

Hepworth SuperSeal[®]

The introduction of Hepworth SuperSeal[®] represents a major step forward in the ongoing development of drainage systems. The new system has been developed for adoptable sewerage schemes, brownfield sites, storm water applications, highway drainage, industrial and commercial developments.

The system comprises of a range of new socket and plain-end pipes, fittings and adaptors in 150mm, 225mm and 300mm diameters. Hepworth SuperSeal[®] replaces the equivalent HepSeal range. HepSeal pipes and fittings in diameters 400mm and above will remain unaffected.



Benefits

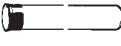





- Overall lower installed cost
- Enables reduced bedding and aggregate requirements
- Takes advantage of recycled aggregate for pipe bedding
- Increased pipe lengths and factory fitted socket for faster installation
- EPDM seals supplied as standard for brownfield sites and aggressive effluents
- High shear resistant socket for areas subject to ground movement
- Adaptable to HepSeal, HepSleve and SuperSleve systems
- Lifetime guarantee*

















* see back page for further information

Product Selector

Hepworth SuperSeal™

Pipes	Description	Dia mm	Code
	Socket/Plain End with EPDM rings Standard length		
	1.75m	150	FP2S
	2.0m	225	FP4S
	2.0m	300	FP7S
Short Length	Description	Dia mm	Code
	Plain End Length 0.6m	150	SP060/2
		225	SP060/5
		300	SP060/7
	Socket/Plain End Length 0.6m	150	FP060/2S
		225	FP060/5S
		300	FP060/7S
Fittings	Description	Dia mm	Code
	Coupling (Polypropylene) EPDM Sealing Rings	150	SC2/2
		225	SC2/5
		300	SC2/7
	Nitrile Sealing Rings	150	SC3/2
		225	SC3/5
		300	SC3/7
	90° Bend	150	FB1/2S
		225	FB1/5S
		300	FB1/7S

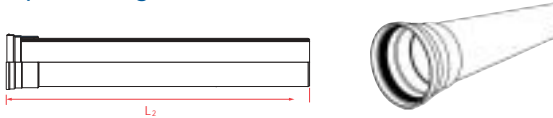
Fittings	Description	Dia mm	Code	
	45° Bend	150	FB2/2S	
		225	FB2/5S	
		300	FB2/7S	
	30° Bend	150	FB3/2S	
		225	FB3/5S	
		300	FB3/7S	
	15° Bend	150	FB4/2S	
		225	FB4/5S	
		300	FB4/7S	
	Rest Bend (DN150 Illustrated)	150	SBR2	
		225	FBR5S	
		300	FBR7S	
	Stopper Polypropylene Clay Clay	150	SS1/2	
		225	SS3/4	
		300	SS3/7	
	Socket Adaptor For traditional connections to SuperSleeve/SuperSeal.	225	SA1/5	
		45° Oblique Junction	150x100	F11/2S
		Double Socket	150x150	F11/3D
		225x100	F11/7S	
		225x150	F11/8D	
		225x225	F11/9D	
		300x100	F11/14S	
		300x150	F11/15D	

Fittings	Description	Dia mm	Code
	90° Curved Square Junction Double Socket	150x100	FJ2/2S
		150x150	FJ2/3D
		225x100	FJ3/7S
		225x150	FJ3/8D
		225x225	FJ2/9D
		300x100	FJ2/14S
		300x150	FJ2/15D
	300x300	FJ2/19D	
	Square Tumbling Bay Junction Branch and barrel equal	150x150	FJ6/3S
		225x225	FJ6/9S
		300x300	FJ6/19S
	Oblique Saddle Small - for pipes up to and including 300mm dia.	150	SIS1/2
	Large - for pipes larger than 300mm dia.	150	SIS2/2
	225	SIS2/5	
	Square Saddle Small - for pipes up to and including 300mm dia.	150	SIS4/2
	Large - for pipes larger than 300mm dia.	150	SIS5/2
	225	SIS5/5	
	Taper Pipe	150x100	ST2/1
		225x150	ST3/2
	300x225	ST4/3	
	Adaptor to HepSeal	150	SA2/2
		225	SA2/5
		300	SA2/7
	Adaptor to HepSleeve	150	SA3/2
		225	SA3/4
		300	SA3/6

■ with single socket on barrel and fitting

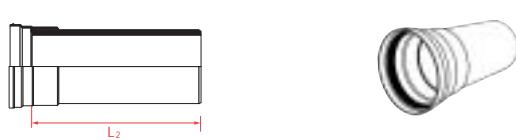
Product Data

Pipe - Single socket



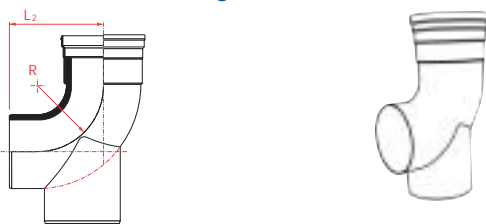
	150	225	300
Nominal diameter	150	225	300
L ₂ Effective length	1750	2000	2000
Weight (kg)	28	70	152
Code	FP2S	FP4S	FP7S

Rocker pipe - Single socket



	150	225	300
Nominal diameter	150	225	300
L ₂ Effective length	600	600	600
Weight (kg)	8.8	21	45.6
Code	FPO60/2S	FPO60/5S	FPO60/7S

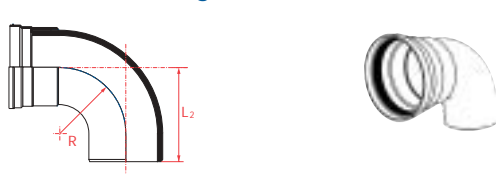
Rest bend - Single socket



	150	225	300
Nominal diameter	150	225	300
L ₂ Effective length	280	335	470
R Radius	235	235	355
Weight (kg)	8.3	22.9	57.9
Code	SBR2	FBR5S	FBR7S

Socket not included on SBR2 - Please order SC2/2

90° bend - Single socket



	150	225	300
Nominal diameter	150	225	300
L ₂ Effective length	285	335	470
R Radius	230	235	355
Weight (kg)	5.9	22.9	51.5
Code	FB1/2S	FB1/5S	FB1/7S

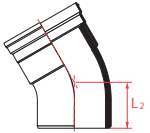
45° bend - Single socket



	150	225	300
Nominal diameter	150	225	300
L ₂ Effective length	150	197	300
Weight (kg)	4.8	12.5	43.1
Code	FB2/2S	FB2/5S	FB2/7S

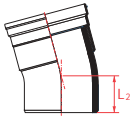
Product Data *continued*

30° bend - Single socket



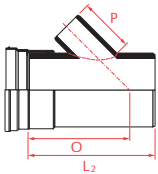
Nominal diameter	150	225	300
L ₂ Effective length	117	163	234
Weight (kg)	4.2	10.9	34.7
Code	FB3/2S	FB3/5S	FB3/7S

15° bend - Single socket



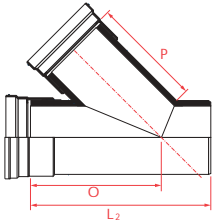
Nominal diameter	150	225	300
L ₂ Effective length	100	131	174
Weight (kg)	3.9	9.7	26.3
Code	FB4/2S	FB4/5S	FB4/7S

45° single socketed oblique junction



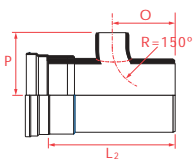
Nominal diameter	150 x 100	225 x 100	300 x 100
L ₂ Effective length	420	450	500
O Offset	305	360	435
P Projection	235	195	258
Weight (kg)	8.2	20.5	38.9
Code	FJ1/2S	FJ1/7S	FJ1/14S

45° double socketed oblique junction



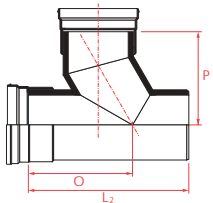
Nominal diameter	150 x 150	225 x 150	225 x 225	300 x 150
L ₂ Effective length	485	450	650	600
O Offset	335	375	494	483
P Projection	303	278	396	336
Weight (kg)	10.2	21.6	36.6	48.6
Code	FJ1/3D	FJ1/8D	FJ1/9D	FJ1/15D

90° single socketed square junction



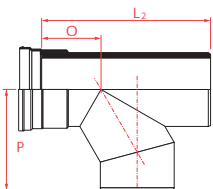
Nominal diameter	150 x 100	225 x 100	300 x 100
L ₂ Effective length	335	450	600
O Offset	166	225	300
P Projection	185	225	310
Weight (kg)	8.2	20.5	35.2
Code	FJ2/2S	FJ3/7S	FJ2/14S

90° double socketed square junction



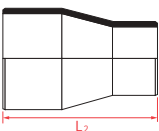
Nominal diameter	150 x 150	225 x 150	225 x 225	300 x 150	300 x 300
L ₂ Effective length	400	450	650	600	800
O Offset	180	225	275	275	300
P Projection	209	225	365	350	500
Weight (kg)	9.7	20.5	33.0	40.1	84.7
Code	FJ2/3D	FJ3/8D	FJ2/9D	FJ2/15D	FJ2/19D

Tumbling bay - Single socket



Nominal diameter	150 x 150	225 x 225	300 x 300
L ₂ Effective length	400	650	800
O Offset	220	375	300
P Projection	209	365	300
Weight (kg)	9.4	32.7	83.4
Code	FJ6/3S	FJ6/9S	FJ6/19S

Taper



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

Brownfield Development

The use of brownfield sites in urban regeneration projects is increasingly important. The Government's stated policy is to achieve 60% of new build on brownfield sites, and with their target of 4.4 million additional households required by 2016, this equates to some 2.6 million properties on brownfield sites. The last estimate suggests there are some 270 square miles of brownfield land available.

Brownfield land is characterised by the presence of one or more of the following: chemical contamination, demolition waste and potentially less stable areas after preparation work prior to development. These factors present a hostile environment where a robust and chemically inert drainage system may be required to provide a lifetime of reliable performance.

Hepworth SuperSeal® and other clay drainage systems, with their high crushing strength and bending moment resistance, provide a robust system for areas subject to potential ground movement and strength to resist damage from demolition waste. The EPDM seals within the socket, fitted as standard on Hepworth SuperSeal® (optional on SuperSieve) provide substantially higher levels of chemical resistance (pH 2-12) than normal SBR sealing rings (pH 3-11).

Dependant upon the particular site, varying degrees of site preparation may need to take place prior to construction. Before specifying or installing a drainage system on a brownfield site, please consult the Hepworth Technical Department on 01226 762014 for system recommendations appropriate to the development.



Aggregates for Bedding, Recycling and Waste and Waste Reduction

Aggregates for Bedding

Hepworth SuperSeal® and clay drainage systems as a whole are unique because of their inherent high crushing strength, which reduces the need for large volumes of bedding material.

Recent changes in regulations and taxation show the governments determination to reduce the amount of primary aggregate used in the construction industry. The new aggregate tax to be introduced in April 2002 will add a further £1.60 per tonne to the cost of primary material. Aggregate for bedding is now becoming a critical factor when pricing the total installed cost of the job.

As a broad requirement, Hepworth SuperSeal® and other clay drainage systems can be laid on a regulating bed of 20mm single size granular material or 20-5mm graded granular material. This significantly reduces the cost of providing a full surround, such as for plastics drainage which requires single-size 10mm pea shingle. The reduced bedding for clay will allow more backfill to be returned to the trench, which in turn reduces the quantity of material to be disposed of in landfill sites.

Recycled Bedding

Hepworth SuperSeal® and other clay drainage systems can be laid on 20mm down recycled construction and demolition waste material for use in bedding construction in class N, F, B and S. The BRE (Building Research Establishment) Digest 433 describes this material in detail.

Suitable materials for clay bedding are:

- Class RCA (II) - concrete or
- Class RCA (III) - concrete and brick

Class RCA (I) Brick only, cannot be used as it does not provide adequate support to the pipes because of a potentially high mortar and plaster content. This means that material for recycled bedding can come from construction and demolition waste and not just from pre-selected concrete. The specification above will exclude unwanted materials such as asphalt, which could lead to a lack of adequate pipe support.

Waste Reduction

Reduction and the elimination of waste is a further government taxation initiative introduced in 1996. Landfill costs are typically around £12 per tonne for general construction waste such as bricks, blocks and sub-soil. This tax introduced a further £2 per tonne additional cost

for inert waste (or an additional £12 per tonne for active waste). Selection of clay drainage systems can offer a cost reduction associated with the disposal of waste or surplus subsoils by returning more as dug material to the trench. The opportunity to recycle construction waste for use as pipe bedding material provides a further benefit where clay is used.



Further Information

Digest 433, Recycled Aggregates, published by BRE/CRC is available from:

The BRE Bookshop
Tel: 01923 664262
www.brebookshop.com

CPDA technical note 9 "laying clay pipes on recycled material" is available from:

Clay Pipe Development Association Limited
Tel: 01494 791456
Fax: 01494 792378
e-mail: cpda@aol.com
www.cpda.co.uk

The Research Report presented in "Recycled material for clay pipe bedding" is given in the Ceram Research Paper 815: 1999 published under the DETR Partners in Technology programme, is available from:

CERAM Research Limited
Tel: 01782 764444
Fax: 01782 412331
e-mail: info@ceram.co.uk
www.ceram.co.uk

Recommended Bedding Requirements

Main Traffic Roads

DN	150	225	300
Class No.	267	200	240
System Type	SuperSeal 150	SuperSeal 225	SuperSeal 300
Crushing Strength kN/m	40	45	72
Depth of Cover (m)	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		

Fields and Gardens

DN	150	225	300
Class No.	267	200	240
System Type	SuperSeal 150	SuperSeal 225	SuperSeal 300
Crushing Strength kN/m	40	45	72
Depth of Cover (m)	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	9		
	10		

Key

	Concrete Surround		Class F Bedding Factor 1.9
	Bedding Factor 1.1 Class D+N		Bedding Factor 2.5 Class B

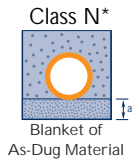
Class D (Bedding factor 1.1)

If the sub-soil falls within types III to VI in Table E1 in Approved Document A1/2 of The Building Regulations 1985, hand-trim the trench bottom with a spade to support the pipe along the length of its barrel, allowing for any socket recesses. (See below).



Class N (Bedding factor 1.1)

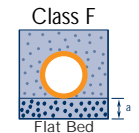
Where the subsoil cannot be trimmed accurately, excavate the trench to a depth of at least 50mm below the pipe barrel for Sleeve pipes, and 100mm for Socketed pipes, increasing this in rocky ground to 150mm for Sleeve, and 200mm for Socketed pipes.



Form a bed for the pipe from as-dug, if suitable, or granular material, well compacted and covering the full trench width. Socket holes should be taken out and the pipe barrel rested firmly on its bedding. Any granular material used should be packed by slicing with a spade.

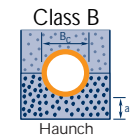
Class F (Bedding factor 1.9)

Recommended for maximum installed cost savings.



Class B (Bedding factor 2.5)

The bedding factors listed above are limited to use with clay pipes only. This provides the benefit of savings in excavation and spoil removal from site and imported material, especially when compared with flexible pipes which require a full granular surround.



B_c = Outside diameter

* see Agrément Certificate 02/3884 for SuperSleeve
Key: a – for sleeve jointed pipes minimum of 50mm.
In rocky ground increase to 150mm under barrel.

Extract from Table E1 in Approved Document A1/2 of The Building Regulations 1985

Type of subsoil	Conditions	Field test applicable
III Clay Sandy clay	Stiff	Cannot be moulded with the fingers, and requires a pick or pneumatic or mechanically-operated spade for its removal.
IV Clay Sandy clay	Firm	Can be moulded by substantial pressure with the fingers and can be excavated with graft or spade.
V Sand Silty sand Clayey sand	Loose	Can be excavated with a spade. Wooden peg 50mm square in cross-section can be easily driven.
VI Silt Sandy clay Silty clay	Soft	Fairly easily moulded in the fingers and readily excavated.

Sizing of Bedding Material

Nominal bore of pipe (mm)	Single sized Size mm	Graded Size mm
150-300	10,14 or 20	14 to 5 or 20 to 5

All granular material to be single sized or graded in accordance with BS 882: 1992, sintered pulverized-fuel ash to BS 3797: 1990 and air-cooled blast furnace slags to BS 1047: 1983 recycled materials. BRE Digest 433 as described in Class RCA (II) - Concrete or Class RCA (III) - Concrete and brick are suitable.

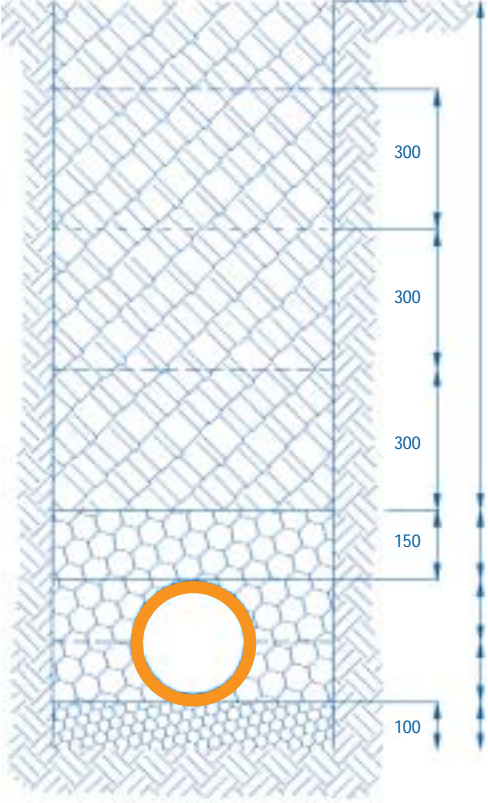
Pipe Bedding Specification

Design load – Main road

Bedding Classification – Class F Bedding Factor – 1.9

Suitable for all diameters of SuperSeal Pipes to a maximum cover depth of 7.5 Metres.

Normal ground conditions *

Trench Detail	General Specification	Suitable Material
	<p>Main Backfill</p> <p>As dug material if suitable</p> <p>Main Backfill consolidated in 300 mm layers</p> <p>NB - No mechanical compaction to be applied until first 300 mm of main backfill is in place</p>	<p>D.O.T. Type 1 if specified</p> <p>Other compactable material</p>
	<p>Initial Backfill</p> <p>Pipe surround above lower bedding to be free from particles exceeding 40 mm & lumps of clay exceeding 100 mm</p>	<p>As dug if suitable, or other compactable material free from particles over 40 mm e.g. Sand, all-in aggregate or other granular material</p>
	<p>Sidefill</p>	
	<p>Upper Bedding</p>	
	<p>Lower Bedding</p> <p>Pipe bed to be of specified granular material</p>	<p>20 mm single size granular material</p> <p>20 mm down granular material</p> <p>20 mm single size re-cycled material</p> <p>20 mm down re-cycled material with a Compaction Fraction less than 0.2**</p>

* Special bedding construction will be required where the trench formation has little bearing strength e.g. soft ground, running sand etc.

** A Compaction Fraction value greater than 0.2 but less than 0.3 will achieve a Bedding Factor of 1.5 which will allow a maximum cover depth of 5.9 Metres.

For more detailed information please contact Hepworth Technical Department. Tel: 01226 762014 or the C.P.D.A. Tel: 01494 791456

Sitework and Installation Instructions

Delivery

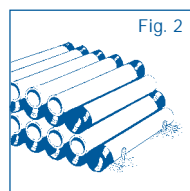
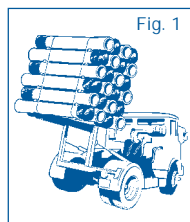
Vitrified clay pipes can be delivered to site in pre-packed form and can be mechanically off-loaded quickly by the delivery vehicle, if pre-arranged at the time of ordering for full vehicle loads only, or by the customer's own plant such as fork lift or crane (Fig. 1).

Pipes not in packs should be carefully off-loaded using slings. These should never be passed through the barrel of the pipe, and multiple pipe lifting with slings should be avoided, as this could result in an accident or damaged pipes.

Never unload pipes by dropping them, and avoid moving the pipes on site by rolling or dragging.

Storage

If stacking is necessary, this should be on level ground, and the bottom layer of pipes should be firmly wedged for stability. Socketed pipes should be kept clear of the ground by a wooden batten (Fig. 2). Successive rows should be turned end-for-end, with the plain end projecting beyond the sockets, and with timber wedges or battens at the ends of the bottom row to prevent movement (Fig. 2).



Trench Preparation

The trench should not be excavated too far in advance of pipe laying and should be backfilled as soon as possible. Trench widths should be as narrow as practicable but not less than the pipe OD plus 300mm to enable proper compaction of sidefill. Trench sides should be adequately supported. Trenches deeper than 1.2 metres need shoring.

The type of bedding and filling needed depends on:-

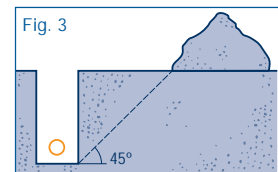
- pipe type and size
- type of subsoil
- load on surface of trench (eg. under a road, field or garden)
- depth of pipe under surface
- width of trench

Selected material and, where required, subsoil and topsoil should be put aside for backfilling at a later stage (Fig. 3).

All excavated material should be placed 4 to 5 metres from the edge of the excavation or outside a 45° line drawn from the bottom of the trench.

If applicable, buried services such as gas, electricity and water should be uncovered with extreme care.

Trenches should be kept free from water, where possible, and the trench formation should be maintained free from disturbance due to foot traffic.



Sitework and Installation Instructions *continued*

Health and Safety Information

To ensure your safety, Hepworth strongly advise the use of appropriate personal protective equipment (PPE). This should include the use of goggles or similar eye protection, gloves and footwear when using pipe cutters.

Pipe Cutting

Cutting is minimised with the availability of short length rocker pipes to complement the full-length pipes at manholes.

To ensure a neat cut use one of the following methods:

Pipe Chain Cutter

This method is best suited to the cutting of 150mm diameter Hepworth SuperSeal®.

The cutter can either be lever type (Product code MPC2) or screw type (Product code MPC3 or MPC6). (Fig. 4.)

The following procedure should be followed:

- 1 Pass the chain under the pipe, aligning cutting wheels with desired cut line on pipe.
- 2 Hook the chain onto the jaw of pipe cutter.
- 3 Tighten chain, by pulling arms of cutter together for if lever type, or turning tension bar if a screw type.
- 4 Make final check for alignment of cut with the pipe and then continue to tension chain by either method until pipe cuts.
- 5 After cutting with the chain cutter the sharp edges of the cut pipe will require trimming with the pipe trimmer (Product code MPT1).



Powered Masonry Saw

This method is best suited to the cutting of 225mm and 300mm diameter Hepworth SuperSeal®. The standard industry masonry saw should preferably be fitted with a diamond tipped cutting blade (carborundum blades can be used but the speed of cut will be slower and life of blade shorter).

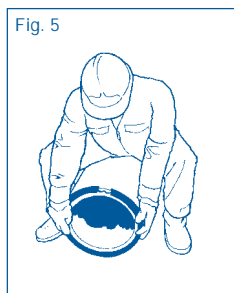
The following procedure should be followed:

- 1 The pipe should be clearly marked around the pipe circumference where the cut is required.
- 2 After reading and complying with the safety instructions of both the masonry saw and blade supplier, score the pipe all the way around its circumference, then continue cutting until the full cut is achieved. Care should be taken to support and secure the pipe to avoid the blade being nipped as the pipe separates.

Pipe End Protection

Trimming of the pipe is not required if the pipe cut end protector is used prior to jointing. Once the protector is placed over the end of the pipe the joint can be made quickly and easily without the risk of damaging the rubber seal (Fig. 5).

Sharp edges should be removed with a pipe trimmer, emery stone or coarse file prior to jointing if the pipe cut end protector is not used.



Pipe Jointing

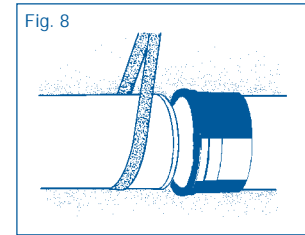
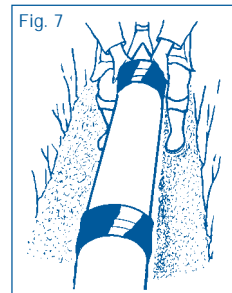
Check that the components of the socket are not damaged in any way that could result in an unsatisfactory joint.

Safely lower the pipe on slings into the trench.

Ensure that the inside of the socket and the exterior of the pipe end are clean. Spread a layer of lubricant over the pipe end to the required insertion depth (Fig. 6).



Inserting the pipe into the socket of the pipe previously laid and push fully home (Fig. 7).



To ease handling lower the pipes on a double sling support, centre the spigot in the pipe home (Fig. 8).

Testing

Before any backfilling takes place, testing should be carried out in accordance with the recommendations set out in 'Water and Air Testing of Drains and Sewers', and (available from Hepworth upon request). 'Testing of Drains and Sewers - Notes for the guidance of the field operative', both published by the Clay Pipe Development Association. These publications have been prepared with reference to the recommendations of BS EN 1610: 1998, and 'Sewers for adoption (5th edition 2001)' published by the Water Authorities Association, used for larger pipe diameters up to 750mm.

Trench Backfilling

In the first stages of backfill, selected material should be placed uniformly on both sides of the pipe by hand in layers not exceeding 100mm in thickness. Each layer should be compacted by hand tamping until the pipe has a minimum of 150mm compacted cover.

Further backfill should be placed in layers not exceeding 300mm, each layer being well compacted. Mechanical compaction equipment should not be used until there is a minimum of 450mm of compacted material above the crown of the pipe.

Shielded Flexible Couplings

A wide range of shielded flexible couplings incorporating EPDM seals are available for replacement and repair operations. They may be used for the placing of new pipes into a drain or sewer to replace damaged or failed pipes, for the insertion of junctions into existing pipelines or for the connection of different sizes or types of pipes (Fig. 9).

Pipe Repairs

Existing pipe Existing pipe

Section of new pipe cut to suit, re-located, secured and resealed

Junction Insertion

A suitable section of pipe is cut and removed from the existing pipeline. The new junction is located, the orientation of the junction arm established and the junction secured and sealed

Fig. 9

Shielded Couplings

Nominal dia	150	225	300
Range O/D (mm)	175-200	250-275	355-385
Code	MCR2	QSC275	MCR4

System Performance and Applications

Chemical Resistance

Clay pipes are resistant to practically all chemical attack. When designing a new sewer system and selecting the materials, consideration should be given to the nature of the development and the possibility of discharge of harmful material.

The principal causes of chemical attack are trade effluents, which can be a wide variety of chemical types, and contamination in surrounding soils. Land in which sewers are to be laid is commonly contaminated e.g. ex gas work sites, and pipe specification is important.

Clay is an inert material and does not generally require internal or external protection. Clay is unaffected by acid conditions resulting from the presence of hydrogen sulphide in sewers and remains unaffected where the pH value is between 2 and 12.

Standards

The Hepworth SuperSeal[®], drainage system complies with all the relevant clauses of BS EN 295-1 : 1991: Vitrified clay pipes and fittings and pipe joints for drains and sewers.

Polypropylene sockets comply with both BS EN 295-1 and BS 65. The rubber sealing rings conform to BS EN 681-1 : 1996: Elastomeric seals - Material requirements for pipe joint seals used in water and drainage applications. Part 1. Vulcanised rubber.

Flexible couplings up to 600mm in diameter also comply with BS EN 295-4 : 1995 Vitrified clay pipes and fittings and pipe joints for drains and sewers Part 4. Requirements for special fittings, adaptors and compatible accessories.

Hepworth clay drainage systems have been designed to meet the provisions laid out in 'Sewers for Adoption - a design and construction guide for developers'.

All systems are capable of meeting the design, layout, construction, testing and maintenance requirements BS EN 752 parts 1 to 4 and BS EN 1610 : 1998 for foul, surface and ground water drainage.

System Applications

System	Nominal Diameter (mm)	Applications	Specification
SuperSeal	150 225 300	Adoptable sewers and foul and surface water in industrial, commercial and highway drainage	BS EN 295 : 1991 Part 1
SuperSleve	100 150 225	Foul and surface water in housing, industrial commercial, highway drainage and adoptable sewers.	BS EN 295 : 1991 Part 1
HepSleve Plus	300	Adoptable sewers and foul and surface water in industrial, commercial and highway drainage.	BS EN 295 : 1991 Part 1
HepSeal	400 450 500 600	Adoptable sewers and foul and surface water in industrial, commercial and highway drainage.	BS EN 295 : 1991 Part 1
HepDuct	100 150 225 300	Communication and power ducting in commercial, industrial and road developments.	BS 65 : 1991
HepLine	100 150 225 300 400 450	Surface water collection - highways, playing fields, sports grounds, forestry, waste tips and general land drainage. Effluent dispersal in housing and industrial developments.	BS EN 295 : 1991 Part 5
Flexible Couplings	110 to 1999	Repair, adapting to other systems and secondary connections.	BS EN 295 : 1995 Part 4

Quality Assurance

All Hepworth clay drainage and ducting systems are manufactured within a quality management system which satisfies BS EN ISO 9001: 2000 Quality management system - requirements.

Lifetime Guarantee

The increasing use of high pressure jetting as a routine and cost-effective method of removing blockages in sewers has led to concerns among water companies, local authorities, developers, contractors and water jetting specialists about the ability of pipelines to withstand such applications. In response to these concerns Hepworth Drainage have introduced a unique Lifetime Guarantee* on its sewerage systems for jetting maintenance up to 7,500 psi.

The Guarantee

All products in the Hepworth Clay Drainage range are guaranteed for the system lifetime against penetration of the pipe wall caused by the following jetting criteria:

- High pressure water jet used at a pressure of up to 7,500 psi (517 bar)
- At a flow rate not exceeding 20 gallons per minute (1.5 litres per second)
- Held immobile for a constant period of not more than 5 minutes

* When laid in accordance with Hepworth instructions and the requirements of the codes of practice and guides relevant to the use.



Advisory Services

Technical Advisory Service

This service covers all aspects of Hepworth products from design through to maintenance.

- Hydraulic and structural design
- Quantity take offs and material scheduling

For any advice or assistance on these matters contact the Technical Advisory Service on:

Tel: 0870 443 5551
Fax: 0870 443 5552

Literature

For details of other products in the Hepworth Drainage range, please telephone the Literature Service Hotline on:

Tel: 0870 443 6000
Fax: 0870 443 8000

Availability

The Hepworth Drainage range is available through a nationwide network of builders merchants or direct from Hepworth. For further details please telephone our order enquiry hotline on:

Tel: 0870 443 6000
Fax: 0870 443 8000



e-mail: info@hepworth.co.uk
web site: www.hepworth.co.uk