
I Inlet size	32–40	50
D External diameter	90	90
L Spigot length	60	60
Weight (kg)	0.1	0.1
Code	**S/S460**	**S/S462**



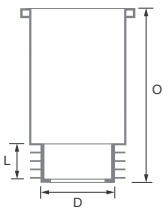
Internal blanking plug

Nominal diameter	100
L Spigot length	65
D External diameter	90
Weight (kg)	0.1
Code	**S/S89**



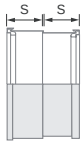
Internal drain connector to rainwater pipes

Nominal diameter	100	100
I Inlet size	68 round	65 square
L Spigot length	53	53
D External diameter	92	92
Weight (kg)	0.1	0.1
Code	**S/4A06B**	**S/4A06C**



Internal drain connector to soil stack

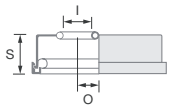
Nominal diameter	100
O Overall length	175
L Spigot length	55
D External diameter	92
Weight (kg)	0.6
Code	**S/S464**



Adaptor to HepSleve

Nominal diameter	100	150	225
S Spigot depth	45	55	75
Weight (kg)	0.1	0.3	0.6
Code	**SA3/1**	**SA3/2**	**SA3/4**

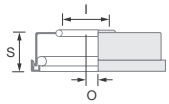
- Adaptor couplings are manufactured in polypropylene with SBR sealing rings



Adaptor to waste pipes

Nominal diameter	100	100
I Inlet size	32	40
S Socket depth	45	45
O Offset	23	20
Weight (kg)	0.1	0.1
Code	**SA4**	**SA5**

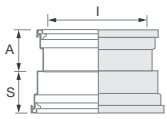
- Adaptor couplings are manufactured in polypropylene with SBR sealing rings
- Adaptors to waste pipes are also available with a combination of:
  2 x 32mm entries (SA4/4)
  1 x 32mm, 1 x 40mm (SA4/5)
  2 x 40mm entries (SA5/5)



Adaptors to rainwater

Nominal diameter	100	100	100
I Inlet size	50	68	82
S Socket depth	45	45	45
O Offset	14	7	0
Weight (kg)	0.1	0.1	0.1
Code	**SA6**	**SA7**	**SA8**

- Adaptor couplings are manufactured in polypropylene with SBR sealing rings



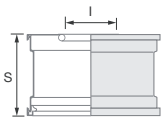
Adaptors to soil pipes

Nominal diameter	100	150
I Inlet size	106	157
S Socket depth	45	55
A Inlet depth	55	55
Weight (kg)	0.1*	1.4*
Code (SuperSleve)	**SA9**	**SA10**
Code (HepSleve)	**VA9**	**VA10**

- Adaptor couplings are manufactured in polypropylene with SBR sealing rings
- The soil pipe adaptors are manufactured from polypropylene with SBR seals and grommets

* Weight for SA9 and SA10

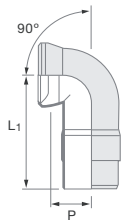
SuperSleve



Rainwater adaptor

Nominal diameter	100	150
I Inlet size	45	75
S Socket depth	80	100
Weight (kg)	0.1	0.2
Code	**SA11**	**SA21**

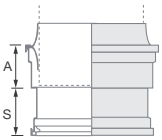
- The 100mm adaptor will accept round or square rainwater pipes up to 76mm maximum.
- The 150mm adaptor accepts pipes up to 100×100mm square



WC pan horizontal connector

Nominal diameter	100
L_1 Effective length	400
P Projection	75
Weight (kg)	0.7
Code	**SA12**

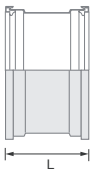
- WC pan connectors are manufactured to BS 5627: 1984 *Specification for plastics connectors for use with horizontal outlet vitreous china WC pans* and are coloured white
- To connect to a SuperSleve pipe use an adaptor (SA9)



WC pan S-trap spigot

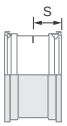
Nominal diameter	100
S Socket depth	45
A Inlet depth	45
Weight (kg)	0.1
Code	**SA13**

- Manufactured to connect to old pans to BS 5503 and new pans to BS EN 33:2003 and BS EN 37:1999.



Sliding coupling

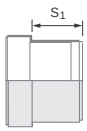
Nominal diameter	100	150
L Effective length	90	110
Weight (kg)	0.1	0.3
Code	**SC4/1**	**SC4/2**



Adaptor to cast iron

Nominal diameter	100	150
S Socket depth	45	55
Weight (kg)	0.1	0.3
Code	**SA14/1**	**SA14/2**

- For connecting to cast iron pipes to BS 437: 1978 *Specification for cast iron spigot and socket drain pipes and fittings*



Double ended spigot adaptor

Nominal diameter	100	150
S_1 Spigot length	65	80
Weight (kg)	0.3	0.4
Code	**SA15/1**	**SA15/2**

- For connecting PlastiDrain pipes to SuperSleve pipes

Stopper

Nominal diameter	100	150	225	300
S Socket depth	45	55	75	100
Weight (kg)	0.1	0.2	7.0	11.3
Code	**SS1/1**	**SS1/2**	**SS3/4**	**SS3/7**
Code – for use with PPICs	**UGS**	**UYS**	**–**	

- SS3/4 and SS3/7 are clay stoppers

Testing stopper

Nominal diameter	100	150
S Socket depth	45	55
Weight (kg)	0.1	0.2
Code	**SS2/1**	**SS2/2**

- The testing stopper has an integral nipple suitable for a push fit connection to a hose

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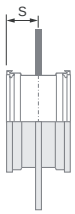
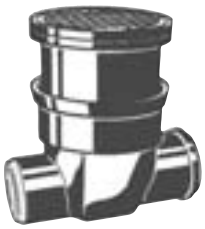
SuperSleve

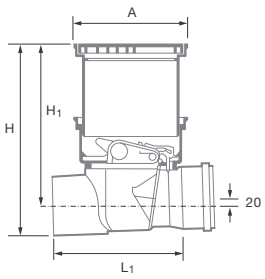


Water stop

Nominal diameter	100	150
S Socket depth	45	55
A Flange size	300 x 300	375 x 375
Weight (kg)	0.9	1.4
Code	**SWS1**	**SWS2**

- The water stop consists of a sliding coupling with a square plastic flange
- Other flange sizes are available upon request

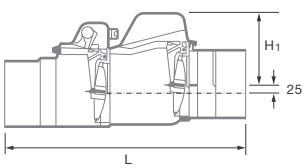




Eurofix anti-flood valve

Nominal diameter	100	150
L_1 Effective length	340	378
H_1 Effective height (max)	311	294
H Overall height (max)	366	374
A Cover diameter	235	235
Weight (kg)	5.0	5.0
Code	**QE1**	**QE2**

- This is a single valve system which can be manually locked in the open or closed position
- The Eurofix raising piece is universal and can be cut down to a minimum of 40mm
- The cover supplied as standard is lockable
- The Eurofix socket accepts 110mm and 160mm OD pipe. To convert to SuperSleve spigot use double spigot adaptors SA15/1 and SA15/2 respectively

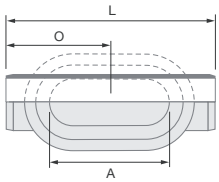


Staufix anti-flood valve

Nominal diameter	100	150
L Overall length	575	615
H_1 Effective height	200	175
Weight (kg)	5.0	5.0
Code	**QS1**	**QS2**

- The Staufix anti-flood valve must be installed in a purpose made manhole
- The Staufix anti-flood valve accepts 110mm and 160mm OD pipe. To convert to SuperSleve spigot use double spigot adaptors SA15/1 and SA15/2 respectively

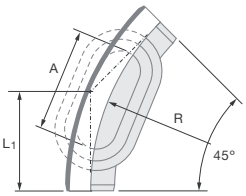
Note: These anti-flood valves are designed specifically for use in surface water systems only



Access pipe

Nominal diameter	100	150
L Overall length	450	505
O Offset	225	252.5
A Access opening	260 x 100	260 x 100
Weight (kg)	7.2	10.9
Code	**SPA1**	**SPA2**

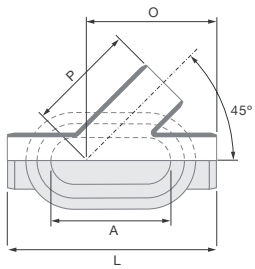
- Alloy lid and frame (ISO) can be supplied to fit
- May be used in conjunction with 260 x 100mm raising pieces (SRP1) to adjust the level of the top



Access bend – 45º

Nominal diameter	100	150
L_1 Effective length	250	270
R Radius	600	650
A Access opening	260 x 100	260 x 100
Weight (kg)	7.6	10.3
Code	**SBA1**	**SBA2**

- Alloy lid and frame (ISO) can be supplied to fit
- May be used in conjunction with 260 x 100mm raising pieces (SRP1) to adjust the level of the top

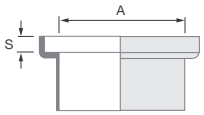


Single oblique access junction

Nominal diameter	100 x 100	150 x 100	150 x 150
L Overall length	450	505	505
A Access opening	260 x 100	260 x 100	260 x 100
P Projection	240	300	320
O Offset	280	320	320
Weight (kg)	8.7	12.6	13.7
Code (left hand)	**SJA1L**	**SJA2L**	**SJA3L**
Code (right hand)	**SJA1R**	**SJA2R**	**SJA3R**

- For left or right hand add L or R to the end of the Code, as shown
- Alloy lid and frame (Code ISO) can be supplied to fit
- May be used in conjunction with 260 x 100mm raising pieces (SRP1) to adjust the level of the top

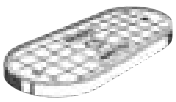
SuperSleve



Access raising piece

Nominal height	75	150	225	300
A Access opening	260 x 100	260 x 100	260 x 100	260 x 100
S Socket access depth	30	30	30	30
Weight (kg)	3.9	6.2	8.4	10.6
Code	**SRP1**	**SRP2**	**SRP3**	**SRP4**

- For use with access fittings to adjust height, sealed with an alloy lid and frame 300 x 150mm
- Does not include alloy frame and lid (ISO) – see below



Access sealing plate and frame

Frame size	300 x 150
Weight (kg)	2.5
Code	**ISO**

- Suitable for sealing 260 x 100 access fittings and raising pieces
- Not for use inside buildings
- Not designed to withstand vehicular loading
- Available in alloy finish

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SuperSeal®

Introduction

Hepworth SuperSeal® represents a major step forward in the continuing development of drainage systems. SuperSeal® has been specifically developed for adoptable and public sewerage schemes, storm water applications, highway drainage, industrial, commercial and on brownfield development sites.

SuperSeal® is currently available in 150-300mm diameters. Pipes are supplied plain ended with a fixed polypropylene socket. The plain ended pipes can be cut and re-jointed to ensure complete installation flexibility and to minimise site wastage.

SuperSeal® utilises the same pipe barrel as SuperSleve, making it interchangeable with SuperSleve products of the same diameter. SuperSeal® replaces the equivalent diameters in the HepSeal range. HepSeal pipes and fittings in diameters 400mm and above remain unaffected.

The SuperSeal® range is stronger and lighter than any of its clay market competitors. Its unique manufacturing process with horizontal firing, produces pipes that are straighter and rounder for easier jointing during installation.

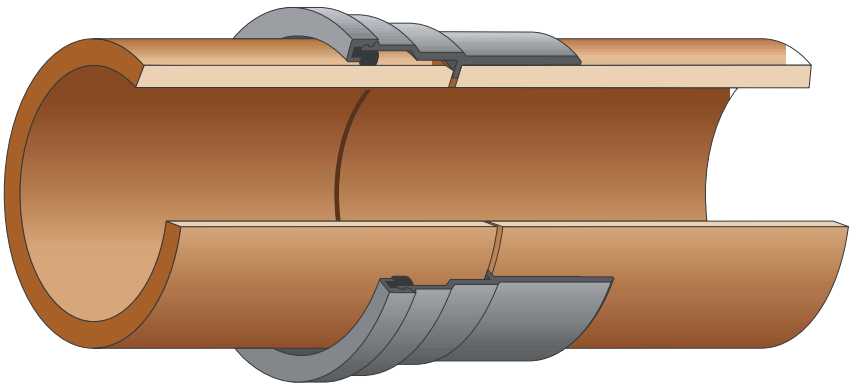
SuperSeal® drainage systems comply with BS EN 295-1: 1991: *Vitrified clay pipes and fittings and pipe joints for drains and sewers: Requirements* and are classified as Joint System E.

For Design considerations, see Section 9.

For Sitework instructions, see Section 11.

Benefits and features

- Overall lower installed cost
- Enables reduced bedding and aggregate requirements
- Suitable for use with recycled aggregate as pipe bedding
- Lifetime jetting guarantee
- Increased pipe lengths and factory fitted socket for easier laying and faster installation
- EPDM seals supplied as standard for brownfield sites and aggressive effluents
- High shear resistant socket for areas subject to ground movement
- Availability of adaptors for integration with existing HepSeal and HepSleve systems
- Interchangeable with SuperSleve range



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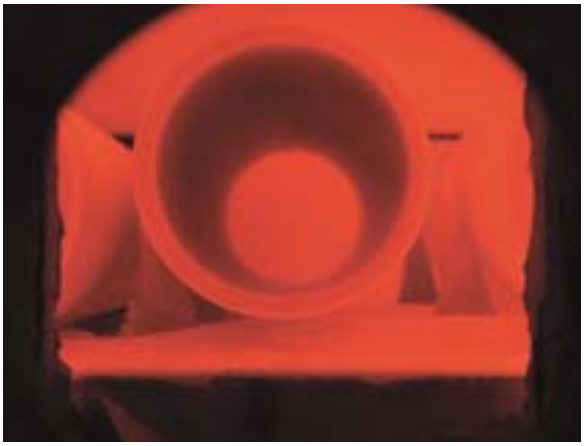
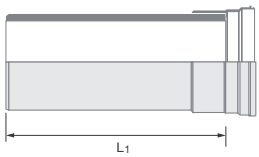


Pipe – Single socket

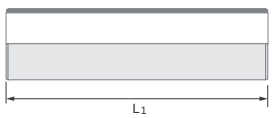
Nominal diameter	150	225	300
L_1 Effective length	1750	1750	2000
E External diameter	178	263	357
S Outside dia of socket	203	295	401
T Wall thickness	14	19	28.5
Weight (kg)	30.6	61.5	152
Code	**FP2S**	**FP175/4S**	**FP7S**

- For separate loose couplings please refer to SuperSleve 150, 225 and 300mm diameter range – see Section 2, page 9.



Rocker pipe – Single socket

Nominal diameter	150	150	150	225	225	225	300	300	300
L_1 Effective length	300	600	1000	300	600	1000	300	600	1000
Weight (kg)	6.0	10.0	18.2	12.1	20.6	33.3	24.1	43.5	73.0
Code	**FPO30/2S**	**FP060/2S**	**FP100/2S**	**FP030/5S**	**FP060/5S**	**FP100/5S**	**FP030/7S**	**FP060/7S**	**FP100/7S**



Pipe – Plain end

Nominal diameter	150	150	150	225	225	225	300	300	300
L Overall length	300	600	1000	300	600	1000	300	600	1000
Weight (kg)	5.8	9.6	17.8	11.3	19.8	32.5	22.1	42.3	71.8
Code	**SP030/2**	**SP060/2**	**SP100/2**	**SP030/5**	**SP060/5**	**SP100/5**	**SP030/7**	**SP060/7**	**SP100/7**

Coupling – Polypropylene

Nominal diameter	150	225	300
S Socket depth	55	75	100
Weight (kg)	0.3	0.8	1.2
Code (EPDM Seal)	**SC2/2**	**SC2/5**	**SC2/7**
Code (Nitrile Seal)	**SC3/2**	**SC3/5**	**SC3/7**

Cut end protector

Nominal diameter	225	300
E External diameter	265	360
F Wall thickness	0.5	0.5
Weight (kg)	0.1	0.12
Code	**SEP5**	**SCEP7**

- Fits over end of pipe before jointing for extra protection

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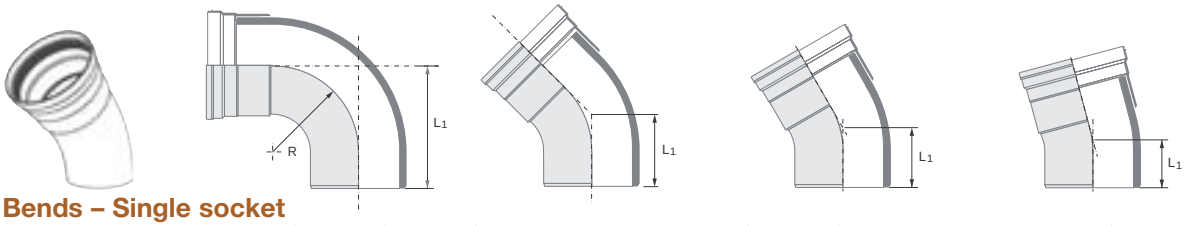
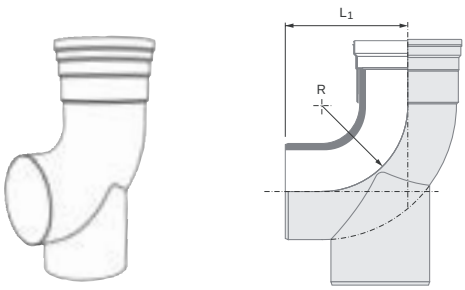


Bends – Single socket

Bend	90º			45º			30º			15º		
Nominal diameter	150	225	300	150	225	300	150	225	300	150	225	300
L_1 Effective length	285	335	470	150	200	300	117	160	234	100	130	174
R Radius	230	235	355	230	235	500	230	235	550	230	235	600
Weight (kg)	5.9	22.9	51.5	4.8	12.5	43.1	4.2	10.9	34.7	3.9	9.7	26.3
Code	**FB1/2S**	**FB1/5S**	**FB1/7S**	**FB2/2S**	**FB2/5S**	**FB2/7S**	**FB3/2S**	**FB3/5S**	**FB3/7S**	**FB4/2S**	**FB4/5S**	**FB4/7S**



Rest bend – Single socket

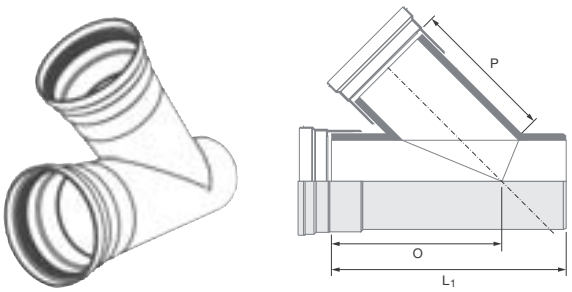
Nominal diameter	150	225	300
L_1 Effective length	280	335	470
R Radius	235	235	355
Weight (kg)	8.3	27.5	57.9
Code	**SBR2***	**FBR5S**	**FBR7S**

* SBR2 is plain ended

Stopper

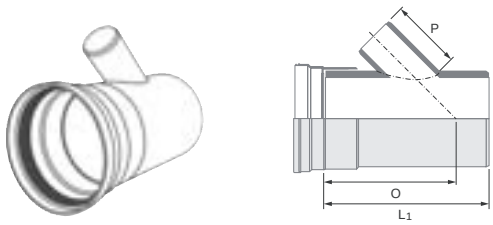
Nominal diameter	100	150	225	300
S Socket depth	45	55	75	100
Weight (kg)	0.1	0.2	7.0	11.3
Code	**SS1/1**	**SS1/2**	**SS3/4**	**SS3/7**
Code (for use with PPICs)	**UGS**	**UYS**	**–**	**–**

- SS3/4 and SS3/7 are clay stoppers



45º double socketed oblique junction

Nominal diameter	150x150	225x150	225x225	300x150
L_1 Effective length	450	450	650	600
O Offset	340	375	494	495
P Projection	340	278	460	336
Weight (kg)	10.2	21.6	36.6	48.6
Code	**FJ1/3D**	**FJ1/8D**	**FJ1/9D**	**FJ1/15D**



45º single socketed oblique junction

Nominal diameter	150x100	225x100	300x100
L_1 Effective length	450	450	600
O Offset	300	384	526
P Projection	300	195	258
Weight (kg)	8.2	20.5	38.9
Code	**FJ1/2S**	**FJ1/7S**	**FJ1/14S**

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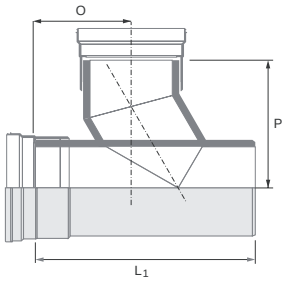
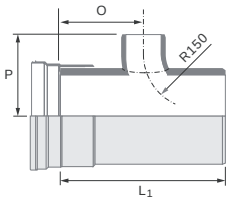


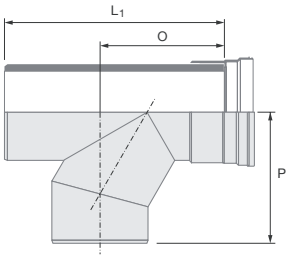
90º double socketed square junction

Nominal diameter	150 x 150	225 x 150	225 x 225	300 x 150	300 x 300
L_1 Effective length	400	450	650	600	800
O Offset	186	225	475	275	300
P Projection	209	225	400	350	500
Weight (kg)	9.7	20.5	33.0	40.1	84.7
Code	**FJ2/3D**	**FJ3/8D**	**FJ2/9D**	**FJ2/15D**	**FJ2/19D**



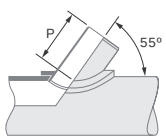
90º single socketed square junction

Nominal diameter	150 x 100	225 x 100	300 x 100
L_1 Effective length	335	450	600
O Offset	244	225	300
P Projection	185	225	310
Weight (kg)	8.2	20.5	35.2
Code	**FJ2/2S**	**FJ3/7S**	**FJ2/14S**



Tumbling bay – Single socket

Nominal diameter	150 x 150	225 x 225	300 x 300
L_1 Effective length	400	650	800
O Offset	220	175	200
P Projection	209	365	500
Weight (kg)	9.4	32.7	38.4
Code	**FJ6/3S**	**FJ6/9S**	**FJ6/19S**

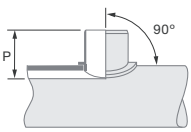


Oblique saddle

Nominal diameter	100	150	225	300
P Projection	150	190	330	625
Weight (kg)	2.8*	5.0*	10.2	40.8
Code (small)	**SJSI/1**	**SJSI/2**	**–**	**–**
Code (large)	**SJS2/1**	**SJS2/2**	**SJS2/5**	**SJS2/7**

- Small for pipes up to and including 300mm diameters
- Large for pipes larger than 300mm diameters

* Weights for large saddle



Square saddle

Nominal diameter	100	150	225	300
P Projection	100	120	210	230
Weight (kg)	1.7*	3.3*	10.2	24.0
Code (small)	**SJS4/1**	**SJS4/2**	**–**	**–**
Code (large)	**SJS5/1**	**SJS5/2**	**SJS5/5**	**SJS5/7**

- Small for pipes up to and including 300mm diameter
- Large for pipes larger than 300mm diameter

* Weights for large saddle

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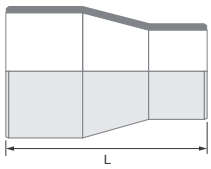
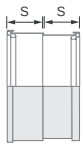
SuperSeal®



Taper

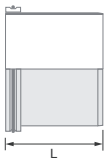
Nominal diameter	150 x 100	225 x 150	300 x 225
L Overall length	250	460	550
Weight (kg)	3.2	15.5	31.2
Code	**ST2/1**	**ST3/2**	**ST4/3**



Adaptor to HepSleve

Nominal diameter	150	225	300
S Spigot depth	55	75	100
Weight (kg)	0.3	0.6	1.2
Code	**SA3/2**	**SA3/4**	**SA3/6**

- Adaptor couplings are manufactured in polypropylene with SBR sealing rings



Adaptor to HepSeal

Nominal diameter	150	225	300
L Overall length	305	197	300
Weight (kg)	10.8	9.4	12.0
Code	**SA2/2**	**SA2/5**	**SA2/7**

HepSeal

Introduction

Following the introduction of SuperSeal® pipes and fittings, the HepSeal range now comprises four pipe diameters from 400mm to 600mm. Suitable for adoptable and public sewers, commercial and industrial developments, including highway drainage.

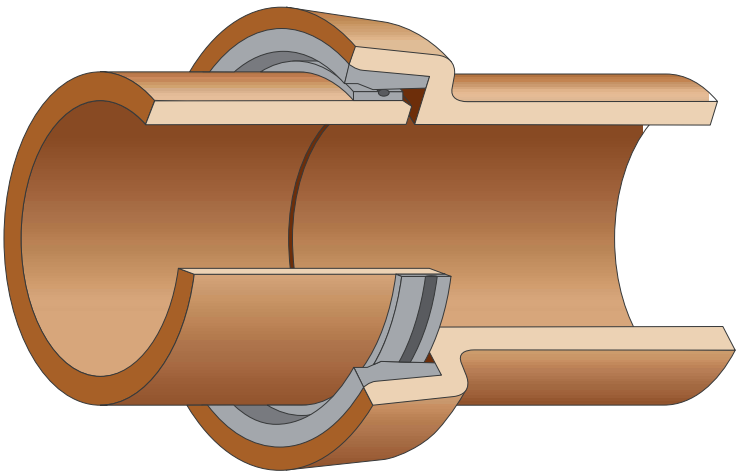
The HepSeal range of pipes and fittings has push-fit flexible spigot and socket joints and is supplied with separate rubber seals in SBR as standard. For special purposes, EPDM and Nitrile rings are also available.

HepSeal vitrified clay pipes and fittings are available to the manufacturing specifications of BS EN 295-1: 1991 and are subject to rigorous quality procedures to ensure a high standard of performance.

HepSeal is classified as joint system D to BS EN 295-1: 1991.

For Design considerations, see Section 9.

For Sitework instructions, see Section 11.



Benefits and features

- Economical to purchase, install and maintain
- Quick and easy pipe laying using push fit spigot and socket joints with rubber seals
- Excellent design performance in excess of European and British Standards
- Suitable for use with recycled aggregate as pipe bedding
- Lifetime jetting guarantee

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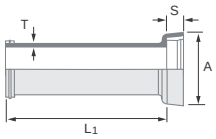
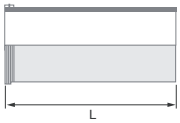
HepSeal



Pipe

Nominal diameter	400	450	450	500	600
L_1 Effective length	2000	2000	2500	2500	2500
T Wall thickness	46	46	51	51	58
S Socket depth	91	91	91	78	95
A Outside diameter of socket	618	692	692	777	887
Weight (kg)	330	473	440	592	847
Code	**HP200/5**	**HP200/7**	**HP6**	**HP7**	**HP8**



Short pipe – spigot/plain end

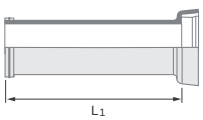
Nominal diameter	400	450	500	600
L Overall length	600	600	600	600
Weight (kg)	87	109	132	169
Code	**HPS1/5**	**HPS1/6**	**HPS1/7**	**HPS1/8**

Sealing rings

Nominal diameter	400	450	500	600
Code – EPDM	**RE5**	**RE6**	**RE7**	**RE8**
Code – Nitrile	**RN5**	**RN6**	**RN7**	**RN8**
Code – SBR (Spare rings)	**R5E**	**R6E**	**R7E**	**R8E**

Short pipe – socket/plain end

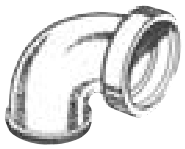
Nominal diameter	400	450	500	600
L Effective length	600	600	600	600
Weight (kg)	87	109	132	169
Code	**HPS2/5**	**HPS2/6**	**HPS2/7**	**HPS2/8**

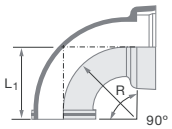


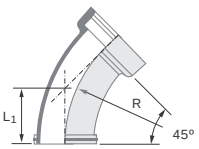
Short pipe – spigot/socket

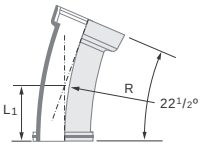
Nominal diameter	400	450	400	450	500	600
L_1 Effective length	600	600	1000	1000	1000	1000
Weight (kg)	87	109	145	181	221	282
Code	**HPS3/5**	**HPS3/6**	**HPS4/5**	**HPS4/6**	**HPS4/7**	**HPS4/8**

HepSeal



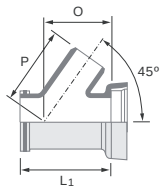






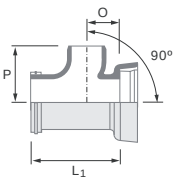
Bends

Bend	90°				45°				22½°			
Nominal diameter	400	450	500	600	400	450	500	600	400	450	500	600
L_1 Effective length	645	640	593	710	295	295	295	345	220	225	245	285
R Radius	645	640	593	710	722	723	720	845	865	875	955	1095
Weight (kg)	92	113	156	169	92	113	124	169	92	113	93	169
Code	**HB1/5**	**HB1/6**	**HB1/7**	**HB1/8**	**HB2/5**	**HB2/6**	**HB2/7**	**HB2/8**	**HB5/5**	**HB5/6**	**HB5/7**	**HB5/8**



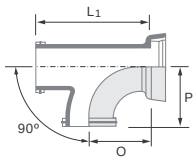
45° oblique junction – SuperSleve arm

Nominal diameter	400 x 100	400 x 150	450 x 100	450 x 150	500 x 150
L_1 Effective length	610	610	610	610	610
O Offset	550	550	575	575	600
P projection	450	490	500	540	580
Weight (kg)	92	102	127	147	181
Code	**HJ3/11**	**HJ3/12**	**HJ3/14**	**HJ3/15**	**HJ3/18**



90° curved square junction – SuperSleve arm

Nominal diameter	400 x 150
L_1 Effective length	610
O Offset	300
P projection	375
Weight (kg)	102
Code	**HJ4/12**



Square tumbling bay junction

Nominal diameter	400 x 400
L_1 Effective length	1015
O Offset	500
P projection	450
Weight (kg)	127
Code	**HJ6/13**

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Unjointed

Introduction

Hepworth offer a comprehensive range of unjointed pipes and fittings with a traditional system of spigot and sockets for cement mortar jointing. The range is particularly suitable for refurbishment and maintenance work where sections of drain need to be replaced or relaid. Pipes and fittings are available in a range of sizes from 100mm to 300mm.

Pipes are manufactured in accordance with BS 65: 1991.

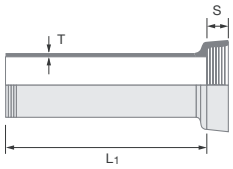
For Design considerations, see Section 9.

For Sitework instructions, see Section 11.

Benefits and features

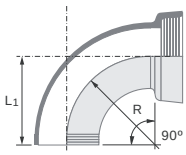
- Traditional spigot and socket joints
- For refurbishment and maintenance work

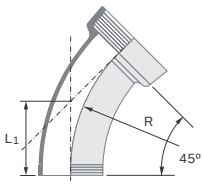
Unjointed

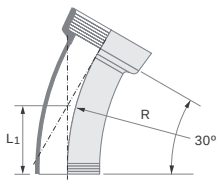


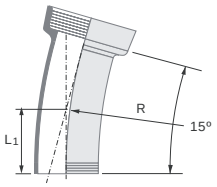
Pipe

Nominal diameter	100	150	225	300
L_1 Effective length	1000	1000	1000	1000
T Wall Thickness	15	21	23	36
S Socket depth	50	55	65	75
Weight (kg)	13.7	25.4	60.0	85.0
Code	**RP1**	**RP100/2**	**RP100/3**	**RP100/4**



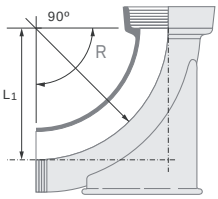






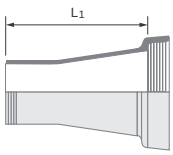
90° bend

Bend	90°	45°			30°		15°	
Nominal diameter	100	100	150	225	100	150	100	150
L_1 Effective length	190	140	160	220	135	150	120	130
R Radius	190	340	380	535	500	500	900	1000
Weight (kg)	5.0	5.0	8.9	20.2	5.0	8.3	5.0	6.1
Code	**RB1/1**	**RB2/1**	**RB2/2**	**RB2/3**	**RB3/1**	**RB3/2**	**RB5/1**	**RB5/2**



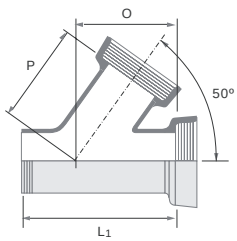
90° rest bend

Nominal diameter	100	150
L_1 Effective length	190	270
R Radius	150	230
Weight (kg)	5.0	9.0
Code	**RBR1**	**RBR2**



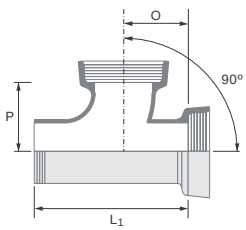
Taper reducer

Nominal diameter	150 x 100
L_1 Effective length	300
Weight (kg)	7.8
Code	**RT1/1**



Oblique junction 50°

Nominal diameter	100 x 100	150 x 100	150 x 150
L_1 Effective length	300	400	450
O Offset	235	300	290
P Projection	225	300	290
Weight (kg)	7.9	8.1	18.3
Code	**RJ1/1**	**RJ1/2**	**RJ1/3**



Curved square junction

Nominal diameter	100 x 100	150 x 100	150 x 150
L_1 Effective length	300	400	450
O Offset	235	300	290
P Projection	225	300	290
Weight (kg)	8.1	10.5	16.0
Code	**RJ2/1**	**RJ2/2**	**RJ2/3**

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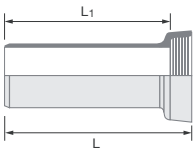
Unjointed

Double collar

Nominal diameter	100	150	225
L_1 Effective length	13	20	55
Weight (kg)	3.0	5.0	9.7
Code	**RDC1**	**RDC2**	**RDC3**

Stopper – Plain

Nominal diameter	100	150	225
Weight (kg)	1.8	2.7	6.7
Code	**RS1**	**RS2**	**RS3**

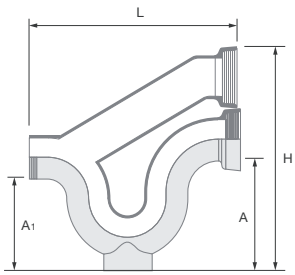


Socket adaptor – Connect to SuperSleve

Nominal diameter	100	150	225	300
L Overall length	370	365	670	680
L_1 Effective length	310	305	600	600
Weight (kg)	3.8	6.0	16.7	30.7
Code	**SA1/1**	**SA1/2**	**SA1/5**	**SA1/7**

Loose collar

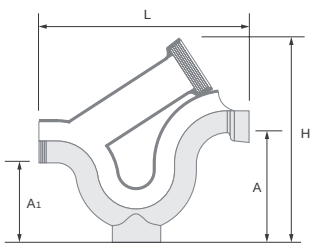
Nominal diameter	100	150
L Overall length	225	225
Weight (kg)	9.7	16.6
Code	**RLC1**	**RLC2**



Interceptor (Kenon)

Nominal diameter	100	150	225
Outlet diameter	100	150	225
L Overall length	660	730	1040
H Overall height	610	800	900
A_1 Outlet height	220	230	350
A Inlet height	290	330	370
Weight (kg)	17.9	32.5	74.8
Code	**RI2/1**	**RI2/2**	**RI2/3**

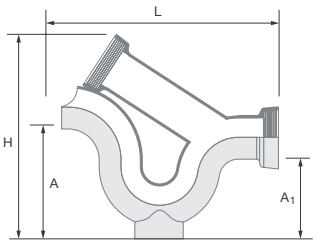
- Due to manufacture processes, all dimensions on interceptors have wide tolerance
- Supplied complete with stopper



Interceptor (Winsor)

Nominal diameter	100	150	225
Outlet diameter	100	150	225
L Overall length	640	800	1060
H Overall height	560	650	850
A_1 Outlet height	210	220	350
A Inlet height	300	320	370
Weight (kg)	15.7	27.1	81.5
Code	**RI1/1**	**RI1/2**	**RI1/3**

- Due to manufacture processes, all dimensions on interceptors have wide tolerance
- Supplied complete with stopper

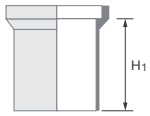


Interceptor reverse action

Nominal diameter	100	150	225
L Overall length	630	800	1060
H Overall height	540	590	850
A_1 Outlet height	230	230	370
A Inlet height	290	330	370
Weight (kg)	15.4	26.1	69.4
Code	**RI3/1**	**RI3/2**	**RI3/3**

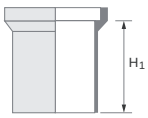
- Due to manufacture processes, all dimensions on interceptors have wide tolerance
- Supplied complete with stopper

Unjointed



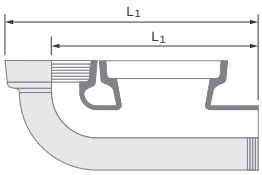
Round raising piece

Nominal diameter	150	150	150	150	225	225	225	255	300	300	300
H_1 Effective height	75	150	225	300	75	150	225	300	150	225	300
Weight (kg)	3.0	4.9	6.6	8.2	6.0	9.4	11.4	15.3	13.8	18.4	22.5
Code	**RRP2/1**	**RRP2/2**	**RRP2/3**	**RRP2/4**	**RRP3/1**	**RRP3/2**	**RRP3/3**	**RRP3/4**	**RRP4/2**	**RRP4/3**	**RRP4/4**



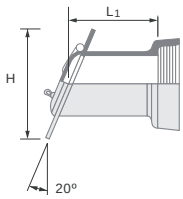
Square raising piece

Nominal size	150x150	150x150	150x150	150x150	225x225	225x225	225x225	225x225	300x300	300x300	300x300	300x300
H_1 Effective height	75	150	225	300	75	150	225	300	75	150	225	300
Weight (kg)	2.2	3.5	4.0	5.0	5.5	8.6	12.5	15.1	10.5	16.4	22.0	27.7
Code	**RRS2/1**	**RRS2/2**	**RRS2/3**	**RRS2/4**	**RRS3/1**	**RRS3/2**	**RRS3/3**	**RRS3/4**	**RRS4/1**	**RRS4/2**	**RRS4/3**	**RRS4/4**



Rainwater shoe with vertical back inlet

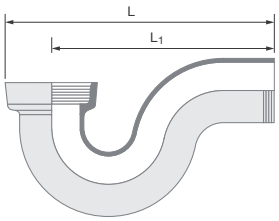
Nominal diameter	100	150
Inlets	100	150
L Overall length	590	680
L_1 Effective length	500	506
Weight (kg)	12.7	16.9
Code	**RRWS3/1**	**RRWS3/2**



Pipe flap valves

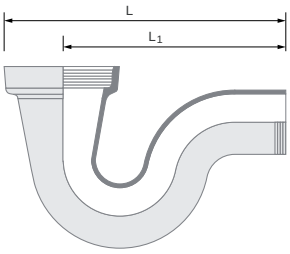
Nominal diameter	100	150	225	300
L_1 Effective length	270	280	425	460
H Overall height	240	280	350	470
Weight (kg)	7.8	13.9	28.3	43.2
Code	**RPV1**	**RPV2**	**RPV3**	**RPV4**

- Flap is manufactured from galvanised alloy



Low back trap

Nominal diameter	100x100	150x150
Outlet	100	150
L Overall length	495	495
L_1 Effective length	410	410
Weight (kg)	9.1	11.3
Code	**RGL1/1**	**RGL1/3**



Round gully

Nominal diameter	100x100	150x100
Outlet	100	100
L Overall length	510	510
L_1 Effective length	410	410
Weight (kg)	10.2	16.9
Code	**RG1/1**	**RG1/2**

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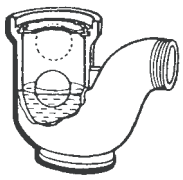
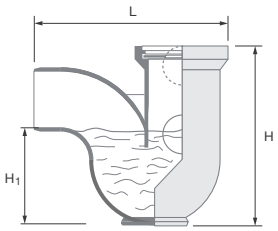
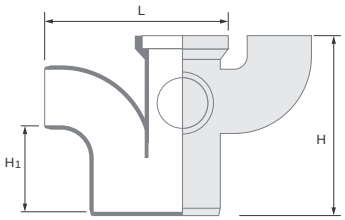
Unjointed





Antiflood gully

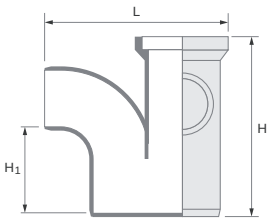
Nominal diameter	150 x 100
L Overall length	350
H Overall height	325
H_1 Trap depth	150
Weight (kg)	13.6
Code	**RGA1**



Square gully – Vertical back inlet

Nominal diameter	150 x 100	150 x 100	150 x 100
Inlet position	Centre	Left	Right
L Effective length	530	330	330
H Overall height	325	325	325
H_1 Trap depth	125	125	125
Weight (kg)	15.1	14.9	14.9
Code	**RGS10/1**	**RGS11/1**	**RGS12/1**

- RGS10/1 illustrated



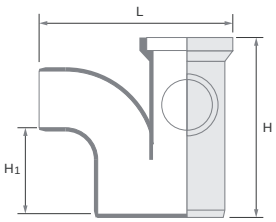
Square gully – One horizontal inlet

Nominal diameter	150 x 100	150 x 100
Inlet position	Left	Right
L Overall length	370	370
H Overall height	370	370
H_1 Trap depth	145	145
Weight (kg)	12.7	12.7
Code	**RGS5/1**	**RGS6/1**

- RGS6/1 illustrated
- For alternative products see SG2/1and SG2/2 on page 13 of this Section

Dish tops

Nominal diameter	100	150
Size	250 x 250	300 x 300
H Overall height	145	145
Weight (kg)	6.8	10.2
Code	**RDR2**	**RDR3**



Square gully – Two horizontal inlets

Nominal diameter	150 x 100	150 x 100	150 x 100
Inlet position	Left&Right	Left&Centre	Right&Centre
L Overall length	320	360	360
H Overall height	370	370	370
H_1 Trap depth	145	145	145
Weight (kg)	13.2	13.2	13.2
Code	**RGS7/1**	**RGS8/1**	**RGS9/1**

- RGS7/1 illustrated

Channels

Introduction

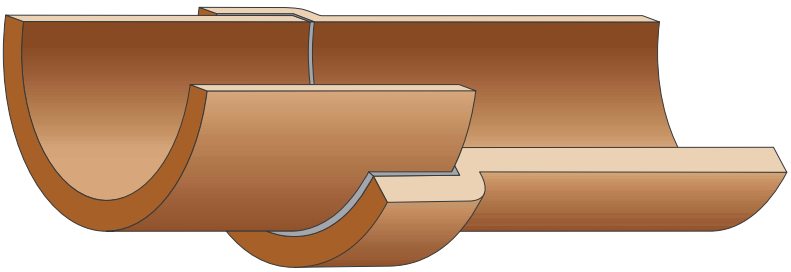
A range of vitrified clay half and three-quarter section channels for use with SuperSleve, SuperSeal® and HepSeal drainage systems in the construction of inspection chambers and manholes. The channels are available in a range of sizes from 100mm to 600mm and are jointed with conventional mortar joints.

Channels are manufactured in accordance with BS 65: 1991.

For Sitework instructions, see Section 11, page 28.

Benefits and features

- Available in traditional spigot and socket joints as well as plain ended
- Jointed with cement mortar
- Creates a good bond between mass concrete and clay channel to prevent ground water ingress and also foul water egress from the sewer system
- Extensive range of junctions and bends available



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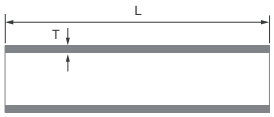
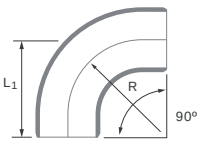
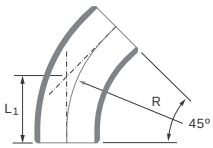
Channels



Pipe – Plain ended

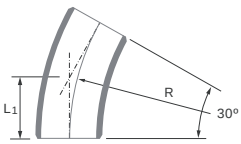
Nominal diameter	100	100	100	150	150	150	225	300	400	450	500	600
L Overall length	300	600	1000	300	600	1000	1000	1000	1000	1000	1000	1000
T Wall thickness	11	11	11	14	14	14	23	36	46	46	51	58
Weight (kg)	1.4	2.7	4.5	2.5	5.1	8.4	20.3	39.9	63.5	72.6	112.9	127.0
Code	**CPP1/1**	**CPP2/1**	**CPP3/1**	**CPP1/2**	**CPP2/2**	**CPP3/2**	**CPP3/3**	**CPP3/4**	**CPP3/5**	**CPP3/6**	**CPP3/7**	**CPP3/8**

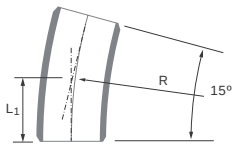




Bends – Plain ended

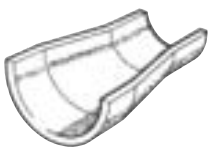
Bend	90°				45°			
Nominal diameter	100	150	225	300	100	150	225	300
L_1 Effective length	195	285	335	470	107	150	195	286
R Radius	150	230	235	320	150	230	477	682
Weight (kg)	1.3	3.0	10.8	18.1	1.3	2.3	20.2	20.2
Code	**CBP1/1**	**CBP1/2**	**VCB1/3**	**VCB1/4**	**CBP2/1**	**CBP2/2**	**VCB2/3**	**VCB2/4**

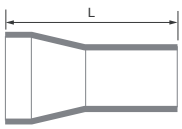




Bends – Plain ended

Bend	30°				15°			
Nominal diameter	100	150	225	300	100	150	225	300
L_1 Effective length	95	117	160	230	90	100	130	195
R Radius	150	230	608	880	150	230	995	1459
Weight (kg)	1.1	2.1	9.0	20.2	1.0	2.0	8.3	17.5
Code	**CBP3/1**	**CBP3/2**	**VCB3/3**	**VCB3/4**	**CBP4/1**	**CBP4/2**	**VCB4/3**	**VCB4/4**

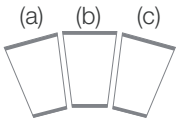




Reducer/enlarger – Plain ended

Nominal diameter	100 x 150	300 x 400	225 x 300
L Overall length	260	600	550
Weight (kg)	1.6	28.2	20.6
Code	**CTP1/1**	**CTP1/4**	**VCTP4/3**

Channels



45º bend – Plain ended

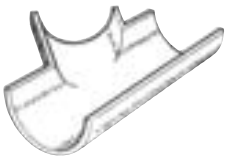
Nominal diameter	400	450	500	600
Weight (kg)	46.2	54.9	59.8	127.0
Code	**CBP2/5**	**CBP2/6**	**CBP2/7**	**CBP2/8**

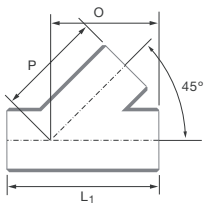
- This item is supplied in 3 separate segments
- Dimensions vary

22½º bend – Plain ended

Nominal diameter	400	450	500	600
Weight (kg)	46.2	54.9	46.2	85.0
Code	**CBP5/5**	**CBP5/6**	**CBP5/7**	**CBP5/8**

- This item is supplied in 2 separate segments
- Dimensions vary



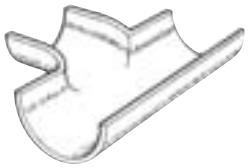


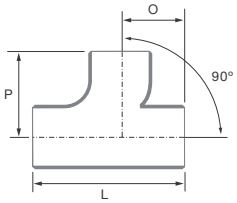
Oblique channel junction – Plain ended

Nominal diameter	100 x 100	150 x 100	150 x 150
L Overall length	405	405	485
O Offset	235	300	330
P Projection	225	300	340
a Branch angle	45	45	45
Weight (kg)*	1.9	3.6	5.1
Code (left hand)	**CJP1/1L**	**CJP1/2L**	**CJP1/3L**
Code (right hand)	**CJP1/1R**	**CJP1/2R**	**CJP1/3R**

- Left hand illustrated

* Weight for left and right hand are the same.



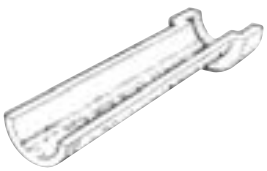


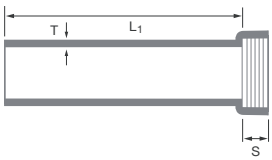
Curved square channel junction

Nominal diameter	100 x 100	150 x 100	150 x 150
L Overall length	400	400	450
O Offset	180	180	180
P Projection	185	205	205
a Branch angle	90	90	90
Weight (kg)*	1.8	3.0	4.3
Code (left hand)	**CJP2/1L**	**CJP2/2L**	**CJP2/3L**
Code (right hand)	**CJP2/1R**	**CJP2/2R**	**CJP2/3R**

- Left hand illustrated

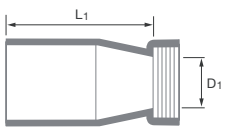
* Weight for left and right hand are the same.





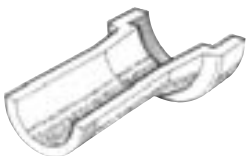
Pipe – Socketed

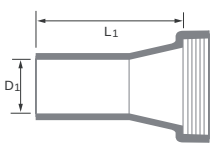
Nominal diameter	100	150	225	300	100	150	225	300	100	150	225	300
L_1 Effective length	300	300	300	300	600	600	600	600	1000	1000	1000	1000
S Socket depth	60	60	70	78	60	60	70	78	60	60	70	78
T Wall thickness	16	21	23	36	16	21	23	36	16	21	23	36
Weight (kg)	2.6	4.5	8.4	16.3	4.5	7.5	14.4	28.8	6.5	11.1	23.5	43.2
Code	**CP1/1**	**CP1/2**	**CP1/3**	**CP1/4**	**CP2/1**	**CP2/2**	**CP2/3**	**CP2/4**	**CP3/1**	**CP3/2**	**CP3/3**	**CP3/4**



Enlarger – Socketed

Nominal diameter	150	225	300
L_1 Effective length	300	450	600
D_1 Main bore inlet	100	150	225
Weight (kg)	3.4	10.0	24.2
Code	**CT2/1**	**CT2/2**	**CT2/3**





Reducer – Socketed

Nominal diameter	150	225	300
L_1 Effective length	300	450	600
D_1 Main bore inlet	100	150	225
Weight (kg)	3.5	13.3	27.1
Code	**CT1/1**	**CT1/2**	**CT1/3**

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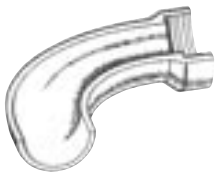
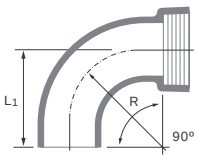
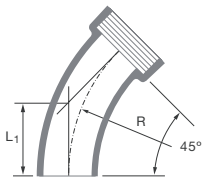
Channels





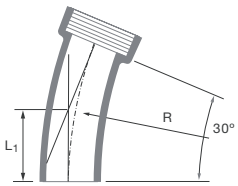


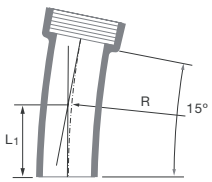
Bends – Socketed

Bend	90°				45°			
Nominal diameter	100	150	225	300	100	150	225	300
L_1 Effective length	195	285	335	470	140	160	220	250
R Radius	150	230	235	320	340	380	535	600
Weight (kg)*	2.4	3.8	12.3	29.7	2.3	3.1	12.0	23.3
Code (right hand)	**CB1/1R**	**CB1/2R**	**CB1/3R**	**CB1/4R**	**CB2/1R**	**CB2/2R**	**CB2/3R**	**CB2/4R**
Code (left hand)	**CB1/1L**	**CB1/2L**	**CB1/3L**	**CB1/4L**	**CB2/1L**	**CB2/2L**	**CB2/3L**	**CB2/4L**

Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.



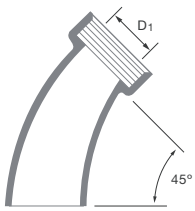


Bends – Socketed

Bend	30°				15°			
Nominal diameter	100	150	225	300	100	150	225	300
L_1 Effective length	135	135	210	240	120	130	210	300
R Radius	500	500	785	900	900	1000	1600	1730
Weight (kg)*	2.6	4.3	10.8	24.5	2.2	4.1	10.8	21.2
Code right hand	**CB3/1R**	**CB3/2R**	**CB3/3R**	**CB3/4R**	**CB4/1R**	**CB4/2R**	**CB4/3R**	**CB4/4R**
Code left hand	**CB3/1L**	**CB3/2L**	**CB3/3L**	**CB3/4L**	**CB4/1L**	**CB4/2L**	**CB4/3L**	**CB4/4L**

Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.

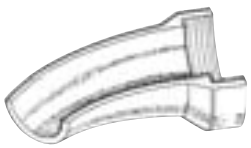


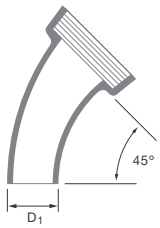
45° enlarger bend

Nominal diameter	150	225	300
D_1 Main bore inlet	100	150	225
Weight (kg)*	3.2	8.9	20.3
Code right hand	**CBT2/1R**	**CBT2/2R**	**CBT2/3R**
Code left hand	**CBT2/1L**	**CBT2/2L**	**CBT2/3L**

Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.





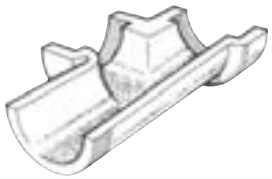
45° reducer bend

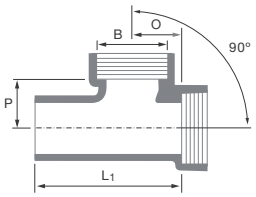
Nominal diameter	225
D_1 Main bore inlet	150
Weight (kg)*	11.1
Code right hand	**CBT1/2R**
Code left hand	**CBT1/2L**

Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.

Channels



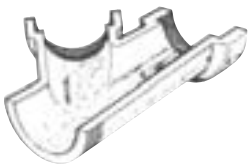


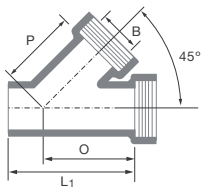
90º curved square junction

Nominal diameter	100	150	150	225	225	225	300	300	300
B Branch diameter	100	100	150	100	150	225	150	225	300
L_1 Effective length	300	300	455	455	455	495	505	610	610
O Offset	100	90	180	150	180	230	180	250	300
P Projection	100	125	195	165	260	230	250	250	250
Weight (kg)*	4.3	4.7	7.0	11.9	13.6	17.5	24.2	30.4	37.1
Code right hand	**CJ2/1R**	**CJ2/2R**	**CJ2/3R**	**CJ2/4R**	**CJ2/5R**	**CJ2/6R**	**CJ2/8R**	**CJ2/9R**	**CJ2/10R**
Code left hand	**CJ2/1L**	**CJ2/2L**	**CJ2/3L**	**CJ2/4L**	**CJ2/5L**	**CJ2/6L**	**CJ2/8L**	**CJ2/9L**	**CJ2/10L**

Note: Handling of channel and access fittings is viewed against direction of flow. Left hand illustrated.

* Weight for left and right hand are the same.



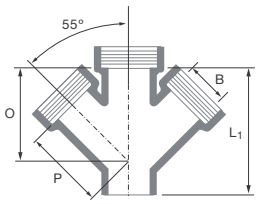


45º oblique junction

Nominal diameter	100	150	150	225	225	225	300	300	300
B Branch diameter	100	100	150	100	150	225	150	225	300
L_1 Effective length	300	300	455	455	455	530	455	610	710
O Offset	100	250	290	285	310	365	370	420	480
P Projection	100	190	280	290	320	335	370	400	450
Weight (kg)*	4.3	5.8	8.3	13.0	14.0	18.6	25.1	34.0	46.8
Code right hand	**CJ1/1R**	**CJ1/2R**	**CJ1/3R**	**CJ1/4R**	**CJ1/5R**	**CJ1/6R**	**CJ1/8R**	**CJ1/9R**	**CJ1/10R**
Code left hand	**CJ1/1L**	**CJ1/2L**	**CJ1/3L**	**CJ1/4L**	**CJ1/5L**	**CJ1/6L**	**CJ1/8L**	**CJ1/9L**	**CJ1/10L**

Note: Handling of channel and access fittings is viewed against direction of flow. Left hand illustrated

* Weight for left and right hand are the same.



Double oblique junction

Nominal diameter	100	150	150	225	225	225	300	300
B Branch diameter	100	100	150	100	150	225	150	225
L_1 Effective length	300	300	455	455	455	525	450	600
O Offset	230	250	345	345	295	370	370	420
P Projection	190	240	325	340	320	340	380	420
Weight (kg)	5.8	7.1	11.5	14.2	16.4	23.8	28.5	31.8
Code	**CJ3/1**	**CJ3/2**	**CJ3/3**	**CJ3/4**	**CJ3/5**	**CJ3/6**	**CJ3/8**	**CJ3/9**

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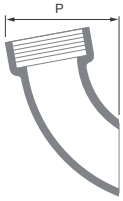
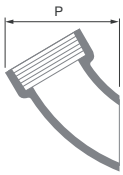
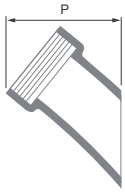
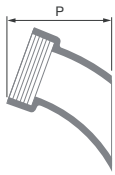
Channels





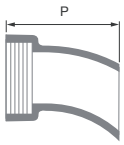


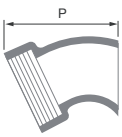
Branch channel bends – 1/2 section

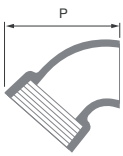
Bend	10°		30°			50°			70°		
Nominal diameter	100	150	100	150	225	100	150	225	100	150	225
P Projection	250	280	250	280	360	250	280	360	250	280	360
Weight (kg)*	1.7	4.1	1.4	3.4	7.8	1.4	3.4	8.2	1.4	3.4	7.8
Code right hand	**CX1/1R**	**CX2/1R**	**CX1/2R**	**CX2/2R**	**CX3/2R**	**CX1/3R**	**CX2/3R**	**CX3/3R**	**CX1/4R**	**CX2/4R**	**CX3/4R**
Code left hand	**CX1/1L**	**CX2/1L**	**CX1/2L**	**CX2/2L**	**CX3/2L**	**CX1/3L**	**CX2/3L**	**CX3/3L**	**CX1/4L**	**CX2/4L**	**CX3/4L**

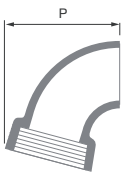
Note: Handling of channel and access fittings is viewed against direction of flow. Left-hand illustrated.

* Weight for left and right hand are the same.





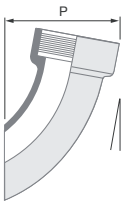


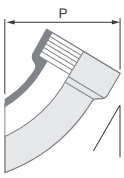
Branch channel bends – 1/2 section

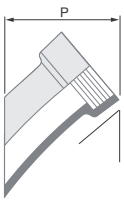
Bend	90°			115°			140°			165°	
Nominal diameter	100	150	225	100	150	225	100	150	225	100	150
P Projection	250	280	360	250	280	360	250	280	360	225	280
Weight (kg)*	1.4	3.7	9.1	1.4	3.7	7.9	1.4	3.7	8.2	1.7	3.7
Code right hand	**CX1/5R**	**CX2/5R**	**CX3/5R**	**CX1/6R**	**CX2/6R**	**CX3/6R**	**CX1/7R**	**CX2/7R**	**CX3/7R**	**CX1/8R**	**CX2/8R**
Code left hand	**CX1/5L**	**CX2/5L**	**CX3/5L**	**CX1/6L**	**CX2/6L**	**CX3/6L**	**CX1/7L**	**CX2/7L**	**CX3/7L**	**CX1/8L**	**CX2/8L**

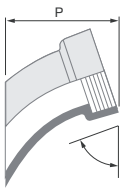
Note: Handling of channel and access fittings is viewed against direction of flow. Left-hand illustrated.

* Weight for left and right hand are the same.





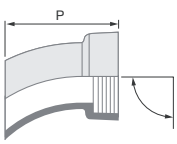


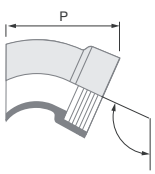
Branch channel bends – 3/4 section

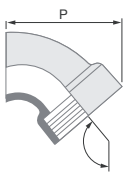
Bend	10°			30°		50°			70°		
Nominal diameter	100	150	225	100	150	100	150	225	100	150	225
P Projection	225	280	360	250	280	225	280	360	225	280	360
Weight (kg)*	3.8	5.8	15.8	2.3	5.5	2.1	3.5	11.3	2.1	3.8	13.0
Code right hand	**CX1AR**	**CX2AR**	**CX3AR**	**CX1BR**	**CX2BR**	**CX1CR**	**CX2CR**	**CX3CR**	**CX1DR**	**CX2DR**	**CX3DR**
Code left hand	**CX1AL**	**CX2AL**	**CX3AL**	**CX1BL**	**CX2BL**	**CX1CL**	**CX2CL**	**CX3CL**	**CX1DL**	**CX2DL**	**CX3DL**

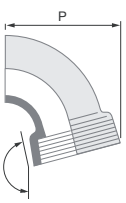
Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.







Branch channel bends – 3/4 section

Bend	90°			115°		140°		165°	
Nominal diameter	100	150	225	100	150	100	150	100	150
P Projection	225	280	360	225	280	225	280	225	280
Weight (kg)*	2.1	4.3	12.8	2.0	4.9	2.1	3.7	2.6	6.0
Code right hand	**CX1ER**	**CX2ER**	**CX3ER**	**CX1FR**	**CX2FR**	**CX1GR**	**CX2GR**	**CX1HR**	**CX2HR**
Code left hand	**CX1EL**	**CX2EL**	**CX3EL**	**CX1FL**	**CX2FL**	**CX1GL**	**CX2GL**	**CX1HL**	**CX2HL**

Note: Handling of channel and access fittings is viewed against direction of flow. Right-hand illustrated.

* Weight for left and right hand are the same.

HepLine

Introduction

HepLine is a tough, technologically advanced rigid land drain system combining unrivalled strength with durability. It is specifically designed for use wherever effective ground drainage is essential. For example, roads and motorways, construction sites, playing fields, sports grounds and forestry areas.

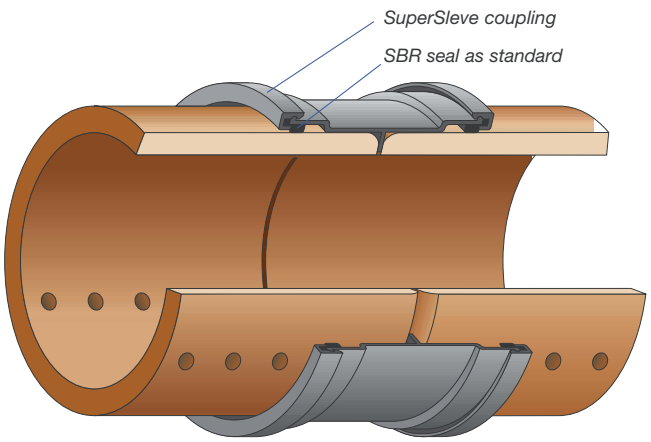
HepLine perforated and slotted vitrified clay pipes may be used as filter drain and carrier pipe combined, as filter drain with separate carrier pipe, or as dispersal lines. The tough, smooth characteristics of vitrified clay means that once installed, you can be sure that the system will provide maximum performance and last a lifetime.

The HepLine range complies with BS EN 295-5: 1994: *Vitrified clay pipes and fittings and pipe joints for drains and sewers. Requirements for perforated vitrified clay pipes and fittings* and is subject to rigorous quality procedures to ensure a high standard of performance.

Pipe sizes 100mm and 150mm are supplied plain ended. A separate SuperSleve coupling is available for easy jointing. Pipe sizes 225mm and 300mm are supplied with a factory fitted coupling. Holes are 8mm in diameter and distributed over a 160° arc and spaced equidistantly along the barrel. Fittings are supplied unperforated.

Sizes 400mm and 450mm are manufactured with a spigot and socket joint giving compatibility with HepSeal and allowing use of the broad range of fittings in that system. Pipes are slotted equidistantly along the barrel.

For Sitework instructions see Section 11, page 16.



Benefits and features

- Economical to purchase, install and maintain
- Technically advanced rigid land drain system
- 100mm to 300mm sizes compatible with SuperSleve fittings
- 400mm to 450mm sizes compatible with HepSeal fittings

Land drainage range

Hepworth offers a unique range of products designed to overcome land drainage problems where high water tables, soils with poor drainage characteristics or flooding are encountered.

The range consists of:

- The technically advanced HepLine system
- Traditional clay land drainage tiles
- Slotted PlastiDrain (see Section 3, page 2)
- Plastic Coil Land Drainage system (see Section 3, page 18)

Across the range products are available in sizes from 75mm to 450mm diameter, providing specifiers, developers and contractors with solutions for every sub-soil drainage situation.

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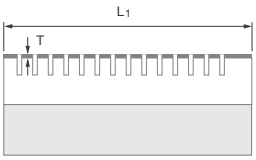
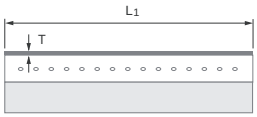
HepLine



300mm diameters

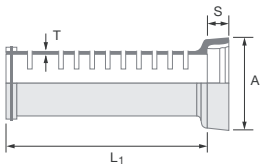


100mm, 150mm and 225 diameters

Pipe

Nominal diameter	100	150	225	300
L_1 Effective length	1600	1750	1750	2000
T Wall thickness	11	14	19	32.5
Rows of holes	2	4	4	–
Holes per row	15	15	17	–
Area of perforations (mm²/m)	281	511	511	1055
Weight (kg)	14.9	30.7	59.5	145.1
Code	**LP1**	**LP2**	**LP175/3**	**LP200/4**

- Fittings for HepLine subsoil drainage system are available from the SuperSleve range for 100 to 300mm diameter pipes
- 100 and 150mm diameters are supplied plain ended. Separate couplings are available. See Section 2 page 9.



Pipe – socketed

Nominal diameter	400	450
L_1 Effective length	2500	2500
T Wall thickness	46	46
S Socket depth	91	91
A Outside dia of socket	618	692
Weight (kg)	363	462
Code	**HLP5**	**HLP6**

- Fittings for HepLine subsoil drainage system are available from the HepSeal range for 400-450mm diameter pipes

Clay Land Drainage Tiles

Introduction

The Hepworth Clay Land Drainage Tiles system provides a traditional range of clay pipes and junctions to ensure a cost effective means of reliable drainage. Available in size: 75, 100, 150 and 225mm. This system is proven to perform wherever high water tables, soils with poor drainage characteristics or flooding are encountered.

Land drainage pipes and fittings are manufactured to BS 1196: 1989: *Specification for clayware field drains pipes and junctions*.

Pipes and fittings are manufactured from a blend of different clays. Due to the nature of the material a consistent end product is produced. Clay is naturally inert to aggressive soils and its high strength is capable of withstanding heavy surface loads.

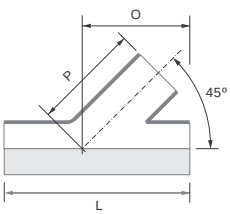
For Sitework instructions see Section 9, page 16.

Benefits and features

- Economical to purchase, install and maintain
- Traditional clay land drain tiles
- Inert to aggressive soils
- Can be recycled at end of life

Land drain

Nominal diameter	75	100	150	225
L Overall length	300	300	300	300
Weight (kg)	2.4	3.3	6.4	10.2
Code	**ALD1**	**ALD2**	**ALD3**	**ALD4**



Junction

Nominal diameter	75 x 75	100 x 100	150 x 100	150 x 150
L Overall length	305	305	305	305
O Offset	220	235	210	275
P Projection	185	195	230	300
Weight (kg)	3.1	4.6	8.5	8.5
Code	**ALJ1**	**ALJ2**	**ALJ3**	**ALJ4**

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HepDuct

Introduction

HepDuct is a range of vitrified clay underground cable conduits to carry communication, service and power lines below ground level. The range comprises pipes, bends and bellmouths.

Pipe sizes 100 and 150mm are supplied plain ended. A separate SuperSleve coupling is available for easy jointing. Bends and fittings are also supplied jointed with separate SuperSleve couplings. 225mm diameter pipes are supplied with factory fitted couplings.

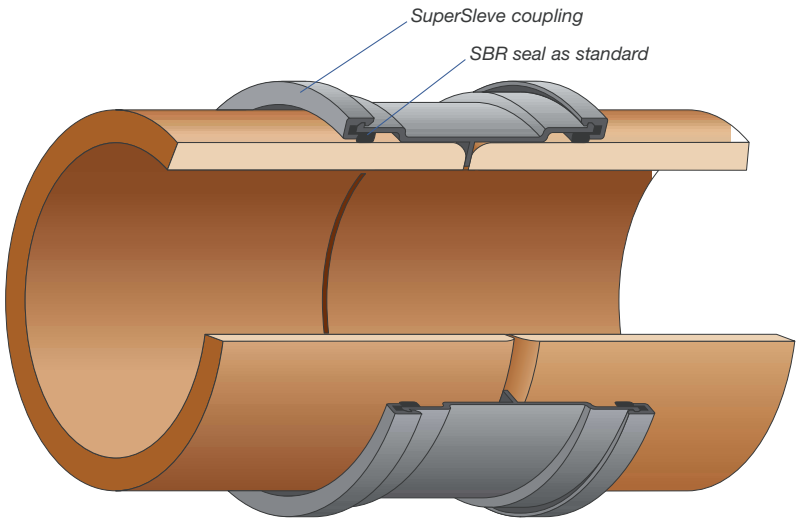
Accessory items include HepTape for identification of underground services, draw ropes and plastic bellmouths.

HepDuct is manufactured in accordance with BS 65: 1991, and has the same high standards of performance and quality as SuperSleve.

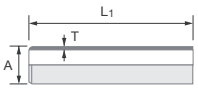
For Sitework instructions see Section 11, page 17.

Benefits and features

- Economical to purchase, install and maintain
- Jointing is quick and easy using a SuperSleve coupling
- High compressive strength



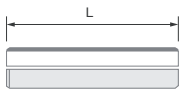
HepDuct



Straight duct

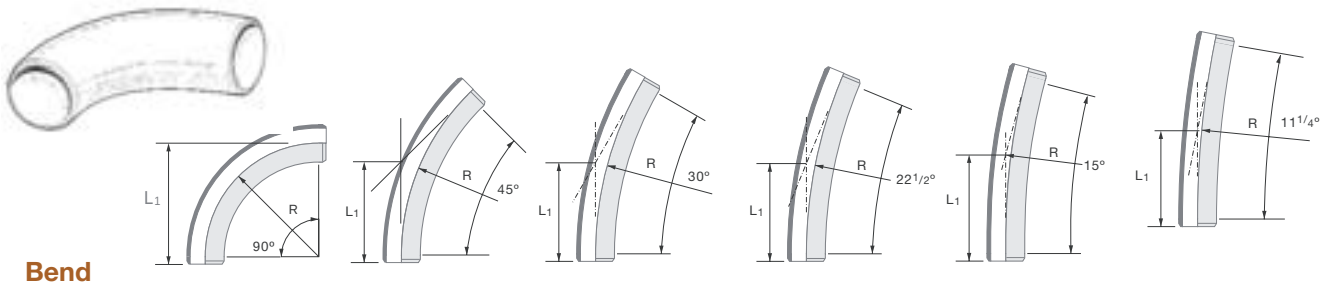
Nominal diameter	100	150	225
L_1 Effective length	1600	1750	1750
A External diameter	122	178	263
T Wall thickness	11	14	19
Weight (kg)	14.9	30.4	80.0
Code	**DP2**	**DP4**	**DP175/5**

- 100 and 150mm diameters supplied plain ended. Separate couplings available. See Section 2 page 9.
- 225mm diameter supplied with factory fitted coupling



Split duct

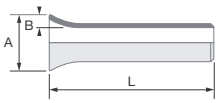
Nominal diameter	100	150	225
L Overall length	1600	1750	1750
Weight (kg)	14.9	30.4	80.0
Code	**DPS2**	**DPS4**	**DPS175/5**



Bend

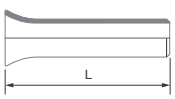
Bend	90°	45°		30°		22½°		15°		11¼°	
Nominal diameter	100	100	150	100	150	100	150	100	150	100	150
L_1 Effective length	300	249	249	241	241	239	239	237	237	237	237
R Radius	300	600	600	900	900	1200	1200	2400	2400	2400	2400
Weight (kg)	4.3	4.3	6.8	4.3	6.7	4.3	6.8	4.3	6.4	4.3	6.7
Code	**DB1/2**	**DB2/2**	**DB2/4**	**DB3/2**	**DB3/4**	**DB4/2**	**DB4/4**	**DB5/2**	**DB5/4**	**DB6/2**	**DB6/4**

- 100 and 150mm diameters supplied plain ended. Separate couplings available.



Bellmouth – Plain spigot

Nominal diameter	100	150
L Overall length	450	450
A Bell outside dia.	160	215
B bell entry	40	40
Weight (kg)	4.0	7.2
Code	**DBM2/2**	**DBM2/4**



Plastic bellmouth – Removable

Nominal diameter	100	150
L Overall length	450	450
Weight (kg)	0.3	0.5
Code	**DBM3/2**	**DBM3/4**

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HepDuct

Draw rope

Overall length	220
Code	**MDR**

Service Marker Tape – Underground warning tape

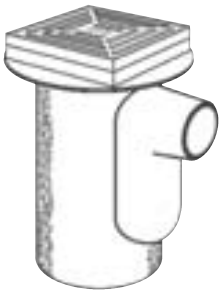
Nominal length (m)	365	365	365	365	365	365	365	365	365	365
Service identity	Electric cable	Street lighting	Street lighting	Gas main	Water main	Telephone cable	Foul sewer	Fin drain	Fibre optic	Sewerage pumping
Colour	Yellow	Yellow	Purple	Yellow	Blue	Green	Red	Green	Green	Red
Thickness (microns)	100	100	100	100	100	100	100	100	100	100
Width	150	150	150	150	150	150	150	150	150	150
Code	**DTYE**	**DTYS**	**DTPS**	**DTO**	**DTB**	**DTG**	**DTR**	**DTFD**	**DTFIB**	**DTSP**

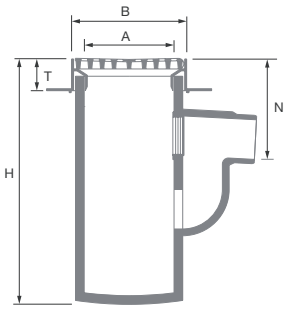
• Service marker tape is manufactured from polyethylene

Service Marker Tape – Detectable tape

Nominal length (m)	100	100	100	100	100	100	100
Service identity	Water pipe	Fibre optic	Fire main	Gas main	Sewerage pumping	Communications power	Electric cable
Colour	Blue	Green	Red	Yellow	Brown	Yellow	Yellow
Width	150	150	200	150	150	150	150
Code	**WAVW**	**WAVFIB**	**WAVFM**	**WAVG**	**WAVSP**	**WAVCP**	**WAVE**

Gullies and Gratings



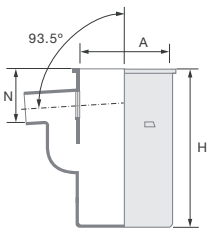


Yard gully

Outlet diameter	100	150
A Internal diameter	225	225
B Frame size	291	291
N Top to invert	250	300
H Overall height	670	670
T Frame height	75	75
Weight (kg)	33.9*	33.9*
Code (Light duty grid)	**RGP5**	**RGP7**
Code (Light duty grid and back inlet)	**RGP5B**	**RGP7B**
Code (Medium duty grid)	**RGP6**	**RGP8**
Code (Medium duty grid and back inlet)	**RGP6B**	**RGP8B**

- Grating is hinged and secured with two screws
- Light duty covers will withstand a 1 tonne wheel load. Medium duty covers will withstand a 5 tonne wheel load
- The horizontal back inlet is the same diameter and set at the same height as the inlet
- Code for spare stopper: RSG2

* Weights given for RGP6B and RGP8B (Other gullies are lighter)



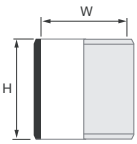
Road gully – clay

Nominal diameter	100	150	150	150
A Internal diameter	300	300	400	450
H Overall height	600	600	750	900
N Top to invert	200	250	250	2
Weight (kg)	50.8	50.8	113	146
Code	**RG1**	**RG2**	**RG3**	**RG4**

- The trap is fitted with a removable rubber stopper, code RSG1, and the outlet gives direct connection to a SuperSleve 150mm coupling

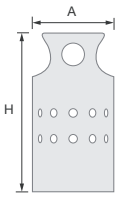
Spare stopper

Outlet diameter	100
Code	**RSG1**



Raising piece

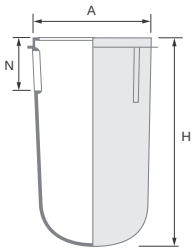
Nominal diameter	225	225
H Overall height	300	450
W Internal diameter	225	225
Weight (kg)	12.7	18.7
Code	**SIC3/1**	**SIC3/2**



Plastic silt bucket

A Overall diameter	205
H Overall height	400
Weight (kg)	0.1
Code	**IBP3**

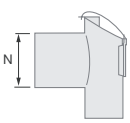
For use with Yard gullies RGP5/6/7/8



Road gully – polypropylene

Outlet diameter	150
H Overall height	920
N Top to invert	250
A Internal diameter	510
Weight (kg)	6.3
Code	**MGP1/1**

- Road gully is supplied with an adaptor to SuperSleve 150mm (MGPA)



Trap – polypropylene

Outlet diameter	150
N Top to invert	250
Weight (kg)	1.1
Code	**MGPT**

- Adaptor to SuperSleve – code SA3/2

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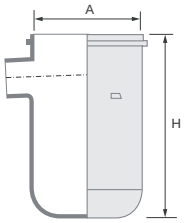
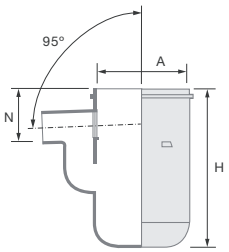
Gullies and Gratings



Road gully – polyethylene

Nominal diameter	150	150
H Overall height	750	840
A Internal diameter	375	510
Weight (kg)	6.0	6.0
Code	**MGP2/1**	**MGP3/1**

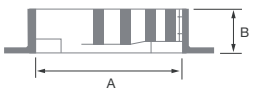
- The untrapped gully is fitted with a spigot for direct connection to a SuperSleve 150mm coupling



Trapped road gully – polyethylene

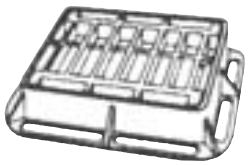
Nominal diameter	150	150
H Overall height	750	840
A Internal diameter	375	510
N Top to invert	250	250
Weight (kg)	1.5	1.5
Code	**MGP2/2**	**MGP3/2**

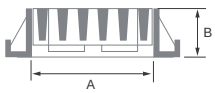
- The trap is fitted with a removable rubber stopper and the outlet gives direct connection to a SuperSleve 150mm coupling



Straight bar double triangular gully grate

Grade	C250
A Clear opening	400 x 400
B Depth	75
Weight (kg)	46
Code	**IDG1**



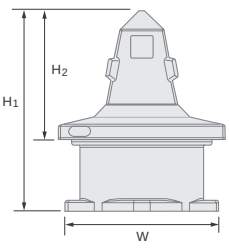


Straight bar end hinged gully grate

Grade	D400	C250	D400
A Clear opening	400 x 450	360 x 310	500 x 350
B Depth	100	75	100
Weight (kg)	37	19	46
Code	**IDG7**	**IDG8**	**IDG9**

Lifting keys (pairs)

Type	Light duty	Heavy duty
Code	**ILK2**	**ILK1**



Temporary manhole cover

Material	MDPE
H_1 Overall height	940
H_2 Projecting height	605
W Width	780
Weight (kg)	9.8
Code	**TMC1**

Universal Grease Trap

Introduction

The Hepworth Universal Grease Trap is designed to intercept and separate greasy discharges and to facilitate periodic removal of fat and solids.

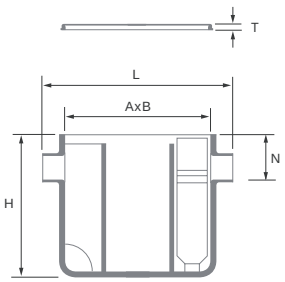
The trap is intended for positioning outside the building, however, when necessary it may be used internally when fitted with an airtight cover and frame.

The installed depth can easily be adjusted by adding one or more courses of engineering bricks to suit.

For Application detail see Section 10, page 21.

Benefits and features

- Trap designed for ease of installation and maintenance
- Can be used in conjunction with both clay and plastic pipe systems
- Symmetrical layout, allowing installation in any orientation
- Tough vitrified clay withstands high temperature discharges and is resistant to practically all chemicals
- Unique baffle layout slows and cools the flow allowing the grease and oil to separate into the middle chamber
- Stainless steel filter basket inside the grease trap retains larger food particles before flow enters the grease separation chamber



Universal Grease Trap

Nominal diameter	100/110
L Overall length	790
A Internal length	600
B Internal width	450
N top to invert	185
H Overall height	565
T Thickness	25
Weight (kg)	129.9
Code	**RGU1**

- Supplied complete, including filter basket, spatula, cover and frame and 100/110 conversion adaptors

Filter bucket and spatula

Weight (kg)	4.2
Code	**RGUFB**

Spare cover and frame

Nominal size	600 x 450
Weight (kg)	25.4
Code	**IGUC1**

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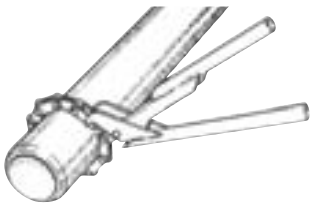
Clayware Accessories

Recommended method of pipe cutting by diameter

Diameter	Highly Recommended 1	2	3	Satisfactory 4
100mm	Pipe Cutter Code: MPC1	Short Lengths	Carborundum Blade	HepBlade Code: DTB1/2
150mm	Pipe Cutter Code: MPC2	Short Lengths	Carborundum Blade	HepBlade Code: DTB1/2
225mm	Short Lengths	HepBlade Code: DTB1/2	Carborundum Blade	Pipe Cutter Code: MPC6
300 to 600mm	Short Lengths	HepBlade Code: DTB1/2	Carborundum Blade	–

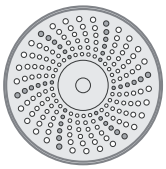


Pipe cutter – lever

Nominal diameter	100	100 & 150
Weight (kg)	3.6	11.3
Code	**MPC1**	**MPC2**

Pipe cutter – screw

Nominal diameter	100 & 150	up to 225
Weight (kg)	11.3	11.3
Code	**MPC5**	**MPC6**



HepBlade masonry saw blade

Nominal diameter	300	300
Weight (kg)	1.4	1.4
Code	**DTB1**	**DTB2**

These are a diamond tipped blades which are recommended for cutting ceramic pipes

A continuous rim of electroplated diamond particles ensures the blade cuts clean and vibration free, producing a high quality cut.

DTB1 is a high performance long-life blade

DTB2 is a standard performance blade

Pipe trimmer

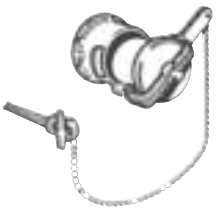
Nominal diameter	100/150
Weight (kg)	2.0
Code	**MPT1**

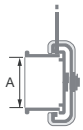
For use with 100 and 150mm pipes

Clayware Accessories

Expanding pipe stopper

Nominal diameter	100	150	200	225	300
Weight (kg)	0.9	0.9	0.9	0.9	0.9
Code	**QPT1**	**QPT2**	**QPT3**	**QPT4**	**QTP6**





Lever locking stopper

Nominal diameter	100	150	225
A Stopper size	140	190	270
Weight (kg)	0.9	2.0	5.0
Code	**IL1**	**IL2**	**IL3**

Lubricant

Weight (kg)	1	2.5	4
Code	**SL1**	**SL2**	**SL5C**

- The lubricant is classified as non-hazardous and should be handled according to good industrial hygiene practice
- The SL5C is a nitrile seal and cold weather jointing lubricant

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