Trade Price List 1st April 2023

Clay Drainage

A Comprehensive Range of Drainage Products



Hepworth CLAY

Fired to Perfection



Naturally the strongest choice.

Powerful reasons for using clay.

For a genuine ‘fit and forget’ high performance, drainage solution, Hepworth Clay is unbeatable. 100% natural and fired to perfection.

Sourced from our own quarries here in the UK, Hepworth Clay’s strength is verified at the factory then delivered to site, enabling clay pipes to be installed shallow or deep and with recycled aggregates. You’d need a strong reason not to install it.

For more information go online or call the number below.

0800 038 0088
www.hepworthclay.co.uk



Hepworth CLAY
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Hepworth CLAY
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Introduction to

Hepworth Clay

Vitrified clay is a well-established material for use in below-ground drainage systems. The inherent strength and durability of clay provide benefits to installers, specifiers and users:

Installation

– Reduced, recycled or re-used material can be used instead of primary aggregates, lowering total installation costs.

– This is achieved by reducing material costs and transport costs of both aggregate to site and trench material from site.

– The amount of as-dug material used will depend on site ground conditions, but the more used, the greater the saving and the lower the environmental impact too.

In use

– A Hepworth Clay Drainage system will withstand high water pressure jetting – see overleaf for details – so that more blockages are cleared first time.

– Clay pipes are chemically inert and are unaffected by any effluent acceptable in an adopted sewer or by virtually all aggressive ground conditions, making it a perfect material for brownfield situations.
A choice of sealing rings is available.

– Clay pipes have a life expectancy of over 100 years.

Hepworth Clay from Wavin is the No. 1 clay drainage brand in the UK, with a reputation second to none for product quality, technical ability and customer service.

Hepworth Clay offers a comprehensive range of drainage products suitable for foul and surface water drainage in adoptable, industrial, commercial and highway drainage applications.

Scan this QR code with your smartphone to visit the website

Email: hepworth.clay@wavin.com Web: www.hepworthclay.co.uk

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Key to abbreviations

	Kitemark
	Lifetime Jetting Guarantee
CE	CE Mark

Important Notes

Products marked with a Kitemark have been tested and awarded the Kitemark.

Please refer to page 50 for Acceptance information.

Product photos are for example only and not representative of every fitting size.

Lifetime Jetting Guarantee

The drainage products* identified in this price list 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.

LIFETIME GUARANTEE JETPROOF TO 7,500 PSI

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

'How to' Videos

To support the Hepworth Clay brand we have a series of 'How to' videos to help with handling, installation and air testing.
They can be viewed at **youtube.com/WavinUK** – select the Hepworth Clay playlist.

YouTube



Technical Tools

Register on **myportal.wavin.co.uk** for access to great tools to help you get the job done faster and with assured accuracy. Includes Inspection Chamber Selector and Hydraulic Calculator.

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Premier and Premier Plus Stock Profile

SuperSleve HouseDrain 100mm

Target market and primary users – small, medium and general builder.

Application – plain ended system with push-fit flexible couplings for use in adoptable, housing, commercial, industrial and highway drainage.

General comments – profile sufficient for 2 or 3 plots of domestic drainage for typical 3 bed detached houses and adoptable drainage.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SP1	Pipe 100mm x 1.6m	102	37.80	3855.60	8
SC1/1	Coupling	200	16.12	3224.00	8
SBR1	Rest Bend – Plain Ended	5	52.25	261.25	9
SB1/1	90° Bend – Plain Ended	16	29.50	472.00	8
SB2/1	45° Bend – Plain Ended	20	29.50	590.00	8
SB3/1	30° Bend – Plain Ended	16	29.50	472.00	8
SB4/1	15° Bend – Plain Ended	16	29.50	472.00	8
SJ1/1	45° Oblique Junction – Plain Ended	8	63.76	510.08	8
SJ2/1	90° Curved Square Junction – PE	8	63.76	510.08	8
SDT2/1	Taper Pipe – Single Socket	4	92.09	368.36	9
SG1/1	Low Back P-Trap – Plain Ended	4	63.76	255.04	9
IG2	Grid – Alloy	2	16.77	33.54	12
SH3/1	Hopper – Rectangular	2	113.41	226.82	11
SDG2/1	Paved Area Gully	2	213.40	426.80	10
SG2/1	Square Gully	4	180.39	721.56	10
SDG3/1	Inlet Gully	3	258.58	775.74	10
SG3/1	Access Gully c/w Grid	2	194.48	388.96	11
SJS1/1	Oblique Saddle – Small	2	62.58	125.16	9
SJS4/1	Square Saddle – Small	2	62.58	125.16	9
SRPS1/1	Square Top Rodding Point	4	142.94	571.76	12
S/S460	Internal Drain Conn. 32/40 waste	25	29.56	739.00	13
SS1/1	Stopper	5	31.30	156.50	13
SA3/1	Adaptor Coupling to HepSleve	5	17.83	89.15	13
SA9	SuperSleve Adaptor to soil pipe	25	48.70	1217.50	13
VA9	HepSleve Adaptor to soil pipe	10	58.21	582.10	13
SA14/1	Adaptor to cast iron	10	48.70	487.00	13

List Price Total	=	17657.16

For comprehensive range and price details please refer to the appropriate product section within this publication.

Important Note: The above profile is available from all Premier stockists – In addition, the profile on the facing page is available from our Premier Plus stockists.

Please see our web site for a full list of Premier Scheme stockists.

Find your nearest Hepworth Clay Premier Scheme Stockist with any web enabled device, simply type in your town or post code and press enter.

stockist.wavin.co.uk

Premier Plus Stock Profile

SuperSleve 150mm

Target market and primary users – medium / general builder and civils contractor.

Application – plain ended system with push-fit flexible couplings for use in adoptable, housing, commercial, industrial and highway drainage.

General comments – profile sufficient for a small civils project in 150mm diameter.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SP2	Pipe 150mm x 1.75m	55	76.45	4204.75	15
SC1/2	Coupling	100	28.28	2828.00	15
SB1/2	90° Bend – Plain Ended	10	58.64	586.40	15
SB2/2	45° Bend – Plain Ended	15	58.64	879.60	15
SB3/2	30° Bend – Plain Ended	15	58.64	879.60	15
SB4/2	15° Bend – Plain Ended	15	58.64	879.60	15
SJ1/2	45° Oblique Junc. 150x100 – PE	5	78.46	392.30	15
SJ1/3	45° Oblique Junc. 150x150 – PE	5	86.16	430.80	15
SJ2/2	90° Curved Sq. Junc. 150x100 – PE	5	78.46	392.30	15
SJ2/3	90° Curved Sq. Junc. 150x150 – PE	5	86.16	430.80	15
SJS2/2	Oblique Saddle Large – PE	2	89.77	179.54	15
SJS1/2	Oblique Saddle Small – PE	2	89.77	179.54	15
ST2/1	Taper Pipe 100-150	5	72.58	362.90	16
SA21	Universal Rainwater Adaptor	5	68.81	344.05	17
SA3/2	Adaptor Coupling to HepSleve	10	68.81	688.10	17
SA10	SuperSleve Adaptor to soil pipe	15	68.81	1032.15	17
SC4/2	Sliding Coupling	5	68.81	344.05	17
SRP1/2	150mm Oval Rodding Point	3	211.45	634.35	16
SS1/2	Stopper	5	42.30	211.50	17
		List Price Total	=	15880.33	

SuperSleve 225mm

Target market and primary users – large builder and civils.

Application – plain ended and socketed (with factory fitted couplings) system for use in adoptable, housing, commercial, industrial and highway drainage.

General comments – profile sufficient for a small civils project in 225mm diameter.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SP4S	Pipe 225mm x 2m	24	282.39	6777.36	18
SP060/5S	Pipe 225mm x 0.6m	4	126.39	505.56	18
SC1/5	Spare Couplings	20	54.23	1084.60	18
SB1/5S	90° Bend	4	298.88	1195.52	18
SB2/5S	45° Bend	10	298.88	2988.80	18
SB3/5S	30° Bend	10	298.88	2988.80	18
SB4/5S	15° Bend	10	298.88	2988.80	18
SJ1/7S	45° Oblique Junction 225x100mm	5	417.21	2086.05	19
SJ1/8S	45° Oblique Junction 225x150mm	5	417.21	2086.05	19
SJ1/9D	45° Oblique Junction 225x225mm	2	530.86	1061.72	19
SJ3/8S	90° Curved Sq. Junc. 225x150mm	2	417.21	834.42	19
ST3/2	Taper Pipe 150-225mm	4	226.41	905.64	19
		List Price Total	=	25503.32	

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Suggested Clay Civils Stock Profile

SuperSleve 300mm

Target market and primary users – large builder and civils.

Application – plain ended and socketed (with factory fitted couplings) system for use in adoptable, housing, commercial, industrial and highway drainage.

General comments – profile sufficient for a small civils project in 300mm diameter.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SP7S	Pipe 300mm x 2.0m	12	432.28	5187.36	20
SP060/7S	Pipe 300mm x 0.6m	4	219.38	877.52	20
SC1/7	Spare Couplings	10	111.40	1114.00	20
SB1/7S	90° Bend	2	567.58	1135.16	20
SB2/7S	45° Bend	3	567.58	1702.74	20
SB3/7S	30° Bend	3	567.58	1702.74	20
SB4/7S	15° Bend	3	567.58	1702.74	20
SJ1/14S	45° Oblique Junction 300x100mm	3	893.24	2679.72	21
SJ1/15S	45° Oblique Junction 300x150mm	3	893.24	2679.72	21
SJ1/17D	45° Oblique Junction 300x225mm	2	1070.85	2141.70	21
SJ1/19D	45° Oblique Junction 300x300mm	2	1136.14	2272.28	21
SJ3/15S	90° Square Junction 300x150mm	2	893.24	1786.48	21
ST4/3	Taper Pipe 225-300mm	2	624.83	1249.66	22
			List Price Total =	26231.82	

Socketed Clay Channels 100-225mm

Target market and primary users – small / medium / general builder and civils contractor.

Application – socketed channel system for use in manholes on commercial, industrial and adoptable drainage including gullies.

General comments – profile sufficient for a small civils project in 100, 150, 225mm diameters.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
100mm Socketed Channels					
CP2/1	Channel Pipe 100mm x 0.6m	5	19.69	98.45	27
CP3/1	Channel Pipe 100mm x 1.0m	5	26.71	133.55	27
CB3/1L	30° Bend Left Hand	2	30.05	60.10	27
CB3/1R	30° Bend Right Hand	2	30.05	60.10	27
CB2/1L	45° Bend Left Hand	2	30.05	60.10	27
CB2/1R	45° Bend Right Hand	2	30.05	60.10	27
CJ1/1L	45° Oblique Junction Left Hand	2	56.74	113.48	29
CJ1/1R	45° Oblique Junction Right Hand	2	56.74	113.48	29
150mm Socketed Channels					
CP2/2	Channel Pipe 150mm x 0.6m	5	31.60	158.00	27
CP3/2	Channel Pipe 150mm x 1.0m	5	44.43	222.15	27
CB3/2L	30° Bend Left Hand	2	47.39	94.78	28
CB3/2R	30° Bend Right Hand	2	47.39	94.78	28
CB2/2L	45° Bend Left Hand	2	47.39	94.78	27
CB2/2R	45° Bend Right Hand	2	47.39	94.78	27
CT2/1	Enlarger 100x150	2	124.82	249.64	27
225mm Socketed Channels					
CP3/3	Channel Pipe 225mm x 1.0m	5	99.73	498.65	27
CT2/2	Enlarger 150x225	2	278.65	557.30	27

Suggested Clay Civils Stock Profile

Gullies

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
100 & 150mm Gullies					
RGP5	225 Yard Gully 100 & L/D Grate	4	454.00	1816.00	32
RGP6	225 Yard Gully 100 & M/D Grate	3	641.81	1925.43	32
RGP7	225 Yard Gully 150 & L/D Grate	2	454.00	908.00	32
RGR1	Road Gully 300x600 – 100 outlet	4	436.65	1746.60	33
RGR2	Road Gully 300x600 – 150 outlet	3	447.14	1341.42	33
RGU1	Universal Grease Trap 600x450	1	3574.88	3574.88	34
		List Price Total	=	14076.55	

Clayware Accessories

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SL1	Lubricant – 1 Kilo Tub	12	23.34	280.08	38
SL2	Lubricant – 2.5 Kilo Tub	6	57.88	347.28	38
MPC1	Lever Pipe Cutter – 100mm	2	363.87	727.74	38
MPC2	Lever Pipe Cutter – 100/150mm	2	562.52	1125.04	38
MPT1	Pipe Trimmer – 100/150mm	2	231.51	463.02	38
		List Price Total	=	2943.16	

Inspection Chambers 100 and 150mm

Target market and primary users – housebuilders and small, medium and general builder.

Application – an inspection chamber system for use in housing, commercial, industrial drainage.

General comments – profile sufficient for 2 or 3 plots of domestic drainage for typical 3 bed detached houses or small construction project.

Cat no	Description	Stock profile quantity	£ List price	£ Total price	Page no
SDAC1/1	Mini Access Chamber – 3 Inlets	4	516.49	2065.96	39
SPIC1/1	PPIC 940mm deep – 5 Inlets	2	763.57	1527.14	40
SPIC2/1	PPIC 595mm deep – 5 Inlets	2	574.86	1149.72	40
SPIC1/2	PPIC 1030mm deep – mixed base	2	808.52	1617.04	40
SPIC4	PPIC 175mm Raising Piece	5	103.10	515.50	40
SPIC5	PPIC Sealing Ring	5	35.54	177.70	40
SPIC6/1	PPIC Base Unit – 5 Inlets	2	336.83	673.66	40
SPIC6/2	PPIC Mixed Base Unit – 5 Inlets	1	492.01	492.01	40
SPIC7	Inlet Adaptor 150-100mm	3	65.30	195.90	40
SPK8	Round Ductile Iron Cover + Frame	4	252.95	1011.80	41
SPKS8	Square Ductile Iron Cover + Frame	1	376.33	376.33	41
		List Price Total	=	12553.32	

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SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			per pipe
	Plain Ended – 100mm x 1.6m	100	SP1	37.80
	**Rocker**			
	0.3m	100	SP030/1	7.59
	0.6m	100	SP060/1	18.59
	1.0m	100	SP100/1	25.18
	**Couplings**			
	Couplings (polypropylene)			
	With EPDM sealing rings	100	SC1/1	16.12
	With Nitrile sealing rings	100	SC3/1	25.70
	**Fittings**			
	90° Bend			
	Single Socket	100	SDB1/1S	46.62
	Plain Ended	100	SB1/1	29.50
	**45° Bend**			
	Single Socket	100	SDB2/1S	46.62
	Plain Ended	100	SB2/1	29.50
	**30° Bend**			
	Single Socket	100	SDB3/1S	46.62
	Plain Ended	100	SB3/1	29.50
	**15° Bend**			
	Single Socket	100	SDB4/1S	46.62
	Plain Ended	100	SB4/1	29.50
	**Flexible Bend (0-25°)**			
	Single Socket	100	SFB1/1	72.79
	**45° Oblique Junction**			
	Double Socket 100mm x 100mm	100	SDJ1/1D	98.23
	Plain Ended 100mm x 100mm	100	SJ1/1	63.76
	**90° Curved Square Junction**			
	Double Socket 100mm x 100mm	100	SDJ2/1D	98.23
	Plain Ended 100mm x 100mm	100	SJ2/1	63.76

Hepworth *Fired to Perfection* CLAY SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	**Oblique Saddle** Small – for pipes up to and including 300mm diameter CE	100	SJS1/1	62.58
	Large – for pipes larger than 300mm diameter CE	100	SJS2/1	62.58
	**Square Saddle** Small – for pipes up to and including 300mm diameter CE	100	SJS4/1	62.58
	Large – for pipes larger than 300mm diameter CE	100	SJS5/1	62.58
	**Rest Bend** Single Socket CE	100	SDBR1	69.98
	Plain Ended CE	100	SBR1	52.25
	Telescopic CE	100	SBRT1	382.04
	**Rat Barrier** CE	100	RAT/FM	583.89
	**Taper Pipe** Single Socket 100mm to 150mm CE	100	SDT2/1	92.09
	**Socket Adaptor** for connection to traditional pipes and fittings CE	100	SA1/1	38.56
	Traps, Gullies			
	**Low Back P-Trap** Single Socketed CE	100	SDG1/1	81.74
	Plain Ended CE	100	SG1/1	63.76

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SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	Inlet Gully CE	100	SDG3/1	258.58
	Inlet Gully, with back inlet + horizontal back inlet CE	100	SDG3/2	278.67
	Spare Accessories			
	Grid and vertical back inlet insert only		SDG10	62.58
	Hopper c/w grid		SDG2/6	87.86
	Cover Plate		SDG2/4	44.67
	Metal Grid		SDG2/5	53.57
	Dip Tube Trap	100	SDC6	33.63
	Paved Area Gully Supplied complete with grid and frame CE	100	SDG2/1	213.40
	Paved Area Gully, with back inlet Supplied complete with grid and frame + horizontal back inlet CE	100	SDG2/3	224.36
	Top Assembly c/w grid and frame Cover Plate Metal Grid		SDG2/2 SDG2/4 SDG2/5	136.65 44.67 53.57
	Square Gully Supplied complete with grid CE	100	SG2/1	180.39
	Spare polypropylene grid	150	SG2/5	15.09
	Square Gully, with back inlet Supplied complete with grid CE	100	SG2/2	236.60
	Spare polypropylene grid	150	SG2/5	15.09

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SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	**Suitable alternative grids** Hinged grating + frame	150	IH2*	70.00
	Cover plate + frame	150	IS2*	67.69
	**Spare stopper for SG2/1 + SG2/2**		410456*	10.31
	**Square Raising Piece for SG2/1, SH1, SH2** Height			
	75mm	150	RRS2/1*	61.26
	150mm	150	RRS2/2*	61.26
	225mm	150	RRS2/3*	61.26
	300mm	150	RRS2/4*	61.26
	**Access Gully c/w grid** CE	100	SG3/1	194.48
	**Access Gully c/w grid and horizontal back inlet** CE Note: Can accept 110mm round or 100x100mm square rainwater pipes	100	SG4/1	250.63
	Spare Accessories			
	Grid	120	IG1P	17.66
	Bridge	120x270	QB1	17.66
	Cover Plate	120	IS1*	39.18
	Hinged Grating	120	IH1*	38.73
	**Access Raising Piece for SG3/1 + SH3/1** Height			
	75mm	265x120	SRP5	87.77
	150mm	265x120	SRP6	87.77
	225mm	265x120	SRP7	87.77
	300mm	265x120	SRP8	87.77

* PG2 discount applies

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SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	**Hopper, Rectangular**	100	SH3/1	113.41
	+ spares			
	Grid 120mm x 120mm		IG1P	17.66
	Bridge 120mm x 270mm		QB1	17.66
	Cover Plate + Frame		IS1*	39.18
	Hinged Grating + Frame		IH1*	38.73
	**Hopper, Square**			
		100	SH1	66.59
	Grid, alloy 150mm x 150mm	150	IG2*	16.77
	Cover Plate, alloy 150mm x 150mm	150	IS2*	67.69
	**Hopper, Square, with 100mm horizontal inlet**			
		100	SH2	120.04
	Grid, alloy 150mm x 150mm	150	IG2*	16.77
	Cover Plate, alloy 150mm x 150mm	150	IS2*	67.69
	Rodding Points			
	**Square Top Rodding Point**			
	Sealed c/w coupling	100	SRPS1/1	142.94
	Polypropylene. Hinged square top secures the air-tight sealing ring. Complete with fitted coupling to connect directly to SuperSleve			
	**Rodding Point**			
	Plain Ended	100	SRP1/1	167.56
	Rodding Point			
	With airtight seal, plain ended	100	SRP2/1	195.41

* PG2 discount applies

Hepworth *Fired to Perfection* CLAY

SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	Drain Connectors			
	Fit Clay and Plastic Systems			
	Internal Drain Connector – To Waste			
	100mm to 32/40mm Waste	100	S/S460	29.56
	100mm to 50mm Waste	100	S/S462	29.56
	Internal Blanking Plug			
	100mm	100	S/S89	26.02
	Internal Drain Connector			
	100mm to 68mm Round Rainwater	100	S/4A06B	35.66
	100mm to 65mm Square Rainwater	100	S/4A06C	35.66
	Internal Drain Connector			
	100mm to Soil Stacks	100	S/S464	43.35
	Adaptors			
	Adaptor Coupling to HepSleve	100	SA3/1	17.83
	Adaptors to 110mm ø soil pipes			
	SuperSleve	110	SA9	48.70
	HepSleve	110	VA9	58.21
	Rainwater Adaptor			
	to round or square rainwater pipes up to 76mm	100	SA11	48.70
	Sliding Coupling	100	SC4/1	48.70
	Adaptor to Cast Iron Pipes			
	made to BS 437	100	SA14/1	48.70
	Double Spigot Adaptor			
	110mm OsmaDrain/100mm SuperSleve	100	SA15/1	48.70
	Stopper	100	SS1/1	31.30
	Testing Stopper			
	with integral nipple	100	SS2/1	38.25

Hepworth *Fired to Perfection* CLAY

SuperSleve HouseDrain

	Description	Nom dia mm	Cat no	Price £ per piece
	Access Fittings			
	Access Pipe	100	SPA1	207.86
	45° Access Bend	100	SBA1	216.09
	Single Oblique Access Junction Left-hand	100	SJA1L	224.52
	Single Oblique Access Junction Right-hand	100	SJA1R	224.52
	Access Raising Piece Height			
	75mm	260x100	SRP1	82.30
	150mm	260x100	SRP2	82.30
	225mm	260x100	SRP3	82.30
	300mm	260x100	SRP4	82.30
	Alloy Lid and Frame Pedestrian areas only 300mm x 150mm		IS0	133.92

Hepworth CLAY — SuperSleve 150

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			per pipe
	Plain Ended – 150mm x 1.75m	150	SP2	76.45
	Rocker			
	0.3m	150	SP030/2	14.00
	0.6m	150	SP060/2	27.93
	1.0m	150	SP100/2	46.53
	**Couplings**			
	Coupling (polypropylene)			
	With EPDM sealing rings	150	SC1/2	28.28
	With nitrile sealing rings	150	SC3/2	46.76
	**Fittings**			
	90° Bend	150	SB1/2	58.64
	45° Bend	150	SB2/2	58.64
	30° Bend	150	SB3/2	58.64
	15° Bend	150	SB4/2	58.64
	45º Oblique Junction			
	150mm x 100mm	150	SJ1/2	78.46
	150mm x 150mm	150	SJ1/3	86.16
	90º Curved Square Junction			
	150mm x 100mm	150	SJ2/2	78.46
	150mm x 150mm	150	SJ2/3	86.16
	Oblique Saddle			
	Small – for pipes up to and including 300mm diameter	150	SJS1/2	89.77
	Large – for pipes larger than 300mm diameter	150	SJS2/2	89.77
	Square Saddle			
	Small – for pipes up to and including 300mm diameter	150	SJS4/2	89.77
	Large – for pipes larger than 300mm diameter	150	SJS5/2	89.77

Hepworth CLAY *Fired to Perfection*

SuperSleve 150

	Description	Nom dia mm	Cat no	Price £ per piece
	**Taper Pipe** 100mm to 150mm CE	100	ST2/1	72.58
	150mm to 225mm CE	150	ST3/2	226.41
	**Rest Bend** CE	150	SBR2	75.35
	**Telescopic Rest Bend** CE	150	SBRT2	603.81
	**Socket Adaptor** for connection to traditional pipes and fittings CE	150	SA1/2	59.48
	**Low-back P-trap** CE	150	SG1/2	99.29
	**Hopper** complete with plastic grid and bridge CE	150	SH3/2	150.14
	+ Spares			
	Grid 120mm x 120mm		IG1P*	17.66
	Bridge 175mm x 375mm		QB2*	21.50
	**Rodding Point** oval (aluminium)	150	SRP1/2	211.45
	Access Fittings			
	**Access Pipe** CE	150	SPA2	221.04
	**45° Access Bend** CE	150	SBA2	258.70
	**45° Single Oblique Access Junction** left hand			
	150mm x 100mm CE	150	SJA2L	321.77
	150mm x 150mm CE	150	SJA3L	321.77

Hepworth CLAY SuperSleve 150

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**45° Single Oblique Access Junction** right hand			
	150mm x 100mm	150	SJA2R	321.77
	150mm x 150mm	150	SJA3R	321.77
	**Access Raising Piece** Height			
	75mm	260x100	SRP1*	167.56
	150mm	260x100	SRP2*	195.41
	225mm	260x100	SRP3*	82.30
	300mm	260x100	SRP4*	82.30
	**Alloy Lid and Frame** Pedestrian areas only 300mm x 150mm		IS0*	133.92
	Adaptors			
	**Rainwater Adaptor** to round or square rainwater pipes up to 100 x 100mm	150	SA21	68.81
	**Adaptor Coupling** to HepSleve	150	SA3/2	68.81
	**Adaptors to 160mm ø PVCu soil pipes**			
	SuperSleve	150	SA10	68.81
	HepSleve	150	VA10	75.40
	**Double Spigot Adaptor** 160mm OsmaDrain/150mm SuperSleve	150	SA15/2	68.81
	**Sliding Coupling**	150	SC4/2	68.81
	**Adaptor to Cast Iron** Pipes made to BS 437	150	SA14/2	68.81
	**Stopper**	150	SS1/2	42.30
	**Testing Stopper** with integral nipple	150	SS2/2	52.38

* PG1 discount applies

Hepworth CLAY SuperSleve 225

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			
	Full Length Pipe			
	– complete with Fitted EPDM Coupling			per pipe
	225mm x 2.0m	225	SP4S	282.39
	**Pipe – Plain Ended**			
	– for use with separate nitrile couplings			per pipe
	225mm x 2.0m	225	SP4	223.21
	**Rocker**			
	0.3m	225	SP030/5	35.65
	0.6m	225	SP060/5	71.25
	1.0m	225	SP100/5	118.77
	**Short Length**			
	0.3m	225	SP030/5S	90.74
	0.6m	225	SP060/5S	126.39
	1.0m	225	SP100/5S	173.88
	**Couplings**			
	Spare couplings (polypropylene)			
	with EPDM sealing rings	225	SC1/5	54.23
	with nitrile sealing rings	225	SC3/5	86.84
	**Fittings**			
	90° Bend			
	Single Socket	225	SB1/5S	298.88
	Plain Ended	225	SB1/5	247.48
	**45° Bend**			
	Single Socket	225	SB2/5S	298.88
	Plain Ended	225	SB2/5	247.48
	**30° Bend**			
	Single Socket	225	SB3/5S	298.88
	Plain Ended	225	SB3/5	247.48
	**15° Bend**			
	Single Socket	225	SB4/5S	298.88
	Plain Ended	225	SB4/5	247.48

Hepworth CLAY *Fired to Perfection*

SuperSleve 225

	Description	Nom dia mm	Cat no	Price £ per piece
	**45° Oblique Junction**			
	Coupling on Barrel 225mm x 100mm	225	SJ1/7S	417.21
	Plain Ended 225mm x 100mm *	225	SJ1/7	312.16
	Coupling on Barrel 225mm x 150mm	225	SJ1/8S	417.21
	Plain Ended 225mm x 150mm *	225	SJ1/8	312.16
	Coupling on Barrel and Arm 225mm x 225mm	225	SJ1/9D	530.86
	Plain Ended 225mm x 225mm *	225	SJ1/9	372.00
	**90° Square Junction**			
	Coupling on Barrel 225mm x 100mm	225	SJ3/7S	417.21
	Plain Ended 225mm x 100mm *	225	SJ3/7	312.16
	Coupling on Barrel 225mm x 150mm	225	SJ3/8S	417.21
	Plain Ended 225mm x 150mm *	225	SJ3/8	312.16
	Coupling on Barrel & Arm 225mm x 225mm	225	SJ2/9D	530.86
	Plain Ended 225mm x 225mm *	225	SJ2/9	372.00
	**Oblique Saddle**	225	SJS2/5	334.05
	**Square Saddle**	225	SJS5/5	334.05
	**Rest Bend**			
	Single Socket	225	SBR5S	326.82
	Plain Ended *	225	SBR5	263.34
	**Taper Pipe**			
	150mm x 225mm	225	ST3/2	226.41
	**Stopper**	225	SS3/4	87.78
	**Socket Adaptor** for connection to traditional pipes and fittings	225	SA1/5	135.60

* Plain ended bends and junctions are for use with separate Nitrile couplings for increased resistance to hydrocarbons. Contact the Technical Advisory Service for further details.

Hepworth CLAY
Fired to Perfection

SuperSleve 300

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			
	Full Length Pipe			
	– complete with Fitted EPDM Coupling			per pipe
	300mm x 2.0m	300	SP7S	432.28
	**Pipe - Plain Ended**			
	– for use with separate nitrile couplings			per pipe
	300mm x 2.0m	300	SP7	323.01
	**Rocker**			
	0.3m	300	SP030/7	51.64
	0.6m	300	SP060/7	103.14
	1.0m	300	SP100/7	171.94
	**Short Length**			
	0.3m	300	SP030/7S	167.83
	0.6m	300	SP060/7S	219.38
	1.0m	300	SP100/7S	288.12
	**Couplings**			
	Spare couplings (polypropylene)			
	with EPDM sealing rings	300	SC1/7	111.40
	with nitrile sealing rings	300	SC3/7	165.90
	**Fittings**			
	90° Bend			
	Single Socket	300	SB1/7S	567.58
	Plain Ended	300	SB1/7	449.88
	**45° Bend**			
	Single Socket	300	SB2/7S	567.58
	Plain Ended	300	SB2/7	449.88
	**30° Bend**			
	Single Socket	300	SB3/7S	567.58
	Plain Ended	300	SB3/7	449.88
	**15° Bend**			
	Single Socket	300	SB4/7S	567.58
	Plain Ended	300	SB4/7	449.88

Hepworth CLAY SuperSleve 300

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**45° Oblique Junction**			
	Coupling on Barrel 300mm x 100mm	300	SJ1/14S	893.24
	Plain Ended 300mm x 100mm *	300	SJ1/14	761.11
	Coupling on Barrel 300mm x 150mm	300	SJ1/15S	893.24
	Plain Ended 300mm x 150mm *	300	SJ1/15	761.11
	Coupling on Barrel and Arm 300mm x 225mm	300	SJ1/17D	1070.85
	Plain Ended 300mm x 225mm *	300	SJ1/17	897.94
	Coupling on Barrel and Arm 300mm x 300mm	300	SJ1/19D	1136.14
	Plain Ended 300mm x 300mm *	300	SJ1/19	940.88
	**90° Square Junction**			
	Coupling on Barrel 300mm x 100mm	300	SJ3/14S	893.24
	Plain Ended 300mm x 100mm *	300	SJ3/14	774.12
	Coupling on Barrel 300mm x 150mm	300	SJ3/15S	893.24
	Plain Ended 300mm x 150mm *	300	SJ3/15	774.12
	Coupling on Barrel and Arm 300mm x 225mm	300	SJ3/17D	1070.85
	Plain Ended 300mm x 225mm *	300	SJ3/17	897.94
	Coupling on Barrel and Arm 300mm x 300mm	300	SJ3/19D	1136.14
	Plain Ended 300mm x 300mm *	300	SJ3/19	897.94
	**Oblique Saddle**	300	SJS2/7	581.22
	**Square Saddle**	300	SJS5/7	581.22
	**Rest Bend**			
	Single Socket	300	SBR7S	863.78
	Plain Ended *	300	SBR7	752.42

* Plain ended bends and junctions are for use with separate Nitrile couplings for increased resistance to hydrocarbons. Contact the Technical Advisory Service for further details.

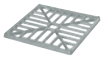
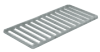
Hepworth CLAY
Fired to Perfection

SuperSleve 300

	Description	Nom dia mm	Cat no	Price £ per piece
	Taper Pipe to 225mm SuperSleve 225mm x 300mm CE	300	ST4/3	624.83
	Stopper CE	300	SS3/7	187.35
	Socket Adaptor for connection to traditional pipes and fittings CE	300	SA1/7	202.87

Hepworth CLAY
Fired to Perfection

SuperSleve Gratings & Cover Plates

	Description	Nom dia mm	Cat no	Price £ per piece
	Pedestrian Areas Only			
	**Gully Grid, (Square)**			
	Alloy	120	IG1	17.56
	Alloy	150	IG2	16.77
	Alloy	225	IG3	52.17
	Alloy	300	IG4	117.51
	Cast Iron	120	IG1C	17.56
	Cast Iron	150	IG2C	16.77
	Cast Iron	225	IG3C	52.17
	Cast Iron	300	IG4C	117.51
	Galvanised	150	IG2G	26.30
	Galvanised	225	IG3G	78.31
	**Alloy only Gully Grid (Rectangular)**			
	Alloy	265x120	IG5	35.55
	For use with: Hopper		SH3/1*	113.41
	Gully		SG3/1*	194.48
	Gully		SG4/1*	250.63
	**Gully Grid, (Round)**			
	Gully size mm			
	100 Alloy	140	IG6	17.56
	150 Alloy	197	IG7	26.81
	225 Alloy	284	IG8	58.35
	100 Cast Iron	140	IG6C	17.56
	150 Cast Iron	197	IG7C	26.81
	225 Cast Iron	284	IG8C	58.45
	**Dish Grid, (Round)**			
	For use with RDR3 dish top			
	Alloy	178	IG11	22.29
	Cast Iron	178	IG11C	22.29
	**Hinged Gratings and Frames (Square)**			
	Alloy	120	IH1	38.73
	Alloy	150	IH2	70.00
	Alloy	230	IH3	127.97
	Alloy	316	IH4	339.28
	Cast Iron	150	IH2C	70.00
	Cast Iron	230	IH3C	127.97
	Cast Iron	316	IH4C	339.28
	**Hinged Gratings and Frames (Round)**			
	Gully size mm			
	150 Alloy	193	IH6	108.82
	225 Cast Iron	265	IH7C	217.41
	300 Cast Iron	368	IH8C	546.89
	**Cover Plate and Frame, (Square)**			
	Alloy	120	IS1	39.00
	Alloy	150	IS2	67.31
	Alloy	225	IS3	123.17
	Cast Iron	120	IS1C	39.18
	Cast Iron	150	IS2C	67.69
	Cast Iron	225	IS3C	123.17

* PG1 discount applies

Hepworth *Fired to Perfection* CLAY

SuperSleve Gratings & Cover Plates

	Description	Nom dia mm	Cat no	Price £ per piece
	**Cover Plate and Frame, (Round)**			
	Gully size mm			
	100 Alloy	140	IS5	54.86
	150 Alloy	197	IS6	78.97
	225 Alloy	273	IS7	126.31
	150 Cast Iron	197	IS6C	78.97
	**Access Cover**			
	Plate and frame	300x150	IS0*	133.92

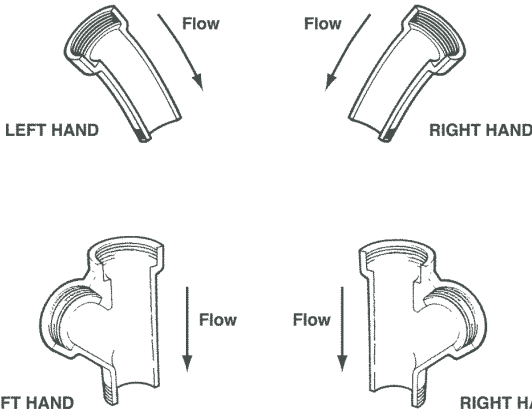
* PG1 discount applies

Hepworth *Fired to Perfection* CLAY Channels

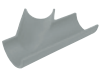
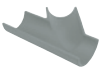
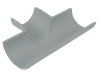
Direction of flow is from the socket towards the spigot.

Important note:

Handing of channel and access fittings is as viewed against direction of flow.

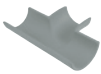


Hepworth CLAY Fired to Perfection — Channels

	Description	Nom dia mm	Cat no	Price £ per piece
	**Channel Pipe – Plain Ended**			
	Pipe			
	0.3m	100	CPP1/1	16.95
	0.6m	100	CPP2/1	16.95
	1.0m	100	CPP3/1	23.74
	0.3m	150	CPP1/2	28.44
	0.6m	150	CPP2/2	28.44
	1.0m	150	CPP3/2	41.69
	1.0m	225	CPP3/3	99.84
	1.0m	300	CPP3/4	210.31
	Pipe – large diameter			
	1.0m	400	CPP3/5	358.85
	1.0m	450	CPP3/6	441.86
	Channel Fittings – Plain Ended			
	Enlarger/Reducer			
	100mm x 150mm	100	CTP1/1	61.02
	225mm x 300mm	225	VCTP4/3	531.49
	300mm x 400mm	300	CTP1/4	896.01
	90° Bend	100	CBP1/1	24.04
	Plain ended channel bends	150	CBP1/2	41.54
	can be used left or right handed	225	VCB1/3	160.98
		300	VCB1/4	328.14
	45° Bend	100	CBP2/1	24.04
		150	CBP2/2	41.54
		225	VCB2/3	160.98
		300	VCB2/4	328.14
	30° Bend	100	CBP3/1	24.04
		150	CBP3/2	41.54
		225	VCB3/3	160.98
		300	VCB3/4	328.14
	15° Bend	100	CBP4/1	24.04
		150	CBP4/2	41.54
		225	VCB4/3	160.98
		300	VCB4/4	328.14
	Oblique Junction			
	left-hand			
	100mm x 100mm	100	CJP1/1L	46.28
	150mm x 100mm	150	CJP1/2L	79.00
	150mm x 150mm	150	CJP1/3L	79.00
	right-hand			
	100mm x 100mm	100	CJP1/1R	46.28
	150mm x 100mm	150	CJP1/2R	79.00
	150mm x 150mm	150	CJP1/3R	79.00
	Curved Square Junction			
	left-hand			
	100mm x 100mm	100	CJP2/1L	46.28
	150mm x 100mm	150	CJP2/2L	79.00
	150mm x 150mm	150	CJP2/3L	79.00

Hepworth CLAY Channels

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**Curved Square Junction**			
	right-hand			
	100mm x 100mm	100	CJP2/1R	46.28
	150mm x 100mm	150	CJP2/2R	79.00
	150mm x 150mm	150	CJP2/3R	79.00
	**Channel Pipe – Socketed**			
	Pipe			
	0.3m	100	CP1/1	19.69
	0.3m	150	CP1/2	31.60
	0.3m	225	CP1/3	91.16
	0.3m	300	CP1/4	184.82
	0.6m	100	CP2/1	19.69
	0.6m	150	CP2/2	31.60
	0.6m	225	CP2/3	91.16
	0.6m	300	CP2/4	184.82
	1.0m	100	CP3/1	26.71
	1.0m	150	CP3/2	44.43
	1.0m	225	CP3/3	99.73
	1.0m	300	CP3/4	204.77
	**Channel Fittings – Socketed**			
	Enlarger			
	100mm x 150mm	100	CT2/1	124.82
	150mm x 225mm	150	CT2/2	278.65
	225mm x 300mm	225	CT2/3	547.95
	Reducer			
	150mm x 100mm	150	CT1/1	124.82
	225mm x 150mm	225	CT1/2	278.65
	300mm x 225mm	300	CT1/3	547.95
	**Channel Bends – Socketed**			
	90° Bend			
	medium left-hand right-hand			
	Left-hand	100	CB1/1L	30.05
	Right-hand	100	CB1/1R	30.05
	Left-hand	150	CB1/2L	49.54
	Right-hand	150	CB1/2R	49.54
	Left-hand	225	CB1/3L	165.20
	Right-hand	225	CB1/3R	165.20
	Left-hand	300	CB1/4L	336.81
	Right-hand	300	CB1/4R	336.81
	45° Bend			
	medium left-hand right-hand			
	Left-hand	100	CB2/1L	30.05
	Right-hand	100	CB2/1R	30.05
	Left-hand	150	CB2/2L	47.39
	Right-hand	150	CB2/2R	47.39
	Left-hand	225	CB2/3L	165.20
	Right-hand	225	CB2/3R	165.20
	Left-hand	300	CB2/4L	336.81
	Right-hand	300	CB2/4R	336.81

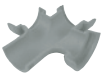
Hepworth CLAY Channels

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**30° Bend**			
	medium left-hand right-hand			
	Left-hand	100	CB3/1L	30.05
	Right-hand	100	CB3/1R	30.05
	Left-hand	150	CB3/2L	47.39
	Right-hand	150	CB3/2R	47.39
	Left-hand	225	CB3/3L	165.20
	Right-hand	225	CB3/3R	165.20
	Left-hand	300	CB3/4L	336.81
	Right-hand	300	CB3/4R	336.81
	**15° Bend**			
	medium left-hand right-hand			
	Left-hand	100	CB4/1L	30.05
	Right-hand	100	CB4/1R	30.05
	Left-hand	150	CB4/2L	47.39
	Right-hand	150	CB4/2R	47.39
	Left-hand	225	CB4/3L	165.20
	Right-hand	225	CB4/3R	165.20
	Left-hand	300	CB4/4L	336.81
	Right-hand	300	CB4/4R	336.81
	**Enlarger**			
	left-hand right-hand			
	Left-hand 100mm x 150mm	100	CBT2/1L	190.04
	Left-hand 100mm x 150mm	100	CBT2/1R	190.04
	Left-hand 150mm x 225mm	150	CBT2/2L	544.54
	Right-hand 150mm x 225mm	150	CBT2/2R	544.54
	Left-hand 225mm x 300mm	225	CBT2/3L	1105.16
	Right-hand 225mm x 300mm	225	CBT2/3R	1105.16
	**Reducer**			
	left-hand right-hand			
	Price is based on larger diameter			
	Left-hand 225mm x 150mm	225	CBT1/2L	544.54
	Right-hand 225mm x 150mm	225	CBT1/2R	544.54
	Channel Junctions – Socketed			
	**90° Square Junction**			
	left-hand right-hand			
	Left-hand 100mm x 100mm	100	CJ2/1L	56.74
	Right-hand 100mm x 100mm	100	CJ2/1R	56.74
	Left-hand 150mm x 100mm	150	CJ2/2L	94.00
	Right-hand 150mm x 100mm	150	CJ2/2R	94.00
	Left-hand 150mm x 150mm	150	CJ2/3L	94.00
	Right-hand 150mm x 150mm	150	CJ2/3R	94.00
	Left-hand 225mm x 100mm	225	CJ2/4L	270.65
	Right-hand 225mm x 100mm	225	CJ2/4R	270.65
	Left-hand 225mm x 150mm	225	CJ2/5L	270.65
	Right-hand 225mm x 150mm	225	CJ2/5R	270.65
	Left-hand 225mm x 225mm	225	CJ2/6L	270.65
	Right-hand 225mm x 225mm	225	CJ2/6R	270.65
	Left-hand 300mm x 150mm	300	CJ2/8L	661.51
	Right-hand 300mm x 150mm	300	CJ2/8R	661.51
	Left-hand 300mm x 225mm	300	CJ2/9L	661.51
	Right-hand 300mm x 225mm	300	CJ2/9R	661.51
	Left-hand 300mm x 300mm	300	CJ2/10L	661.51
	Right-hand 300mm x 300mm	300	CJ2/10R	661.51

Hepworth CLAY Channels

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**45° Oblique Junction**			
	left-hand right-hand			
	Left-hand 100mm x 100mm	100	CJ1/1L	56.74
	Right-hand 100mm x 100mm	100	CJ1/1R	56.74
	Left-hand 150mm x 100mm	150	CJ1/2L	94.00
	Right-hand 150mm x 100mm	150	CJ1/2R	94.00
	Left-hand 150mm x 150mm	150	CJ1/3L	94.00
	Right-hand 150mm x 150mm	150	CJ1/3R	94.00
	Left-hand 225mm x 100mm	225	CJ1/4L	270.65
	Right-hand 225mm x 100mm	225	CJ1/4R	270.65
	Left-hand 225mm x 150mm	225	CJ1/5L	270.65
	Right-hand 225mm x 150mm	225	CJ1/5R	270.65
	Left-hand 225mm x 225mm	225	CJ1/6L	270.65
	Right-hand 225mm x 225mm	225	CJ1/6R	270.65
	Left-hand 300mm x 150mm	300	CJ1/8L	661.51
	Right-hand 300mm x 150mm	300	CJ1/8R	661.51
	Left-hand 300mm x 225mm	300	CJ1/9L	661.51
	Right-hand 300mm x 225mm	300	CJ1/9R	661.51
	Left-hand 300mm x 300mm	300	CJ1/10L	661.51
	Right-hand 300mm x 300mm	300	CJ1/10R	661.51
	**45° Double Oblique Junction**			
	100mm x 100mm	100	CJ3/1	85.10
	150mm x 100mm	150	CJ3/2	141.79
	150mm x 150mm	150	CJ3/3	141.79
	225mm x 150mm	225	CJ3/5	432.93
	225mm x 225mm	225	CJ3/6	432.93
	300mm x 150mm	300	CJ3/8	993.76
	300mm x 225mm	300	CJ3/9	993.76
	**90° Double Square Junction**			
	100mm x 100mm	100	CJ4/1	85.10
	150mm x 100mm	150	CJ4/2	141.75
	150mm x 150mm	150	CJ4/3	141.75
	225mm x 150mm	225	CJ4/5	432.93
	225mm x 225mm	225	CJ4/6	432.93
	300mm x 150mm	300	CJ4/8	993.76
	**45° Breeches Oblique Junction**			
	100mm x 100mm	100	CJ5/1	85.10
	150mm x 100mm	150	CJ5/2	141.75
	150mm x 150mm	150	CJ5/3	141.75
	225mm x 150mm	225	CJ5/5	432.93
	225mm x 225mm	225	CJ5/6	432.93
	300mm x 225mm	300	CJ5/9	993.76
	300mm x 300mm	300	CJ5/10	993.76
	**90° Breeches Square Junction**			
	100mm x 100mm	100	CJ6/1	85.10
	150mm x 100mm	150	CJ6/2	141.75
	150mm x 150mm	150	CJ6/3	141.75
	225mm x 150mm	225	CJ6/5	432.93
	225mm x 225mm	225	CJ6/6	432.93
	300mm x 300mm	300	CJ6/10	993.76

Hepworth CLAY Fired to Perfection

Channels

	Description	Nom dia mm	Cat no	Price £ per piece
	Branch Channel Bends – Socketed			
	Half-section			
	10° left-hand			
	10° right-hand			
	Left-hand	100	CX1/1L	61.31
	Right-hand	100	CX1/1R	61.31
	Left-hand	150	CX2/1L	100.55
	Right-hand	150	CX2/1R	100.55
	30° left-hand			
	30° right-hand			
	Left-hand	100	CX1/2L	61.31
	Right-hand	100	CX1/2R	61.31
	Left-hand	150	CX2/2L	100.55
	Right-hand	150	CX2/2R	100.55
	50° left-hand			
	50° right-hand			
	Left-hand	100	CX1/3L	61.31
	Right-hand	100	CX1/3R	61.31
	Left-hand	150	CX2/3L	100.55
	Right-hand	150	CX2/3R	100.55
	70° left-hand			
	70° right-hand			
	Left-hand	100	CX1/4L	61.31
	Right-hand	100	CX1/4R	61.31
	Left-hand	150	CX2/4L	100.55
	Right-hand	150	CX2/4R	100.55
	90° left-hand			
	90° right-hand			
	Left-hand	100	CX1/5L	61.31
	Right-hand	100	CX1/5R	61.31
	Left-hand	150	CX2/5L	100.55
	Right-hand	150	CX2/5R	100.55
	115° left-hand			
	115° right-hand			
	Left-hand	100	CX1/6L	61.31
	Right-hand	100	CX1/6R	61.31
	Left-hand	150	CX2/6L	100.55
	Right-hand	150	CX2/6R	100.55
	140° left-hand			
	140° right-hand			
	Left-hand	100	CX1/7L	61.31
	Right-hand	100	CX1/7R	61.31
	Left-hand	150	CX2/7L	100.55
	Right-hand	150	CX2/7R	100.55
	165° left-hand			
	165° right-hand			
	Left-hand	100	CX1/8L	61.31
	Right-hand	100	CX1/8R	61.31
	Left-hand	150	CX2/8L	100.55
	Right-hand	150	CX2/8R	100.55

Hepworth CLAY Channels

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	Three-quarter-section			
	10° left-hand			
	10° right-hand			
	Left-hand	100	CX1AL	67.68
	Right-hand	100	CX1AR	67.68
	Left-hand	150	CX2AL	113.60
	Right-hand	150	CX2AR	113.60
	30° left-hand			
	30° right-hand			
	Left-hand	100	CX1BL	67.68
	Right-hand	100	CX1BR	67.68
	Left-hand	150	CX2BL	113.60
	Right-hand	150	CX2BR	113.60
	50° left-hand			
	50° right-hand			
	Left-hand	100	CX1CL	67.68
	Right-hand	100	CX1CR	67.68
	Left-hand	150	CX2CL	113.60
	Right-hand	150	CX2CR	113.60
	70° left-hand			
	70° right-hand			
	Left-hand	100	CX1DL	67.68
	Right-hand	100	CX1DR	67.68
	Left-hand	150	CX2DL	113.60
	Right-hand	150	CX2DR	113.60
	90° left-hand			
	90° right-hand			
	Left-hand	100	CX1EL	67.68
	Right-hand	100	CX1ER	67.68
	Left-hand	150	CX2EL	113.60
	Right-hand	150	CX2ER	113.60
	115° left-hand			
	115° right-hand			
	Left-hand	100	CX1FL	67.68
	Right-hand	100	CX1FR	67.68
	Left-hand	150	CX2FL	113.60
	Right-hand	150	CX2FR	113.60
	140° left-hand			
	140° right-hand			
	Left-hand	100	CX1GL	67.68
	Right-hand	100	CX1GR	67.68
	Left-hand	150	CX2GL	113.60
	Right-hand	150	CX2GR	113.60
	165° left-hand			
	165° right-hand			
	Left-hand	100	CX1HL	67.68
	Right-hand	100	CX1HR	67.68
	Left-hand	150	CX2HL	113.60
	Right-hand	150	CX2HR	113.60

Hepworth CLAY Fired to Perfection

Yard / Road Gullies

	Description	Internal dia mm	Internal depth mm	Back Inlet dia mm	Outlet dia mm	Nom dia mm	Cat no	Price £ per piece
	**Yard Gullies**							
	Yard Gully							
	Supplied complete with grating and frame (A15) suitable for pedestrian and domestic areas							
		225	585	–	100	100	RGP5	454.00
		225	585	100	100	100	RGP5B	696.37
		225	585	–	150	150	RGP7	454.00
		225	585	150	150	150	RGP7B	713.83
	Supplied complete with grating and frame (B125) suitable for pedestrian areas and car parks that are used occasionally							
		225	585	–	100	100	RGP6	641.81
		225	585	100	100	100	RGP6B	901.25
		225	585	–	150	150	RGP8	703.24
		225	585	150	150	150	RGP8B	918.77
	**Yard Gully Extras**							
	Raising Piece							
	300mm Plain Raising Piece					225	SP030/5	35.65
	600mm Plain Raising Piece					225	SP060/5	71.25
	Spare Couplings EPDM					225	SC1/5	54.23
	Combined Filter and Silt Bucket					205	IBP3	164.16
	**Yard Gully**							
	Round with rodding eye and stopper							
		225	585	–	100	100	RGP1	374.10
		225	585	–	150	150	RGP2	472.36
	**Grating and Frame**							
	Grating and frame (A15) suitable for pedestrian and domestic areas					–	RGP3	213.27
	Grating and frame (B125) suitable for pedestrian areas and car parks that are used occasionally					–	RGP4	349.21

Hepworth *Fired to Perfection* CLAY Yard / Road Gullies

	Description	Internal dia mm	Internal depth mm	Outlet dia mm	Pack Qty	Nom dia mm	Cat no	Price £ per piece
	**Road Gullies** **Road Gully** Round with rodding eye and stopper							
		300	600	100	16	100	RGR1	436.65
		300	600	150	16	150	RGR2	447.14
		400	750	150	12	150	RGR3	518.60
		450	900	150	6	150	RGR4	701.64
	**Spare Stopper** for Road and Yard Gully					100	RSG1	15.57

Hepworth CLAY — Yard / Road Gullies

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**Plastic Road Gullies** Polyethylene Gully Trapped 150mm SuperSleve outlet Internal dia 375mm / Internal depth 750mm	150	MGP2/2	227.41
	**Clay Traps** Universal Grease Trap 550mm deep Supplied complete including filter basket, spatula, cover and frame and 100/110 conversion adaptors CE Internal length 600mm / Internal width 450mm	100	RGU1	3574.88
	Spare Cover and Frame		IGUC1	361.73
	Spare Filter Basket and Spatula		RGUFB	615.12

Hepworth CLAY
Fired to Perfection

HepGuard

	Description	Nom dia mm	Cat no	Price £ per piece
	Surface Box (polypropylene) Plain #	150	GSB1	86.33

Are to be withdrawn from stock and are subject to availability.

Hepworth *Fired to Perfection* CLAY HepLine

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			per pipe
	Perforated – Plain Ended			
	Standard 100mm/150mm diameter coupling required from the SuperSleve range			
	100mm x 1.6m perforated	100	LP1	58.02
	150mm x 1.75m perforated	150	LP2	115.29
	**Perforated – complete with Fitted EPDM Coupling**			
	225mm x 1.75m perforated	225	LP175/3	243.97
	300mm x 2.0m perforated	300	LP200/4	542.79
	Important note: Stoppers and fittings for HepLine subsoil drainage systems are available from the SuperSleve Range			

Hepworth CLAY Unjointed

Fired to Perfection

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe**			
	Standard Pipe Length			
	1.0m			per pipe
	♡ •	100	RP1	47.31
	♡ •	150	RP100/2	72.78
	♡ •	225	RP100/3	140.61
	♡ •	300	RP100/4	241.70
	**Fittings**			
	Socket Adaptor			
	Connects SuperSleve to traditional pipes + fittings			
	♡	100	SA1/1*	38.56
	♡	150	SA1/2	59.48
	♡	225	SA1/5	135.60
	♡	300	SA1/7	202.87
	Interceptor – Winsor			
	With fall between inlet and outlet c/w stopper			
	♡ †	100	RI1/1	349.12
	♡ †	150	RI1/2	503.38
	†	225	RI1/3	1571.05
	Interceptor – Kenon			
	With fall between inlet and outlet c/w stopper			
	♡ †	100	RI2/1	349.12
	♡ †	150	RI2/2	503.38
	Interceptor – Reverse Action			
	With fall between inlet and outlet c/w stopper			
	♡ †	100	RI3/1	349.12
	♡ †	150	RI3/2	503.38
	Square Raising Piece			
	Height			
	75mm	150	RRS2/1	61.26
	♡			
	150mm	150	RRS2/2	61.26
	♡			
	225mm	150	RRS2/3	61.26
	♡			
	300mm	150	RRS2/4	61.26
	♡			
	75mm	225	RRS3/1	133.44
	♡			
	150mm	225	RRS3/2	133.44
	♡			
	**Traps, Gullies**			
	Dish Tops			
	♡	100	RDR2	173.39
	♡	150	RDR3	173.39

• Subject to extended delivery period. † Due to the manufacturing process size tolerances and appearance on this product can vary. * PG1 discount applies.

Hepworth CLAY
Fired to Perfection

Clayware Accessories

	Description	Nom dia mm	Cat no	Price £ per piece
	**Pipe Cutter - Lever**			
	Cuts 100mm SuperSleve	100	MPC1*	363.87
	Cuts 100 and 150mm SuperSleve	150	MPC2	562.52
	**Pipe Trimmer**			
	100mm/150mm	150	MPT1	231.51
	**Lever Locking Stoppers**			
	Pipe size mm			
	100	140	IL1	209.62
	150	188	IL2	289.64
	**Lubricant**			
	1 kilo – Pack quantity 10		SL1	23.34
	2.5 kilo – Pack quantity 6		SL2	57.88
	**High Performance Jointing Lubricant**			
	recommended for nitrile seals cold and/or wet weather			
	– 1 kilo		SL1C	81.18

*PG1 discount applies to this item only

Hepworth CLAY
Fired to Perfection

Inspection Chambers

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	Mini Access Chamber Up to 600mm deep				
	Polypropylene Mini Access Chamber 300mm diameter, depth 600mm. 100/110mm inlets conversion adaptors supplied. Complete unit including base unit, 2 raising pieces with cover and frame	100/110	SDAC1/1	1	516.49
	Polymer Cover and Frame (airtight) 345mm x 345mm square. Effective height 85mm		SDC3	1	246.85
	Raising Piece, with rubber sealing ring Effective height 150mm		SDC4	1	104.89
	Base Unit 215mm deep with two 100/110mm flexible inlets allowing 10° of movement. Conversion adaptors supplied	100/110	SDC5	1	246.85
	**Accessories** Spare Screws for mini access chamber cover and frame		SKW1	1	1.83

Hepworth CLAY Inspection Chambers

Fired to Perfection

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	PPIC Inspection Chamber **Up to 1.2m deep**				
	**100/110mm PPIC Polypropylene Inspection Chamber** 475mm diameter, supplied with 4 inlet stoppers.				
	940mm deep, with 5 100/110mm inlets. Conversion adaptors supplied.	100/110	SPIC1/1	1	763.57
	595mm deep, with 5 100/110mm inlets. Conversion adaptors supplied	100/110	SPIC2/1	1	574.86
	**Mixed Base PPIC Polypropylene Inspection Chamber** 475mm diameter supplied with 4 inlet stoppers.				
	1030mm deep, with 150/160 straight through main channel with 2x150/160 branches at 90° & 2x100/110 branches at 45°. Conversion adaptors supplied	100/110 150/160	SPIC1/2	1	808.52
	**Raising Piece** 175mm high		SPIC4	1	103.10
	**Sealing Ring for Raising Piece**		SPIC5	1	35.54
	**Base** 225mm deep, with 5 100/110 inlets. Conversion adaptors and 4 inlet stoppers supplied	100/110	SPIC6/1	1	336.83
	**Mixed Base** 315mm deep, with 150/160mm straight through main channel with 2x150/160 branches at 90° and 2x100/110 branches at 45°. Conversion adaptors and 4 inlet stoppers supplied	100/150	SPIC6/2	1	492.01
	**Inlet Adaptor** 150mm to 100mm	150	SPIC7	1	65.30
	**Extra Stopper** 100mm – Green	100	UGS	1	15.72
	150mm – Yellow	150	UYS	1	31.74
	**Extra Conversion Adaptor** 100mm to 110mm	100	M09H BL	1	15.72
	150mm to 160mm	150	M09J BL	1	31.74

Hepworth CLAY — Inspection Chambers

Fired to Perfection

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	**Round Ductile Iron Cover and Plastics Frame** Cover loading EN124 A15 35kN Includes security clips for additional safety		SPK8	1	252.95
	**Round Ductile Iron Cover and Plastics Frame** Cover loading EN124 B125 Includes security clips for additional safety		SPK9	1	418.05
	**Square Ductile Iron Cover and Frame (airtight)** Cover loading EN124 A15 35kN Includes security clips for additional safety		SPKS8	1	376.33
	**Spare Security Clip for SPK8 and SPK9**		SPK8+9CLIP	1	13.26
	**Spare frame for SPK8 and SPK9**		UCIF	1	61.82
	**Accessories** Spare screws for SPKS8		SKW3	1	1.83

Hepworth *Fired to Perfection* CLAY

Inspection Chambers

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	Non Man-Entry Inspection Chambers: Range 450 **– 450mm diameter shaft for use with 100mm SuperSleve or 150mm SuperSleve to a maximum invert depth of 3 metres** **Range 450 is approved and Kitemarked to BS EN 13598-2**				
	Base Options				
	**D/S Equal Inspection Chamber Base** – 100mm or 150mm straight channel, for use with 100mm or 150mm SuperSleve. Supplied complete with a base-to-shaft sealing ring				
	♢	100	44NE310	1	560.77
	♢	150	46NE310	1	715.07
	**D/S Equal Inspection Chamber Base** – 100mm straight channel with one 100mm x 45° and one 100mm x 90° left hand branch entry, for use with 100mm SuperSleve components. Supplied complete with a base to shaft sealing ring and one 100mm blank-off plug for use in unused side entry				
	♢	100	44NE314	1	567.69
	**D/S Equal Inspection Chamber Base** – 100mm straight channel with one 100mm x 45° and one 100mm x 90° right hand branch entry for use with 100mm SuperSleve components. Supplied complete with a base to shaft sealing ring and one 100mm blank-off plug for use in unused side entry				
	♢	100	44NE315	1	567.69
	**D/S Equal Inspection Chamber Base** – 100mm straight channel with two 100mm x 45° and 2 100mm x 90° left/right hand branch entries, for use with 100mm SuperSleve components. Supplied complete with a base to shaft sealing ring and 3 100mm blank-off plugs for use in unused side entry				
	♢	100	44NE316	1	586.41
	**D/S Equal Inspection Chamber Base** – 150mm straight channel with one 100mm x 45° and one 150mm x 90° left hand branch entry, for use with 100/150mm SuperSleve components. Supplied complete with a base to shaft sealing ring and one 100mm blank-off plug for use in unused side entry				
	♢	150	46NE317	1	772.82

Hepworth CLAY Inspection Chambers

Fired to Perfection

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	**D/S UnEqual Inspection Chamber Base** – 150mm straight channel with one 100mm x 45° and one 150mm x 90° right hand branch entry, for use with 100/150mm SuperSleve components. Supplied complete with a base to shaft sealing ring and one 100mm blank-off plug for use in unused side entry	150	46NE318	1	772.82
	**D/S UnEqual Inspection Chamber Base** – 150mm straight channel with two 100mm x 45° and 2 150mm x 90° left/right hand entries, for use with 100/150mm SuperSleve components. Supplied complete with a base to shaft sealing ring and 2 100mm and one 150mm blank-off plugs for use in unused side entry	150	46NE319	1	834.31
	**Shaft Options** **P/E Inspection Chamber Shaft** – 450mm diameter x 3 metres long for use with all types of Range 450 bases	450	40NE300	1	499.66
	**Restriction Access Cap** – for use with 40NE300 shaft sections, restricts access to 350mm, supplied with one 450mm sealing ring	450	40NE930	1	267.50
	**Spares** **Chamber Base to Shaft Seal** – 450mm diameter for use with 40NE300	-	450TW117*	1	59.51

* TWI discount applies

Hepworth CLAY Fired to Perfection

Inspection Chambers

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	Non Man-Entry Inspection Chambers: Range 600 – 600mm dia shaft for use with 150mm SuperSleve (via adaptor TA/2), 225mm SuperSleve (via adaptor TA/4) or 300mm SuperSleve (via adaptor TA/7) to a maximum invert depth of 3 metres Range 600 is approved and Kitemarked to BS EN 13598-2				
	**Base Options** **D/S Equal Inspection Chamber Base** – straight channel for use with 150mm SuperSleve (via TA/2), 225mm SuperSleve (via TA/4) or 300mm SuperSleve (via TA/7) components. Supplied complete with a base to shaft sealing ring.				
	For use with 150mm SuperSleve (via TA/2) components	150	66NE300	1	2039.34
	For use with 225mm SuperSleve (via TA/4) components	225	69NE300	1	2081.06
	For use with 300mm SuperSleve (via TA/7) components	300	612NE300	1	2122.62
	**D/S Equal Inspection Chamber Base** – bent 90° channel for use with 150mm SuperSleve (via TA/2), 225mm SuperSleve (via TA/4) or 300mm SuperSleve (via TA/7) components. Supplied complete with a base to shaft sealing ring.				
	For use with 150mm SuperSleve (via TA/2) components	150	66NE314	1	2039.34
	For use with 225mm SuperSleve (via TA/4) components	225	69NE314	1	2081.06
	For use with 300mm SuperSleve (via TA/7) components	300	612NE314	1	2122.62

Hepworth CLAY Inspection Chambers

Fired to Perfection

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	**D/S Equal Inspection Chamber Base** – bent 30° channel for use with 150mm SuperSleve (via TA/2), 225mm SuperSleve (via TA/4) or 300mm SuperSleve (via TA/7) components. Supplied complete with a base to shaft sealing ring.				
	For use with 150mm SuperSleve (via TA/2) components	150	66NE315	1	2039.34
	For use with 225mm SuperSleve (via TA/4) components	225	69NE315	1	2081.06
	For use with 300mm SuperSleve (via TA/7) components	300	612NE315	1	2122.62
	**D/S Equal Inspection Chamber Base** – straight channel, with two equal 90° left/right hand branch entries, for use with 150mm SuperSleve (via TA/2), 225mm SuperSleve (via TA/4) or 300mm SuperSleve (via TA/7) components. Supplied complete with a base to shaft sealing ring.				
	For use with 150mm SuperSleve (via TA/2) components	150	66NE316	1	2039.34
	For use with 225mm SuperSleve (via TA/4) components	225	69NE316	1	2081.06
	For use with 300mm SuperSleve (via TA/7) components	300	612NE316	1	2122.62
	**Shaft Options** **P/E Inspection Chamber Shaft** – 600mm diameter x 3 metres long for use with all types of Range 600 bases	600	60NE003	1	972.90
	**Restriction Access Cap** – for use with 60NE003 shaft sections, restricts access to 350mm, supplied with one 600mm sealing ring	600	60NE930	1	230.14
	**Spares** **Chamber Base to Shaft seal** – 600mm diameter for use with 60NE003	–	600TW117*	1	145.68

* TWI discount applies

Hepworth *Fired to Perfection* CLAY

Inspection Chambers

	Description	Nom dia mm	Cat no	Pack qty	Price £ per piece
	**Ancillaries** **Range 600 Adaptor to SuperSleve 150, 225 and 300mm**				
	– adapts the Range 600 inlet	150	TA/2	1	31.38
	diameter to accept SuperSleve	225	TA/4	1	47.01
		300	TA/7	1	101.89
	Non Man-Entry Inspection Chambers **– for connecting 100/150mm SuperSleve pipe to IC Ranges 450 and 600 shaft sections** Use the following components, along with the **SA15/1** / **SA15/2** adaptors – refer to the Product Technical Guides for full instructions				
	**Connector Kit**	110	NE950	1	64.35
		160	NE960	1	98.27

Ordering and Delivery

Mechanical Off-Loading by Trailer Mounted Forklift (on request)

Please note that it is our policy not to offer mechanical off-loading facilities for delivery to branch. It is available on request for direct to site deliveries only.

You should be aware that there is limited availability of mechanical off-load vehicles, and in busy periods there may be a lead time for this service.

A stable, clean and level surface is required for operation of the trailer mounted forklift equipment Drainage is ideally off-loaded by forklift or by M.O.L vehicle.

Guide to Good Drainage Ordering

To help us improve our service to you, our customers, please take the time to ensure that you provide us with the following information when placing your order.

- Completed purchase order number
- Customer's name, address and post code for delivery
- Requested delivery date
- Special delivery instructions, times, access, vehicles
- State units on all orders
- Line by line pricing, total net value and DCA No. as applicable
- Your name, telephone and email address to resolve any mismatching details

Catalogue numbers always override product descriptions.

Ordering Pack and Pallet Quantities

See next pages (48-49) as a quick guide for pack, pallet quantities and values for top selling products.



Full and part pack quantities, catalogue nos. and values

Pipes		Cat no	No. per pack	Approx metres per pack	Price £
SuperSleve	100mm x 1.6m	SP1	102	163	3855.60
	100mm x 1.6m	SP1	51	82	1927.80
	150mm x 1.75m	SP2	55	96	4204.75
	150mm x 1.75m	SP2	33	58	2522.85
	225mm x 2.0m	SP4S	24	48	6777.36
	225mm x 2.0m	SP4S	12	24	3388.68
	300mm x 2.0m	SP7S	15	30	6484.20
	300mm x 2.0m	SP7S	9	18	3890.52
	300mm x 2.0m	SP7S	6	12	2593.68
HepLine	100mm x 1.6m	LP1	51	82	2959.02
	150mm x 1.75m	LP2	33	58	3804.57
	225mm x 1.75m	LP175/3	24	42	5855.28
	300mm x 2.0m	LP200/4	15	30	8141.85

Couplings		Cat no	No. per bag	No. per pallet	Price £
SuperSleve Couplings EPDM	100mm	SC1/1	25	1300	20956.00
	150mm	SC1/2	25	450	12726.00
	225mm	SC1/5	4	160	8676.80
	300mm	SC1/7	3	90	10026.00
Adaptor from SuperSleve to HepSleve	100mm	SA3/1	20	960	17116.80
	150mm	SA3/2	25	400	27524.00
SuperSleve Adaptors to Soil	100mm	SA9	25	1200	58440.00
	150mm	SA10	30	480	33028.80

Packs of Fittings	Cat no	No. per pallet	Price £
SuperSleve HouseDrain			
90 Bend - Single Socket	SDB1/1S	249	11608.38
45 Bend - Single Socket	SDB2/1S	354	16503.48
30 Bend - Single Socket	SDB3/1S	376	17529.12
15 Bend - Single Socket	SDB4/1S	408	19020.96
Flexible Bend	SFB1/1	5	363.95
45 Oblique Junction - Double Socket	SDJ1/1D	120	11787.60
90 Curved Square Junction - Double Socket	SDJ2/1D	120	11787.60
Rest Bend - Single Socket	SDBR1	150	10497.00
Taper Pipe - Single Socket	SDT2/1	196	18049.64
Low Back P Trap - Single Socket	SDG1/1	110	8991.40
Inlet Gully	SDG3/1	54	13963.32

Packaging materials – All packaging materials are free of charge and non-returnable.

Full and part pack quantities, catalogue nos. and values

Inspection Chambers	Cat no	No. per pallet	Price £
MAC – Mini Access Chamber	SDAC1/1	12	6197.88
MAC – Raising Piece	SDC4	4	419.56
PPIC – Chamber, 940mm deep	SPIC1/1	8	6108.56
PPIC – Chamber, 595mm deep	SPIC2/1	12	6898.32
PPIC – Raising Piece	SPIC4	40	4124.00
PPIC – 100mm Base only	SPIC6/1	40	13473.20

Packs of Fittings (Plain Ended)	Cat no	No. per pallet	Price £
SuperSleve HouseDrain 100mm			
90 Bend	SB1/1	360	10620.00
45 Bend	SB2/1	510	15045.00
30 Bend	SB3/1	510	15045.00
15 Bend	SB4/1	510	15045.00
Oblique Junction	SJ1/1	210	13389.60
Curved Square Junction	SJ2/1	210	13389.60
Rectangular Hopper	SH3/1	175	19846.75
Socket Adaptor	SA1/1	220	8483.20
SuperSleve 150mm			
90 Bend	SB1/2	108	6333.12
45 Bend	SB2/2	176	10320.64
30 Bend	SB3/2	220	12900.80
15 Bend	SB4/2	220	12900.80
Oblique Junction, 150 x 100mm	SJ1/2	84	6590.64
Oblique Junction, 150 x 150mm	SJ1/3	56	4824.96
Curved Square Junction, 150 x 100mm	SJ2/2	84	6590.64
Curved Square Junction, 150 x 150mm	SJ2/3	56	4824.96
Rest Bend	SBR2	60	4521.00
Socket Adaptor	SA1/2	96	5710.08

Channel Pipes	Cat no	No. per Pallet	Price £
Plain End			
100mm x 0.6m	CPP2/1	204	3457.80
100mm x 1.0m	CPP3/1	102	2421.48
150mm x 0.6m	CPP2/2	100	2844.00
150mm x 1.0m	CPP3/2	100	4169.00
Socketed			
100mm x 0.6m	CP2/1	110	2165.90
100mm x 1.0m	CP3/1	110	2938.10
150mm x 0.6m	CP2/2	65	2054.00
150mm x 1.0m	CP3/2	65	2887.95

Acceptance

a) British Standards Institution

Hepworth Clay Drainage Systems comply, where applicable, with the requirements of the following British Standards:

SuperSleve

BS EN 295-1:2013

Vitrified clay pipes and fittings and pipe joints for drains and sewers.

Gullies, Unjointed

BS 65:1991

Specification for vitrified clay pipes and fittings, also flexible mechanical joints for use solely with surface water pipes and fittings.

HepLine

BS EN 295-5:2013

Vitrified clay pipes and fittings and pipe joints for drains and sewers. Requirements for perforated vitrified clay pipes and fittings.

b) CE Mark

CE – As of the 1st July 2013, the Construction Products Regulation (CPR) came into force. It is mandatory for any construction product covered by a harmonised European Norm (hEN) to have a Declaration of Performance (DoP) and an accompanying CE mark.

The product standards and ranges covered by the CPR and identified in this price list are:

BS EN 295-1:2013

SuperSleve 100 – 300mm diameter

BS EN 295-5:2013

HepLine 100 – 300mm diameter

The CE is also marked on the actual product or product packaging. The specific DoP and CE mark details can be found and downloaded via www.hepworthclay.co.uk

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44NE310	560.77	42
44NE315	567.69	42
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46NE310	715.07	42
46NE317	772.82	42
46NE318	772.82	43
46NE319	834.31	43
60NE003	972.90	45
60NE930	230.14	45
66NE300	2039.34	44
66NE314	2039.34	44
66NE315	2039.34	45
66NE316	2039.34	45
69NE300	2081.06	44
69NE314	2081.06	44
69NE315	2081.06	45
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600TW117*	145.68	45
612NE300	2122.62	44
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612NE316	2122.62	45
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CBT2/3L	1105.16	28
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CJ1/2L	94.00	29
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CJ1/9R	661.51	29
CJ1/10L	661.51	29
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CJ2/3R	94.00	28
CJ2/4L	270.65	28
CJ2/4R	270.65	28
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CJ2/5R	270.65	28
CJ2/6L	270.65	28
CJ2/6R	270.65	28
CJ2/8L	661.51	28
CJ2/8R	661.51	28
CJ2/9L	661.51	28
CJ2/9R	661.51	28
CJ2/10L	661.51	28
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CJ3/1	85.10	29
CJ3/2	141.79	29
CJ3/3	141.79	29
CJ3/5	432.93	29
CJ3/6	432.93	29
CJ3/8	993.76	29
CJ3/9	993.76	29
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CJ5/6	432.93	29
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CJ5/10	993.76	29
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CPP3/3	99.84	26
CPP3/4	210.31	26
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CX1/2R	61.31	30
CX1/3L	61.31	30
CX1/3R	61.31	30
CX1/4L	61.31	30
CX1/4R	61.31	30
CX1/5L	61.31	30
CX1/5R	61.31	30
CX1/6L	61.31	30
CX1/6R	61.31	30
CX1/7L	61.31	30
CX1/7R	61.31	30
CX1/8L	61.31	30
CX1/8R	61.31	30
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CX2/7R	100.55	30
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CX2AL	113.60	31
CX2AR	113.60	31
CX2BL	113.60	31
CX2BR	113.60	31
CX2CL	113.60	31
CX2CR	113.60	31
CX2DL	113.60	31
CX2DR	113.60	31
CX2EL	113.60	31
CX2ER	113.60	31
CX2FL	113.60	31
CX2FR	113.60	31
CX2GL	113.60	31
CX2GR	113.60	31
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IG4	117.51	23
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IG6	17.56	23
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IGUC1	361.73	34
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IH2	70.00	23
IH2*	70.00	11
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IH3C	127.97	23
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IH4C	339.28	23
IH6	108.82	23
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IS0*	133.92	17
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IS1*	39.18	11
IS1C	39.18	23
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IS2*	67.69	11
IS2*	67.69	12
IS2*	67.69	12
IS2C	67.69	23
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IS7	126.31	24
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LP2	115.29	36
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M09J BL	31.74	40
MGP2/2	227.41	34
MPC1*	363.87	38
MPC2	562.52	38
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RGP7	454.00	32
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RGP8B	918.77	32
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RGR2	447.14	33
RGR3	518.60	33
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RGUFB	615.12	34
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RRS2/3*	61.26	11
RRS2/4*	61.26	11
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RDR3	173.39	37
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RI1/3	1571.05	37
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RI2/2	503.38	37
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SA1/5	135.60	37
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SA10	68.81	17
SA11	48.70	13
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SA15/1	48.70	13
SA15/2	68.81	17
SA21	68.81	17
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SB1/1	29.50	8
SB1/2	58.64	15
SB1/5	247.48	18
SB1/5S	298.88	18
SB1/7	449.88	20
SB1/7S	567.58	20
SB2/2	58.64	15
SB2/5	247.48	18
SB2/5S	298.88	18
SB2/7	449.88	20
SB2/7S	567.58	20
SB3/1	29.50	8
SB3/2	58.64	15
SB3/5	247.48	18
SB3/5S	298.88	18
SB3/7	449.88	20
SB3/7S	567.58	20
SB4/1	29.50	8
SB4/2	58.64	15
SB4/5	247.48	18
SB4/5S	298.88	18
SB4/7	449.88	20
SB4/7S	567.58	20
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SBA2	258.70	16
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SBR2	75.35	16
SBR5	263.34	19
SBR5S	326.82	19
SBR7	752.42	21
SBR7S	863.78	21
SBRT1	382.04	9
SBRT2	603.81	16
SC1/1	16.12	8
SC1/2	28.28	15
SC1/5	54.23	32
SC1/5	54.23	18
SC1/7	111.40	20
SC3/1	25.70	8
SC3/2	46.76	15
SC3/5	86.84	18
SC3/7	165.90	20
SC4/1	48.70	13
SC4/2	68.81	17
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SDB1/1S	46.62	8
SDB2/1S	46.62	8
SDB3/1S	46.62	8
SDB4/1S	46.62	8
SDBR1	69.98	9
SDC3	246.85	39
SDC4	104.89	39
SDC5	246.85	39
SDC6	33.63	10
SDG1/1	81.74	9
SDG2/1	213.40	10
SDG2/2	136.65	10
SDG2/3	224.36	10
SDG2/4	44.67	10
SDG2/4	44.67	10
SDG2/5	53.57	10
SDG2/5	53.57	10
SDG2/6	87.86	10
SDG3/1	258.58	10
SDG3/2	278.67	10
SDG10	62.58	10
SDJ1/1D	98.23	8
SDJ2/1D	98.23	8
SDT2/1	92.09	9
SFB1/1	72.79	8
SG1/1	63.76	9
SG1/2	99.29	16
SG2/1	180.39	10
SG2/2	236.60	10
SG2/5	15.09	10
SG2/5	15.09	10
SG3/1	194.48	11
SG3/1*	194.48	23
SG4/1	250.63	11
SG4/1*	250.63	23
SH1	66.59	12
SH2	120.04	12
SH3/1	113.41	12
SH3/1*	113.41	23
SH3/2	150.14	16
SJ1/1	63.76	8
SJ1/2	78.46	15
SJ1/3	86.16	15
SJ1/7	312.16	19
SJ1/7S	417.21	19
SJ1/8	312.16	19
SJ1/8S	417.21	19
SJ1/9	372.00	19
SJ1/9D	530.86	19
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SJ1/19	940.88	21
SJ1/19D	1136.14	21
SJ2/1	63.76	8
SJ2/2	78.46	15
SJ2/3	86.16	15
SJ2/9	372.00	19
SJ2/9D	530.86	19
SJ3/7	312.16	19
SJ3/7S	417.21	19
SJ3/8	312.16	19
SJ3/8S	417.21	19
SJ3/14	774.12	21
SJ3/14S	893.24	21
SJ3/15	774.12	21
SJ3/15S	893.24	21
SJ3/17	897.94	21
SJ3/17D	1070.85	21
SJ3/19	897.94	21
SJ3/19D	1136.14	21
SJA1L	224.52	14
SJA1R	224.52	14
SJA2L	321.77	16
SJA2R	321.77	17
SJA3L	321.77	16
SJA3R	321.77	17
SJS1/1	62.58	9
SJS1/2	89.77	15
SJS2/1	62.58	9
SJS2/2	89.77	15
SJS2/5	334.05	19
SJS2/7	581.22	21
SJS4/1	62.58	9
SJS4/2	89.77	15
SJS5/1	62.58	9
SJS5/2	89.77	15
SJS5/5	334.05	19
SJS5/7	581.22	21
SKW1	1.83	39
SKW3	1.83	41
SL1	23.34	38
SL1C	81.18	38
SL2	57.88	38
SP1	37.80	8
SP2	76.45	15
SP4	223.21	18
SP4S	282.39	18
SP7	323.01	20
SP7S	432.28	20
SP030/1	7.59	8
SP030/2	14.00	15
SP030/5	35.65	18
SP030/5	35.65	32
SP030/5S	90.74	18
SP030/7	51.64	20
SP030/7S	167.83	20
SP060/1	18.59	8
SP060/2	27.93	15
SP060/5	71.25	18
SP060/5	71.25	32
SP060/5S	126.39	18
SP060/7	103.14	20
SP060/7S	219.38	20
SP100/1	25.18	8
SP100/2	46.53	15
SP100/5	118.77	18
SP100/5S	173.88	18
SP100/7	171.94	20
SP100/7S	288.12	20
SPA1	207.86	14
SPA2	221.04	16
SPIC1/1	763.57	40
SPIC1/2	808.52	40
SPIC2/1	574.86	40
SPIC4	103.10	40
SPIC5	35.54	40
SPIC6/1	336.83	40
SPIC6/2	492.01	40
SPIC7	65.30	40
SPK8	252.95	41
SPK8+9CLIP	13.26	41
SPK9	418.05	41
SPKS8	376.33	41
SRP1	82.30	14
SRP1*	167.56	17
SRP1/1	167.56	12
SRP1/2	211.45	16
SRP2	82.30	14
SRP2*	195.41	17
SRP2/1	195.41	12
SRP3	82.30	14
SRP3*	82.30	17
SRP4	82.30	14
SRP4*	82.30	17
SRP5	87.77	11
SRP6	87.77	11
SRP7	87.77	11
SRP8	87.77	11
SRPS1/1	142.94	12
SS1/1	31.30	13
SS1/2	42.30	17
SS2/1	38.25	13
SS2/2	52.38	17
SS3/4	87.78	19
SS3/7	187.35	22
S/S89	26.02	13
S/S460	29.56	13
S/S462	29.56	13
S/S464	43.35	13
ST2/1	72.58	16
ST3/2	226.41	16
ST3/2	226.41	19
ST4/3	624.83	22
TA/2	31.38	46
TA/4	47.01	46
TA/7	101.89	46
UCIF	61.82	41
UGS	15.72	40
UYS	31.74	40
VA9	58.21	13
VA10	75.40	17
VCB1/3	160.98	26
VCB1/4	328.14	26
VCB2/3	160.98	26
VCB2/4	328.14	26
VCB3/3	160.98	26
VCB3/4	328.14	26
VCB4/3	160.98	26
VCB4/4	328.14	26
VCTP4/3	531.49	26

Notes

Hepworth CLAY
Fired to Perfection

Important Notes

Hepworth Clay is a brand of Wavin. See **www.wavin.co.uk** for more information.

All purchases are subject to our standard terms and conditions of sale, available at **www.wavin.co.uk/general-conditions** or call for a copy.

Prices are subject to VAT at the current rate.

Free delivery is subject to minimum order values as stated in your Wavin agreement.

Wavin offers a programme of continuous improvement and reserves the right to modify the specification of products without notice. All information in this publication is believed to be correct at time of going to press. However, no responsibility can be accepted for any errors or omissions.

Quality Assurance

Hepworth Clay pipes are manufactured on a site whose carbon emissions have been independently verified to EU ETS, earning it the CICS Carbon Verified Assurance Mark.

VERIFIED LUCIDEON CARBON FOOTPRINT EU ETS

Wavin manufacturing sites operate Environmental Management Systems which comply with the requirements of and are certified to EN ISO 14001:2015, Certificate No. 0126863.

Wavin products are manufactured under a quality management system which is approved to BS EN ISO 9001: 2015.

Contact

Orders and enquiries Tel: 0800 038 0088

Technical advice Email: hepworth.clay@wavin.com

Address Wavin Limited
Edlington Lane
Edlington
Doncaster
South Yorkshire
DN12 1BY

Scan this QR code with your smartphone to visit the website

Email: hepworth.clay@wavin.com Web: www.hepworthclay.co.uk

General information

Downloads



Hepworth Clay literature, material safety datasheets, certificates and CAD details can be downloaded from **hepworthclay.co.uk**
Or contact **info@wavin.co.uk**

For everything you need to know about Clay – order or download our new **Hepworth Clay Product, Design and Installation Guide** – the latest industry references, product details and extensive installation guidance.

'How to' videos

To support the Hepworth Clay brand, we have a series of 'How to' videos' to give guidance on a range of installation and maintenance issues.
View at **www.youtube.com/WavinUK** under the Hepworth Clay playlist or from **hepworthclay.co.uk**



- How clay drainage can benefit your next project
- How to join clay pipes
- How to cut clay drainage pipes
- Dismantling a Hepworth Clay pipe pack
- How to air test clay pipes
- Troubleshooting clay pipe air test failures

Technical tools

Register on **myportal.wavin.co.uk** for access to great tools to help you get the job done faster and with assured accuracy. Includes Inspection Chamber Selector and Hydraulic Calculator.

Training

Register on **myportal.wavin.co.uk** for access to online training including Hepworth Clay, an introductory level product training module covering SuperSleve and Inspection Chambers.

Website

www.hepworthclay.co.uk is the place to find an overview of our ranges, individual item information, links to videos, training modules, case studies, stockist locator, blog and downloads.

Technical design

For any technical enquiries please contact:
Email: **hepworth.clay@wavin.com**

Hepworth Clay Product, Design & Installation Guide



Everything you need to know about Hepworth Clay in one place – the Clay Drainage Guide is a must-have!

- Information on revised BS 9295 standard – containing recycled aggregates for bedding clay pipes
- Product details – including dimensional information
- Installation – comprehensive guidance covering a range of situations such as laying pipe in difficult ground conditions
- Links to installation videos

Download from hepworthclay.co.uk

Wavin Limited
Edlington Lane
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Doncaster
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www.hepworthclay.co.uk

April 2023



ACO StormBrixx SD, HD900 and HD

DATA SHEET

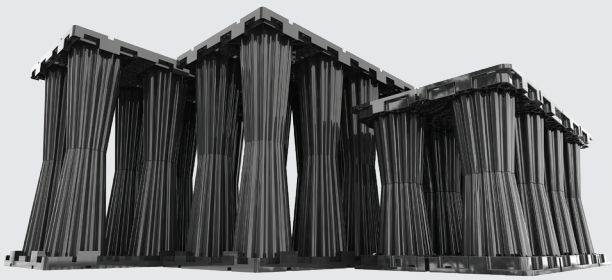
The ACO StormBrixx is a unique and patented plastic geocellular stormwater management system.

Its versatile design allows the system to be used in applications across all construction environments as a standalone solution or as part of an integrated Sustainable Drainage System (SuDS).

The range consists of StormBrixx SD (standard duty) and StormBrixx HD (heavy duty) stormwater management systems. StormBrixx SD is manufactured from recyclable polypropylene and has a design life of 50 years, whilst StormBrixx HD is manufactured from recycled polypropylene and has a design life of 60 years.

Benefits

- Fully certified performance - DiBt, MFPA, compliance with BS EN 17152-1
- Brick bonding and cross bonding for optimum stability
- Remote and man access for ease of maintenance
- High void ratio which minimises excavation volume (97% for SD and HD900, 95% for HD)
- Reduced CO_2 emissions



ACO StormBrixx SD, HD900 and HD

Simplified handling and logistics

- Compact delivery method with stackable nestled design allowing up to four times fewer deliveries
- Unique stackable design that simplifies on site storage and handling during installation
- Time savings: movement on site and installation

The ACO StormBrixx Range





Complies with BS EN 17152-1

NEW — ACO StormBrixx HD900

Void ratio:	97%
Short term vertical compressive strength:	605kN/m²
Short term lateral compressive strength:	120kN/m²
Accessibility:	Remote access
One layer height:	920mm

Components overview - dimensions and weights

Product Code	Description	Length [mm]	Width [mm]	Height [mm]	Weight [kg/m²]
314054	Half Body	1208	604	460/496	12.3
314091	Side Panel	907	592	104	3.13
314092	Top Cover	550	550	45	0.76
314094	Half Layer Cover Plate	1200	600	94	3.66
314098	Half Layer Side Panel	450	592	104	1.5

ACO StormBrixx SD

Void ratio:	97%
Short term vertical compressive strength:	350kN/m²
Short term lateral compressive strength:	70kN/m²
Accessibility:	Remote access
One layer height:	914mm

Components overview - dimensions and weights

Product Code	Description	Length [mm]	Width [mm]	Height [mm]	Weight [kg/m²]
314090	Half Body	1200	600	494	9.41
314091	Side Panel	907	592	104	3.13
314092	Top Cover	550	550	45	0.76
314094	Half Layer Cover Plate	1200	600	94	3.66
314098	Half Layer Side Panel	450	592	104	1.5



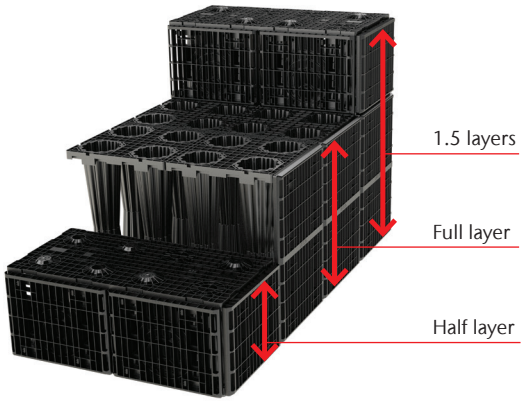
ACO StormBrixx HD

Void ratio:	95%
Short term vertical compressive strength:	455kN/m²
Short term lateral compressive strength:	95kN/m²
Accessibility:	Man access & remote access
One layer height:	612mm

Components overview - dimensions and weights

Product Code	Description	Length [mm]	Width [mm]	Height [mm]	Weight [kg/m²]
314061	Half Body GF	1205	602	306/343	10
314021	Side Panel	580	580	35	1.6
314022	Top Cover	550	550	43	0.8





The ACO StormBrixx SD and HD900 half layer is suitable for where installation depth is restricted.

ACO Water Management Contacts:
Sales: uk-swc@aco.co.uk
Technical: technical@aco.co.uk
Tel: 01462 816666
www.aco.co.uk

ACO. we care for water

ACO-2051-0220

B 125
Access Covers
Slide-out



KD3340S



KD14BS

Features:

- Manufactured to BS EN 124 class B 125
- BSI Kitemarked for third party assurance of quality
- Suitable for slow moving traffic
- Slide-out design
- Ductile iron to ISO 1083 for improved weight to strength ratio
- Black coated finish

Options:

- Standard Locking
- High Security Locking
- Badging e.g. FW, SW, Motorway Comms
- Safety Grids
- Security Plates

Standard Sizes

Code	Clear Opening (mm)	O/all Frame (mm)	Frame Depth (mm)	Weight (kg)
KD3240S	450 x 450	540 x 540	40	23
KD3340S	600 x 450	692 x 542	40	28
KD3375S	600 x 450	692 x 542	75	38
KD3440S	600 x 600	690 x 690	40	34
KD3475S	600 x 600	690 x 690	75	40
KD34AS	675 x 675	765 x 765	40	47
KD14BS*	675 x 750	835 x 870	50	70
KD3540S	750 x 600	840 x 690	40	53
KD3640S	750 x 750	840 x 840	40	59
KD3740S	900 x 600	990 x 690	40	59
KD3840S	1220 x 675	1320 x 775	40	102
KD13BS*	1310 x 850	1430 x 1010	50	140

*Locked as standard

KD3640S MACADAM 750x750 Slide Out EN124 B125 40 deep

Product: 91020104



Product Type:	Access Covers
Installation area:	B125 – Footpaths
Product Ranges:	Pavement Covers and Frame
Standards:	EN124
Surface Finish:	ANTI-SLIP OTHER SURFACE
Tag Text:	KD3640S MACADAM 750x750 Slide Out EN124 B125 40 deep
Clear Opening Length (Hinge Side):	750 mm
Clear Opening Width:	750 mm
Cover/Grating Shape:	Square
Family:	Municipal
Manufacturing Type:	Casting
Flange Outer Length:	840 mm
Flange Outer Width:	840 mm
Frame Height:	40 mm
Weight:	56 kg
Hinged:	No

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Declaration of Performance
No: 02b – Manholes

1. *Unique identification code of the product type:*

   Precast concrete manholes and inspection chambers (reinforced and unreinforced products)

2. *Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4) of the CPR:*

   Nominal sizes not exceeding DN1250 circular or LN1250 rectangular (see individual product markings for size and manufactured date)

3. *Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:*

   For the permitting of access to, and to allow aeration of, drain or sewer systems for the conveyance of sewerage, rainwater and surface water under gravity or occasional low head of pressure, in pipelines that are generally buried

4. *Name, registered trade name or registered trade mark and contact address of the manufacturer as required under article 11(5):*

   CPM Group Limited, Mells Road, Mells, Nr Frome, Somerset, BA11 3PD

5. *Where applicable, name and contact address of the authorised representative whose mandate covers the task specified under Article 12(2):*
   Not applicable

6. *System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR, Annex V:*

   System 4

7. *In case of the declaration of performance concerning a construction product covered by a harmonised standard:*

   BS EN 1917: 2002

8. *In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:*

   Not applicable

9. *Declared Performance:*

Essential characteristics	Performance	Harmonised technical specification
Opening size/s	As clause 5.4.5 of BS 5911-3:2010	EN 1917:2002 clause 4.3.3.5
Mechanical resistance	Concrete strength test ≥ 40 MPa (N/mm^2) Crushing strength (chamber/shaft) to BS 5911-3:2010 clause 5.5 : Strength class 30 - DN900 & DN1050 Strength class 25 - DN1200 & LN1200 x WN750 Strength class 40 - LN < 600 Strength class 30 - LN 600 - 799 Strength class 20 - LN 800 - 999 Strength class 15 - LN 1000 Crushing strength (reducing/capping units): Reinforced units 120 kN proof load Unreinforced units 300kN ultimate load	EN 1917:2002 clauses 4.2.2, 4.3.5, 4.3.6 and 5.2.6.
Load bearing capacity of any installed steps (by manufacturer)	deflection ≤10mm under 2 kN vertical load, with permanent deflection ≤2mm resistant to 5 kN pull-out force.	EN 1917:2002 clause 4.3.7
Watertightness	50kPa (0.5bar) internal hydrostatic test pressure	EN 1917:2002 clause 4.3.8
Durability	Water cement ratio ≤0.45 Max chloride content of 1% (unreinforced products) or 0.4% (reinforced products) Water absorption ≤ 6% by mass Joint validation by Method 1 or 2 Concrete cover ≥ 15mm (≥ 20mm for slabs, adjusting units and corbel slabs)	EN 1917:2002 clauses 4.3.10

10. *The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.*

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer:

Name: **Mark Flavell** **Position:** **Technical Director**

Signed:

Date: 20.03.2015

Colinwell
Architectural Masonry since 1888

Colinwell Engineering Brick

Brick Dimensions	Brick Configuration	No. Per Pack	Weight Per Pack
215 x 102 x 65mm	Solid	384	1152Kg

Colinwell Engineering Brick	
Product Type	Concrete Engineering Brick
Manufacture	Manufactured in accordance with BS EN 771-3: 2011
Specification	Specified in accordance with BS EN 771-3: 2011
Size	215 x 102 x 65mm which complies with BS EN 771-3: 2011
Weight	2.65kg
Compressive Strength	30N/mm^2
Water Absorption	Less than 6%
Water Absorption by capillary	<85G/$m^2/s^{0.5}$
Drying Shrinkage	Not exceeding 0.05%
Density	2200Kg/m^3
Shear Bond Strength	0.15/mm^2
Thermal Conductivity	Protected 1.56 W/mK Exposed 1.66W/mK
Efflorescence	The low salt content of the materials used in manufacturing Colinwell Facing Bricks ensures the elimination of this problem.
Durability	F2 (sever exposure)
Tolerance	D1 (+3-5mm in all directions)
Fire Rating	Euroclass A1
Soluble Salts	S2
Mortars and Expansion Joints	Please refer to BS 5628-2:2005
Bed Reinforcement	Please refer to BS 5628-2:2005
Installed to	Please refer to BS 5628-2:2005
NBSPlus	F10 215

Sustainability	
Energy	100% renewable energy
Water	100% water comes from an on site ground source well
Recycle	65% recycled secondary aggregate content
Sourcing	Aggregates sourced within a 30 radius of the manufacturing plant
Manufacturing Location	Produced in the UK
Accreditations	ISO9001 – Quality Management Accreditation ISO14001 – Environmental Accreditation

THINKING PRECAST?
THINK FP MCCANN

DRAINAGE AND WATER MANAGEMENT

v3.9

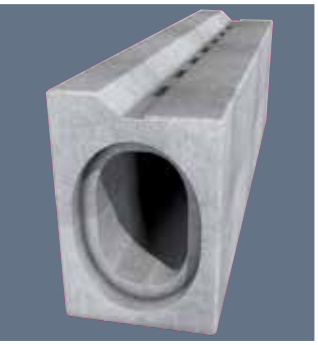
CONCRETE PIPES





EASI-BASE™ MANHOLE SYSTEM





STORM-CHANNEL™

HEAVY DUTY PRECAST DRAINAGE CHANNEL







STORM-BRAKE™

VORTEX FLOW CONTROL CHAMBER UNIT







STORM-STORE™

TANK & CHAMBER SYSTEMS





STORM-HOLD™

STORM WATER MANAGEMENT SYSTEM





DRAINAGE AND WATER MANAGEMENT

With one of the largest drainage and water management product ranges in the UK and Ireland, FP McCann has become the first choice for all of our customers.

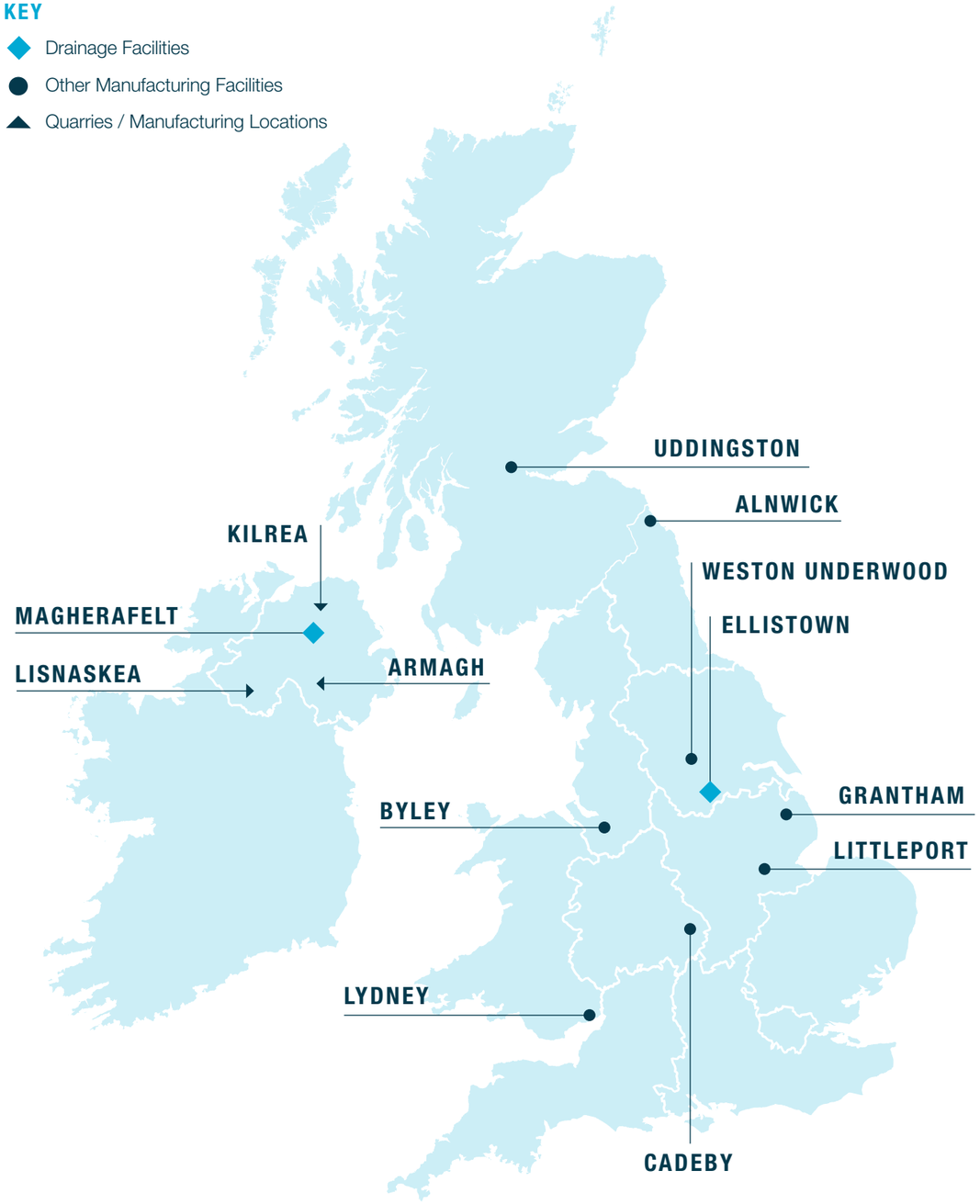


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OUR COMPANY

KEY

- Drainage Facilities
- Other Manufacturing Facilities
- Quarries / Manufacturing Locations



OUR COMPANY

FP McCann is the UK's market leader in the manufacture, supply and delivery of precast concrete solutions. Our comprehensive precast concrete business extends to include:

AGRICULTURE I BOX CULVERTS I BUILDING PRODUCTS I CONCRETE ROOF TILES
DOCK LEVELLER PITS I DRAINAGE I FENCING I FILTER BED SYSTEMS
FLOORING I POWER & INFRASTRUCTURE I PRECAST OFF-SITE BUILDING SOLUTIONS
RAIL I SPECIALIST PRECAST I TANKS & CHAMBERS I TUNNELS & SHAFTS I WALLING

Modern manufacturing plants at Alnwick (Northumberland), Armagh (Northern Ireland), Byley (Cheshire), Cadeby (Leicestershire), Ellistown (Leicestershire), Grantham (Lincolnshire), Lisnaskea (Northern Ireland), Littleport (Cambridgeshire), Lydney (Gloucestershire), Kilrea (Northern Ireland), Magherafelt (Northern Ireland), Uddingston (Lanarkshire) and Weston Underwood (Derbyshire) incorporate the latest computerised batching, distribution, casting, curing and handling systems and are operated by skilled and experienced workforces to ensure consistency of quality. Their geographical spread gives us an unrivalled ability to serve the construction industry throughout the UK and Ireland.

By applying the DFMA principles, FP McCann's design engineers are able to evaluate individual precast concrete products part by part, in addition to documenting the assembly process step by step. This allows them to generate the cost, part count and assembly time to provide a benchmark to measure its success and identify the parts and process improvement opportunities. In turn, this has allowed FP McCann to design and manufacture more cost-effective and efficient high-quality precast concrete products with less wastage and greater on-site recycling. As a result, increased productivity, combined with a reduction in production time and costs, allows FP McCann to be more competitive within the marketplace.

Please note: all information is correct at time of going to print.



8 GOOD REASONS WHY YOU SHOULD USE CONCRETE DRAINAGE

1 SUSTAINABILITY

Concrete pipes outperform other types of pipeline solutions in a number of the environmental impact categories, such as human toxicity levels and chemical / hazardous waste generated. The CO2 emissions from concrete and cement production are relatively small compared to other building materials. Some 95 to 99% of ingredients used in the production of concrete pipes are sourced locally, so a considerable positive impact on the carbon footprint and fuel consumption associated with transporting these materials can be achieved.

2 STRENGTH

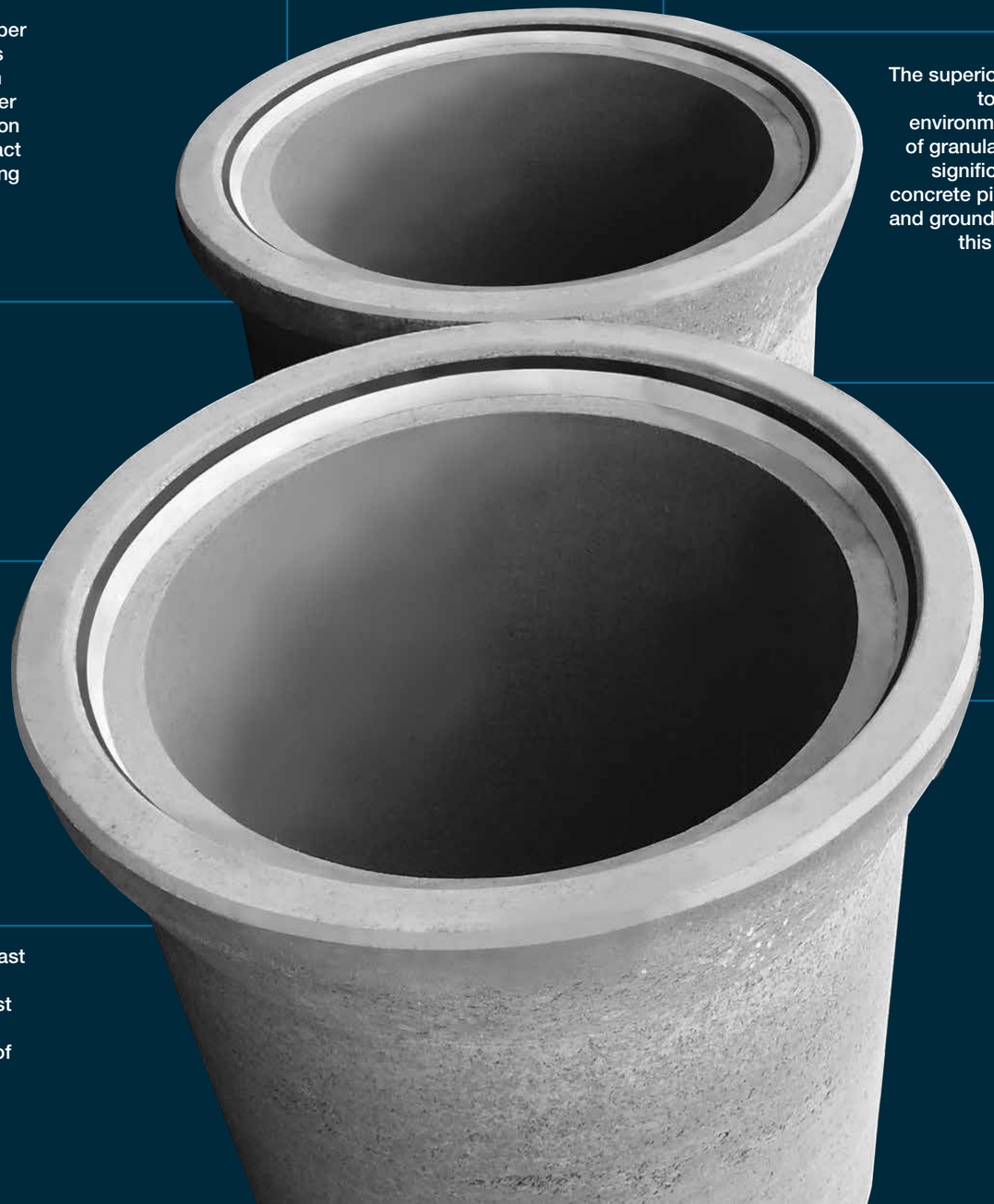
Concrete is much more durable than any other kind of pipe. Hence, it can carry more load at any given time and gains strength over time. It cannot be weakened by heat, moisture, mould or pests, nor will it rust. Underground concrete pipes have the ability to resist chemical attacks and massive impacts such as jetting, so blockages can be cleared easily.

3 QUALITY

Since precast concrete pipes are produced in highly controlled plant environments under rigid production standards and testing specifications, they achieve consistent high quality levels of performance.
The pipe production process will normally include computer-controlled mixing systems, computer-controlled weighing and proportioning systems, absorption testing and automated recording systems.
FP McCann's concrete pipes are manufactured in accordance with BS EN 1916 and BS 5911, and certified by Quality Assessment under the Kitemark Scheme and ISO 9001.

4 WHOLE LIFE VALUE

Due to its amazing structural properties and functional benefits, precast concrete pipes tend to attract lower insurance premiums than those built from other construction materials. The natural strength of precast concrete pipes enables recycled aggregate to be used as a bedding material, significantly reducing installation costs and the elimination of waste disposal costs.



5 FIRE-RESISTANCE

Being naturally fire-resistant, concrete forms a highly effective barrier to fire spread and it does not emit any toxic fumes when affected by fire. It will not produce smoke or drip molten particles. Therefore, in the majority of applications, concrete can be described as virtually 'fireproof'. Due to its inbuilt fire resistant properties, concrete not only maintains an airtight construction that stops smoke spreading, but also has the ability to keep its strength during a fire.

6 BEDDING PERFORMANCE

The superior strength of concrete pipes enables recycled aggregate to be used as a bedding material, thus reducing costs and environmental impact during installation. Since a full trench depth of granular material can actually be more expensive than the pipe, significant pipe bedding savings can be achieved when using a concrete pipe instead. FP McCann can advise on the optimum soil and ground conditions from geotechnical reports, to establish when this sustainable and cost-efficient solution can be deployed.

7 CHEMICAL RESISTANCE

Concrete pipes and manholes are resistant to sulphate and chemical attack. Concrete pipeline products with higher design chemical classes of DC3 and DC4 are capable of withstanding attack from the vast majority of aggressive ground environments in the UK.

8 HYDRAULIC EFFICIENCY

The rigidity and mass of concrete pipes (both within the pipe and pipe joints) allows it to retain its shape over its long service life, preserving structural integrity and hydraulic efficiency, by minimising the resistance to water flow that often occurs when the shape or integrity of a flexible pipe is compromised through deformation.

fpmccann DRAINAGE

SPIGOT AND SOCKET PIPES

All of our spigot and socket pipes are manufactured and CE marked in accordance with European Standard BS EN 1916, the specification for unreinforced and reinforced concrete pipes (including jacking pipes) and fittings with flexible joints. They are also designed to meet BS 5911 for concrete pipes and ancillary products.



STANDARD PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100	*2400
Internal Diameter	A	300	375	450	525	600	675	750	△805	900	1050	1200	1350	1500	1800	2100	△2380
Barrel Diameter	B	416	505	590	685	790	901	996	975	1080	1266	1460	1620	1800	2130	2460	2750
Socket Diameter	C	497	575	665	760	852	960	1060	1130	1235	1420	1590	1800	2010	2380	2650	2750
Effective Length	MM	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Actual Weight	KG	454	616	812	996	1420	1856	2194	1690	2060	2760	3630	4290	5330	7300	9160	10070
Reinforced		N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Approx. Pipes per load		61	45	34	28	22	15	12	17	13	10	8	6	5	4	3	2
Chamber Ring to suit †		1200	1350	1350	1500	1500	1500	1800	1800	1800	2100	2100	2400	2400	2700	3000	3600
Crushing Strengths	Kn/M	36	45	54	63	72	81	90	99	108	126	144	162	180	216	252	288
Nominal Joint Gap	MM	4	4	4	4	4	4	4	4	4	5	5	5	7	7	7	-
Maximum Joint Gap	MM	34	34	34	34	34	34	34	34	34	34	36	36	36	41	41	-
Maximum Deflection	° Degrees	2	2	2	2	2	2	1	1	1	1	1	0.5	0.5	0.5	0.5	-

† Minimum chamber ring size to suit pipe = DN size of pipe + 900

* Lifting anchors available
△ Please note internal dimensions

PIPE LUBRICANT

Pipes should only be joined using an FP McCann lubricant

Nominal size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800	2100
No. of joints per	KG	27	22	18	15	13	12	10	9	9	8	7	6	5	4	4

Sold in 2.5kg Tubs



ROCKER PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1000	1000	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	145	180	220	300	365	800	950	1020	1020	1200	1605	2020	2755	4440	4620

* Lifting anchors available



SOCKET BUTT PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	145	174	230	270	370	960	1175	945	1105	1500	1930	2435	3100	4300	5400

* Lifting anchors available



SPIGOT BUTT PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	100	135	155	205	270	870	980	750	910	1170	1585	1850	2230	3005	3800

* Lifting anchors available



ONE PIECE BEND

Degree	11.25º			22.5º			45º			90º		
Nominal size (DN)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)
	a	b		a	b		a	b		a	b	
300	115	103	66	160	148	79	257	245	112	618	509	167
375	239	140	117	294	195	142	413	314	199	735	636	270
450	127	79	109	196	148	139	344	296	232	745	698	352
525	97	194	140	179	276	200	335	436	400	828	965	750
600	149	137	188	240	228	289	437	425	513	973	961	898
750	384	115	502	499	230	661	744	475	1087	1412	1143	1810



TWO PIECE BENDS - 11.25º, 22.5º & 45º

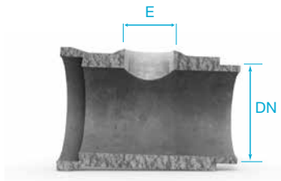
Nominal Size	DN	675	750	900	1050	1200	1350	1500	1800
Effective Length	MM	1000	1000	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	775	925	1140	1515	1955	2425	2965	4105



THREE PIECE BENDS - 90º

Nominal Size	DN	675	750	825	900	1050	1200	1350	1500	1800	2100
Effective Length	MM	1750	1750	2500	1750	2500	2500	2500	2500	2500	3000
Approx. Weight	KG	850	1200	1900	2000	2600	3500	4200	5100	6800	7100

Any fabricated/cut bends need to be surrounded in concrete.



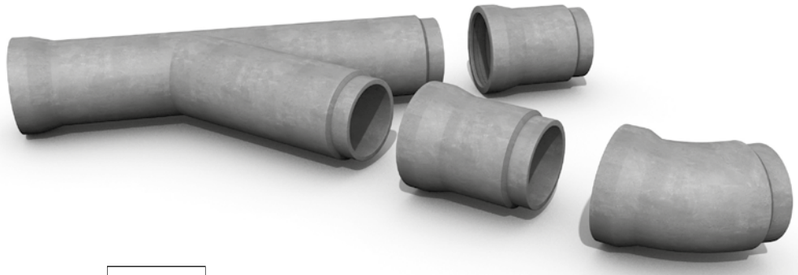
FASTFIT JUNCTIONS

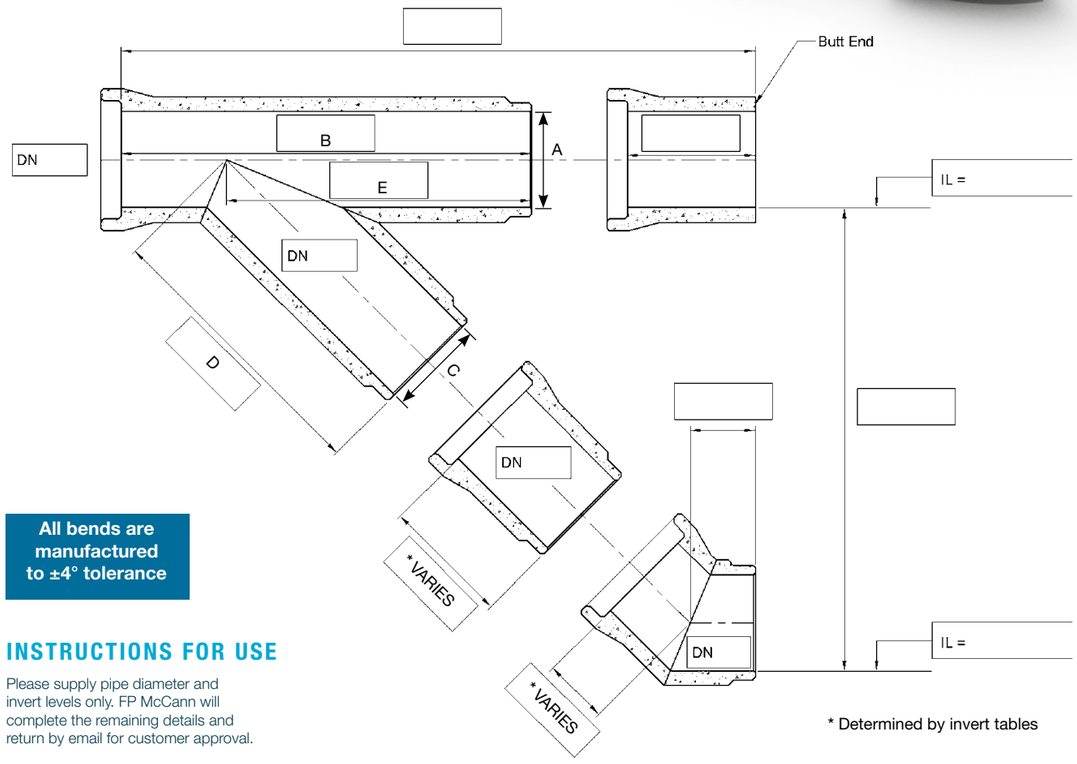
Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800
Branch Size	E	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Effective Length	MM	600	600	600	600	600	1000	1000	1250	1250	1250	1250	2500	2500	2500
Approx. Weight	KG	132	169	211	277	350	750	905	800	1140	1513	2427	4416	5120	7360

All junctions are to be fitted on their side. Junctions are not designed for vertical surface compaction and need to be surrounded in concrete.

For information on our different Pipe Sealing options, please view pages 31-33.

OBLIQUE (45º) TUMBLING JUNCTION (SPIGOT)





* Determined by invert tables

All bends are manufactured to ±4° tolerance

INSTRUCTIONS FOR USE

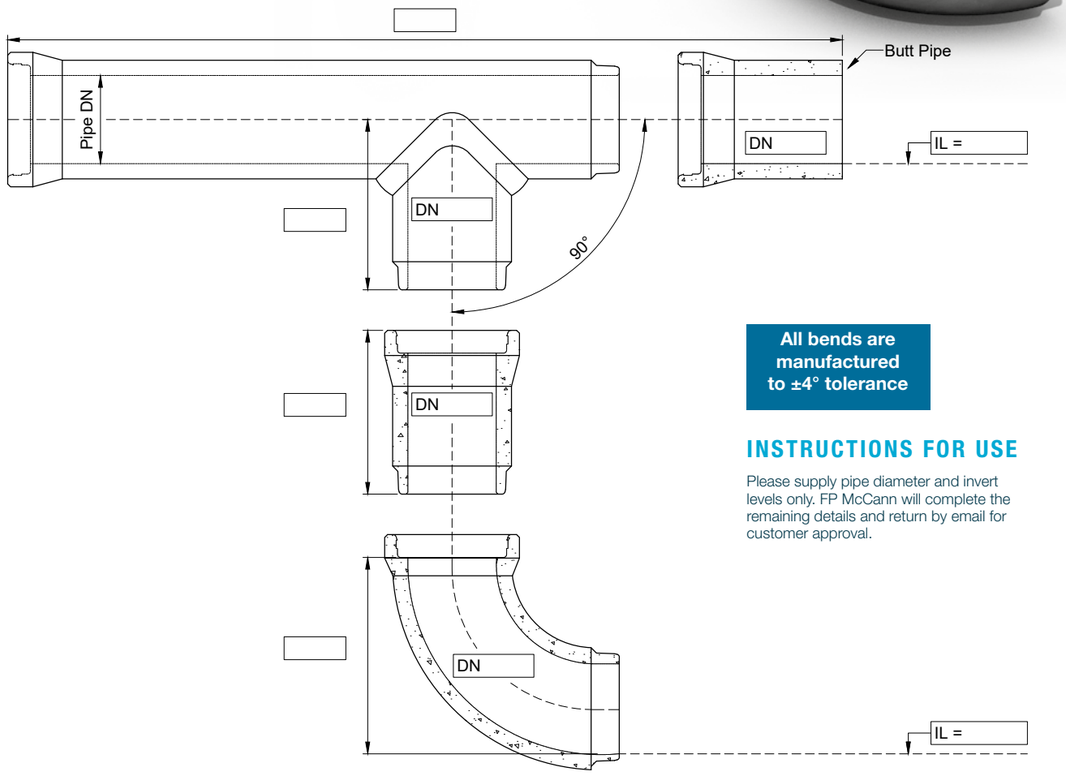
Please supply pipe diameter and invert levels only. FP McCann will complete the remaining details and return by email for customer approval.

Oblique (45°) Spigot Tumbling Bay Junction											
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050
	Effective Length	D	870	985	1087	1177	1329	1433	1558	1679	1896
	Effective Length	E	1424	1495	1533	1533	1652	1790	1739	1703	1795
	Approx Weight	Kg	520	696	873	1350	1458	2311	2828	3654	3875

Oblique (45°) Socket Tumbling Bay Junction											
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050
	Effective Length	D	870	985	1087	1329	1329	1433	1558	1679	1896
	Effective Length	E	1014	989	943	864	862	819	759	623	535
	Approx Weight	Kg	572	748	940	1450	1550	2400	3090	3885	4199

SQUARE (90º) TUMBLING JUNCTION (SPIGOT)





All bends are manufactured to ±4° tolerance

INSTRUCTIONS FOR USE

Please supply pipe diameter and invert levels only. FP McCann will complete the remaining details and return by email for customer approval.

Square (90°) Spigot Tumbling Bay Junction												
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	D	580	628	670	708	770	818	865	1163	1005	1100
	Effective Length	E	1219	1242	1238	1229	1257	1250	1250	915	1165	1165
	Approx Weight	Kg	484	640	827	1098	1396	1453	2457	2964	3370	4374

Square (90°) Socket Tumbling Bay Junction												
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	D	580	628	670	708	770	710	865	915	1005	1100
	Effective Length	E	1219	1242	1238	1229	1257	1250	1249	1163	1165	1165
	Approx Weight	Kg	540	685	854	1098	1453	1550	2542	3144	3398	4582

PIPE HANDLING/ LAYING INSTRUCTIONS



Recommended site work practice - open cut flexible jointed pipes

HANDLING & STORING PIPES

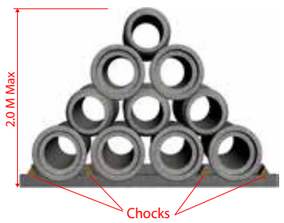
1. Time and place of off-loading should be agreed before the units arrive at site. The contractor should provide suitable equipment for off-loading, stacking and stringing out of pipes on-site.
2. Off-loading should take place at the nearest hard road to the point of installation. To ensure the safety of all personnel, units must be left in a stable position, well clear of the edge of the trench.
3. Pipes should be inspected before off-loading to ensure that materials delivered correspond with the order placed.
4. Pipes should be carefully checked during off-loading to ensure no units are damaged. Any discrepancies should be recorded on the delivery docket.
5. Where stacking is necessary, this should be done on level ground and the bottom layer of pipes securely chocked to prevent the stack from collapsing. Pipes should be supported under the barrel so that the socket is free of load and to prevent the jointing faces from getting damaged. Preferably, they should be stacked barrel to barrel with sockets hanging over alternative sides.
6. For safety reasons and to prevent damage to the lower layers of pipe in the stack, pipes should not be loaded or stacked in a greater number of layers than is shown in the table below.
7. Avoid damage when handling, especially to ends of concrete pipes. Never drag or roll pipes over the ground.

Note: FP McCann's spigot and socket pipes from DN1350 can be handled using our purpose-built Anchor System. Special lifting anchors can be cast into pipes at manufacture. A Universal Head Link (available from FP McCann) can then be hooked onto the exposed anchor heads to lift the pipe. Lifting anchors are fitted to order.

LAYING PIPES

1. **Trench Excavation** The trench should be excavated to the line, gradient and width, as indicated in the contract documents or as agreed with the engineer. The safety of the public and site personnel is of paramount importance. Care should be taken to ensure personal safety at all times.
2. **Trench Width** Any increase in trench width above that specified could increase the load on the pipe, increasing the quantity of excavation and the bedding material required. A trench narrower than the specified width may impede the proper placing of bedding or backfill material, or the correct jointing of pipes.
3. **Formation** Uniform support along the pipeline is essential. Rock outcrops and soft zones, which can cause differential settlement, should be dug out and replaced with compacted specified backfill material. De-watering may be necessary during pipe laying and subsequent backfilling operations. The specified bedding material should be placed as detailed in the contract specification, and trimmed to ensure uniform support of the pipe throughout the length of its barrel. Recesses should be prepared for the pipe sockets.
4. **Pipe Laying** Before being lowered into the trench, pipes and fittings should be inspected to ensure that they have not been damaged during handling and storage on-site. Units should be lowered carefully into the trench using a recognised lifting tackle, such as a concrete mechanical pipe lifter.
5. **Jointing** Using our pipe jointing instruction guide, all pipe spigots must be fully lubricated with the pipe lube supplied, just prior to being lowered into the trench. Please note: pipes should only be jointed using a FP McCann lubricant. The socket of the laid pipe should, at this stage, be prepared by removing the polystyrene forming ring to leave a clean seal, free from debris. The adjoining pipe should be lowered into position, as level as possible, centring the pipe spigot with the seal of the laid pipe so that the pipes are in line. On achieving this, apply pressure to the socket end of the adjoining pipe using a substantial piece of timber to protect the pipe from damage when pushing the pipe home. (see page 47 for details)
6. **Testing** Acceptance tests on the completed pipeline give an indication of the level of control of workmanship and materials during construction.
7. **Visual Testing** Check for obstructions and debris within the pipe, the structural soundness of pipes, that joints are properly sealed and that the pipe invert is even. Note: pipes smaller than DN750 may be inspected from manholes or by means of TV cameras.
8. **Watertightness** The watertightness of a pipeline may be checked using a water or air test. Such tests will reveal the existence of cracked or porous pipes or faulty joints. These tests should be made during and after laying and before backfilling. The test method will be detailed in the contract specification or referenced to an appropriate code of practice. In certain circumstances (e.g. where the distance between manholes is great, or when site conditions are such that backfilling must take place immediately or when laying small diameter pipelines), it is recommended that the pipeline is tested at regular intervals (say every 2/3 pipes) during construction (s ee page 47).
9. **Backfilling** This should take place after inspection and testing. The attention given to the backfill selection is of great importance. The placing and compaction of inappropriate backfill may cause damage to a new pipeline. The structural strength of the completed pipeline depends as much on good site workmanship as on the strength of individual pipes. Consequently, all backfill material must be selected and placed as detailed in the contract specification or recognised code of practice.

Note: For additional information on laying and testing pipes, please refer to the BPDA website: precastdrainage.co.uk



DN	No of layers
300 - 375	4
450 - 600	3
750 - 900	2
> 1050	1

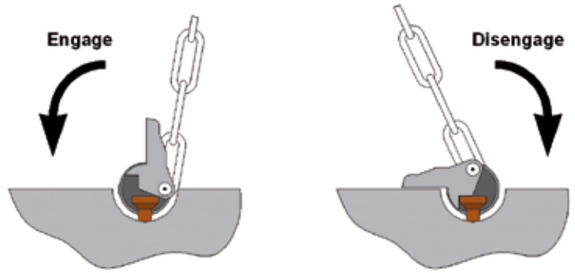
ANCHOR SYSTEM

FP McCann's pipes from DN1350 should be handled using our purpose-built anchor system. Special lifting anchors are cast into pipes at manufacture. A universal head link (available from FP McCann online) can then be hooked onto the exposed anchor heads to lift the pipe.

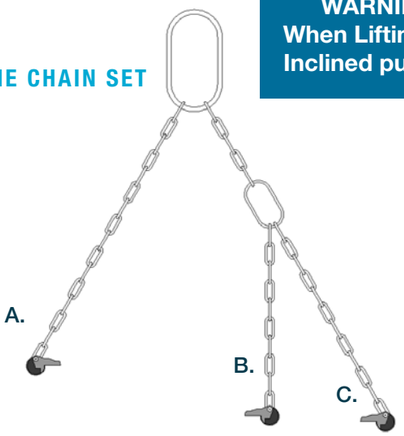
Use the equal lengths (A & B) for lifting the pipe. Join the longer chain (C) onto the pipe already laid and place the shorter length (B) onto the hook. The pipe can then be jointed without moving the jib of the crane. www.fpmccann.co.uk/anchor-system

WARNING
When Lifting ≥45°
Inclined pull only

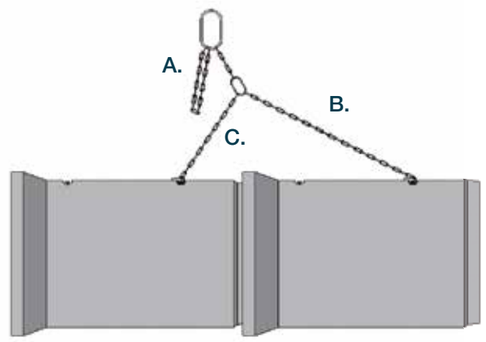
ENGAGING AND DISENGAGING THE EYE



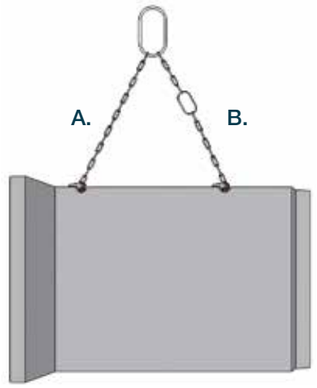
THE CHAIN SET



JOINTING



LIFTING AND HANDLING



Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800	2100	2400
Anchor Availability		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓

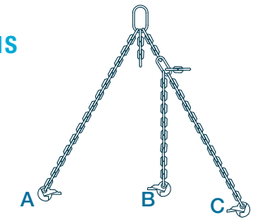
Anchor system available from 1350mm diameter upwards (Available in DN1200 in NI only) / * Lift only not jointing

NOTES:

1. All dimensions are in mm.
2. Weights in kg are based on a concrete density of 2500kg/m³.
3. Where relevant, pipes are manufactured in accordance with BS EN1916.
4. Normal practice is to determine left or right branch laterals to the main line by looking up the flow i.e. from the socket end.
5. Right hand or left hand junctions (viewed socket to spigot) should be specified when ordering reduced junctions in pipe diameters DN1350 and above.
6. Lifting chains are not suitable for joining purposes in pipes of diameter DN2400. Joint in the traditional method.
7. Do not install vertical junctions.

PIPE LIFTING INSTRUCTIONS

LIFTING CHAINS



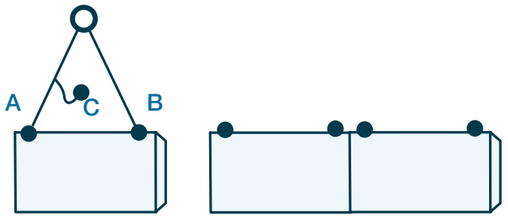
Nominal Size (mm)	1800	2100	2400
Medium Duty Chain Set	3	3	X
Heavy Duty Chain Set	X	X	*3

*Only suitable for Lifting not Jointing

HANDLING/LIFTING INSTRUCTIONS

DN1800 to DN2400 pipes are designed and manufactured to incorporate FP McCann's jointing and lifting systems.

LIFT SYSTEM



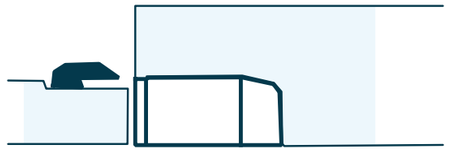
The Lift

To lift the pipes, select the two short legs A and B on the chain set. Place the spherical coupling over the cast-in anchor and engage by turning the tail of the head link down to the concrete. The pipe can then be lifted as normal.

Never pass slings or other lifting appliances through the barrel and never lift more than one pipe at a time.

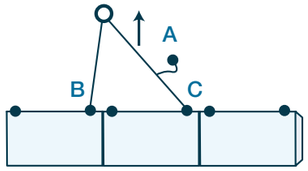
JOINTING

Ensure pipe sockets and spigots are not damaged. Ensure that integral seals are not damaged and apply the approved lubricant. For pipes without an integral seal, ensure the seal is of the correct size and is not damaged. Position the rubber ring on the end of the spigot. Under no circumstances use lubricants when using seals of this type, as they are pre-lubricated internally.



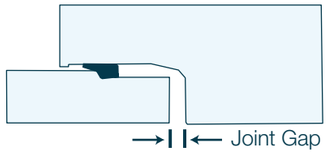
Ensure the tension is even.

Ensure each pipe to be laid is aligned with the laid pipeline and is fully supported along its length. Recommended method of joining pipes is shown below.



Lift joint

To joint the pipe using the chain system, attach the long leg A and the short leg B to the already laid pipe C. Take up the slack in the chains with the lifting pulley over the anchor of the laid pipe, and increase the upward force to joint the pipes. When jointed, ensure that there is no excessive slew or misalignment, this can easily be checked by reference to the joint gap.



Joint Gap

WARNING
When Lifting ≥45°
Inclined pull only

NOTES:

1. All dimensions are in mm.
2. Weights in kg are based on a concrete density of 2500kg/m³
3. Where relevant, pipes are manufactured in accordance with BS EN 1916.
4. Normal practice is to determine left or right branch laterals to the main line by looking up the flow i.e. from the socket end.
5. Right hand or left hand junctions (viewed socket to spigot) should be specified when ordering reduced junctions in pipe diameters DN1350 and above.
6. Lifting chains are not suitable for joining purposes in pipes of diameter DN2400. Joint in the traditional method.
7. Do not install vertical junctions.
8. In-wall pipes do not require lubrication.

ONE PIECE INTEGRAL RUBBER SEAL









FP McCann now provide a new type of integral seal for their precast concrete pipes. This new integrated seal is a simple, one-piece rubber compression connector which is embedded in the concrete when the pipe is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.

FEATURES

- The seal complies with all relevant European standards, including EN 681-1, ISO 90001 and QR 4060
- Durable synthetic EPDM rubber seal with over 100 years shelf life
- Seal is cast accurately and stable at the precast factory
- Pipe is cast with numerous holding parts to keep the seal in place
- Clean, high quality sockets
- Ideal for use with mechanical laying techniques such as pipelifter
- Pipes arrive at site ready to be connected

Please note: During the changeover phase, our new integral seal is fully compatible with our current seal

BENEFITS

- Integrally cast into the structure of the pipe
- Environmentally friendly as it eliminates the need for the polystyrene strip
- Reduction in waste on site
- No cavities or steps in joints
- Almost zero push back
- Requires low insertion force
- Seal not sensitive to weather
- No clamps required to tighten or forget
- Fast and easy installation
- Pipes may be backfilled immediately
- Less time in excavation
- Durable, reusable casting forms

Important Jointing Information
The integral pipe-seal jointing system used in FP McCann's drainage products requires the use of a FP McCann proprietary lubricant, which can be supplied with all pipeline orders from us. Failure to use the proprietary lubricant in accordance with the instructions provided by the pipe-seal manufacturer / FP McCann, may give rise to problems with pipe jointing and seal performance and invalidate any warranty, implied or otherwise. FP McCann accepts no responsibility whatsoever for problems or loss of performance arising from any such failure.

AIR TEST ONLY (A.T.O.)

INFLATABLE PIPE STOPPER

Air testing is a quick and easy way of checking a pipeline following installation. Correct assembly of joints, workmanship and the prevention of site handling damage can be identified by this test. FP McCann recommends the use of inflatable stoppers when air testing concrete pipes. Associated test equipment should be in good condition and in full working order. FP McCann recommends that this test is done every 2-3 pipes before backfilling, regularly following backfill during the installation and then at the finish; preferably before both manholes have been constructed.

The pipeline should be pressurised with air until the 'U' guage (manometer) indicates 100mm. Allow a minimum of 5 minutes for stabilisation of the air pressure, longer may be needed in cold or very hot weather. Observe the fall in indicated pressure over a 5 minute test period. The test is successful if the residual pressure does not fall below 75mm within the 5 minute test period.

If the pressure falls sharply and the pipeline appears to have failed, the following checks should be carried out:

- Inspect the seal of the inflatable stopper against the inside of the pipe using soapy water. Use pipe lubricant or industrial soap to assist in providing a seal where necessary
- Check the connections, rubber tube and stoppers for leaks
- Temperature and humidity changes can significantly affect the test. It may be necessary to allow more time for stabilisation or repeat the test in extreme weather conditions

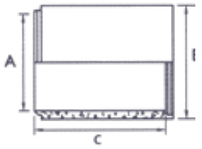
If difficulties are still being experienced following these checks, please contact FP McCann for further assistance.

Please note that failure to adhere to the advice given above and on the FP McCann website may result in any subsequent claims being invalid. Call-out charges may also apply if FP McCann's technical personnel have to attend on site.

Failure to successfully pass an air test does not prohibit the acceptance of pipeline if a successful water test can be obtained in accordance with BS EN 1610.

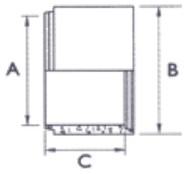


PRE-LUBRICATED PIPES



STANDARD PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070
Pipes per Load	Qty	4	3	2

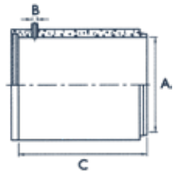


ROCKER PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070

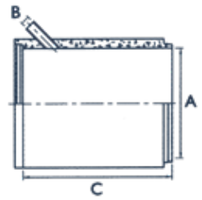
TWO PIECE BENDS

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Angle Øº	11.25	3	3	3
Angle Øº	22.5	3	3	3
Angle Øº	45	3	3	3



RIGHT ANGLE (90°) REDUCED JUNCTION

Nominal Size	DN	1800	2100	2400
Branch Supersleeve	A	100	100	100
Branch Supersleeve	B	150	150	150
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070



OBLIQUE (45°) REDUCED JUNCTION

Nominal Size	A	1800	2100	2400
Branch Supersleve	B	100	100	100
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070

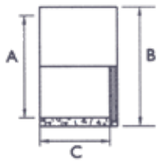
NB: Dimensions above are in mm.

Fastfits available 150mm Super sleeve made to order. Can connect to other pipes via additional adaptors not supplied

Note:

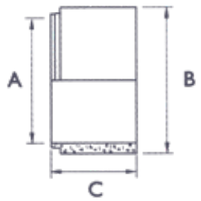
All junctions are to be fitted on their side. Junctions are not designed for vertical surface compaction.

Under no circumstances should lubricants be used when assembling pre-lubricated pipes; the seal is lubricated internally.



SPIGOTT/SOCKET BUTT PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	1250	1250	1250
Approx. Weight	KG	3370	4095	5195



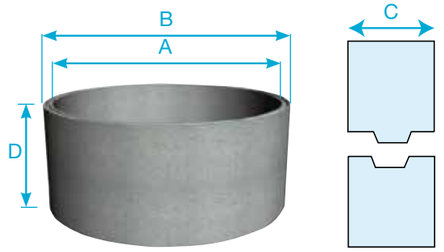
SPIGOT BUTT PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	1250	1250	1250
Approx. Weight	KG	3020	3610	4670

MANHOLE CHAMBERS



MANHOLE CHAMBERS (TONGUE & GROOVE JOINT)



Tongue and Groove Joint Profile

Nominal Size (A) (DN) (mm)	Available Depth of Section (D) 250mm (±25mm)	500mm (±25mm)	750mm (±50mm)	1000mm (±50mm)	Wall Thickness (C) mm	Litres per metre	Barrel Diameter (B) mm	Approx Weight Kg. (per metre)	Approx. Products per load Qty. (metre)	Lifting Hole Qty/Dia. (per /unit) (mm)
900	✓	✓	✓	✓	70	656	1040	520	38	3 x 45
1050	✓	✓	✓	✓	80	894	1210	690	34	3 x 45
1200	✓	✓	✓	✓	90	1167	1380	880	26	3 x 45
1350		✓	✓	✓	95	1478	1540	1050	22	3 x 45
1500		✓	✓	✓	100	1824	1710	1300	16	3 x 45
1800		✓	✓	✓	115	2544	2030	1750	12	3 x 45
2100		✓	✓	✓	125	3464	2350	2040	10	4 x 50
2400		✓	✓	✓	140	4514	2680	2790	8	4 x 50
2700		✓	✓	✓	150	5725	3000	† 3400	8	4 x 50
3000		✓	✓	✓	190	7069	3380	† 4700	5	4 x 50
3600		✓	✓	✓	185	10179	3970	5400	5	△ 3 x RD30
4000			✓	✓	200	12566	4400	*7200	4	△ 4 x RD36
										Dia ± 5mm

MOL from 900-1500 / * 2 piece chamber ring - 3600kg per piece (4m diameter)

△ 570 long wavy tail anchors † 5% Safety Factor

PRODUCT INFORMATION

- FP McCann's manhole chamber rings are manufactured with tongue and groove joints and comply with BS EN 1917 / BS 5911-3
- Manhole chambers from DN900 -DN1800 have 3 lifting points.
- Manhole chambers from DN2100 - DN3000 have 4 lifting points.
- DN3600 and DN4000 are outside of the scope of the British Standard (Non-Kitemark), but comply with all relevant provisions of the European Standard. DN4000 is supplied in two halves

NB: NI have 3 lifting points

WARNING
When Lifting ≥45°
Inclined pull only

RECOMMENDED SITE WORK PRACTICE - MANHOLE CHAMBERS

RECOMMENDED LIFTING EQUIPMENT

Nominal Size DN (mm)	Lifting Hole Qty/dia (p/Unit)	36mm lifting pin 3.5 t SWL	42mm lifting pin 3.5 t SWL	3 leg lifting chain 3.1t	4 leg lifting chain SWL 6.7 t
900	3 x 45mm dia	✓		✓	
1050	3 x 45mm dia	✓		✓	
1200	3 x 45mm dia	✓		✓	
1350	3 x 45mm dia	✓		✓	
1500	3 x 45mm dia	✓		✓	
1800	3 x 45mm dia	✓		✓	
2100	4 x 50mm dia		✓		✓
2400	4 x 50mm dia		✓		✓
2700	4 x 50mm dia		✓		✓
3000	4 x 50mm dia		✓		✓
3600	3 x RD30 (Loops)			✓	
4000	4 x RD36 (Loops)				✓

Dia + 5mm

HANDLING & INSTALLING MANHOLES

1. Time and place of off-loading should be agreed before the units arrive at site. The contractor should provide suitable equipment for off-loading. For safety reasons, all chamber sections are loaded and delivered chimney fashion.
2. Off-loading should take place at the nearest hard road to the point of installation. When off-loaded, units should never be stored on their side (on the roll) but always be laid in the 'as installed' upright position.
3. Carefully inspect units during off-loading to verify that products are undamaged and comply with order placed. Note any discrepancies on the delivery docket and advise accordingly.

CONSTRUCTION

To ensure that the manhole structure is vertical, accurate levelling of the formation or the in-situ concrete foundation is essential. Please note: the depths of each manhole can vary and are subject to tolerances; it is recommended that each unit installed has it's depth measured prior to installation, to ascertain if the levelling requirements are satisfactorily met. Tongue and groove joints should be installed with the groove facing upward. Manhole sections fitted with double steps can be used at any depth. However, it is recommended that the deepest section of manhole units should be used whenever possible, in order to minimise the number of joints and costs. Precast cover slabs can be laid directly onto the shaft or chamber rings. To allow for any differential settlement between manhole and pipeline, a flexible joint incorporating short length rocker pipes should be constructed as close as possible to the outside of the manhole or the concrete surround, if used. Extra care must be taken to ensure that joints are properly made.

JOINTING

Precast manhole components are provided with joints formed within the wall section. These are sealed with cement and sand mortar, or with proprietary FP McCann mastic sealants. Precast concrete manhole units, well jointed, provide an adequate seal under normal conditions.

REINSTATEMENT

A well-constructed precast manhole is a strong, durable structure with its own inherent strength and will only require an in-situ concrete surround for exceptional structural reasons. A concrete surround is usually specified to assure the chamber is watertight. Generally, adoption authorities prescribe a concrete surround is used with traditional precast manhole units (wall thickness less than 125mm) but it is not required for the wide walled precast units (wall thickness 125mm and above). However, watertightness should be given consideration where the distance from ground level to the base of the chamber exceeds 5m. Further measures may be required for the chamber rings below 5m depth in these instances, such as the use of a concrete surround. Where a concrete surround is required, it should have a minimum thickness of 150mm, backfilling should take place as each precast manhole section is assembled and it must be brought up evenly and compacted around the manhole to prevent displacement.

TESTING

It is generally unnecessary to apply water tests to manholes. In normal working conditions, manholes are not normally full of water. Prevention of infiltration is of more relevance than exfiltration. If infiltration does occur, it can be seen and remedied by sealing using an appropriate method.

Note: When handling precast products on site, it is recommended that the contractor has the correct lifting equipment in place and adheres to the relevant lifting guidelines and standards.
Refer to the BPDA website for further information:
https://www.precastdrainage.co.uk/page/pipe-laying-lifting

MANHOLE SOAKAWAYS

MANHOLE SOAKAWAY CHAMBERS

Nominal Size DN (mm)	No. of 75mm holes per chamber			Wall Thick-ness mm	Litres per metre ring	Barrel Dia. mm	Approx Weight Kg. (p/metre)	Approx. Products per load Qty. (metre)
	500 mm	750 mm	1000 mm					
900	5	8	10	70	656	1040	520	46
1050	6	9	12	80	894	1210	690	34
1200	7	10	14	90	1167	1380	880	26
1350	8	11	15	95	1478	1540	1050	22
1500	8	13	17	100	1824	1710	1300	18
1800	10	15	20	115	2544	2030	1750	12
2100	12	18	24	125	3464	2350	2040	10
2400	14	20	27	140	4514	2680	2790	8
2700	15	23	31	150	5725	3000	† 3400	6
3000	17	25	34	190	7069	3380	† 4700	5
*3600	20	31	41	185	10179	3970	5400	5
*4000	23	34	45	200	12566	4400	6800	1.5

* DN3600/4000 see Manhole Chambers / DN3600/4000 Manhole Soakaways made to order
† 5% Safety Factor



SEALING STRIP

Nominal Size DN (MM)	Sealant Size (metres)	No. of rolls p/joint (metres)	Rolls required Quantity
900	20 x 20 x 4	0.88	1
1050	20 x 20 x 4	1.00	1
1200	20 x 40 x 4	1.13	2
1350	20 x 40 x 4	1.25	2
1500	20 x 40 x 4	1.38	2
1800	20 x 40 x 4	1.63	2
2100	20 x 40 x 4	1.88	2
2400	20 x 40 x 4	2.13	3
2700	20 x 40 x 4	2.38	3
3000	12 x 120 x 6	1.75	2
3600	12 x 120 x 6	2.08	3
4000	12 x 120 x 6	2.33	3

Please note this is a guideline based on sealant supplied by FP McCann only.

DN4000 MANHOLE CHAMBER



The DN4000 manhole chamber sections can be used in a variety of applications such as:

- Water treatment plants
- Stormwater attenuation systems
- Storage tanks
- Catchpits

The DN4000 chamber ring is supplied with a standard tongue and groove joint, connecting bolts and butyl rubber sealant for jointing purposes. The units are designed for use with the FP McCann ladder system. Single units (half ring) are lifted using 3 no. threaded lifting loops connected into threaded lifting sockets that are cast into the units, all of which must be used. Assembled units (full ring) are then lifted using 4 threaded lifting loops.

The 4 metre chamber section comes as a two part unit, which allows for ease of transport and handling.

DN4000 CHAMBER SECTION

Nominal Size (mm)	Section Depth (mm)	Wall Thickness (mm)	Approx. weight per section (kg)	Approx. weight per section when jointed (kg)
4000	1000	200	3400	6800
4000	750	200	2550	5100

DN4000 COVER SLAB – 2 PIECE UNIT (DETAIL FOR STANDARD 600 & 675 OPENINGS)

Nominal Size (mm)	Section Depth (mm)	Overall Thickness (mm)	Overall Diameter (mm)	Approx. weight of half section (mm)	Approx. weight of combined sections (kg)
4000	300	300	4500	6450	11,700

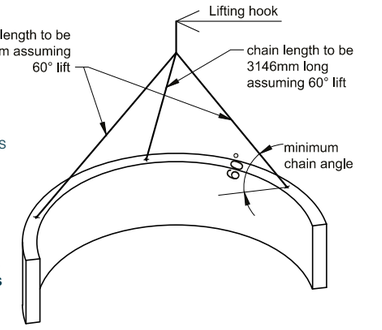
Cover slabs are manufactured in two sections, supplied with standard openings. Standard cover slabs are designed to withstand 30 units of Type HB loading, applied in accordance with BS 5911. If required, cover slabs can be designed to withstand 45 units of Type HB loading. For special opening cover slabs, an engineering drawing and steel specification may be required in order to achieve the desired loading requirement.

FP McCann will provide a technical installation sheet which must be adhered to when installing DN4000 manhole chambers. This is available online or from our sales team.

DN4000 LIFTING/HANDLING & INSTALLATION GUIDE

1. LIFTING

Single units (half ring) are lifted using 3 no. threaded lifting loops connected into threaded lifting sockets that are cast into the units, all of which must be used. The chain angle should not be less than 60 degrees to the horizontal. In order to lift without tilt, the chain lengths will differ. Refer to the diagram opposite for explanation of minimum chain angle and lengths. Alternatively, a spreader beam may be used. Complete units (full ring) are lifted using 4 threaded lifting loops attached to threaded lifting sockets cast into the units. Refer to the diagram opposite for explanation of the location of the lifting sockets to be used. The chain angle should not be less than 60 degrees to the horizontal. Alternatively, a spreader beam may be used. **Note: Using 3 chains to lift a full ring will put unnecessary stress on the concrete and may cause the concrete around the join to crack.**

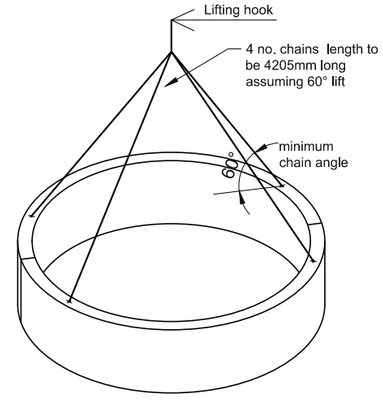


Unit weight and identification of lifting points will be marked on each casting for information.

2. HANDLING & INSTALLATION

It is recommended that the two piece chamber ring is jointed before lifting into place:

- Place the two units on a level surface, ideally on 2 skids to reduce resistance when jointing and also to maintain a clean joint
- Place both halves side by side, ensuring both are at the correct orientation i.e. with bolt holes in line with threaded sockets
- Insert the M24x200 threaded pins with the 60mm threaded side placed into the cast-in sockets
- Place a strip of bituminous sealant along the small recess of the vertical joint on both halves of the ring
- Once bolts and sealant are in position, the 2 halves of the unit must be pulled together using a ratchet system e.g. a chain block fixed to the cast-in M24 x 80 sockets on opposite ends of the units. (Do not use the wall end bolting system to pull the units together as this may crack the concrete and damage the joint)
- The completed ring can then be manoeuvred into place, as detailed above



Half-rings can be lifted into final position and the chamber can be built up, a half unit at a time.

Please note it is the end-user's responsibility to ensure safe access and lifting procedures are followed at all times.

WIDE WALL MANHOLE CHAMBER

FP McCann's precast concrete wide wall manholes have been designed with a tongue and groove dimension to accommodate the use of bituminous sealant. FP McCann's approved sealant should be used at all times. The sealant requirement for wide wall manholes is 12mm x 120mm x 6m. When placing the sealing strip into position during installation, the ends of the strips must be overlapped by a minimum of 30mm and cut at an angle of 60 degree. The cut ends must then be pressed together. Full installation guidelines can be provided upon request or obtained from our website www.fpmccann.co.uk

DN1200, 1500 AND 1800MM WIDE WALL MANHOLE CHAMBERS

A 130mm thick wide wall chamber, in combination with the Easi-Base™ unit, provides a sealed watertight manhole system. This robust design means that the requirement for a concrete surround is eliminated.

PRODUCT BENEFITS

- Quick and easy installation
- Watertight structure
- Safe anchor lifting system (spherical head lifting system)
- Greater cost savings associated with using precast concrete over a traditional system
- No concrete back fill required, in accordance with 'Sewers for Adoption' 7th edition
- More environmentally friendly than a traditional system, almost 40% less carbon omitted during the concrete casting process
- Significant reduction in health and safety risks associated with using precast concrete

Please note: Wide Wall Manhole Chambers are manufactured with 3 x 2.5T Lift Head Anchor points to facilitate the safe anchor lifting system (spherical head lifting system).

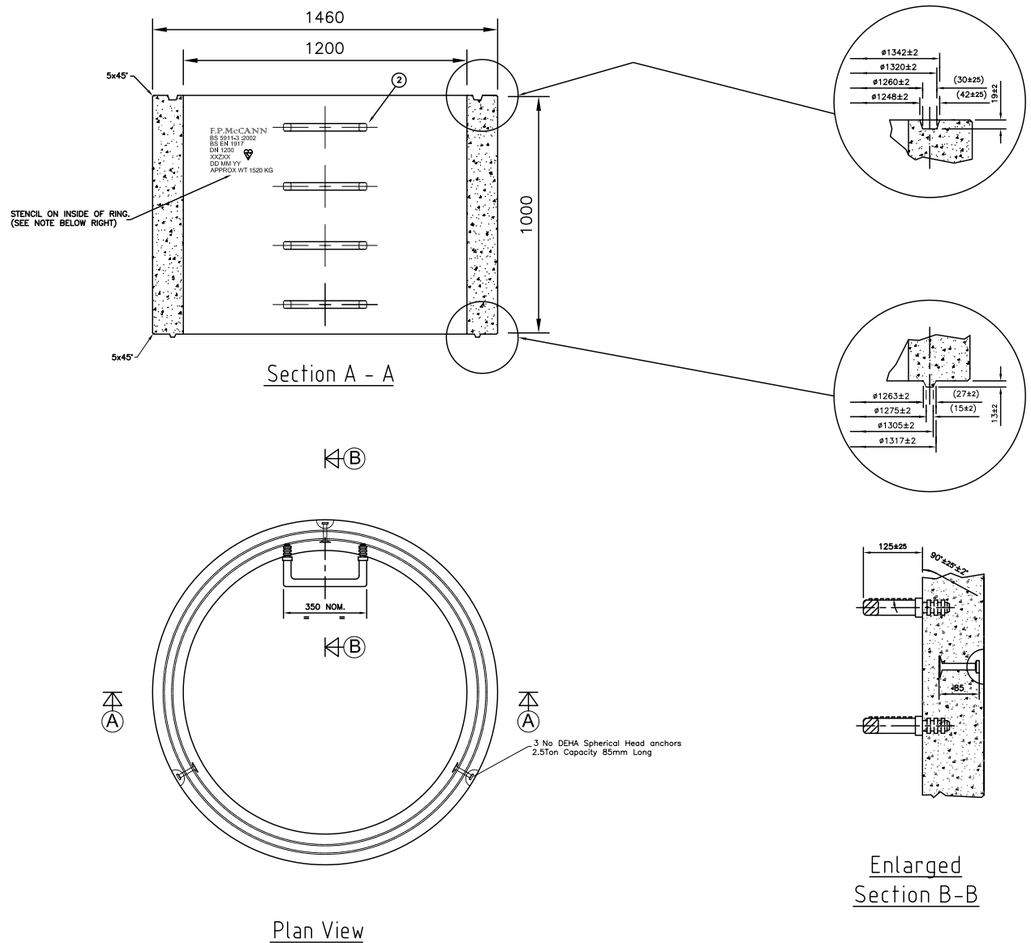






WIDE WALL MANHOLE CHAMBER DIMENSIONS





Nominal Size DN (mm)	Available Depth of Section				Wall Thickness (mm)	Barrel Diameter (mm)	Approx Weight Kg. (p/metre)	Approx. Products per load Qty. (metre)	36mm Lifting Pin 0.7t SWL	42mm Lifting Pin 3.5t SWL	3 leg lifting chain SWL 3.1t
	250mm (±25mm)	500mm (±25mm)	750mm (±50mm)	1000mm (±50mm)							
1200	✓	✓	✓	✓	130	1460	1520	16	3x 2.5T Lifting clutches. FP McCann supplies recommended and approved lifting clutches.		✓
1500	✓	✓	✓	✓	130	1760	1645	14			✓
1800	✓	✓	✓	✓	130	2060	1970	12			✓

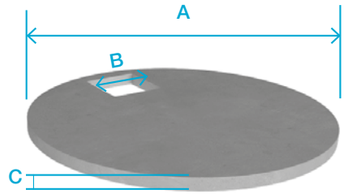
MANHOLE COVER SLABS & ACCESSORIES

STANDARD LANDING SLABS				
Chamber Section (DN)	Outside Diameter (A)	Opening Diameter (B)	Slab Thickness (C)	Approx. Weight (Kg)
1500	1730	900	200	826
1800	2050	900	200	1292
2100	2375	900	200	2030
2400	2705	900	200	2600
2700	3025	900	200	3880
3000	3330	900	200	4500

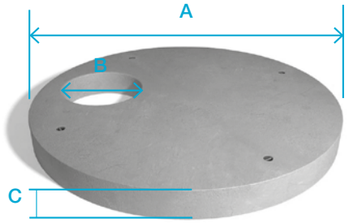
NB: All dimensions are in mm, unless stated otherwise

			STANDARD COVER SLABS			STANDARD REDUCING SLABS		
			Opening Configuration B					
Chamber DN (mm)	Outside Diameter (A) (mm)	Slab Thickness (C) (mm)	Size (mm)	Location	Approx. Weight (kg)	Opening Diameter B (mm)	Effective Depth (mm)	Approx. Weight (kg)
900	1080	150	600x600 675x675	CENTRAL	215			
1050	1240	150	600x600 675x675	ECCENTRIC	315			
1050	1450	150	750x750	CENTRAL				
1200	1450	150	600x600 675x675 750x600	ECCENTRIC	455	900	200	385
1350	1580	170	600x600 675x675 750x600	ECCENTRIC	650	1050	200	695
1350	1740	175	1200x675	CENTRAL	980	1200	200	680
1500	1740	175	600x600 675x675 750x600 1200x675	ECCENTRIC CENTRAL	980	900 1050 1200	200 200 200	981 835 680
1800	2070	175	600x600 675x675 750x600 1200x675	ECCENTRIC	1460	900 1050 1200	200 200 200	1495 1350 1220
2100	2380	200	600x600 675x675 750x600 1200x675	ECCENTRIC	2180	900 1050 1200	200 200 200	2130 2690 2540
2400	2710	200	600x600 675x675 750x600 1200x675	ECCENTRIC	2800	900 1050 1200	200 200 200	2815 2690 2540
2700	3030	230	600x600 675x675 750x600 1200x675	ECCENTRIC	3750	900 1050 1200	200 200 250	3695 3550 3410
3000	3420	200	600x600 675x675 750x600 1200x675	ECCENTRIC	4970	900 1050 1200	200 200 200	4970 4970 4970
*3600 Two Piece	4000	300	600x600 675x675 750x600 1200x675	ECCENTRIC	9250	Covers to suit Manholes greater than or equal to 1.5m deep cover level to pipe soffit.		
*4000 Two Piece	4500	300	600x600 675x675 750x600 1200x675	ECCENTRIC	11700	*3600mm and 4000mm diameter cover slabs come in a 2 piece unit		

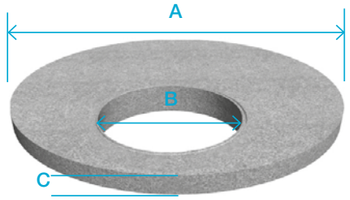
COVER SLABS



LANDING SLABS



REDUCING SLABS



Multiple access/other access sized cover slabs can be made to order

Note:
Cover Slab sizes 900-3000 are manufactured in accordance with BS 5911-3. DN3600 and 4000 cover slabs are generally designed in accordance with BS EN 1992-1-1, (for 30 units of Type HB loading, can also be designed to withstand 45 units of Type HB loading).
* Weights for DN3600 and DN4000 are estimated weights based on solid slabs.

ADJUSTING UNITS & CORBEL SLABS

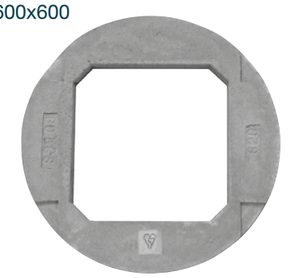
Manhole Type	Diameter (mm)	Opening Size (mm)	No. per Pack	Thickness (mm)	Weight (kg)
Type 2	1050	600 x 600	15	65	70
Type 2	1050	675 x 675	15	65	55
Type 2	1050	750 x 600	15	65	60
Type 2	1050	750 x 750	10	65	45
Type 2	1575 x 1050	1200 x 675	6	75	160
Type 1	1175 x 1025	600 x 600	10	65	125

Note: A 600 x 600 eccentric corbel slab is also available when using a ladder BS EN 1917 and BS 5911

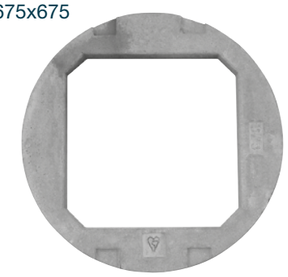
FP McCann manufactures a full range of adjusting units and corbel slabs that have the following advantages:

- Designed as seating for manhole cover
- Eliminates laying engineering bricks on-site
- Quicker to lay, ensuring reduced labour costs
- 65mm thick – similar to brickwork
- Sits on top of the manhole cover slab
- Eliminates brickwork vertical joint weakspots
- Quality product produced by vibration process
- Comprehensive strength, similar to Class B.Eng bricks

Type 2
600x600



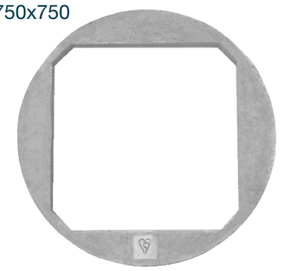
Type 2
675x675



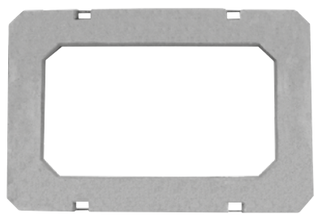
Type 2
750x600



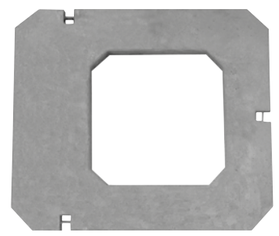
Type 2
750x750



Type 2 1200x675

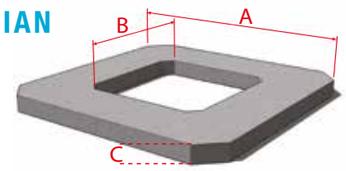


Type 1 600x600 Eccentric (Corbel)



Size (A) (mm)	Slab Thickness (C) (mm)	Openings (B) (mm)	Approx. Weight (kg)
1125x1125	75	600x600/675x675/750x600	140
1125x1125	150	600x600/675x675/750x600	290

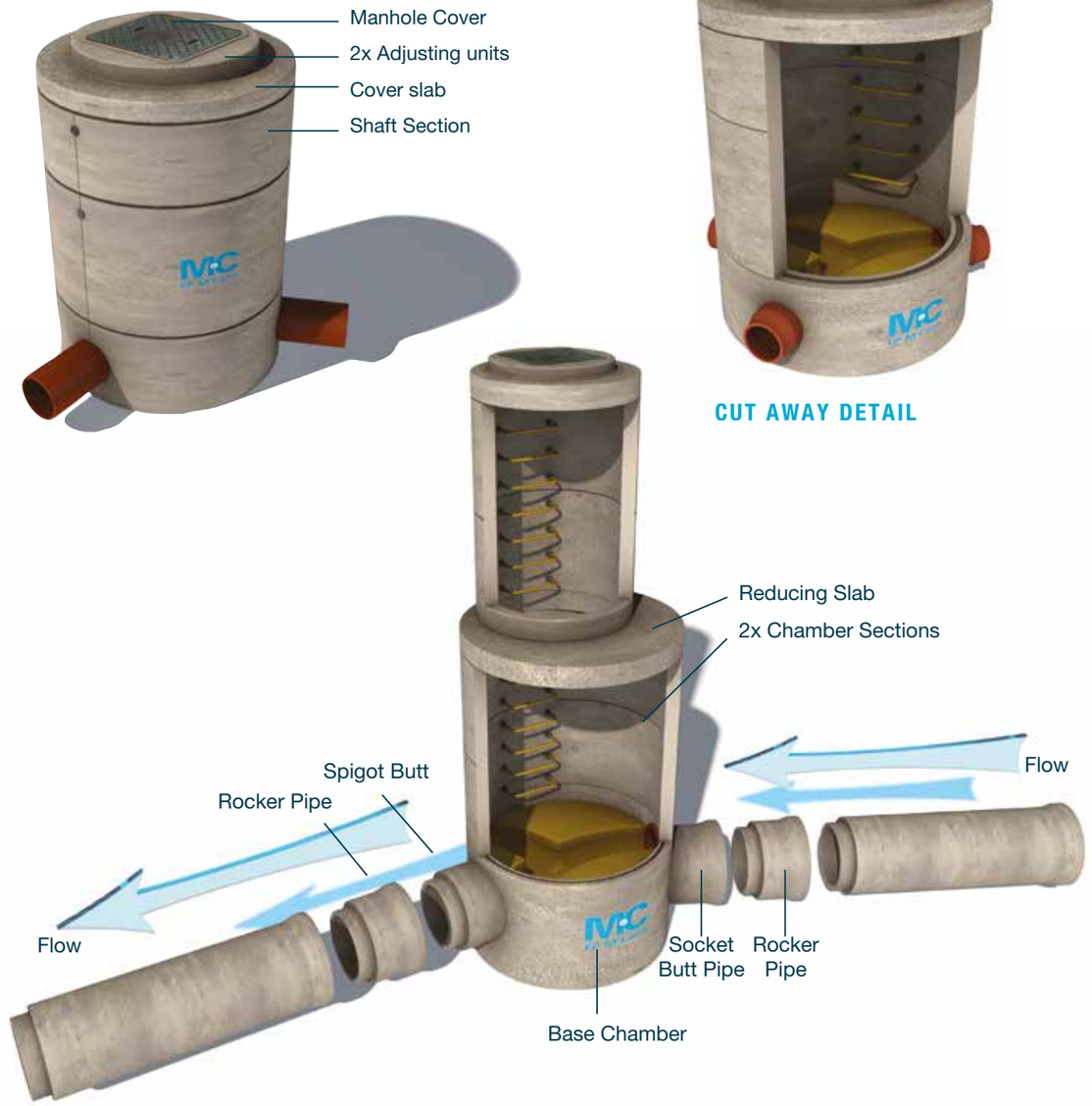
LOTHIAN SLAB



MANHOLE CONSTRUCTION



DETAIL OF MANHOLE CONSTRUCTION



CUT AWAY DETAIL

DN1200 EASI-BASE™

FP McCann's DN1200 Easi-Base™ is a prefabricated manhole base unit with integral benching, channels and connectors, that provides an immediate and long-lasting watertight solution in the management of waste water.

PRODUCT BENEFITS

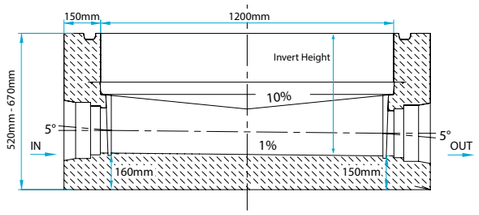
- An extremely fast, efficient and economical method of constructing manhole bases on-site
- Accepted by all UK water companies
- Significant health and safety benefits
- An immediate watertight structure, allowing other trades to instantly follow on
- Factory prefabrication provides a quality finish to channelling and benching, and enables accurate combinations and variations for entry/ exit pipes
- Connects with any type of pipe and is compatible with the DN1200 130mm thick wide wall chamber ring which eliminates the need for backfilling.
- Maintenance of channels and benches are aided by clean access for inspection
- Eliminates the risk of water pollution that is associated with traditional methods of manhole construction, such as concrete base formation integrity failures due to bad weather conditions, which results in groundwater being contaminated with polluted raw sewerage and clean groundwater infiltrating the already overloaded raw sewerage system of pipelines and treatment plants
- The 7th Edition of Sewers for adoption has now been published to include precast bases; Easi-Base™s are in full accordance with the guidance provided.
- Easi-Base™ is a kitemark product, manufactured and tested to BS EN1917
- WRc tested and approved
- An 80 year guaranteed base



The unique DN1200 Easi-Base™ utilises a polypropylene liner with prefabricated benching and channels. Pipe connection bells are pushed into the inlet and outlet points and the liner is then encased and embedded in concrete to provide its structural strength and integrity. The DN1200 Easi-Base™ is manufactured as a monolithic precast unit; it utilises the standard manhole tongue and groove joint and is ready for immediate use, in combination with either a standard 90mm thick manhole chamber or the new 130mm thick wide wall chamber ring.

The Easi-Base™ system connects with most type of pipe including Single wall uPVC, Twin wall, Concrete, Ductile Iron and Clay.

The DN1200 unit allows connection to channel diameters DN150 to DN300. FP McCann has developed a selection of adaptors to increase the range of pipe types accommodated. The type of pipe must be disclosed prior to placing the order, so that the correct adapters and seals are fitted.



DN1200 EASI-BASE™ UNITS					
Diameter	Internal Diameter	Size	Invert Level (for take off)	Depth	Weight
DN1200	150	SMALL	370	520	1.7
DN1200	150	MEDIUM	445	595	1.8
DN1200	150	LARGE	520	670	1.9
DN1200	225	SMALL	470	620	2.2
DN1200	225	MEDIUM	545	695	2.4
DN1200	225	LARGE	620	770	2.5
DN1200	300	SMALL	520	670	2.4
DN1200	300	MEDIUM	595	745	2.5
DN1200	300	LARGE	670	820	2.7

All sizes are in mm

PRODUCT FEATURES

- The DN1200 Easi-Base™ is made to an internal diameter of 1200mm with a tongue and groove joint profile to match standard DN1200 manhole chamber rings
- Wall thickness is 150mm
- The base has a 150mm floor thickness with the outlet invert at approximately 150mm from ground level
- A 1% fall exists across the channel toward the outlet (1:100)
- A gradient of 1:10 is present at the benching with the run-off toward the channel
- The height of the DN1200 Easi-Base™ unit varies in accordance with the diameter of the main channel running through the unit. (Please refer to the above table for heights)

DN1200 RANGE OF LINER ORIENTATIONS

Pipe Size (mm)	PREDL REFERENCE
150	P1, P13, P135, P13579, P14, P147, P149, P15, P157, P158, P159, P16, P169 P17, P18, P19, P2-, P2, P24, P248, P25, P258, P259, P26, P268, P27, P28, P29 P3-, P3, P35, P357, P358, P359, P36, P37, P38, P39, P4-, P4, P45, P46, P469 P47, P48, P49, P5-, P5, P5+, P56, P57, P579, P58, P59, P6, P6+, P68, P69, P7, P7+, P79, P8, P8+, P9
200 *	P1, P15, P159, P19, P2, P3, P4, P5, P59, P6, P7, P8, P9
225	P1, P14, P149, P15, P157, P158, P159, P16, P169, P17, P18, P19, P2-, P2, P248, P25, P257, P258, P259, P26, P27, P28, P29, P3-, P3, P35, P357, P358, P359, P37, P38, P39, P4-, P4, P46, P48, P49, P5-, P5, P5+, P57, P58, P59, P6, P6+, P69, P7, P7+, P8, P8+, P9
250 *	P1, P15, P159, P19, P2, P25, P3, P35, P4, P5, P57, P58, P59, P6, P7, P8, P9
300	P1, P15, P159, P17, P18, P19, P2-, P2, P25, P27, P28, P29, P3-, P3, P35, P37, P38, P39, P4-, P4, P5-, P5, P5+, P57, P58, P59, P6, P7, P7+, P8, P8+, P9

150 Pipe: PVC (EN1401), Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay

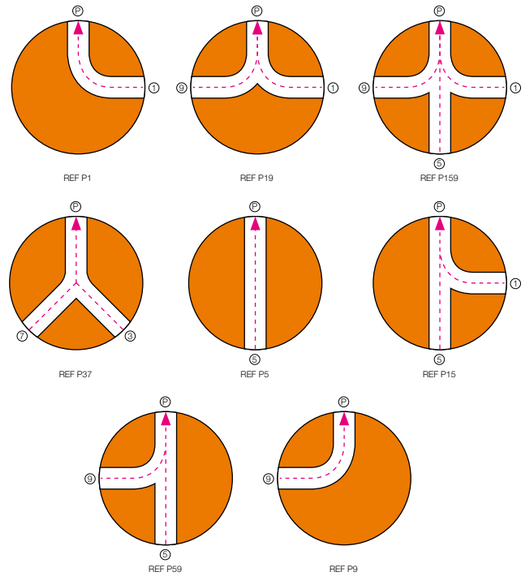
200 Pipe: PVC (EN1401)

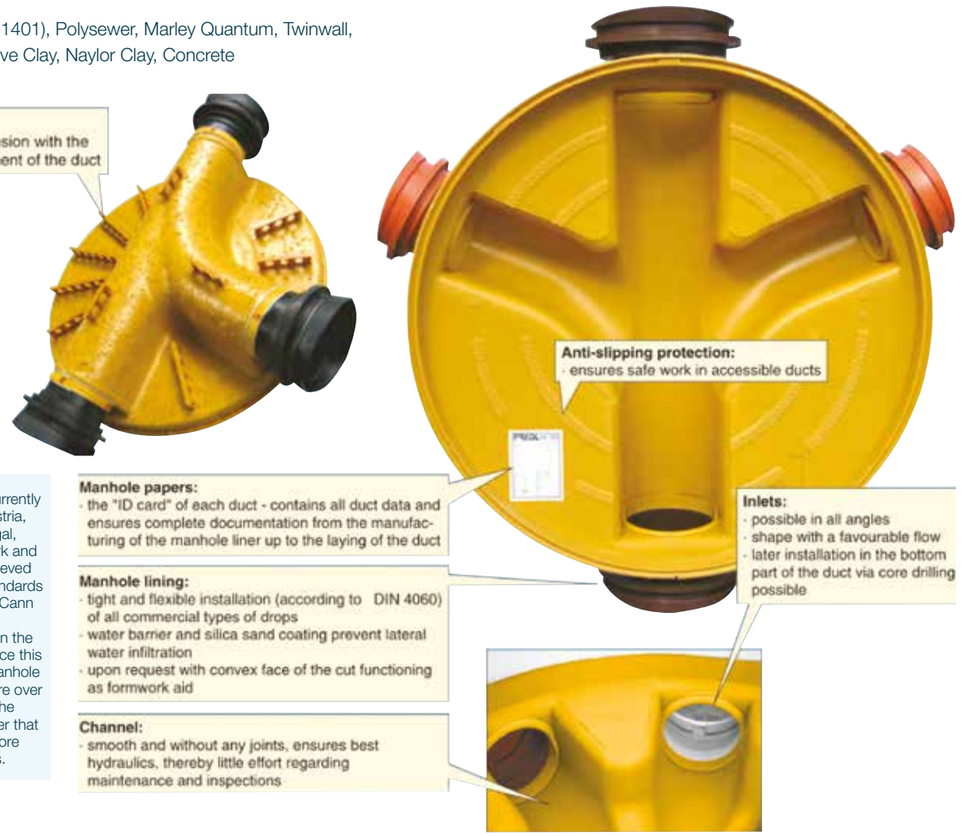
225 Pipe: Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay

250 Pipe: PVC (EN1401)

300 Pipe: PVC (EN1401), Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay, Concrete

EXAMPLES OF PREDL LINERS STANDARD STOCK





PREDL® liners are currently used in Germany, Austria, France, Spain, Portugal, Italy, Norway, Denmark and Poland and have achieved accredited quality standards within Europe. FP McCann with franchise partner PREDL® are the rst in the British Isles to introduce this new technology to manhole construction. There are over 1500 basic forms of the PREDL® manhole liner that can be delivered in more than 100,000 variants.

EASI-BASE™ ORDER FORM

ORDER DETAILS

Merchant:.....

Merchant Contact: .....

Contractor:.....

Contact Name:.....

Contact Tel: .....

Job Details / Address: .....

Manhole Ref:.....

Chamber Dia (mm): .....

Order your Easi-Base™ using the PREDL Clock diagram. The outlet is 'P' with inlets available in any combination from 1-9. Any angles from 90°- 270° are available in accordance with the latest sewers for adoption compliance.

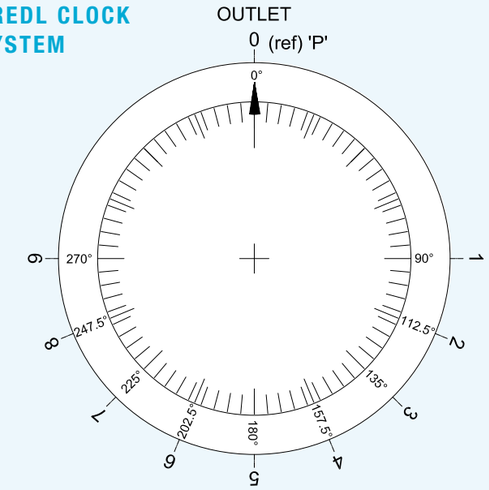
Please consider the example, and use the table below to place your order. One form is required per Easi-Base™.

We can offer a bespoke take-off service on all manholes upon placement of order.

NOTES

1. One form required per Easi-Base™.
2. It is essential the pipe type is given correctly to ensure the correct pipe seals are provided.

PREDL CLOCK SYSTEM



SPECIFYING AND ORDERING YOUR EASI-BASE UNIT

Combinations and variants in entry pipe diameters and orientations can be chosen from the PREDL Clock diagram.

When ordering, it is important to remember that the 'P' refers to the position of the outlet leading from the manhole. All other orientations are specified as a reference from the 'P' position; the next reference is then given as the main channel; each inlet is then referenced firstly by the largest diameter, then by numerical order.

Please see the examples below.

- P5 is a DN1200 Easi-Base™ with straight-through inlet at 180° from the outlet position. Note a 1% fall in the channel exists towards the outlet position 'P'.
- P59 refers to a DN1200 Easi-Base™ with the main channel inlet at 180° from the outlet 'P' position and an additional second inlet at 270°.

Using the PREDL clock reference system, FP McCann can ensure the accuracy of each channel connection.

	Outlet	Inlet 1	Inlet 2	Inlet 3	Inlet 4	Inlet 5
PREDEL Ref.	P					
Angle	0˚					
Pipe Size						
Pipe Type						
Add. Info.						
EXAMPLE - P519						
PREDEL Ref.	P	1	5	9	-	-
Angle	0˚	90˚	180˚	270˚	-	-
Pipe Size	300mm	150mm	300mm	150mm	-	-
Pipe Type	Wavin Ultrarib	Wavin Ultrarib	Wavin Ultrarib	Wavin Ultrarib	-	-
Add. Info.						

DN1500 - DN2100 EASI-BASES™



FP McCann's bespoke Easi-Bases™ from DN1500 to DN2100 complement our existing manhole ranges and are produced as monolithic units, utilising standard manhole tongue and groove joints for connection with standard manhole chambers. These units are produced wholly from concrete and provide a variety of connection orientations using the Predl Clock System. They can accommodate concrete, clay, twinwall, ductile iron and uPVC pipes from 150mm to 1200mm.

The table below gives the dimensions associated with each size, including the overall height of the unit, the invert level for each different pipe diameter and the combination of pipe diameters accommodated. All Easi-Base™s are made level to soffit, (i.e. level-benching).





DN1500 - DN2100 EASI-BASE™ UNIT SIZES				
Diameter	Pipe Size	Invert Level to top of base	Finished Height	Weight (T)
DN1500	100	470	750	3.50
DN1500	150	470	750	3.50
DN1500	200	575	760	3.50
DN1500	225	575	760	3.50
DN1500	250	575	760	3.90
DN1500	300	705	950	3.90
DN1500	375	755	1000	4.60
DN1500	450	825	1100	4.60
DN1500	525	945	1200	4.70
DN1500	600	1015	1310	4.75
DN1800	100	470	750	6.00
DN1800	150	470	750	6.00
DN1800	200	575	760	6.10
DN1800	225	575	760	6.10
DN1800	250	575	760	6.10
DN1800	300	705	950	6.10
DN1800	375	755	1000	6.50
DN1800	450	825	1100	6.70
DN1800	525	945	1200	7.00
DN1800	600	1015	1310	6.50
DN1800	675	1175	1450	8.00
DN1800	750	1195	1450	7.75
DN1800	825	1255	1500	7.50
DN1800	900	1345	1560	6.85
DN2100*	150-1200	1900	2435	10.50

* 2 part unit / max Δ per unit
† 1 unit ex Knockloughrim depot

All sizes are in mm

WEIGHTS AND LIFTING MECHANISM DETAIL

Easi-Base™ (DN)	Lifting Mechanism	Quantity of Lifters Used per unit	Safe Working Load (S.W.L) per lifter (Tonnes)	Easi-Base™ Unit Max. weight (Tonnes)
1200	M24	3	2.5	1.5 - 2.5
1500	M36	3	6.3	3.5 - 5.0
1800	M36	3	6.3	6.0 - 8.0
2100	M36	3	6.3	6.5
* 2100	Utility Anchors & M36	3 & 3	5 & 6.3	11.0

* Manufactured in NI
(Please note, weights will vary dependent upon pipe size and number of inlets/outlets.)

Our Easi-Base™ manhole systems are manufactured with cast-in lifting sockets to allow chains to be hooked on to lift the base in a safe manner, which will prevent damage during handling. It also negates the requirement to drill holes through the Easi-Base, thus ensuring absolute water tightness when installing in wet ground.



EASI-BASE™ WITH INTEGRAL SEAL



FP McCann's integral seal is a simple, reliable rubber compression connector which is embedded in the concrete when the manhole is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.

FP McCann is the first precast concrete manufacturer in the UK to offer an integral seal on our Easi-Base™ DN1500 and DN1800 units. Our new integral seal system is a simple, reliable rubber compression connector which is embedded in the concrete when the manhole is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.





FEATURES

- Connector is placed in the sealing position at the precast plant
- Manhole arrives at the jobsite ready to receive the pipe
- Pipe is beveled and lubricated, and then inserted through connector
- Manhole may be back filled immediately

BENEFITS

- Integrally cast into the *structure when the concrete is poured
- Requires low insertion force
- No clamps to tighten or forget
- Fast and easy installation
- Less time in the excavation
- Durable, reusable casting forms
- Reusable tooling holds connector in position during casting process.

* 1050mm and above pipe sizes require grouting using a e-proxy resin or similar approved product

SEALANT

DN1200	12mm x 120mm x 4.2m
DN1500	12mm x 120mm x 5.2m
DN1800/DN2100	12mm x 120mm x 6.0m

EASI-BASE ADAPTORS AND SEALS

Part No.	Size	Pipe O/D	Type	Description
FPM 101	225	250	Adaptor	PVC TW & Ultra Rib
FPM 102	225	N/A	Adaptor	End cap Stock
FPM 103	225	263	Adaptor	Clay (SuperSleve)
FPM 104	225/150	N/A	Adaptor	Level Invert Reducer
FPM 105	225	268	Adaptor	PE Twin Wall
FPM 106	225	N/A	Seal	Uni bell Seal
FPM 107	225	263	Seal	Clay Adaptor Seal
FPM 108	150	170	Adaptor	Ultra Rib
FPM 109	150	N/A	Adaptor	End Cap
FPM 110	150	178	Adaptor	Twin Wall PE
FPM 111	150	178	Adaptor	Clay (SuperSleve)
FPM 112	300	335	Adaptor	Ultra Rib
FPM 113	150	188	Adaptor	Naylor Densleeve
FPM 114	300	353	Adaptor	Twin Wall
FPM 115	150	160	Adaptor	Twin Wall PVC
FPM 116	225	278	Adaptor	Naylor Densleeve

Please note: all adaptors and seals are available from stock

FLEXI-FIT PIPE SEAL

Introducing the new range of sizes for FP McCanns Flexi-Fit seal.

FF150

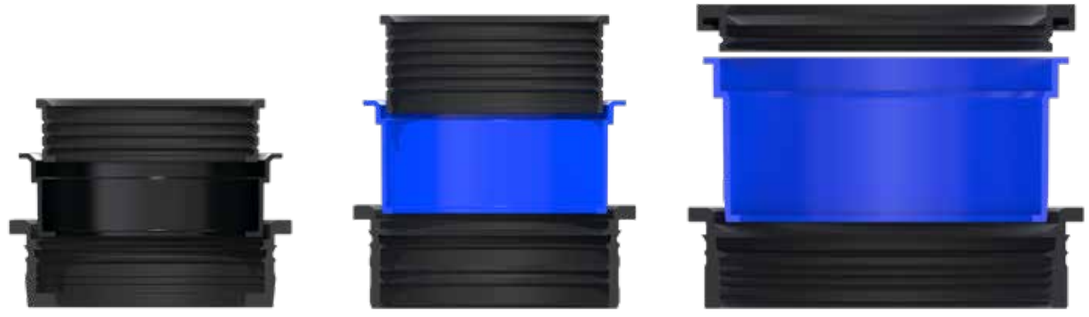
Designed to be used in junctions and large diameter pipes.

FF150 Base

Designed to be used in manhole bases and catchpits. Lateral support is required.

FF225

Designed to be used in manhole bases and catchpits. Lateral support is required.



The Flexi-Fit seal is a time and cost saving solution for fitting lateral (or branch) pipes into larger concrete pipes, manholes, junctions, catch pits or other concrete structures, at the time of casting or retro-fitting into a cored hole.

Each seal uses three component parts to adapt its internal size to suit the lateral pipe being fitted. The user can simply remove components to increase the internal diameter of the seal. All components conform to the latest standards for below ground applications. The universal nature of the Flexi-Fit range means that any lateral pipe of the same nominal diameter can be fitted. The Flexi-Fit removes the need to purchase and store multiple seals and adaptors for different pipe materials, simplifies project planning and supports specification changes.

BENEFITS

- Universal solution
- Removes the need for adaptors
- Can be installed in seconds
- Can be cast into concrete during manufacture or cored and retro-fit
- Configuration can be altered in seconds
- Watertight connection for any DN150 & DN225 Lateral
- Smooth transition and level invert through to the connecting structure
- Designed to remove the possibility of lateral intrusion
- Independently tested to 0.5 bar pressure on all adoptable laterals



FLEXI-FIT PIPE SEAL



PIPE FITTING OPTIONS

Option 1 - Full product



Product	Pipe Type
FF150 FF150 Base	**DN150:** PVC Smooth Marley Quantum Polysewer Cast Iron Ultra 3
FF225	**DN225:** PVC Smooth Cast Iron Ultra 3

Option 2 - Inner Bush removed



Product	Pipe Type
FF150 FF150 Base	**DN150:** Ultrarib
FF225	**DN225:** Marley Quantum Polysewer Ultrarib

Option 3 - Outer Body only



Product	Pipe Type
FF150 FF150 Base	**DN150:** Supersleeve Clay All Twinwall pipe types
FF225	**DN225:** Supersleeve Clay All Twinwall pipe types

Note: the pipe seal must be used in the first groove.

*Not suitable for Naylor Clay - adaptor required with FF150/225

FLEXI-FIT PIPE SEAL





Product Code	FF150 / FF150 Base / FF225
Description	DN150/DN225 Universal connector
Core Hole Size	198 +0/-1mm & 294 +0/-1mm
Material	ABS & EPDM Rubber
Pressure Rating	0.5 bar
Jetting Resistance	180 bar
Temperature Range	-50°c to 80°c constant, 100°c intermittent
Standards	BS EN 681-1:1995 WIS 4-35-01

INSTALLATION



5 EASY STEPS

- Using the correct equipment, core a 198mm or 294mm hole at the selected position into the concrete pipe, manhole or junction. Ensure the cored hole and surrounding area is clean and free from slurry/debris.
- Remove the two inner body components from the main outer body as shown in image 2.
- Press the rubber into the 198mm/294mm cored hole until fully seated, a little force will be required.
- Lubricate the outside of the casting socket using water (if required).
- Using a chock of wood and hammer (if required) drive the casting socket into the outer body evenly around the circumference.

Note: It is recommended that a diamond tipped core drill be used to core the 198mm / 294mm holes.

GENERAL INFORMATION

Flexi-Fit Seal has been certified by the British Standards Institution (BSI) as a company of assessed capability, with a quality management system which meets the requirements of BS EN ISO 9001:2015.

A materials cost calculator is available on request. For further information on FP McCann's precast drainage solutions, contact the sales team: SCOTLAND/NI: 028 7954 9026 | ENGLAND/WALES: 01530 240000

DN1050 HIGHWAYS AGENCY CATCHPIT

HIGHWAYS AGENCY COMPLIANT EPDM FLEXIBLE SEAL DN1050 CATCHPIT

With its flexible rubber pipe connector seals, precast concrete catchpits can be utilised on a single lane carriageway, replacing the requirement to cast a base sump in-situ and construct the catchpit from a standard DN1050 manhole ring.

The innovative EPDM 40 flexible rubber seal at the connection points can accommodate pipe sizes DN150, DN225 and DN300. This negates the need to saw cut openings in the concrete wall and the use of wet mortar trades to seal the pipe surround.

Catchpits are supplied with factory fitted pre-marked EPDM 40 rubber blanks. The unique rubber blank/seal has preformed cutting grooves around the three DN entry sizes indicated. This allows for accurate cutting out to pipe diameter requirement. There is no similar system available on the market. Once pipes are fitted into the seal, up to 45 degrees of pipe deflection is permitted without breaking the seal.

Significant savings in time eliminates the need for follow-up finishing gangs. Reduced safety risks because the operative time in excavation is minimal and no power tools are required to cut concrete. Indirect cost benefits arise from saving up to 26 hours of labour time, related to the curing of wet trades on a traditional build.

FP McCann's catchpit products are manufactured under BSI Kitemark approval to comply with BS EN 1917 and BS 5911, and are therefore fully compliant to HA's MCHW specification.

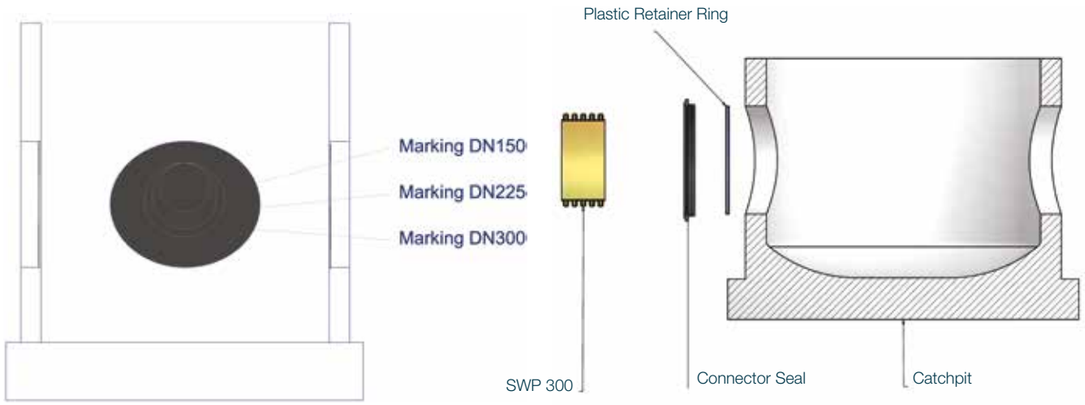




Can be used in straight through, 90° connection or straight through with a cross drain.



Once pipe is fitted to the connector, up to 45° of deflection is possible without breaking the seal.



CATCHPIT

The catchpit effectively provides a sealed sump manhole, a monolithic precast concrete unit fitted with connector seals, which can be used to connect to the following types of pipe: uPVC, twin wall, clay, ductile iron and concrete. The catchpit is designed to accommodate pipe sizes DN150 to DN1800 and is in line with highway specification.



PRODUCT BENEFITS

- Creates an immediate watertight structure
- Prefabricated off-site (minimising on-site labour and costs)
- Quick and efficient to install
- Accommodates connection to all types of pipe used in road and manhole construction
- Safety benefits gained in the construction of manholes as the pre-formed sump and connect seals eliminate on-site construction, thus greatly reducing labour activity within the manhole
- Quality is greatly increased as construction is within the factory environment and complies with BS EN 1917 and BS 5911
- Eliminates material wastage associated with current in-situ method
- Yields environmental benefits such as lower carbon footprint, less concrete used on-site and less excavated material removed from site
- Bespoke designs available



Nominal Size (dn)	Height (mm)	+ Max. Pipe Size (mm)	Chamber OD (mm)	Wall Thickness (mm)	Capacity (l)	**Approx. Weight (kg)		No.of Units per Load	Lifting Hole Qty/ da/ per unit
DN1050	* 1000	300	1210	80	650	1380		19	3no. ø45 lifting holes
DN1200	* 1000	300	1380	90	870	1600		16	3no. ø16 sockets and loops
DN1500T1	* 1400	600	1800	150	1800	4700		5	3no. utility anchors
DN1500T2	* 2400	675	1800	150	3300	7700		4	3no. utility anchors
DN1800T1	* 1500	600	2100	150	2700	^ 6300		4	3no. utility anchors
DN1800T2	* 2400	900	2100	150	5100	8300		3	3no. utility anchors
DN2100	* 2400	1500	2400	150	7000	^ 9000	11000	3	3no. utility anchors
DN2400	* 2700	1800	2700	150	10,500	^ 11700	14000	2	3no. utility anchors

* Height can be reduced to suit customers' requirements Based on 300mm sump. If a non-standard invert level is required, please specify when ordering

^ Lightweight catchpits (available on request)

** Maximum weight of a solid, full height unit with no holes

\+ Based on a standard catchpit only. If larger pipe sizes are required, please contact FP McCann

VALVE CHAMBER

FP McCann designs and manufactures a bespoke range of reinforced valve chambers capable of housing any size and type of valve/pump. Valve chambers consist of a precast concrete sealed sump manhole with factory-fitted saddles to house the pump, and are used in the management of water, oils and chemicals.

Chamber Diameter	1200 - 3000mm
Chamber Height	900mm
Stool	Bespoke to project requirements
Pipe Size	150 - 375mm
Inlets / Outlets	Will vary to accommodate pipe size
Cover Slab Thickness	Will vary in accordance with chamber diameter
Base Thickness	250mm







PRODUCT BENEFITS

- Immediate watertight structure
- Reduced installation time/costs
- Accommodates connection to all types of pipe, including concrete, metallic, HDPE and clay
- Pump is raised off the ground and sits on a preformed concrete stool
- Easy and clean access for operation and inspection



STORMBRAKE

VORTEX FLOW CONTROL SYSTEM

wrc approved PT/398/0217

A new force in vortex flow technology

Vortex Flow Controls (VFCs) are commonly used in drainage systems to regulate the storm water runoff from urban areas. Through the use of vortex flow technology, FP McCann's StormBrake™ provides the solution to a variety of stormwater management problems. These include accurately controlling storm/surface water flow, minimising upstream storage requirements and reducing the risk of blockages compared to traditional orifice plates.

WHAT IS VORTEX FLOW TECHNOLOGY?

Vortex flow technology is based on the principle of a vortex hydrodynamics, where under sufficiently high upstream water levels a vortex is induced in the flow by the device. The vortex motion results in significant energy loss, creating a pressure drop across the device and restricting the discharge leaving the outlet. The geometric properties of the device control the amount of flow restriction and can be tailored to suit the design conditions for a specific site.



Low water level in the flow control chamber

BENEFITS

- Reduces the amount of upstream storage required, minimising the cost of providing attenuation facilities
- Minimal maintenance required after installation. FP McCann's StormBrake™ is self-activating and function without any mechanical components
- Outlet clearances up to 6 times larger than an equivalent orifice plate, significantly reducing the risk of blockages and the associated maintenance costs
- Accurately designed to meet a wide range of design conditions:

  - flows up to 40l/s;

  - heads up to 2m

- Contains a bypass door which can be manually opened at ground level using a pull cable to allow easy access for inspection or blockage removal

For design conditions outside of this range, please contact FP McCann directly



STORMBRAKE™

VORTEX FLOW CONTROL SYSTEM

DESIGN

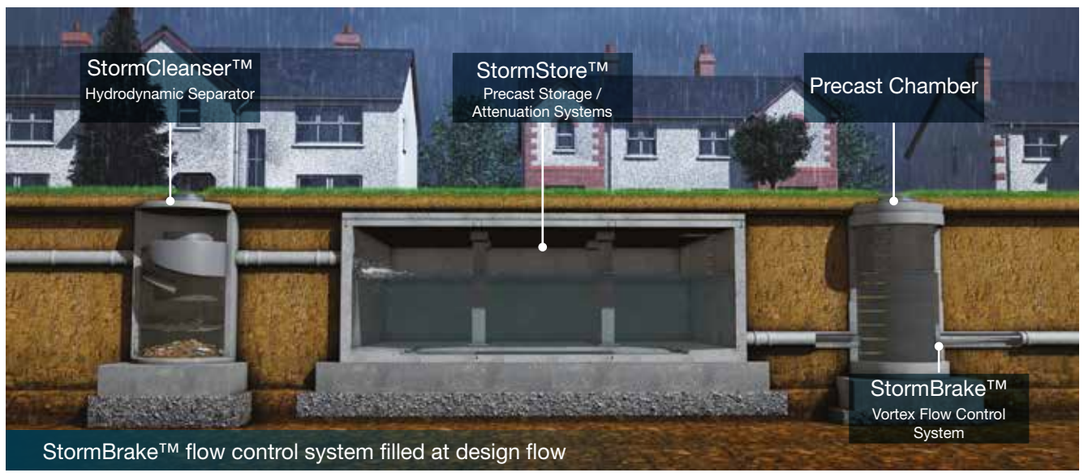
FP McCann's StormBrake™ is manufactured using grade 304L / 316L stainless steel for increased durability, strength and resistance to corrosion and chemical damage. It consists of 3 main parts: an inlet section, a vortex chamber and an outlet. Each part can be configured to provide the most efficient solution to specific site requirements.

Each StormBrake™ is fitted with a pivoting bypass door on the front face in line with the outlet pipe. A stainless steel wire cable is attached to the bypass door and extends to the top of the manhole chamber. Upon pulling the cable the bypass door rotates and moves upwards, revealing a clear straight-through channel between the manhole and the outflow pipe. In the event of the StormBrake™ becoming blocked by debris, the bypass door allows fast discharge of water out of the chamber for maintenance.





StormBrake™ flow control system at low flow



StormBrake™ flow control system filled at design flow

FLOW STAGES

The performance of FP McCann's StormBrake™ is determined by relating the upstream head to the outflow leaving the device. Its performance is characterised by a head-flow curve, which produces a unique 'S'-shape, corresponding to the following three phases of flow:

(i) Pre-vortex phase – hydrodynamics governed by orifice flow. The flow generated by the upstream head is not large enough to induce a vortex in the StormBrake™. This phase occurs until the flush-flow point is reached.

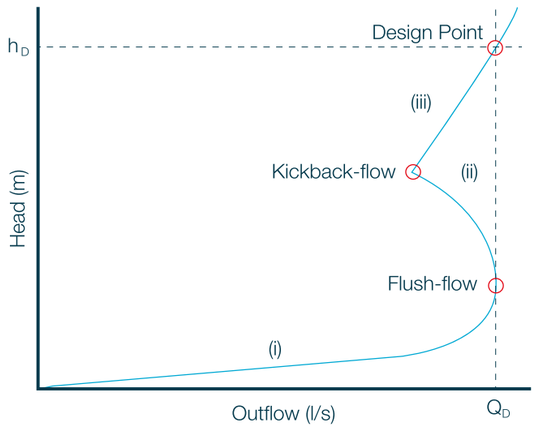
(ii) Transition phase – flow throttling initiated. Vortex continually
forms and collapses, resulting in significant energy loss and lower flow rates despite increasing upstream head. This phase is bounded by the flush-flow and kickback points.

(iii) Vortex phase – vortex fully formed with central air core. The air core imposes a quasi-physical flow restriction, reducing the available area in the pipe for outflow.



By changing the geometry of the StormBrake™, the positions of the flush-flow and kickback points can be tailored to suit the clients' needs. For example, the curve below is ideal for situations
where upstream storage capacity is limited. The flush-flow point occurs at the design flow, allowing for maximum discharge of water during the early stages of a storm, therefore minimising upstream storage requirements.

VFC HEAD-FLOW CURVE





TESTING

FP McCann's in-house development team test the StormBrake™ using a full scale test facility. The test-rig is constructed of the same components that would be used on site, increasing the accuracy and realism of the tests. The team works closely with university researchers to apply state-of-the-art experimental methods and computational fluid dynamics to the development process. To date, over 2.5 million litres of water has been used to characterise the performance of the StormBrake™. This volume is constantly increasing, due to continual development and rigorous hydrodynamic characterisation, ensuring maximum product performance to meet the requirements of each specific site.

INSTALLATION

1) Position the StormBrake™ so that the inlet is at the bottom and the outlet surround is resting on the inside of the outlet pipe. Mark the locations of the mounting points on the chamber wall;

2) Using the marked locations, drill holes to the required diameter and depth for the supplied masonry anchors. Fix the anchors to the drilled holes.

3) Attach the StormBrake™ to the anchor points, ensuring the neoprene gasket is flush with the chamber wall, and fasten the device by tightening the bolts. This will compress the neoprene gasket to provide a watertight seal between the device and the wall.

4) Fix the stainless steel wire cable from the bypass door to the underside of the manhole cover, vertically above the device. A secondary bracket is supplied and should be fitted halfway up the chamber to guide the bypass door cable in deeper chambers.

5) Adjust the length of the bypass cable accordingly, so that it reaches ground level whilst ensuring the bypass door can open if required.

STORMCLEANSER™
HYDRODYNAMIC SEPERATOR

FP McCann has designed and developed the enhanced StormCleanser™ for the treatment of urban catchment stormwater run-off.

The StormCleanser™ provides a cost-effective solution for designers, engineers and contractors involved in the provision of Sustainable Drainage Systems (SuDS). This unit has no moving parts, requires no power, and is constructed within standard precast concrete chambers.

The standard units come factory fitted in precast chambers and could also be installed on-site as required. The modular stainless steel built assembly is designed to provide installation simplicity. The separator internal assembly is fabricated out of stainless steel (304L/316L), per BSI BS EN 10088-2-2014. Stainless Steel material grade and composition, provides exceptional longevity due to high corrosion resistance. The lifespan of the internal assembly outlasts the lifespan of a typical precast concrete structure (100+ years).

The enhanced StormCleanser™ design allows for an inlet at varying angles with respect to the outlet. Moreover, the design also enables configuration with multiple inlets, at different orientations and of various sizes. The symmetric inlet design provides the freedom of clockwise or counter-wise flow direction, and allows the vortex formation with minimal hydrodynamic losses and turbulence.



Fixed flow direction separators tend to lose efficiency especially when a higher flow inlet is placed ahead of a lower flow inlet. The changeable flow direction provides drainage engineers the freedom to set the desired orientation of multiple inlets. StormCleanser™ allows for preferential flow direction of the main inlet, providing optimum performance for a wide range of configurations. StormCleanser™ is developed with state-of-the-art hydraulics technology, using Computational Fluid Dynamics (CFD) modelling and full-scale experimentation.





OPERATION

The StormCleanser™ is specifically designed to remove suspended solids, hydrocarbons, and floatable debris from the stormwater run-off. Water and pollutants enter the system via the inlet pipe, where the internal geometry enables low energy forced vortex flow patterns. This allows the floatables to gather and solids to settle to the bottom of the treatment chamber for subsequent removal.

Settled sediment is retained within the sump storage of the unit, allowing easy access for suction cleaning. Re-suspension of the solids is minimised by the provision of a baffle plate (Catch Skirt), positioned above the sediment storage sump. A central core allows for convenient suction hose entry down to the sump for cleaning and maintenance. If there is a stormwater surge in excess of maximum treatment flow rate, it overflows a weir, bypasses the treatment zone and directly discharges through the outlet pipe. This helps to minimize the effects of scour within the treatment region and prevents wash out of retained sediment downstream.

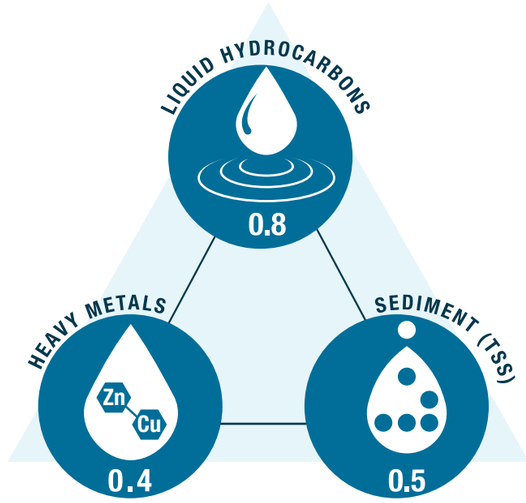
FEATURES

- Developed at inhouse high-flow Hydraulic Rig, and rigorously tested against actual rainfall inlet conditions
- High retention at most frequent rainfall events per annum
- High treatment flow rate to size ratio preventing oversized separators in the drainage design i.e. minimise footprint
- Wide range of chamber sizes (Ø1200 – Ø4000mm) and pipe sizes (Ø150 – Ø900mm)

APPLICATIONS

- SuDS based drainage networks
- Housing Developments
- Retail Parks
- Commercial Centres
- Leisure Facilities
- Industrial Developments
- Highway Drainage Products
- Car Parks, Roads, Motorways and Trafficked Areas
- Existing surface water sewer discharges

SuDS POLLUTION MITIGATION INDEX (PMI)



- Tested using extremely fine sand particles starting from 2µm
- Modular and innovative design for multiple inlet orientation
- Choice of flow direction providing optimal configuration performance
- Complies with SuDS legislation

SPECIFICATIONS

MODEL	TANK DIAMETER	MAX TREATMENT FLOW RATE	PIPE SIZE	MIN. SEDIMENT STORAGE CAPACITY	MIN. OIL STORAGE CAPACITY	MAX. HEAD LOSS AT TREATMENT FLOW RATE
	(mm)	(L/s)	(mm)	(m^3)	(L)	(mm)
PRE-SC1200	1200	43	300	0.50	320	240
PRE-SC1500	1500	67	375	0.82	630	300
PRE-SC1800	1800	96	450	1.23	1085	360
PRE-SC2100	2100	131	525	1.75	1725	420
PRE-SC2400	2400	172	600	2.38	2575	480
PRE-SC2700	2700	217	675	3.13	3670	540
PRE-SC3000	3000	268	750	4.01	5035	600
PRE-SC3600	3600	387	900	6.20	8703	720
PRE-SC4000	4000	477	900	8.00	11938	800

Notes:

- MTFR is per WRc specified Weighted Annualised Removal Efficiency of at least 50%, for a particle size distribution (PSD) with a D_{50}: 63µm and density of 2650 kg/m^3
- Customized solutions such as: oriented inlet, multiple inlets, and different pipe sizes available as required
- Sediment storage capacity could be extended as required, per the desired maintenance frequency

STORMCHANNEL™

FP McCann's StormChannel™ is a heavy duty, precast concrete slot drainage channel designed to remove surface water from many areas, including roads, motorways, car parks, industrial, commercial and residential areas. This helps to prevent flooding and run-off.

FP McCann offers two types of StormChannel™ slot drain:

1. A precast concrete bullnosed kerb drainage channel has a linear slot drain and a profiled, oblong drainage channel.
2. A standard precast concrete drainage channel with an interrupted slot and stabiliser bars for increased stability.

PRODUCT BENEFITS

- Quick installation
- Minimal maintenance
- Excellent flow rates even at zero or shallow gradients
- Modular system
- Robust product
- Economical product
- Integrated watertight seal
- No concrete surround required
- Conforms to EN 1433

SCAN THE QR CODE TO SEE OUR STORMCHANNEL™ INSTALLATION VIDEO

CAST IN GRATING



A unit with cast in grating to allow easy cleaning and maintenance

PRODUCT FEATURES

- Resilient up to class D400kN, E600kN or F900kN
- 300 and 400 Standard Stormchannel™ tested to Class E600
- 2% surface slope to the slot
- Supplied with interrupted slot only – slot width 30mm
- Spigot and socket end for correct alignment and joining

Additional connections can be provided on request to this precast slot drain solution. Junction boxes and sump units are also available in all sizes.

RANGE OF SIZES



300 Standard | 400 Standard | 400 Kerb | 500 Standard | 600 Standard

HOUSE INSPECTION CHAMBERS

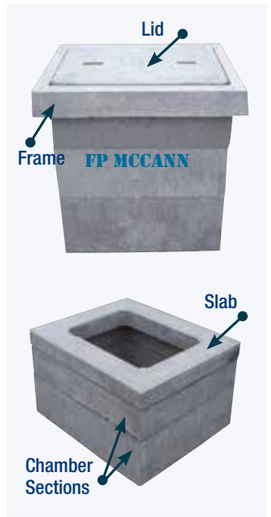


FP McCann's precast concrete inspection chambers are available in two sizes: 600 x 450 and 1200 x 750mm. Manufactured in accordance with BS EN 1917 / BS5911, each section has a tongue and groove joint and can be sealed with a sand and cement mortar or bitumen sealant, in the same fashion as a circular manhole and chamber ring.

To complete the chamber, FP McCann has a range of covers and ground level components. FP McCann's frame (also known as a surround) and lid combination is designed to sit flush with the top course, such as tarmac or concrete surfacing or in grassy areas.

The lid itself features an anti-slip chequered finish and recessed lifting points to allow removal from the frame by use of standard lifting eyes.

Chamber Size (mm)	Cover
600x450	Frame and lid places straight on top of unit
1200x750	Light or heavy duty below surface slab with 600x600 access, allowing use of standard steel access hole cover



Description Units (mm)	**Weight per unit (kg)	No. of units per pallet	Wall/ Slab thickness (mm)
600x450x150 section	40	12	40
600x450x225 section	65	8	40
600x450x300 section	85	6	40
600x450x100 frame	45	8	100
600x450x55 lid	50	16	55
1200x750x150 section	120	6	75
1200x750x250 section	200	4	75
1200x750x80 cover slab (600x600 access)	185	6	*80

* Effective thickness
** Approximate weights



NOTE: For HIC's placed in depths greater than 1.5m, we recommend the use of a concrete surround.

GULLIES & SLABS RANGE



GULLIES

Dimensions (mm)			Nominal Weight (Kg)	Approx. Capacity (litres)	No. per load
Diameter Internal	Depth	Outlet			
375	750	150	180	51	66
375	900	150	200	67	66
450	750	150	215	71	60
450	900	150	255	95	60
450	1050	150	270	118	60
450	1200	150	280	142	60

PRODUCT BENEFITS

- The seal has been cast-in, thus preventing loss or damage on-site
- An integral seal and rodding eye for universal sealing characteristics
- The rodding eye closure has been recessed into the concrete to help eliminate dislodgment
- Reduced thickness, giving reduced weight and a smaller footprint for better vehicle utilisation
- Improved system that helps prevent any discharge of oil
- The gully is fully universal, suitable for all plastic and clay drainage products from 160mm to 186mm diameter
- Does not lose shape
- Does not float (self weight inhibits flotation)

GULLY COVER SLABS

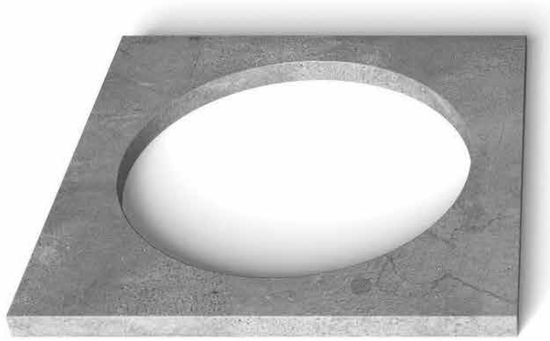
Dimensions (mm)	Standard	Horseshoe	65 Standard	65 Horseshoe
Length (mm)	750	600	750	600
Width (mm)	650	650	650	650
Thickness (mm)	100	100	65	65
Weight (kg)	70	58	51	37
Hole Size (mm)	450	450	450	450
Qty/Pack	12	12	12	12

The Gully Cover Slab is designed as seating for a gully grate

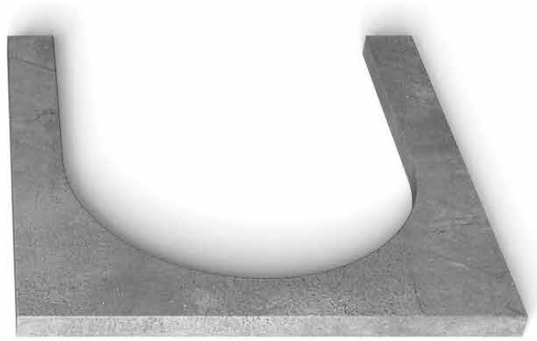
PRODUCT BENEFITS

- Quicker to lay, ensuring reduced labour costs
- Use on top of 450mm diameter gully
- Eliminates laying engineering bricks on-site
- Sits flush to kerb for enhanced stability
- 100mm and 65mm thick single piece units available
- Eliminates brickwork vertical joint 'weakspots'
- Greater stability than brickwork
- Quality product produced by vibration process
- Compressive strength similar to Class B.Eng. bricks

STANDARD GULLY COVER



HORSESHOE GULLY COVER



Note: Gullies and Gully cover slabs manufactured in accordance with BS 5911-6

FALL ARREST SYSTEM

AWARD-WINNING SAFETY SOLUTION FOR MANHOLE CONSTRUCTION

Clients, consultant engineers, contractors and suppliers all have a duty to mitigate hazards on-site, whenever reasonably practicable. One such hazard identified is the risk of operatives falling through manhole openings, particularly during the construction process and also in follow-up maintenance work.

Working with partners Severn Trent Water, engineer Grontmij and contractor to the water sector, Morgan Sindall plc, FP McCann has designed an award-winning safety solution. Our fall arrest system allows for safe working around the manhole opening prior to the fitting of the ironwork.

In the construction of a manhole, operatives often work unprotected from the opening at surface level when the final stages of completion occur. This includes the final brickwork up to the manhole frame and the mortar bedding of the frame itself.

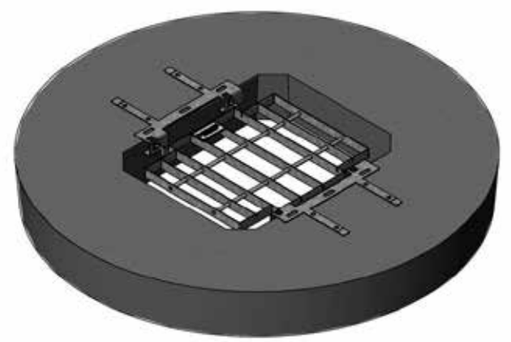
With most standard cover slabs, the access point for man entry is open and it is left to the contractor to cover on-site. In many site situations, these openings remain for a number of days while phases of work are completed. Our fall arrest system immediately addresses this problem. The future production of all standard access cover slabs will incorporate the optional protective grid, which will remain in the slab even when the final D400 steel cover and frame are set in place at surface level.

The galvanised mild steel grid is available in four standard sizes:

- 610mm x 610mm
- 675mm x 675mm
- 750mm x 600mm
- 1200mm x 675mm

The fall arrest grid is seated on load-bearing corners cast into a standard range of manhole cover slabs. If a temporary fall arrest system is required, once the construction of the manhole is complete, the grid can be removed prior to the fitting of the ironwork. Alternatively, it can be a permanent fixture, left in place beneath the manhole lid. The spacing between the bars allows for ease of inspection and jetting of the manhole base during maintenance work.





RAIN HARVESTING CHAMBERS

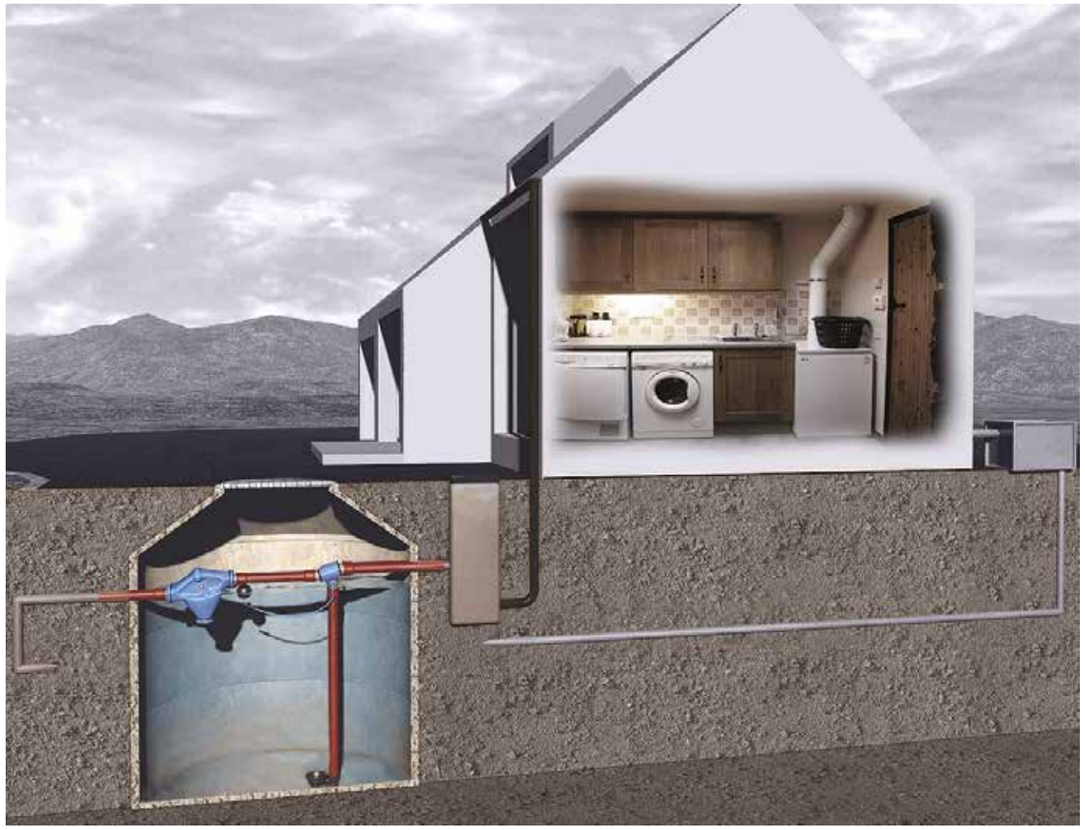
FP McCann's rain harvesting chamber is a bespoke precast water storage chamber that is compatible with water harvesting systems for residential, industrial/commercial and agricultural installations. Capturing rainwater for re-use offers significant cost savings for the user and benefits the environment by increasing water resources and further enhancing water amenity. The chamber complies with Environment Agency SuDS (Sustainable Urban Drainage System) directives.

The basic concept of harvesting rainwater is simple - rainwater is mostly collected from the roofs of buildings - it flows through gutters and downspouts and is then filtered and collected by a storage tank. From the tank, it can be recirculated or treated to produce a better quality of recycled water.



VOLUME CAPACITY OF STORAGE CHAMBERS

Internal Diameter (x1000mm)	Capacity (Litres)	Weight (kg)
DN1800	1200	1800
DN1800	1500	1900
DN2400	3000	5900
DN2400	5000	7250
DN2400	7000	8700





ADD-A-STEP®

MODULAR MANHOLE LADDER

ADD-A-STEP® modular ladders are designed to allow easy access to chambers and are approved for use in potable water, waste water, highly corrosive and general construction applications. They are a cheaper, safer and a more user-friendly alternative to traditional stainless steel ladders.

The ADD-A-STEP® modular ladder system is designed to provide a product that can be supplied off-the-shelf for next day delivery. Each module of the ADD-A-STEP® ladder consists of two stiles, one rung and two retaining clips. Each stile measures 360mm long, 80mm wide and 32mm thick maximum dimension. The ladder width outside the stiles (upright) is 435mm.

The ADD-A-STEP® ladder has 30mm diameter rungs at 300mm centre spacing and the width or foot space inside the stiles is 375mm. Two types of wall brackets are supplied as standard, one for circular and one for square chambers. The ladder can be assembled on-site using the number of modules to achieve any length and can be trimmed to length using a standard hand saw without the need for expensive cutting equipment.

ASSEMBLED IN MINUTES

STAINLESS STEEL PULL-UPS AVAILABLE TO SUIT EX STOCK

BENEFITS

The modular design allows for more economical transportation than fully assembled ladders. The ADD-A-STEP® ladder requires no maintenance other than occasional cleaning with a pressure hose, if desired. The ladder has excellent insulation properties so it can be used in applications where electrical cables are present. Constructed from polybutylene (PBT), which is UV tolerant, it is a non-corrosive and a fully recyclable material; it can easily be cut on-site with no harmful shards or dust given off.

The ADD-A-STEP® ladder helps to reduce potential health and safety risks. At approximately 5kg per linear metre, the ladder is significantly lighter than galvanized or stainless steel alternatives and its yellow colour gives it high visibility properties, making it clearly visible when the manhole cover is raised. It is also a cheaper and more user-friendly alternative to traditional stainless steel manhole ladders. The ADD-A-STEP® system is fully compliant and tested to BS EN 14396, and is the only CE marked modular ladder system in the UK.



PLASTIC ENCAPSULATED LADDERS & RUNGS

This system ladder gives the user benefits of a durable plastic encapsulated ladder without the need to specify an exact length or fit on-site. In addition, a single specification can be used for all depths of access.

PRODUCT SPECIFICATIONS

BS EN 13101 Plastic Encapsulated Steps

WIS 4-33-01: 1990 Polypropylene Encapsulated Steps

PRODUCT APPLICATIONS

Concrete manholes and inspection chambers.
Renovation of existing structures.

MATERIALS

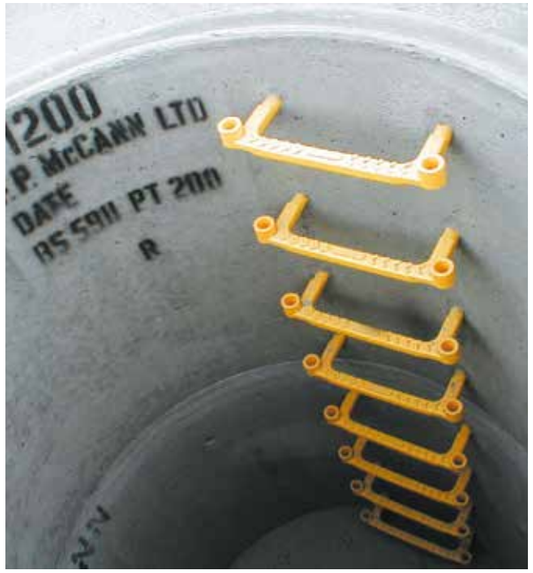
The plastic encapsulated ladder has a bright yellow coating and is made from high impact virgin polypropylene copolymer plastic. If the ladder is to be subject to prolonged exposure to daylight then black or UV stabilised material should be specified. It is reinforced with structural steel.

PERFORMANCE

Pull out load:	7.5kN minimum, when fitted in accordance with manufacturer's instructions
Deflection under load:	5mm maximum at 2.5kN
Permanent Set:	0 mm at 2.5kN
Impact:	20kg weight from 1 metre, no cracking
Chemical Resistance:	At least pH2 to 12
Integrity of plastic:	2M ohm at 500 volts DC
Thickness of plastic:	3mm minimum
Minimum cross section:	25mm diameter

PRODUCT BENEFITS

- Excellent corrosion resistance
- Visibility
- No sharp edges
- Eliminates need to specify exact length or fit on-site
- Steel reinforcement gives predictable deflection under load without causing brittle failure





HANDHOLD ENTRY POLE SYSTEM

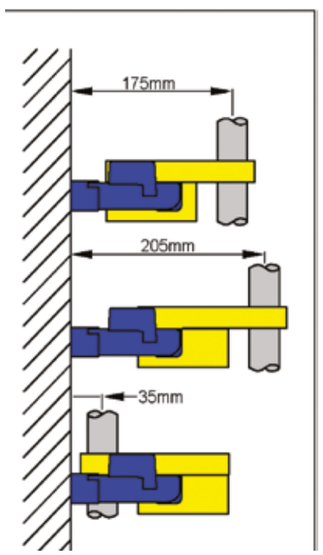
The handhold entry pole system is suitable for aiding maintenance engineers in the initial entry into a manhole from the surface level. Once fitted, the entry pole is a permanent fixture within the manhole, which is stored in the lowered position beneath the level of the cover. When required, the entry pole can be easily extended by simply hooking the easy-to-reach loop located at the top of the pole, pulling the handle upwards and twisting, locking into position. The handhold then provides a stable support to aid the entrance of the manhole, as well as a clear visual indication of the location of the manhole, when open. This helps prevent injury of other people in the area. Once the engineer has used the entry pole to aid their return to the surface, the pole is simply twisted to unlock it from the raised position and lowered back into the manhole, ready for the next time it is needed.

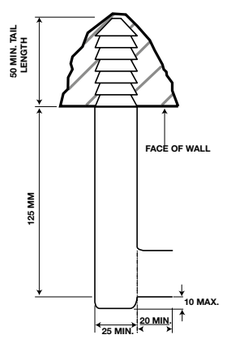


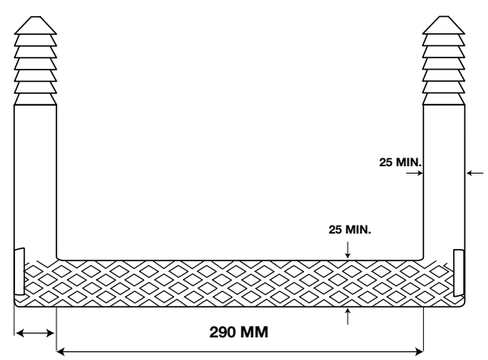


SPECIFICATION

The handhold has a pole length of 1200mm and can be assembled to give three different distances from the pole to the wall. This is designed to accommodate different cover positions.







PRODUCT BENEFITS

- Helps the user find the first step safely
- Creates visual aid to indicate location of manhole to other people in the area
- Easy to fit
- Easy to raise and lower
- High strength for ultimate safety
- Low cost
- Can be fitted to any Caswick step
- Two projections for round or flat walled manholes

HEADWALLS

FP McCann's precast concrete headwalls provide an ideal end connection point to outfall pipes into open watercourses such as rivers, culverts, collection and balancing ponds. They are a very efficient alternative to intrusive shuttering of soil embankments and costly on-site formwork with ready-mixed concrete, making them particularly suitable for use in hard-to-reach locations and in environmentally sensitive areas.

Where time constraints exist such as in tidal flow situations, concrete headwalls can be quickly positioned, secured and backfilled, providing immediate stability around the point of water discharge.

The FP McCann headwall range can accommodate pipe sizes from DN150 to DN2100 and is suitable for usage with box culverts. Additionally, accessories such as flap valves, penstocks, silt traps, handrails and safety grating can be added as part of the specification.

A front weir wall can be fabricated onto any of the standard headwall range, on request, and installation is quick and easy.



KEY SITE SAFETY BENEFITS

Safety hand rails can be used with our full range of headwalls. Health and safety risks are minimised because the construction work takes place off-site and installation is quick and easy.

Please note: Bespoke grates and handrails are available on request. Please contact FP McCann for information on correct installation



SMALL HEADWALL



MEDIUM HEADWALL



LARGE HEADWALL



XL-T4 HEADWALL



XXL-T2 HEADWALL



PRODUCT BENEFITS

- Headwalls are designed to EC2 and manufactured to BS EN 13369. (Full design calculations available to illustrate design assumptions).
- Prefabricated off-site
- Speedy and efficient to install
- Durable, long-lasting and low maintenance
- No on-site shuttering or formwork required
- Provides immediate stability and reduces soil erosion
- Valve and safety accessories available
- Cost-effective solution
- Significantly reduces the potential for floating debris to block the watercourse
- Installation with 2 or 3 lifting anchors
- Flap valves and grates available
- Reduces carbon footprint as no need to bring in lorries to site to pour in-situ
- The extended toe unit is available for all sizes making the entire headwall range compliant with Sewers for Adoption (SFA) and Sewers for Scotland
- Headwalls meet the requirements indicated in Fig. C.5 (typical details) of Sewers for Adoption

Headwall Range	Up to & including Pipe Sizes	Max Pipe O.D. mm	Approx. Weight (Kg)
HW Small 100	300	450	1100
HW Small 150	300	450	1390
HW Medium 100	450	630	1540
HW Medium 150	450	630	2020
HW Large 100	900	1080	3020
HW Large 200	900	1080	4740
HW XL-T1	1500	1800	Part A / B 4725
HW XL-T2	1050	1260	Part A / B 4095
HW XL-T3	675	885	Part A / B 3465
HW XL-T4	375	505	Part A / B 2646
HW XXL-T1	2100	2460	Part A / B 10,150
HW XXL-T2	1500	1800	Part A / B 9205
HW XXL-T3	1050	1260	Part A / B 8421
HW XXL-T4	525	675	Part A / B 6915

NB: The above dimensions are in mm.

ACCESSORIES

Please note: Bespoke grates and handrails are available on request. Please contact FP McCann for information on correct installation



TYPICAL FRONT WALL GRATE



TYPICAL BASKET GRATE



TYPICAL HANDRAIL



MECHANICAL CONCRETE PIPE LIFTER

Fit a pipe lifter to your excavator and you can lay concrete pipes in around half the time with less cost and less hassle – but with greater safety.

To buy or rent the Pipe Lifter, contact BPDA's supply partners visit: concretepipelifter.co.uk for details

Safer. No operative needed on vehicle during off-loading or in trench during pipe laying.

Easier. Simple to use. No special equipment & minimal training required.

Faster. Around 50% saving on installation time.

Cheaper. Fewer operatives plus greater productivity.

The Concrete Pipe Lifter makes light work of the installation of waste water pipelines. Within seconds, it can be attached to your excavator using a quick-hitch coupling. There are no hydraulic links or additional energy requirements.

There is no need for anyone to stand on the bed of the vehicle during off-loading (the biggest cause of accidents during pipe laying). There's no need for anyone to stand in the trench during installation and there are no slings or chains to trap hands and fingers. The whole operation is around 50% faster and you can reduce the size of your pipe laying team, so costs are lower too.

The Concrete Pipe Lifter is suitable for standard UK specification BS EN1916 concrete pipes from DN300 to DN1200.

The Manhole Lifter is a companion device that makes lifting manhole rings a safe and easy, one-man operation. It eliminates the risk of vehicle falls during off-loading. There are two versions available for precast concrete manhole rings from DN900 to DN1800 and from DN2100 to DN3000. It's capable of lifting rings from 250 mm to 1000 mm deep.



KNOW YOUR LIFTERS

All of the precast concrete drainage products manufactured by FP McCann feature a lifting system to allow safe off-loading and installation in an efficient manner. Each system is suited to each type of product.



The information below will allow you to determine what lifting attachments are required. This list is not exhaustive and may be subject to change. Please contact FP McCann's technical department if you are unsure about any aspect of lifting. Please be aware that it is the contractor's responsibility to ensure all lifts are safe and compliant with legal requirements.

If you do not have the correct lifting equipment, please contact our sales department who will be happy to assist. **Please ensure you have ordered lifting equipment to arrive on-site, ready for when your load is delivered!**

Unless otherwise stated, FP McCann will only supply the eyes or attachments. Correct chains will need to be sourced by the contractor. Unless otherwise specified, access to the trailer will be required to insert the attachments.

PRODUCT	LIFTERS REQUIRED		NOTES
900 to 1800 Standard Chamber Rings and Soak-away	3No M24 Lifting Eye Pins inserted into holes through the ring wall.		Eyes should be on the INSIDE of the ring.
2100 to 3000 Standard Chamber Rings and Soak-away	4No M30 Lifting Eye Pins inserted into holes through the ring wall.		Eyes should be on the INSIDE of the ring.
3600 Standard Chamber Rings	3No RD30 Lifting Loops screwed into the top face of the ring		Please be aware that the loops are not intended for prolonged use.
4000 Standard Chamber Rings (2 part)	4No RD36 Lifting Loops screwed into the top face of the ring		Please be aware that the loops are not intended for prolonged use. Instructions for handling are shown on the product itself.
1200 to 1800 Wide-Wall Chamber Rings	3No 5t Spherical Head Clutch		Attach to the OUTSIDE of the ring.
300 to 1200 Standard Pipes and Fittings	Pipe Grab (below) or Slings		Slings are <u>not</u> supplied by FP McCann. **DO <u>NOT</u> USE HOOKS!** These can damage the pipes and can be dangerous!
1350 to 2100 Standard Pipes and Fittings	10t Spherical Head Clutch and Chain Sling Set		Clutches and chains allow safe lift and easy installation of units.
2400 Standard Pipes and Fittings	20t Spherical Head Clutch and Chain Sling Set		12-20 tonne shackle 2 leg lifting chain only
All Diameters of Standard Cover Slabs	None		Chain Hooks can be attached directly to all of our standard slabs without further equipment required.
Small Headwalls	2 No. 24mm Lifting Loops		Please be aware that the loops are not intended for prolonged use. Instructions for handling are shown on the product itself.
Medium & Large Headwalls	3 No. 24mm Lifting Loops		

MECHANICAL GRABS - The quicker, easier and safer option for handling rings and pipes. These attachments connect to site plant and allow off-loading and installation without any need for access to the trailer bed. Mechanical grabs are available for pipe diameters DN300 to 1200 and for ring diameters of DN900 to 3000. For further information, contact your sales representative. Easi-bases, headwalls and flow-control chambers come supplied with the correct lifters ready for use. Catchpits should be handled with a mechanical grab. All lifters supplied by FP McCann come with appropriate certification and are ready for use. Lifters should be incorporated into the contractors lifting equipment inspection regime under LOLER regulations or disposed of after use.

SAFE LIFTING OF STANDARD PRECAST CHAMBER RING SECTIONS

When lifting chamber ring sections with lifting eyes, it is important that the eyes are passed from the inside of the ring and the nut is attached to the outside of the ring to secure the pin. Hooks must be attached to the eyes on the inside of the chamber and lifted in a safe and controlled manner.

Lifting with the pins installed in any other way is dangerous and should not be attempted in any circumstances.

Lifting with the eyes on the outside is NOT safe and can crush the concrete section. When using lifting eye bolts with the nut not attached, the ring can become damaged or the eyes can pull out of the concrete.

Please be aware that precast concrete rings are fragile. They have thin walls and are not reinforced, and can be easily broken when handled incorrectly.

INCORRECT



Eyes passed through from the outside with hooks connected to the outer face of the ring. Pins can come loose if nuts not applied or the self-locking mechanism has not engaged and the concrete can be crushed by the chains.

CORRECT



Eyes passed through from the inside with the plate and nut applied to the thread on the outside, or self-locking mechanism engaged. Hooks are connected to the inside of the ring to allow for a safe lift with straight chains.

For safe lifting in situations when access to the product is restricted (i.e. when stacked high or on a trailer bed, a mechanical grab should be employed). Wide wall chamber rings are lifted via a different method (see page 18).

Bespoke chamber components such as Easi-Bases™ and StormBrake™ Flow Control Chambers will feature a separate handling method. Reference should be made to appropriate drawings or handling information.

STORMSTORE™ RANGE OF TANKS & CHAMBER SYSTEMS

FP McCann's Stormstore™ range of precast tank and chamber systems is the most extensive in the UK. Products manufactured include StormTank™ bespoke precast concrete panel system, StormChamber™ bespoke precast concrete chamber system, a precast concrete storm and waste water management system called Modular Tank System and StormHold™ stormwater management system. Complementary products include StormCleanser™ hydrodynamic separator, StormBrake™ vortex flow control system and StormChannel™ heavy-duty precast concrete slotted drainage channel.

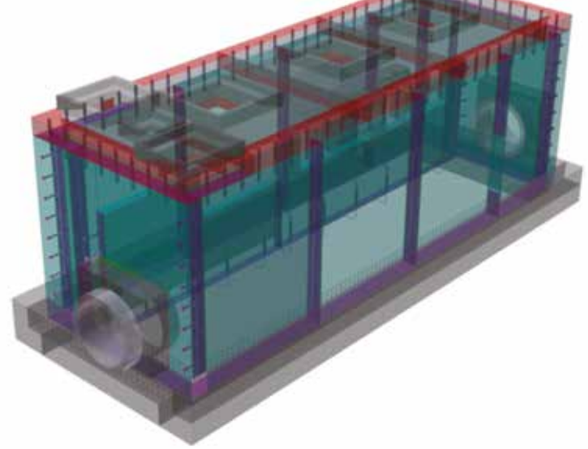
KEY ADVANTAGES OF OUR RANGE

- From receiving the specification, designs can be returned within 2 days
- Complete design package provided, including calculations and drawings
- Manufactured off-site, including factory-fitted pipework and flow control connections, ensures consistent quality, lower construction costs, faster installation and lower health and safety issues
- Design service life of 100 years
- Overall cost of the project can be estimated no matter how complicated the design
- Bespoke designs can be used for reproductions and for future alterations
- No vertical shuttering required, unless an in-situ floor is installed
- Complies with all relevant British Standards and Eurocodes



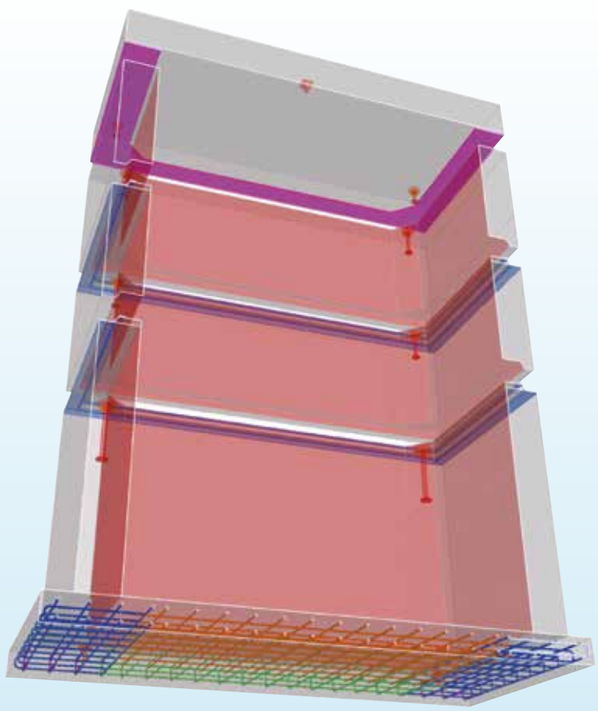
PARAMETRIC DESIGN

ONE DESIGN FOR ALL STRUCTURES



FP McCann's precast tank and chamber systems are designed using parametric 3D modelling. Specification details such as length, width, depth and loading category are entered into our in-house system by our design team; along with additional options such as pipe entries, which will instantly produce the drawings, schedules, price etc.

All multi-purpose chamber and panel systems are designed to BS EN 1992 and are CE marked.



THE DESIGN PROCESS...

DESIGN PARAMETERS ARE ENTERED ON THE SYSTEM BY FP MCCANN

↓

RUDIMENTARY DETAILS PRODUCED, INCLUDING PRICE AND DRAWING

↓

ONCE APPROVED, ADDITIONAL DESIGN DETAILS ARE ENTERED ON THE SYSTEM

↓

SYSTEM PRODUCES AUTOMATIC PRODUCTION DRAWINGS, STEEL SCHEDULES, CUSTOMER DRAWINGS AND DEDICATED CALCULATIONS

↓

APPROVAL OBTAINED FROM CLIENT BY SIGNING DRAWINGS AND CALCULATIONS

↓

PRODUCTION COMMENCES

STORMCHAMBER™

MULTIPURPOSE CHAMBER SYSTEM



FP McCann's StormChamber™ multipurpose chamber system is a single piece chamber system made up of a base unit, risers and cover slab to suit chamber depth and the specific application. A 3D dimensional drawing is available on request. This flexible modular system is suitable for most tank and chamber applications.

STORMCHAMBER™ – INTERNAL DIMENSIONS

1250 x 1250mm	2500 x 2000mm
1500 x 1500mm	2500 x 2500mm
2000 x 1500mm	3000 x 2500mm
2000 x 2000mm	3000 x 3000mm

The above size range do not generally have toe units.

Sizes above 3000x3000mm up to a maximum size of 5000x3500mm. The length and width of these chambers can be adjusted up/down in 250mm increments to suit requirements. The height of the chamber is flexible up to 6 metres, with 8 metres possible, subject to calculations.

If chamber dimensions are critical and don't fit with the above range, we can usually offer a solution.

TYPICAL CONSTRUCTION/ INSTALLATION

(Subject to specific application)

- Base unit is placed on level concrete blinding or type 1 sub base
- Riser unit/s are placed onto the base unit, if required
- Hydrophilic swell, butyl sealant and bearing strips are placed in the joint between the base unit and riser unit/s
- Internal wall is fitted at factory or at site and is connected with threaded rod, nuts and washers
- Pipework is connected and backfilling takes place
- Cover slab is bedded on with high strength mortar, contained to the inside by butyl sealant strip

You should consider the overall installed cost of the chamber when taking into account all the benefits and cost savings detailed below, not the upfront material cost.

BENEFITS

- Concrete surround is not required, saving time and money on site installation. Up to 85% reduction in on-site construction programme
- Pipe penetrations are done at the factory, avoiding the need for cutting or core drilling on site
- Weir walls, flow controls etc can be factory fitted, if required. Up to 95% reduction in site man-hours for pit construction
- Virtual elimination of on-site waste
- 55% reduction in lorry movements for deliveries
- Traffic calming/ management reduction
- Elimination of need for confined space working
- Significant reduction in site noise
- Clear openings to suit requirements
- Reduces enclosed spaces work and working at depth
- Reduction in Health and Safety and Dynamic Risk Assessment issues
- Enhanced functionality - product can be designed for future alterations
- A flexible modular system with a high quality factory finish
- Greatly reduces long term maintenance costs
- Smaller units may be adjusted using alternative increments, if required



STORMTANK™

MULTIPURPOSE PANEL SYSTEM

The StormTank™ multipurpose panel system is an underground structure consisting of wall panels, an in-situ or precast concrete base and cover slab, which are assembled on-site by the contractor or an approved installer using a range of standard jointing types. The panels can be made with cast-in pipe connections, recesses and openings and have penstocks or flap valves pre-installed. Internal weir-walls, overflows, underpasses and baffle walls can also be incorporated into the structure.

This system can be used for a variety of uses such as CSO chambers, storage tanks, large size manholes, pumping stations, valve chambers etc. The main advantage of using this system is that there is no size limitation, except for the height, which cannot exceed six metres, with a two metre overburden. A detailed installation guide is available. Please contact FP McCann for further details.

PRODUCT APPLICATIONS

- Air-infiltration chambers
- Hydro-brake chambers
- Large CSO chambers
- Water storage tanks
- Pumping stations
- Attenuation tanks
- Large manholes
- ASP structures
- Sludge tanks
- Basements
- Headwalls

wrc approved™ PT/433/0119



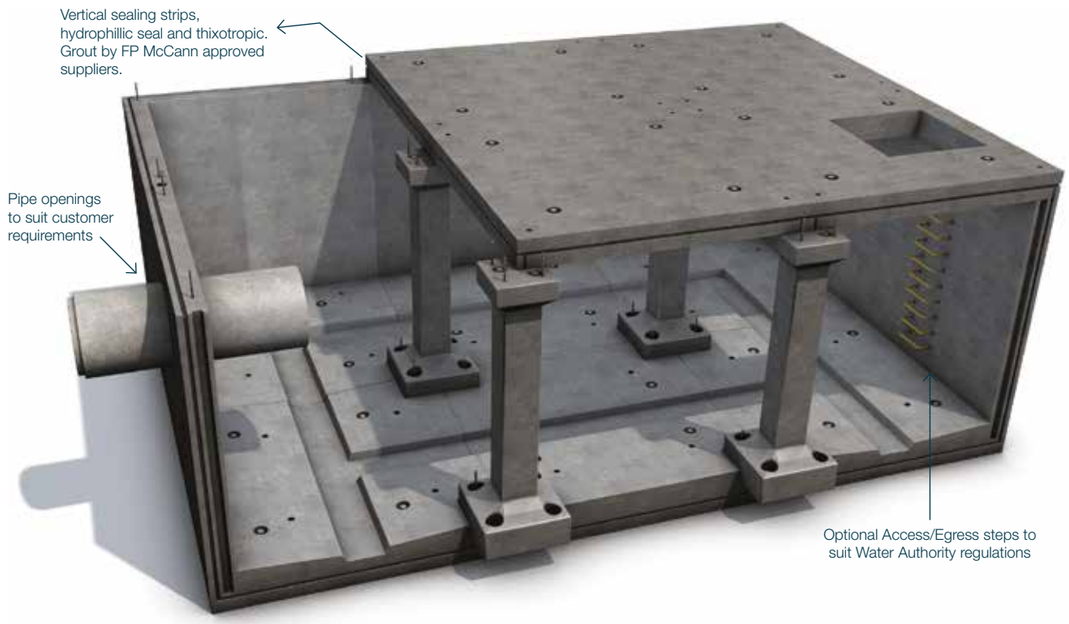




MODULAR TANK SYSTEM

wrc approved™ PT/363/0715

StormStore (storm and waste water management system) provides a multifunctional, durable solution for the detention, retention, infiltration, harvesting and treatment of water, comprising of a combination of standardised precast concrete elements, which are designed to solve your storm and waste water management needs.



DETENTION

StormStore™ provides a cost-effective solution for site applications where stormwater needs to be detained and allowed to discharge at a controlled rate.

RETENTION

StormStore™ retention systems are ideal for applications where the goal is to retain rainwater or stormwater for some type of harvest and reuse applications.

INFILTRATION

Eliminate the issues created with discharging stormwater off-site by using a StormStore™ to infiltrate stormwater into the soil for natural treatment and to replenish local aquifiers.

HARVESTING

Water harvesting is the collection, storage, cleaning and recycling of stormwater to replace or reduce the consumption of municipal potable water.

TREATMENT

Stormwater treatment options such as pre-treatment, post-treatment and oil water separators are available as stand-alone systems, as well as integration with StormStore.

BENEFITS OF MODULAR TANK SYSTEM

MANUFACTURING BENEFITS

- Manufactured locally
- Bespoke inlets and outlets
- An adoptable system which can cater for the 1 in 30 and 1 in 100 year storm event
- FP McCann uses state-of-the-art tooling to manufacture products of the highest quality
- A fully modular system encompassing inherent health and safety benefits

MAINTENANCE AND CLEANING BENEFITS

- The StormStore system excels where most other systems fail, incorporating features that provide maximum system performance and life cycles. As with all stormwater systems, inspection and maintenance of the StormStore system is vital for satisfactory performance and extended life cycle of the stormwater management system
- A self-cleansing and easy maintainable system which includes silt collection areas
- Designed to create safe walking channels during the maintenance, cleaning and inspection process
- Easily inspected visually, offering reduced inspection costs
- System provides clear lines of sight to aid health and safety during maintenance and cleaning

DESIGN BENEFITS

- Complies with BS EN 1992
- Grated inlets may also be incorporated to accommodate surface stormwater flows directly into the StormStore system, reducing the requirements for conventional site drainage components. Any grated inlets may also include pre-treatment devices for pollutant removal
- Standard units reduce design cost
- No requirement for in-situ structural topping to roof slab – offering reduced fill depths and cost savings
- Fully accessible system with the option of including step rungs or ladders
- A fully modular system that brings with it inherent health and safety benefits
- The design and performance meets CESWI 7th edition
- Standard internal heights from underside of roof slab to the channel inverts of 1500, 1800, 2100 and 2400mm. All available with either 1 in 4 or 1 in 20 benching gradients
- The system fully meets CE Marking requirements
- The system and installation is approved by WRc
- Complies with Sewers for Adoption 7th edition and Sewers for Scotland 3rd Edition 2015



- Precast elements manufactured using concrete with a DC4 design chemical class in accordance with BRE SD1
- Up to 2.5m overburden with a 10kN/m2 surcharge
- 100 year design life
- Complies with watertightness class 1 of BS EN 1992-3
- Assumed water table at roof slab level
- Suitable for use within wastewater and stormwater drainage systems

INSTALLATION BENEFITS

- Potential savings on temporary works
- Reduced disruption due to speed of installation
- No need to wait 28 days before back filling. Backfilling can follow on after installation
- No requirement for in-situ concrete topping to roof slab
- No requirement for on-site in-situ benching
- No requirement for in-situ joint-stitching



STORM-HOLD™

LARGE DIAMETER PIPE STORMWATER MANAGEMENT SYSTEM

The production of water-impermeable surfaces in construction is inevitable. This includes roof areas on buildings, car parks, loading bays and road pavements. The provision of these surfaces interrupts the natural drainage process, creating increased stormwater run-off in respect of both volume and flow rate.

In many cases, this increase in stormwater flow and volume is a problem as the local sewer or watercourse does not have the sufficient capacity to cope. This problem could be alleviated by an increase in the size of the stormwater sewer or watercourse, thus providing the capacity within the drainage system to cope with the increased surface water. This, however, may be expensive, cause major infrastructure disruption, and can often be completely unfeasible.

Legislation under Planning Policy Statement 25 and Building Regulations approved Document H3 for flood risk assessment (SuDS), has created the need for planners and developers to design and install effective stormwater management systems.

The types of systems that can be employed to overcome these issues are well documented and varied. Quite often they can be very technically demanding in their operation, maintenance and construction. The selection of a system will depend on site constraints, position, expected loading, geographical limitations and inevitably cost.

The Storm-Hold system offers a complete solution to the stormwater attenuation problem and utilises a tried, tested and approved method of stormwater storage. FP McCann can provide the complete package of design, product specification and supply of products and installation advice.

PRODUCT FEATURES

- Available in a range of sizes
- Can use and combine a number of techniques and products such as pipes, culverts, tanks, manifold systems and soakaways
- A complete solution with all connections
- Established and familiar products
- Can be laid in short lengths
- The system can be adapted to load-bearing and non-load bearing applications
- 120 year design life
- Adoptable by water companies
- Manufactured in accordance with a BSI accredited quality management system conforming to ISO 9001
- Available straight from stock





STRUCTURAL

The inherent structural strength of concrete is well documented and can be designed to meet the severest of loading criteria.

Storm-Hold systems can be tailored to suit low load situations, for example, when the tank is to be situated below verges or gardens.

BENEFITS

- System can be designed specifically to suit the application
- Quick construction using a standard joint
- No need for fabrication on-site or external specialist contractors
- Straightforward installation using known techniques, no need to retrain
- Can be installed under roads and car parks
- Can cope with construction plant loading
- Flotation is not a concern – no need for geotechnical anchors when located below the water table
- Long term solution

DESIGN

The design of the system can be tailored to suit most structural and hydraulic criteria.

RELEVANT LEGISLATION/ INFORMATION

- Planning Policy Statement 25 (PPS25) December 2009
- Department of Communities and Local Government (DCLG)
- Future Water February 2008, Department for Environment, Food and Rural Affairs (DEFRA)
- The Pitt Review, Learning Lessons from the 2007 floods by Sir Michael Pitt
- The Code for Sustainable Homes February 2008, Department for Communities and Local Government (DCLG)
- The SuDS Manual 2007, CIRIA C697
- Sustainable drainage systems - Hydraulic, structural and water quality advice 2004, CIRIA C609
- Flood and Water Management Act 2010

FP McCann's Storm-Hold systems can be designed to suit a wide range of construction projects and drainage schemes. Precast concrete attenuation components include products such as side entry manholes, stop end bends and spigot and socket end wall pipes. These products

can either be engineered into an on-line sewer pipe system or utilised off-line as single or multiple stormwater holding tanks. All FP McCann storm attenuation products comply with the requirements set out within 'Sewers for Adoption 7th Edition' and are made from Kite marked precast concrete components, which comply with the relevant Standards: BS EN 1916 / BS 5911-1 and Manholes BS EN 1917.

STORM-HOLD™

LARGE DIAMETER PIPE STORMWATER MANAGEMENT SYSTEM

EXAMPLES

Spigot and Socket Tank End Wall Pipes (Adaptor/Fitting - BS EN 1916)

- Consists of a standard 2500mm long flex pipe with a cast-in end wall. Inlet/outlet holes are generally cored into the wall

Side Entry Manholes (Junction - BS EN 1916)

- Entry shafts factory-fitted to pipes 900mm diameter and above
- Ideal for use in restrictive locations where conventional manhole build is not possible
- Can be supplied in left or right hand configuration. Access steps can be fitted, if required
- Can be used in conjunction with an end wall pipe
- Additional chamber sections or a reducing slab can be used to build height

Stop End Bends (Bend - BS EN 1916)

- Tank end access for pipes 900m diameter and above
- Access steps fitted, if required
- Drainage inlet/outlet holes cored, as requested
- Additional chamber sections or a reducing slab can be used to build height

Side Entry Manhole with Bend (Junction/Bend -BS EN 1916)

- 2500mm long Easi-Flex standard pipe with cast-in bend
- Entry shaft fitted to pipes 900mm diameter and above

Mid Entry Manholes (Junction/Bend BS EN 1916)

- Standard pipe with a sealed manhole joint, complete with fitted slab
- Manhole joint and slab factory-fitted to pipes 1200mm and above
- Access to the tank via winch or removable ladder. Reduced access via slab, available on request
- Additional chamber sections or a reducing slab can be used to build height

End Entry Manholes (Junction - BS EN 1916)

- Standard pipe with a sealed manhole joint, fitted slab and cast-in end wall
- Manhole joint and slab factory-fitted to pipes 1500mm diameter and above
- Drainage inlet/outlet holes cored, as requested
- Access steps factory-fitted, if required

PRODUCT BENEFITS

1. Flexibility of design - adaptable to meet client requirements
2. Products can be used in space restrictive on-line sewer systems, providing the required storage volume
3. Reduction in construction times
4. Quality assured and kite marked products used
5. Sustainable systems with design life in excess of 100 years
6. Site safety benefits related to reduction of man hours spent in excavation
7. Ease of access for maintenance
8. Can be linked to other SuDS related systems such as rainwater capture and re-use

Note: Concrete haunching should be used to provide local stiffening to the concrete pipes with manhole entries. Use a minimum 150mm thickness surround to the pipe, extending to a height of 300mm above the pipe, in order to support the shaft joint.



DRY WEATHER FLOW CHANNELS

Prefabricated dry weather flow channels for pipes and box culverts are available. Half round (or equivalent) channels can be cast into the floor of the units at any position, with a choice of equivalent half round diameters.



BOX CULVERTS

TYPICAL CULVERT

Units are available in internal span sizes from 1000mm to 6000mm and internal heights from 500mm to 3600mm, with unit lengths to a maximum of 2000mm, dependent on final mould configuration (please refer to internal dimensions chart opposite).



DRY WEATHER FLOW CHANNELS

Half round (or equivalent) channels can be cast into the floor of the units at any position, we offer a choice of equivalent half round diameters.



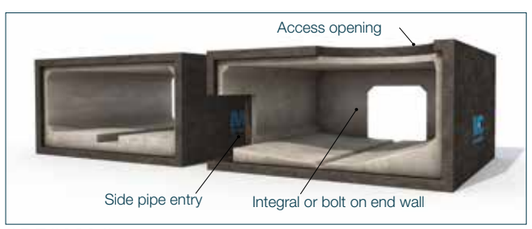
BENCHING

Combined with either a channel or cast as a “vee”, benching improves self-cleansing flow rates.



MAMMAL LEDGES

Cast-in mammal ledges allow access through the culvert to wildlife without the requirement for extra site provisions.



SPECIALS

Bespoke units accommodating a variety of features can be manufactured to our customers’ design requirements.

The proven strength and performance characteristics of precast concrete box culverts, together with their excellent service life, make them ideal for a wide variety of civil engineering and construction applications. Box culvert sections can be manufactured in a variety of internal profiles and sizes, offering exceptional versatility in the uses to which they can be applied.

In addition to the more common use for diverting water courses, box culverts have been used in an array of applications including balancing tanks, pedestrian subways, access shafts, service tunnels, sea outfalls, road crossings and many other situations where the whole life costing consideration requires strength, durability and economy to be of paramount importance.

Unlike other materials such as steel, precast concrete box culverts do not require additional treatments to prolong their life or improve performance. The concrete surface will not rust and the smooth internal finish of the box culvert ensures optimum flow of water through the concrete structure.

Precast concrete box culverts fulfil the current design life requirements for buried structures. With minimum maintenance and the ability to provide many years of service, precast concrete box culverts are the most cost-effective means of diverting water courses, especially with the ever present risk of corrosive elements in the water or soil.

Whilst the methods and procedures for the installation of precast concrete box culverts are familiar to contractors, careful attention to detail will lead to safer working, a smoother flow of operations and a higher standard of finished culvert. Box Culvert installation and jointing details can be downloaded from **www.fpmccann.co.uk/box-culverts**

This guide provides a reliable checklist for anyone engaged in the installation of box culverts. It is published to encourage good practice in the use of precast box culverts.

INSTALLATION GUIDELINES

For installation and jointing details, refer to the Box Culvert Installation Guide which can be downloaded from our website.

DESIGN CRITERIA

Design loading criteria is generally specified by the scheme engineer and ideally should include, as a minimum, the information below:

- Internal span
- Internal height
- Metres required
- Number of runs
- Minimum depth of fill over the culvert unit
- Maximum depth of fill over the culvert unit
- Culvert usage
- Surface loading conditions : green field, highway etc
- Invert type

Exposure conditions should be specified and, where available, design codes provided. Further design requirements may be required for inlet/outlet points, access holes and end walls.

PORTAL FRAMES



Portal frames either consist up of an n-shaped upper unit and two L-shaped footings per ring, or simply just an n-section. The portal frame system offers a quicker and more economical alternative to bridge beams and abutments that are cast in-situ. Units can be designed for specified loadings, and fulfill Eurocode requirements.

KEY FEATURES

- Alternative to bridge beam construction
- Ball and socket joint between wall and roof
- Designed per project requirements
- Reduced insitu works
- Used for road infrastructure
- Bitumen coating can be factory applied if required



UAN CULVERTS

UAN culverts consist of two U-shaped sections, which can then be assembled on-site. A ball and socket joint is used between the two parts of the finished section. This option can be offered for larger box culverts that are unsuitable for transport as a monolithic structure or if there are any site specific weight constraints.

The popularity of UAN culverts is growing, largely due to their immediate stability, quick installation, and the flexibility in being able to manufacture culverts for a wider range of applications. Key uses include as an underbridge for road or rail, and in other road infrastructure projects.

KEY FEATURES

- Adjustable moulds mean the product can be made to accommodate a range of projects
- Instant stability
- Mammal ledges can be added to allow wildlife to safely pass through the culvert
- The ball and socket joint is typically located mid-height.
- Used for road infrastructure
- Bitumen coating can be factory applied if required



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MAGHERAFELT OFFICE:
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Knockloughrim
Magherafelt
BT45 8NR
T 028 7954 9026
sales@fpmccann.co.uk

DRAINAGE

Ellistown 01530 240000 (England/Wales) Magherafelt 028 7954 9026 (Scotland)

AGRICULTURE
Lydney 01594 847500 Grantham 01476 562277

BOX CULVERTS
Weston Underwood 01335 361269

BUILDING PRODUCTS
Cadeby 01455 290780

DOCK LEVELLER PITS
Weston Underwood 01335 361269

FENCING
Cadeby 01455 290780

FILTER BED SYSTEMS
Littleport 01353 861416

FLOORING
Weston Underwood 01335 361269 Uddingston 01698 803300

POWER & INFRASTRUCTURE
Littleport 01353 861416

PRECAST OFF-SITE BUILDING SOLUTIONS
Byley 01606 843500 Grantham 01476 562277 Littleport 01353 861416

RAIL
Littleport 01353 861416

SPECIALIST PRECAST
Littleport 01353 861416

TANKS & CHAMBERS
Littleport 01353 861416

TUNNELS & SHAFTS
Cadeby 01455 290780

WALLING
Grantham 01476 562277 Lydney 01594 847500
Uddingston 01698 803 300 (Scotland)

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THINKING PRECAST?
THINK FP MCCANN

mpa British Precast Drainage Association

DRAINAGE AND WATER MANAGEMENT

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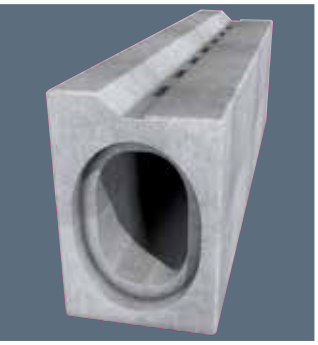
CONCRETE PIPES





EASI-BASE™ MANHOLE SYSTEM





STORM-CHANNEL™

HEAVY DUTY PRECAST DRAINAGE CHANNEL







STORM-BRAKE™

VORTEX FLOW CONTROL CHAMBER UNIT







STORM-STORE™

TANK & CHAMBER SYSTEMS





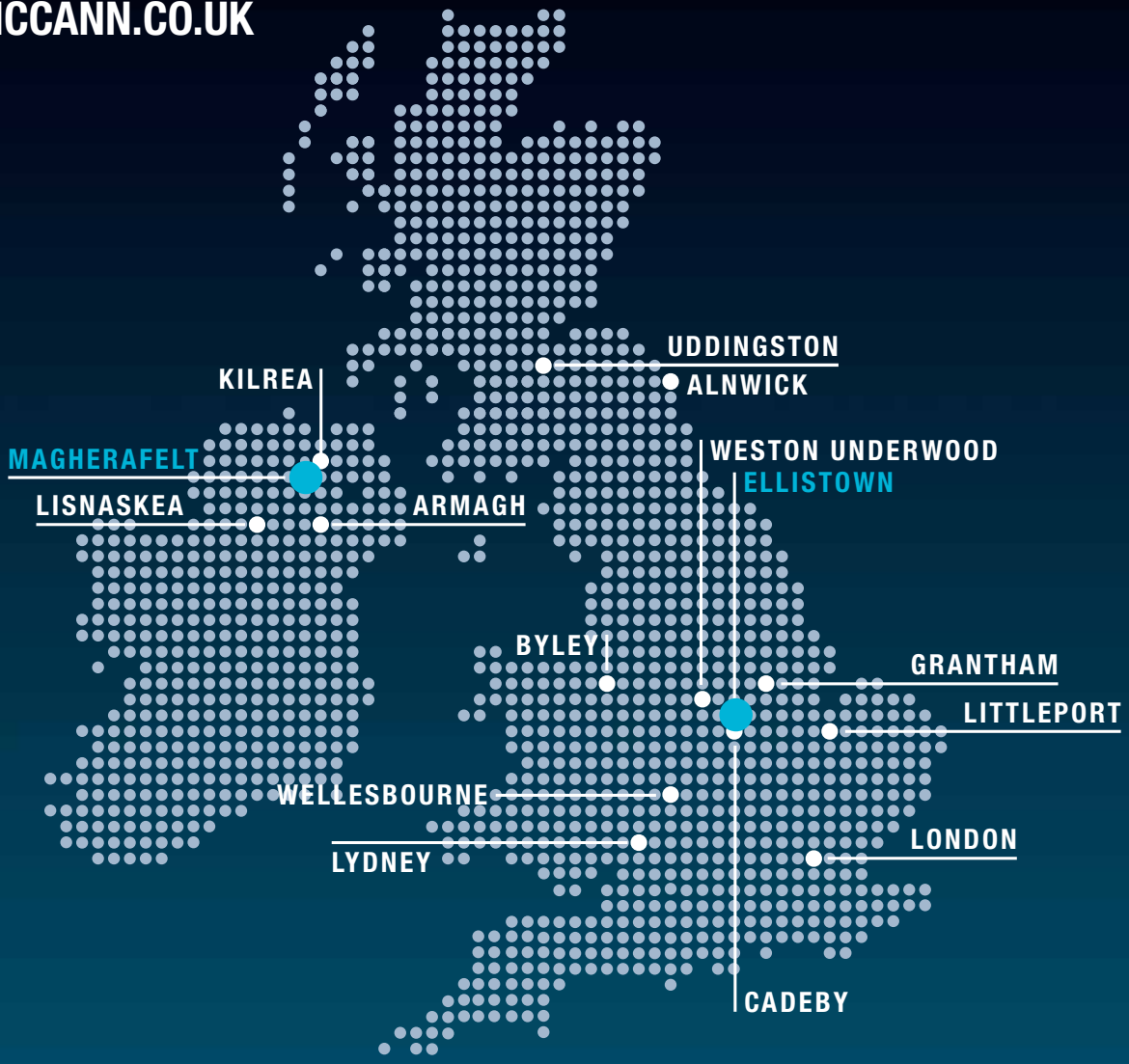
STORM-HOLD™

STORM WATER MANAGEMENT SYSTEM





FPMCCANN.CO.UK



FP McCann is the UK's market leader in the manufacture, supply and delivery of precast concrete solutions. Our comprehensive precast concrete business extends to include:

AGRICULTURE I ARCHITECTURAL PRECAST I BOX CULVERTS I BUILDING PRODUCTS DOCK LEVELLER PITS I DRAINAGE I FENCING I FILTER BED SYSTEMS I FLOORING POWER & INFRASTRUCTURE I RAIL I SPECIALIST PRECAST I STRUCTURAL PRECAST TANKS & CHAMBERS I TUNNELS & SHAFTS I WALLING

Modern manufacturing plants at Alnwick (Northumberland), Armagh (Northern Ireland), Byley (Cheshire), Cadeby (Warwickshire), Ellistown (Leicestershire), Grantham (Lincolnshire), Lisnaskea (Northern Ireland), Littleport (Cambridgeshire), Lydney (Gloucestershire), Kilrea (Northern Ireland), Magherafelt (Northern Ireland), Uddingston (Lanarkshire) and Weston Underwood (Derbyshire) incorporate the latest computerised batching, distribution, casting, curing and handling systems and are operated by skilled and experienced workforces to ensure consistency of quality. Their geographical spread gives us an unrivalled ability to serve the construction industry throughout the UK and Ireland.

By applying the DFMA principles, FP McCann's design engineers are able to evaluate individual precast concrete products part by part, in addition to documenting the assembly process step by step. This allows them to generate the cost, part count and assembly time to provide a benchmark to measure its success and identify the parts and process improvement opportunities. In turn, this has allowed FP McCann to design and manufacture more cost-effective and efficient high-quality precast concrete products with less wastage and greater on-site recycling. As a result, increased productivity, combined with a reduction in production time and costs, allows FP McCann to be more competitive within the marketplace.

Please note: all information is correct at time of going to print.

DRAINAGE AND WATER MANAGEMENT

With one of the largest drainage and water management product ranges in the UK and Ireland, FP McCann has become the first choice for all of our customers.



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8 GOOD REASONS WHY YOU SHOULD USE CONCRETE DRAINAGE

1 SUSTAINABILITY

Concrete pipes outperform other types of pipeline solutions in a number of the environmental impact categories, such as human toxicity levels and chemical / hazardous waste generated. The CO2 emissions from concrete and cement production are relatively small compared to other building materials. Some 95 to 99% of ingredients used in the production of concrete pipes are sourced locally, so a considerable positive impact on the carbon footprint and fuel consumption associated with transporting these materials can be achieved.

2 STRENGTH

Concrete is much more durable than any other kind of pipe. Hence, it can carry more load at any given time and gains strength over time. It cannot be weakened by heat, moisture, mould or pests, nor will it rust. Underground concrete pipes have the ability to resist chemical attacks and massive impacts such as jetting, so blockages can be cleared easily.

3 QUALITY

Since precast concrete pipes are produced in highly controlled plant environments under rigid production standards and testing specifications, they achieve consistent high quality levels of performance.
The pipe production process will normally include computer-controlled mixing systems, computer-controlled weighing and proportioning systems, absorption testing and automated recording systems.
FP McCann's concrete pipes are manufactured in accordance with BS EN 1916 and BS 5911, and certified by Quality Assessment under the Kitemark Scheme and ISO 9001.

4 WHOLE LIFE VALUE

Due to its amazing structural properties and functional benefits, precast concrete pipes tend to attract lower insurance premiums than those built from other construction materials. The natural strength of precast concrete pipes enables recycled aggregate to be used as a bedding material, significantly reducing installation costs and the elimination of waste disposal costs.



5 FIRE-RESISTANCE

Being naturally fire-resistant, concrete forms a highly effective barrier to fire spread and it does not emit any toxic fumes when affected by fire. It will not produce smoke or drip molten particles. Therefore, in the majority of applications, concrete can be described as virtually 'fireproof'. Due to its inbuilt fire resistant properties, concrete not only maintains an airtight construction that stops smoke spreading, but also has the ability to keep its strength during a fire.

6 BEDDING PERFORMANCE

The superior strength of concrete pipes enables recycled aggregate to be used as a bedding material, thus reducing costs and environmental impact during installation. Since a full trench depth of granular material can actually be more expensive than the pipe, significant pipe bedding savings can be achieved when using a concrete pipe instead. FP McCann can advise on the optimum soil and ground conditions from geotechnical reports, to establish when this sustainable and cost-efficient solution can be deployed.



7 CHEMICAL RESISTANCE

Concrete pipes and manholes are resistant to sulphate and chemical attack. Concrete pipeline products with higher design chemical classes of DC3 and DC4 are capable of withstanding attack from the vast majority of aggressive ground environments in the UK.

8 HYDRAULIC EFFICIENCY

The rigidity and mass of concrete pipes (both within the pipe and pipe joints) allows it to retain its shape over its long service life, preserving structural integrity and hydraulic efficiency, by minimising the resistance to water flow that often occurs when the shape or integrity of a flexible pipe is compromised through deformation.

fpmccann DRAINAGE

SPIGOT AND SOCKET PIPES

All of our spigot and socket pipes are manufactured and CE marked in accordance with European Standard BS EN 1916, the specification for unreinforced and reinforced concrete pipes (including jacking pipes) and fittings with flexible joints. They are also designed to meet BS 5911 for concrete pipes and ancillary products.



STANDARD PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100	*2400
Internal Diameter	A	300	375	450	525	600	675	750	△805	900	1050	1200	1350	1500	1800	2100	△2380
Barrel Diameter	B	416	505	590	685	790	901	996	975	1080	1266	1460	1620	1800	2130	2460	2750
Socket Diameter	C	497	575	665	760	852	960	1060	1130	1235	1420	1590	1800	2010	2380	2650	2750
Effective Length	MM	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Actual Weight	KG	454	616	812	996	1420	1856	2194	1690	2060	2760	3630	4290	5330	7300	9160	10070
Reinforced		N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Approx. Pipes per load		61	45	34	28	22	15	12	17	13	10	8	6	5	4	3	2
Chamber Ring to suit †		1200	1350	1350	1500	1500	1500	1800	1800	1800	2100	2100	2400	2400	2700	3000	3600
MOL Availability		Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N
Crushing Strengths	Kn/M	36	45	54	63	72	81	90	99	108	126	144	162	180	216	252	288
Nominal Joint Gap	MM	4	4	4	4	4	4	4	4	4	5	5	5	7	7	7	-
Maximum Joint Gap	MM	34	34	34	34	34	34	34	34	34	34	36	36	36	41	41	-
Maximum Deflection	° Degrees	2	2	2	2	2	2	1	1	1	1	1	0.5	0.5	0.5	0.5	-

† Minimum chamber ring size to suit pipe = DN size of pipe + 900

* Lifting anchors available
△ Please note internal dimensions

PIPE LUBRICANT

Pipes should only be joined using an FP McCann lubricant

Nominal size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800	2100
No. of joints per	KG	27	22	18	15	13	12	10	9	9	8	7	6	5	4	4

Sold in 2.5kg Tubs



ROCKER PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1000	1000	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	145	180	220	300	365	800	950	1020	1020	1200	1605	2020	2755	4440	4620

* Lifting anchors available



SOCKET BUTT PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	145	174	230	270	370	960	1175	945	1105	1500	1930	2435	3100	4300	5400

* Lifting anchors available



SPIGOT BUTT PIPES

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	*1350	*1500	*1800	*2100
Effective Length	MM	600	600	600	600	600	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	100	135	155	205	270	870	980	750	910	1170	1585	1850	2230	3005	3800

* Lifting anchors available



ONE PIECE BEND

Degree	11.25º			22.5º			45º			90º		
Nominal size (DN)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)	Length (mm)		Weight (kg)
	a	b		a	b		a	b		a	b	
300	115	103	66	160	148	79	257	245	112	618	509	167
375	239	140	117	294	195	142	413	314	199	735	636	270
450	127	79	109	196	148	139	344	296	232	745	698	352
525	97	194	140	179	276	200	335	436	400	828	965	750
600	149	137	188	240	228	289	437	425	513	973	961	898
750	384	115	502	499	230	661	744	475	1087	1412	1143	1810



TWO PIECE BENDS - 11.25º, 22.5º & 45º

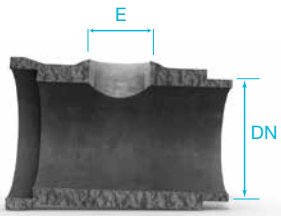
Nominal Size	DN	675	750	900	1050	1200	1350	1500	1800
Effective Length	MM	1000	1000	1250	1250	1250	1250	1250	1250
Approx. Weight	KG	775	925	1140	1515	1955	2425	2965	4105



THREE PIECE BENDS - 90º

Nominal Size	DN	675	750	825	900	1050	1200	1350	1500	1800	2100
Effective Length	MM	1750	1750	2500	1750	2500	2500	2500	2500	2500	3000
Approx. Weight	KG	850	1200	1900	2000	2600	3500	4200	5100	6800	7100

Any fabricated/cut bends need to be surrounded in concrete.



FASTFIT JUNCTIONS

Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800
Branch Size	E	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Effective Length	MM	600	600	600	600	600	1000	1000	1250	1250	1250	1250	2500	2500	2500
Approx. Weight	KG	132	169	211	277	350	750	905	800	1140	1513	2427	4416	5120	7360

All junctions are to be fitted on their side. Junctions are not designed for vertical surface compaction and need to be surrounded in concrete.

CONVERT TO OTHER PIPE TYPES



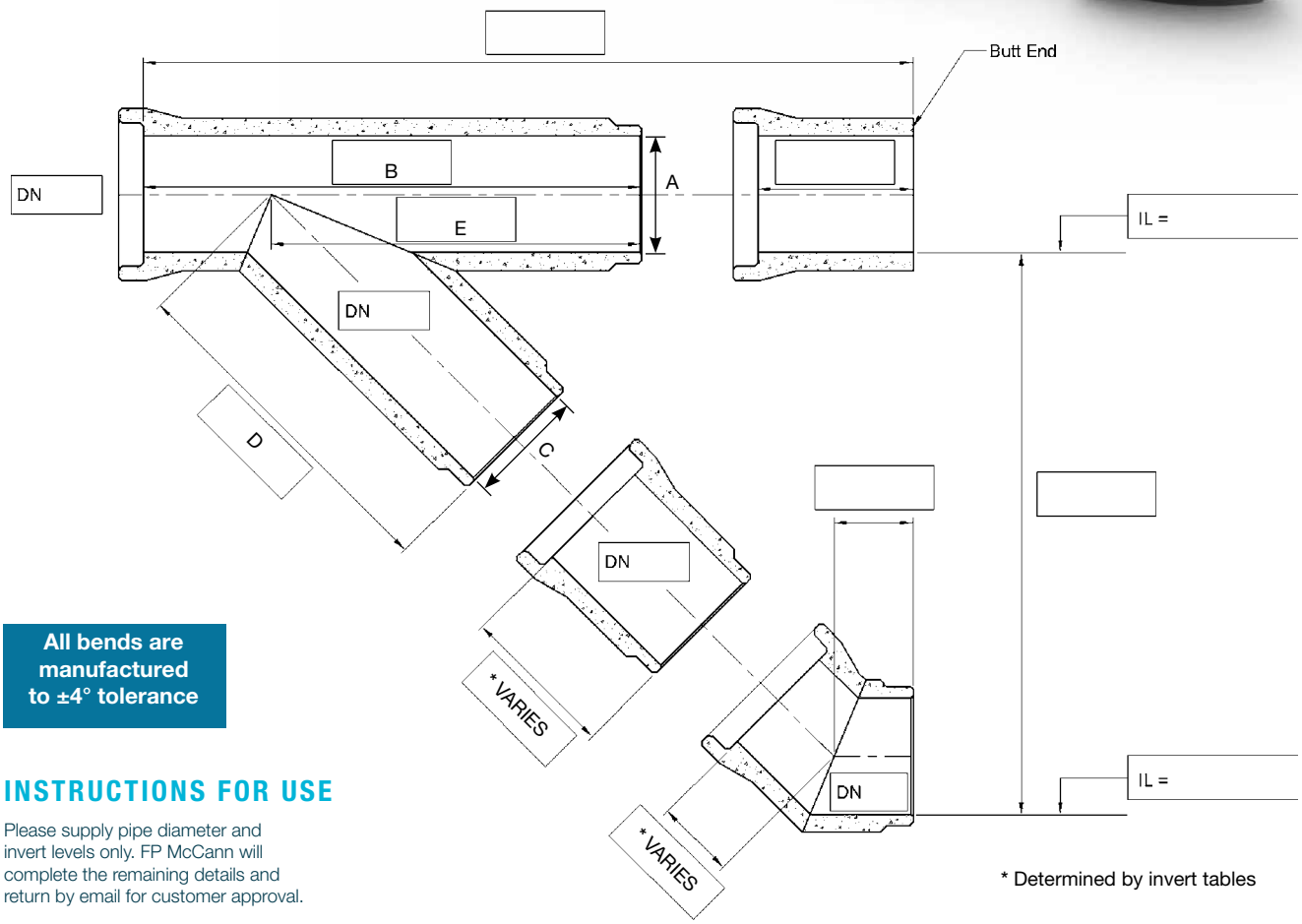






OBLIQUE (45º) TUMBLING JUNCTION (SPIGOT)





All bends are manufactured to ±4° tolerance

INSTRUCTIONS FOR USE

Please supply pipe diameter and invert levels only. FP McCann will complete the remaining details and return by email for customer approval.

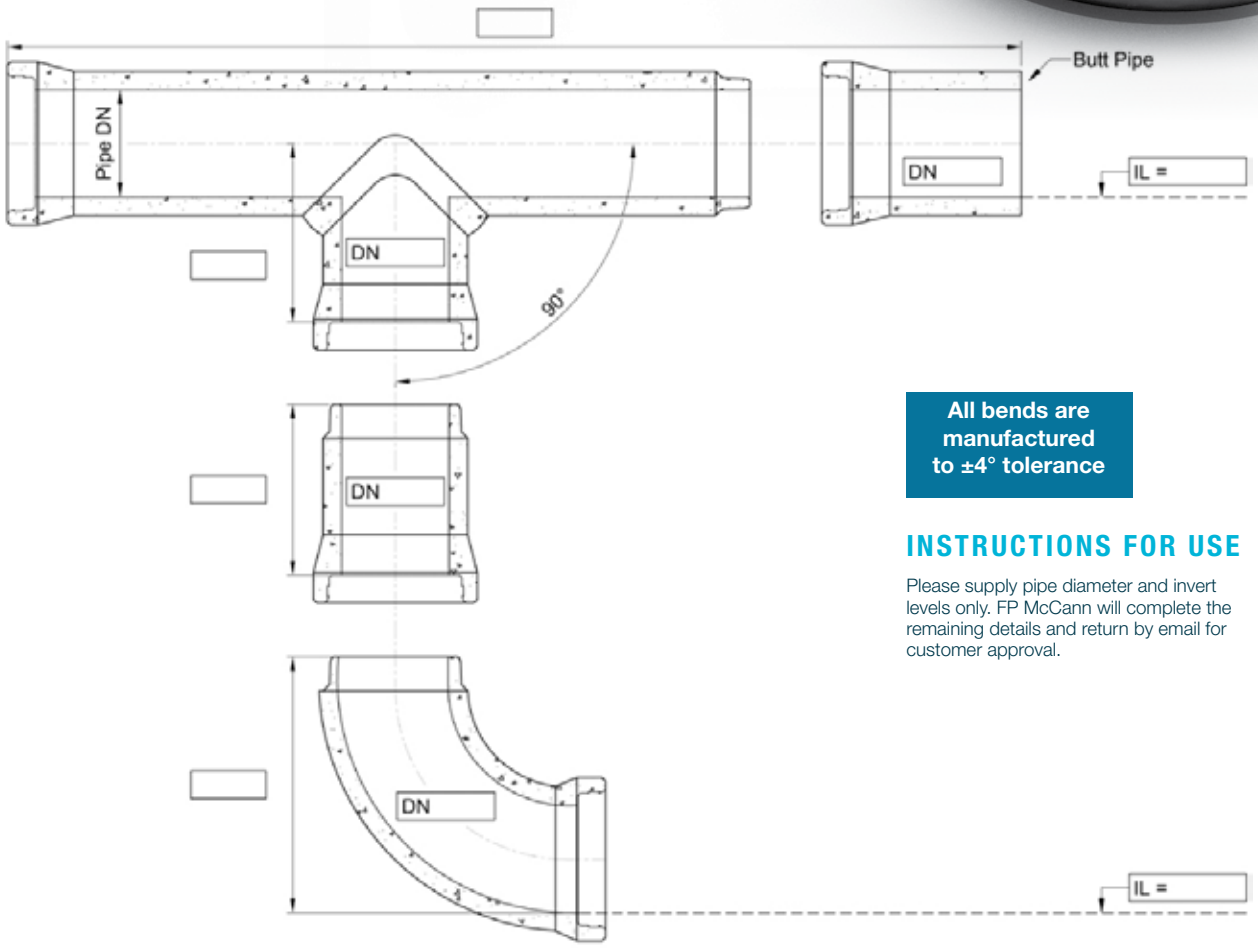
* Determined by invert tables

Oblique (45°) Spigot Tumbling Bay Junction											
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050
	Effective Length	D	870	985	1087	1177	1329	1433	1558	1679	1896
	Effective Length	E	1424	1495	1533	1533	1652	1790	1739	1703	1795
	Approx Weight	Kg	520	696	873	1350	1458	2311	2828	3654	3875

Oblique (45°) Socket Tumbling Bay Junction											
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050
	Effective Length	D	870	985	1087	1329	1329	1433	1558	1679	1896
	Effective Length	E	1014	989	943	864	862	819	759	623	535
	Approx Weight	Kg	572	748	940	1450	1550	2400	3090	3885	4199

SQUARE (90º) TUMBLING JUNCTION (SPIGOT)





All bends are manufactured to ±4° tolerance

INSTRUCTIONS FOR USE

Please supply pipe diameter and invert levels only. FP McCann will complete the remaining details and return by email for customer approval.

Square (90°) Spigot Tumbling Bay Junction												
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	D	580	628	670	708	770	818	865	1163	1005	1100
	Effective Length	E	1219	1242	1238	1229	1257	1250	1250	915	1165	1165
	Approx Weight	Kg	484	640	827	1098	1396	1453	2457	2964	3370	4374

Square (90°) Socket Tumbling Bay Junction												
Main Pipe	Nominal Size	A	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	B	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Branch Pipe	Nominal Size	C	300	375	450	525	600	675	750	900	1050	1200
	Effective Length	D	580	628	670	708	770	710	865	915	1005	1100
	Effective Length	E	1219	1242	1238	1229	1257	1250	1249	1163	1165	1165
	Approx Weight	Kg	540	685	854	1098	1453	1550	2542	3144	3398	4582

PIPE HANDLING/ LAYING INSTRUCTIONS



Recommended site work practice - open cut flexible jointed pipes

HANDLING & STORING PIPES

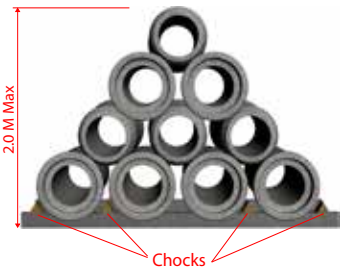
1. Time and place of off-loading should be agreed before the units arrive at site. The contractor should provide suitable equipment for off-loading, stacking and stringing out of pipes on-site.
2. Off-loading should take place at the nearest hard road to the point of installation. To ensure the safety of all personnel, units must be left in a stable position, well clear of the edge of the trench.
3. Pipes should be inspected before off-loading to ensure that materials delivered correspond with the order placed.
4. Pipes should be carefully checked during off-loading to ensure no units are damaged. Any discrepancies should be recorded on the delivery docket.
5. Where stacking is necessary, this should be done on level ground and the bottom layer of pipes securely chocked to prevent the stack from collapsing. Pipes should be supported under the barrel so that the socket is free of load and to prevent the jointing faces from getting damaged. Preferably, they should be stacked barrel to barrel with sockets hanging over alternative sides.
6. For safety reasons and to prevent damage to the lower layers of pipe in the stack, pipes should not be loaded or stacked in a greater number of layers than is shown in the table below.
7. Avoid damage when handling, especially to ends of concrete pipes. Never drag or roll pipes over the ground.

Note: FP McCann's spigot and socket pipes from DN1350 can be handled using our purpose-built Anchor System. Special lifting anchors can be cast into pipes at manufacture. A Universal Head Link (available from FP McCann) can then be hooked onto the exposed anchor heads to lift the pipe. Lifting anchors are fitted to order.

LAYING PIPES

1. **Trench Excavation** The trench should be excavated to the line, gradient and width, as indicated in the contract documents or as agreed with the engineer. The safety of the public and site personnel is of paramount importance. Care should be taken to ensure personal safety at all times.
2. **Trench Width** Any increase in trench width above that specified could increase the load on the pipe, increasing the quantity of excavation and the bedding material required. A trench narrower than the specified width may impede the proper placing of bedding or backfill material, or the correct jointing of pipes.
3. **Formation** Uniform support along the pipeline is essential. Rock outcrops and soft zones, which can cause differential settlement, should be dug out and replaced with compacted specified backfill material. De-watering may be necessary during pipe laying and subsequent backfilling operations. The specified bedding material should be placed as detailed in the contract specification, and trimmed to ensure uniform support of the pipe throughout the length of its barrel. Recesses should be prepared for the pipe sockets.
4. **Pipe Laying** Before being lowered into the trench, pipes and fittings should be inspected to ensure that they have not been damaged during handling and storage on-site. Units should be lowered carefully into the trench using a recognised lifting tackle, such as a concrete mechanical pipe lifter.
5. **Jointing** Using our pipe jointing instruction guide, all pipe spigots must be fully lubricated with the pipe lube supplied, just prior to being lowered into the trench. Please note: pipes should only be jointed using a FP McCann lubricant. The socket of the laid pipe should, at this stage, be prepared by removing the polystyrene forming ring to leave a clean seal, free from debris. The adjoining pipe should be lowered into position, as level as possible, centring the pipe spigot with the seal of the laid pipe so that the pipes are in line. On achieving this, apply pressure to the socket end of the adjoining pipe using a substantial piece of timber to protect the pipe from damage when pushing the pipe home. (see page 47 for details)
6. **Testing** Acceptance tests on the completed pipeline give an indication of the level of control of workmanship and materials during construction.
7. **Visual Testing** Check for obstructions and debris within the pipe, the structural soundness of pipes, that joints are properly sealed and that the pipe invert is even. Note: pipes smaller than DN750 may be inspected from manholes or by means of TV cameras.
8. **Watertightness** The watertightness of a pipeline may be checked using a water or air test. Such tests will reveal the existence of cracked or porous pipes or faulty joints. These tests should be made during and after laying and before backfilling. The test method will be detailed in the contract specification or referenced to an appropriate code of practice. In certain circumstances (e.g. where the distance between manholes is great, or when site conditions are such that backfilling must take place immediately or when laying small diameter pipelines), it is recommended that the pipeline is tested at regular intervals (say every 2/3 pipes) during construction (s ee page 47).
9. **Backfilling** This should take place after inspection and testing. The attention given to the backfill selection is of great importance. The placing and compaction of inappropriate backfill may cause damage to a new pipeline. The structural strength of the completed pipeline depends as much on good site workmanship as on the strength of individual pipes. Consequently, all backfill material must be selected and placed as detailed in the contract specification or recognised code of practice.

Note: For additional information on laying and testing pipes, please refer to the BPDA website: precastdrainage.co.uk



DN	No of layers
300 - 375	4
450 - 600	3
750 - 900	2
> 1050	1

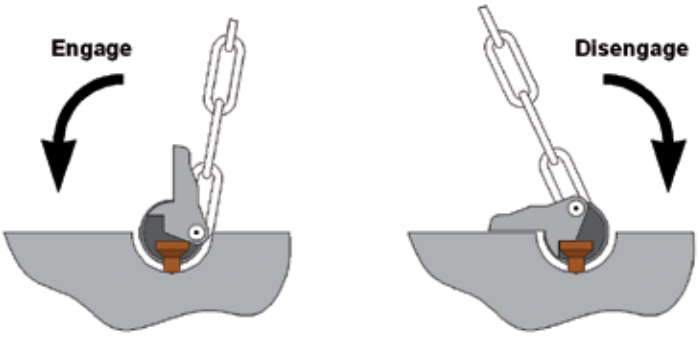
ANCHOR SYSTEM

FP McCann's pipes from DN1350 should be handled using our purpose-built anchor system. Special lifting anchors are cast into pipes at manufacture. A universal head link (available from FP McCann online) can then be hooked onto the exposed anchor heads to lift the pipe.

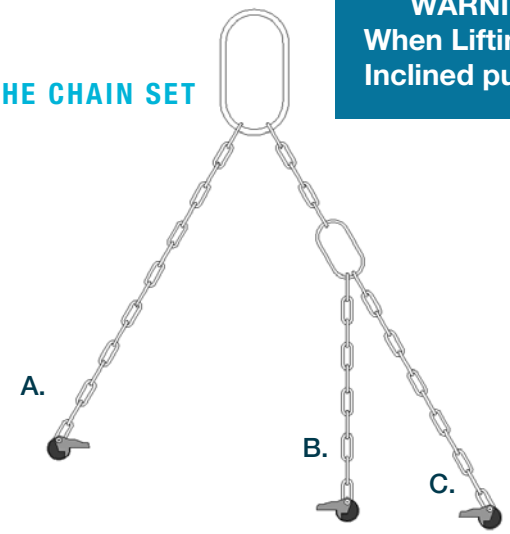
Use the equal lengths (A & B) for lifting the pipe. Join the longer chain (C) onto the pipe already laid and place the shorter length (B) onto the hook. The pipe can then be jointed without moving the jib of the crane. www.fpmccann.co.uk/anchor-system

WARNING
When Lifting ≥45°
Inclined pull only

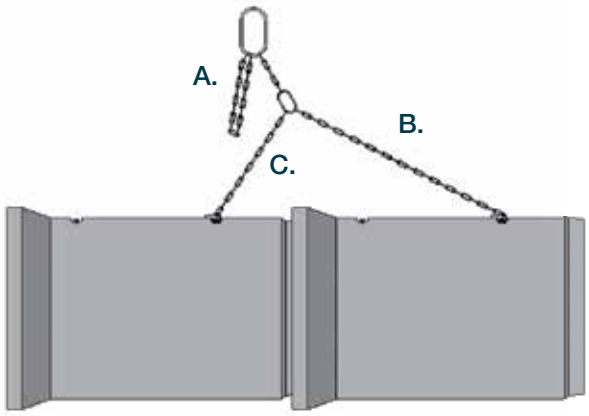
ENGAGING AND DISENGAGING THE EYE



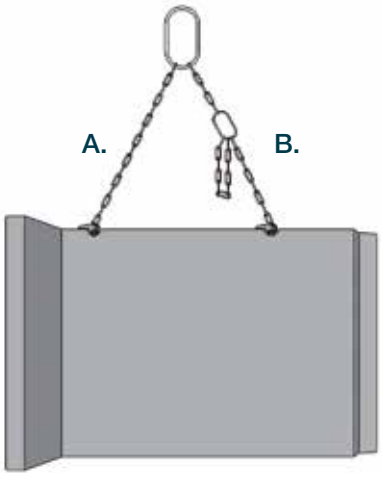
THE CHAIN SET



JOINTING



LIFTING AND HANDLING



Nominal Size	DN	300	375	450	525	600	675	750	825	900	1050	1200	1350	1500	1800	2100	2400
Anchor Availability		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	✓	✓	✓	✓	✓

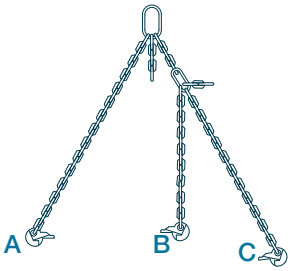
Anchor system available from 1350mm diameter upwards (Available in DN1200 in NI only) / * Lift only not jointing

NOTES:

1. All dimensions are in mm.
2. Weights in kg are based on a concrete density of 2500kg/m³.
3. Where relevant, pipes are manufactured in accordance with BS EN1916.
4. Normal practice is to determine left or right branch laterals to the main line by looking up the flow i.e. from the socket end.
5. Right hand or left hand junctions (viewed socket to spigot) should be specified when ordering reduced junctions in pipe diameters DN1350 and above.
6. Lifting chains are not suitable for joining purposes in pipes of diameter DN2400. Joint in the traditional method.
7. Do not install vertical junctions.

PIPE LIFTING INSTRUCTIONS

LIFTING CHAINS



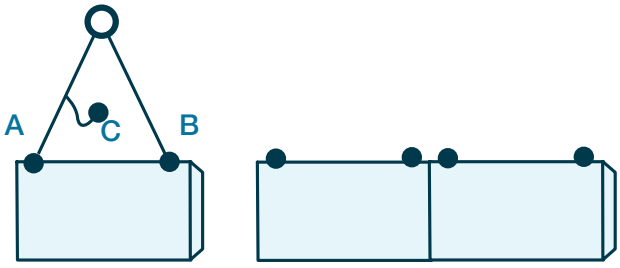
Nominal Size (mm)	1800	2100	2400
Medium Duty Chain Set	3	3	X
Heavy Duty Chain Set	X	X	*3

*Only suitable for Lifting not Jointing

HANDLING/LIFTING INSTRUCTIONS

DN1800 to DN2400 pipes are designed and manufactured to incorporate FP McCann's jointing and lifting systems.

LIFT SYSTEM



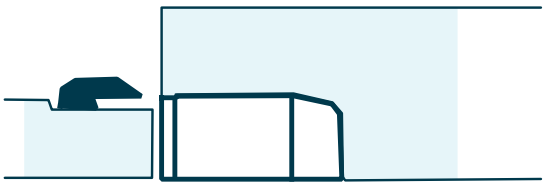
The Lift

To lift the pipes, select the two short legs A and B on the chain set. Place the spherical coupling over the cast-in anchor and engage by turning the tail of the head link down to the concrete. The pipe can then be lifted as normal.

Never pass slings or other lifting appliances through the barrel and never lift more than one pipe at a time.

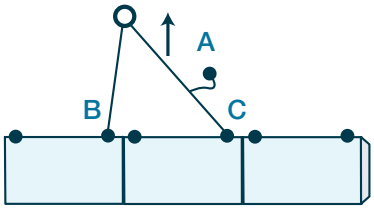
JOINTING

Ensure pipe sockets and spigots are not damaged. Ensure that integral seals are not damaged and apply the approved lubricant. For pipes without an integral seal, ensure the seal is of the correct size and is not damaged. Position the rubber ring on the end of the spigot. Under no circumstances use lubricants when using seals of this type, as they are pre-lubricated internally.



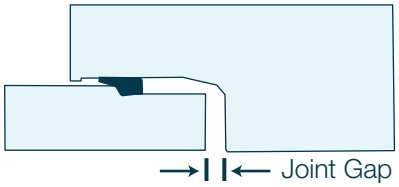
Ensure the tension is even.

Ensure each pipe to be laid is aligned with the laid pipeline and is fully supported along its length. Recommended method of joining pipes is shown below.



Lift joint

To joint the pipe using the chain system, attach the long leg A and the short leg B to the already laid pipe C. Take up the slack in the chains with the lifting pulley over the anchor of the laid pipe, and increase the upward force to joint the pipes. When jointed, ensure that there is no excessive slew or misalignment, this can easily be checked by reference to the joint gap.



WARNING
When Lifting ≥45°
Inclined pull only

NOTES:

1. All dimensions are in mm.
2. Weights in kg are based on a concrete density of 2500kg/m^3
3. Where relevant, pipes are manufactured in accordance with BS EN 1916.
4. Normal practice is to determine left or right branch laterals to the main line by looking up the flow i.e. from the socket end.
5. Right hand or left hand junctions (viewed socket to spigot) should be specified when ordering reduced junctions in pipe diameters DN1350 and above.
6. Lifting chains are not suitable for joining purposes in pipes of diameter DN2400. Joint in the traditional method.
7. Do not install vertical junctions.
8. In-wall pipes do not require lubrication.

ONE PIECE INTEGRAL RUBBER SEAL









FP McCann now provide a new type of integral seal for their precast concrete pipes. This new integrated seal is a simple, one-piece rubber compression connector which is embedded in the concrete when the pipe is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.

FEATURES

- The seal complies with all relevant European standards, including EN 681-1, ISO 90001 and QR 4060
- Durable synthetic EPDM rubber seal with over 100 years shelf life
- Seal is cast accurately and stable at the precast factory
- Pipe is cast with numerous holding parts to keep the seal in place
- Clean, high quality sockets
- Ideal for use with mechanical laying techniques such as pipelifter
- Pipes arrive at site ready to be connected

Please note: During the changeover phase, our new integral seal is fully compatible with our current seal

BENEFITS

- Integrally cast into the structure of the pipe
- Environmentally friendly as it eliminates the need for the polystyrene strip
- Reduction in waste on site
- No cavities or steps in joints
- Almost zero push back
- Requires low insertion force
- Seal not sensitive to weather
- No clamps required to tighten or forget
- Fast and easy installation
- Pipes may be backfilled immediately
- Less time in excavation
- Durable, reusable casting forms

Important Jointing Information
The integral pipe-seal jointing system used in FP McCann's drainage products requires the use of a FP McCann proprietary lubricant, which can be supplied with all pipeline orders from us. Failure to use the proprietary lubricant in accordance with the instructions provided by the pipe-seal manufacturer / FP McCann, may give rise to problems with pipe jointing and seal performance and invalidate any warranty, implied or otherwise. FP McCann accepts no responsibility whatsoever for problems or loss of performance arising from any such failure.

AIR TEST ONLY (A.T.O.)

INFLATABLE PIPE STOPPER

Air testing is a quick and easy way of checking a pipeline following installation. Correct assembly of joints, workmanship and the prevention of site handling damage can be identified by this test. FP McCann recommends the use of inflatable stoppers when air testing concrete pipes. Associated test equipment should be in good condition and in full working order. FP McCann recommends that this test is done every 2-3 pipes before backfilling, regularly following backfill during the installation and then at the finish; preferably before both manholes have been constructed.

The pipeline should be pressurised with air until the 'U' guage (manometer) indicates 100mm. Allow a minimum of 5 minutes for stabilisation of the air pressure, longer may be needed in cold or very hot weather. Observe the fall in indicated pressure over a 5 minute test period. The test is successful if the residual pressure does not fall below 75mm within the 5 minute test period.

If the pressure falls sharply and the pipeline appears to have failed, the following checks should be carried out:

- Inspect the seal of the inflatable stopper against the inside of the pipe using soapy water. Use pipe lubricant or industrial soap to assist in providing a seal where necessary
- Check the connections, rubber tube and stoppers for leaks
- Temperature and humidity changes can significantly affect the test. It may be necessary to allow more time for stabilisation or repeat the test in extreme weather conditions

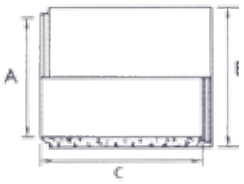
If difficulties are still being experienced following these checks, please contact FP McCann for further assistance.

Please note that failure to adhere to the advice given above and on the FP McCann website may result in any subsequent claims being invalid. Call-out charges may also apply if FP McCann's technical personnel have to attend on site.

Failure to successfully pass an air test does not prohibit the acceptance of pipeline if a successful water test can be obtained in accordance with BS EN 1610.

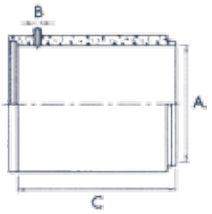


PRE-LUBRICATED PIPES



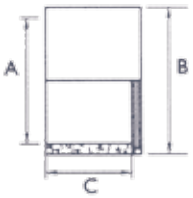
STANDARD PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070
Pipes per Load	Qty	4	3	2



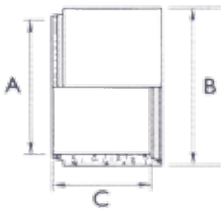
RIGHT ANGLE (90°) REDUCED JUNCTION

Nominal Size	DN	1800	2100	2400
Branch Supersleeve	A	100	100	100
Branch Supersleeve	B	150	150	150
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070



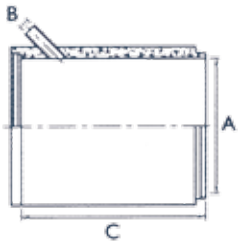
SPIGOTT/SOCKET BUTT PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	1250	1250	1250
Approx. Weight	KG	3370	4095	5195



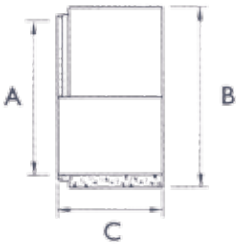
ROCKER PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	1250	1250	1250
Approx. Weight	KG	3310	4010	5040



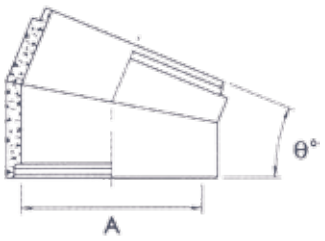
OBLIQUE (45°) REDUCED JUNCTION

Nominal Size	A	1800	2100	2400
Branch Supersleve	B	100	100	100
Effective Length	C	2500	2500	2500
Approx. Weight	KG	6525	7960	10070



SPIGOT BUTT PIPES

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Barrel Diameter	B	2140	2410	2750
Effective Length	C	1250	1250	1250
Approx. Weight	KG	3020	3610	4670



TWO PIECE BENDS

Nominal Size	DN	1800	2100	2400
Internal Diameter	A	1830	2076	2380
Angle Ø°	11.25	3	3	3
Angle Ø°	22.5	3	3	3
Angle Ø°	45	3	3	3

NB: Dimensions above are in mm.

Fastfits available 150mm Super sleeve made to order. Can connect to other pipes via additional adaptors not supplied

Note:

All junctions are to be fitted on their side. Junctions are not designed for vertical surface compaction.

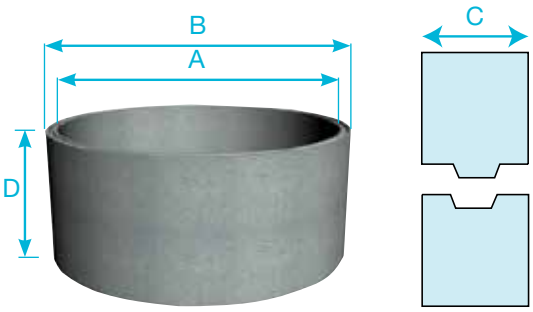
Under no circumstances should lubricants be used when assembling pre-lubricated pipes; the seal is lubricated internally.



MANHOLE CHAMBERS



MANHOLE CHAMBERS (TONGUE & GROOVE JOINT)



Tongue and Groove Joint Profile

Nominal Size (A) (DN) (mm)	Available Depth of Section (D)				Wall Thickness (C) mm	Litres per metre	Barrel Diameter (B) mm	Approx Weight Kg. (per metre)	Approx. Products per load Qty. (metre)	Lifting Hole Qty/Dia. (per /unit) (mm)
	250mm (±25mm)	500mm (±25mm)	750mm (±50mm)	1000mm (±50mm)						
900	✓	✓	✓	✓	70	656	1040	520	38	3 x 45
1050	✓	✓	✓	✓	80	894	1210	690	34	3 x 45
1200	✓	✓	✓	✓	90	1167	1380	880	26	3 x 45
1350		✓	✓	✓	95	1478	1540	1050	22	3 x 45
1500		✓	✓	✓	100	1824	1710	1300	16	3 x 45
1800		✓	✓	✓	115	2544	2030	1750	12	3 x 45
2100		✓	✓	✓	125	3464	2350	2040	10	4 x 50
2400		✓	✓	✓	140	4514	2680	2790	8	4 x 50
2700		✓	✓	✓	150	5725	3000	† 3400	8	4 x 50
3000		✓	✓	✓	190	7069	3380	† 4700	5	4 x 50
3600		✓	✓	✓	185	10179	3970	5400	5	△ 3 x RD30
4000			✓	✓	200	12566	4400	*7200	4	△ 4 x RD36
										Dia ± 5mm

MOL from 900-1500 / * 2 piece chamber ring - 3600kg per piece (4m diameter)

△ 570 long wavy tail anchors † 5% Safety Factor

PRODUCT INFORMATION

- FP McCann's manhole chamber rings are manufactured with tongue and groove joints and comply with BS EN 1917 / BS 5911-3
- Manhole chambers from DN900 -DN1800 have 3 lifting points.
- Manhole chambers from DN2100 - DN3000 have 4 lifting points.
- DN3600 and DN4000 are outside of the scope of the British Standard (Non-Kitemark), but comply with all relevant provisions of the European Standard. DN4000 is supplied in two halves

NB: NI have 3 lifting points

WARNING
When Lifting ≥45°
Inclined pull only

RECOMMENDED SITE WORK PRACTICE - MANHOLE CHAMBERS

RECOMMENDED LIFTING EQUIPMENT

Nominal Size DN (mm)	Lifting Hole Qty/dia (p/Unit)	36mm lifting pin 3.5 t SWL	42mm lifting pin 3.5 t SWL	3 leg lifting chain 3.1t	4 leg lifting chain SWL 6.7 t
900	3 x 45mm dia	✓		✓	
1050	3 x 45mm dia	✓		✓	
1200	3 x 45mm dia	✓		✓	
1350	3 x 45mm dia	✓		✓	
1500	3 x 45mm dia	✓		✓	
1800	3 x 45mm dia	✓		✓	
2100	4 x 50mm dia		✓		✓
2400	4 x 50mm dia		✓		✓
2700	4 x 50mm dia		✓		✓
3000	4 x 50mm dia		✓		✓
3600	3 x RD30 (Loops)			✓	
4000	4 x RD36 (Loops)				✓

Dia + 5mm

HANDLING & INSTALLING MANHOLES

1. Time and place of off-loading should be agreed before the units arrive at site. The contractor should provide suitable equipment for off-loading. For safety reasons, all chamber sections are loaded and delivered chimney fashion.
2. Off-loading should take place at the nearest hard road to the point of installation. When off-loaded, units should never be stored on their side (on the roll) but always be laid in the 'as installed' upright position.
3. Carefully inspect units during off-loading to verify that products are undamaged and comply with order placed. Note any discrepancies on the delivery docket and advise accordingly.

CONSTRUCTION

To ensure that the manhole structure is vertical, accurate levelling of the formation or the in-situ concrete foundation is essential. Please note: the depths of each manhole can vary and are subject to tolerances; it is recommended that each unit installed has it's depth measured prior to installation, to ascertain if the levelling requirements are satisfactorily met. Tongue and groove joints should be installed with the groove facing upward. Manhole sections fitted with double steps can be used at any depth. However, it is recommended that the deepest section of manhole units should be used whenever possible, in order to minimise the number of joints and costs. Precast cover slabs can be laid directly onto the shaft or chamber rings. To allow for any differential settlement between manhole and pipeline, a flexible joint incorporating short length rocker pipes should be constructed as close as possible to the outside of the manhole or the concrete surround, if used. Extra care must be taken to ensure that joints are properly made.

JOINTING

Precast manhole components are provided with joints formed within the wall section. These are sealed with cement and sand mortar, or with proprietary FP McCann mastic sealants. Precast concrete manhole units, well jointed, provide an adequate seal under normal conditions.

REINSTATEMENT

An in-situ concrete surround to precast concrete manholes is not necessary because a well-constructed precast manhole is a strong, durable structure with its own inherent strength and would only require a surround for exceptional structural reasons. However, under some specifications, a concrete surround is required where the depth from ground level to the base of the concrete chamber ring exceeds 4.5m. In this case, the surround should be of 150mm thickness. Backfilling should take place as each precast manhole section is placed. It must be brought up evenly and compacted around the manhole to prevent displacement.

TESTING

It is generally unnecessary to apply water tests to manholes. In normal working conditions, manholes are not normally full of water. Prevention of infiltration is of more relevance than exfiltration. If infiltration does occur, it can be seen and remedied by sealing using an appropriate method.

Note: When handling precast products on site, it is recommended that the contractor has the correct lifting equipment in place and adheres to the relevant lifting guidelines and standards.
Refer to the BPDA website for further information:
https://www.precastdrainage.co.uk/page/pipe-laying-lifting

MANHOLE SOAKAWAYS



MANHOLE SOAKAWAY CHAMBERS

Nominal Size DN (mm)	No. of 75mm holes per chamber			Wall Thick-ness mm	Litres per metre ring	Barrel Dia. mm	Approx Weight Kg. (p/metre)	Approx. Products per load Qty. (metre)
	500 mm	750 mm	1000 mm					
900	5	8	10	70	656	1040	520	46
1050	6	9	12	80	894	1210	690	34
1200	7	10	14	90	1167	1380	880	26
1350	8	11	15	95	1478	1540	1050	22
1500	8	13	17	100	1824	1710	1300	18
1800	10	15	20	115	2544	2030	1750	12
2100	12	18	24	125	3464	2350	2040	10
2400	14	20	27	140	4514	2680	2790	8
2700	15	23	31	150	5725	3000	† 3400	6
3000	17	25	34	190	7069	3380	† 4700	5
*3600	20	31	41	185	10179	3970	5400	5
*4000	23	34	45	200	12566	4400	6800	1.5

* DN3600/4000 see Manhole Chambers / DN3600/4000 Manhole Soakaways made to order
† 5% Safety Factor

SEALING STRIP

Nominal Size DN (MM)	Sealant Size (metres)	No. of rolls p/joint (metres)	Rolls required Quantity
900	20 x 20 x 4	0.88	1
1050	20 x 20 x 4	1.00	1
1200	20 x 40 x 4	1.13	2
1350	20 x 40 x 4	1.25	2
1500	20 x 40 x 4	1.38	2
1800	20 x 40 x 4	1.63	2
2100	20 x 40 x 4	1.88	2
2400	20 x 40 x 4	2.13	3
2700	20 x 40 x 4	2.38	3
3000	12 x 120 x 6	1.75	2
3600	12 x 120 x 6	2.08	3
4000	12 x 120 x 6	2.33	3

Please note this is a guideline based on sealant supplied by FP McCann only.

DN4000 MANHOLE CHAMBER



The DN4000 manhole chamber sections can be used in a variety of applications such as:

- Water treatment plants
- Stormwater attenuation systems
- Storage tanks
- Catchpits

The DN4000 chamber ring is supplied with a standard tongue and groove joint, connecting bolts and butyl rubber sealant for jointing purposes. The units are designed for use with the FP McCann ladder system. Single units (half ring) are lifted using 3 no. threaded lifting loops connected into threaded lifting sockets that are cast into the units, all of which must be used. Assembled units (full ring) are then lifted using 4 threaded lifting loops.

The 4 metre chamber section comes as a two part unit, which allows for ease of transport and handling.

DN4000 CHAMBER SECTION

Nominal Size (mm)	Section Depth (mm)	Wall Thickness (mm)	Approx. weight per section (kg)	Approx. weight per section when jointed (kg)
4000	1000	200	3400	6800
4000	750	200	2550	5100

DN4000 COVER SLAB – 2 PIECE UNIT (DETAIL FOR STANDARD 600 & 675 OPENINGS)

Nominal Size (mm)	Section Depth (mm)	Overall Thickness (mm)	Overall Diameter (mm)	Approx. weight of half section (mm)	Approx. weight of combined sections (kg)
4000	300	300	4500	6450	11,700

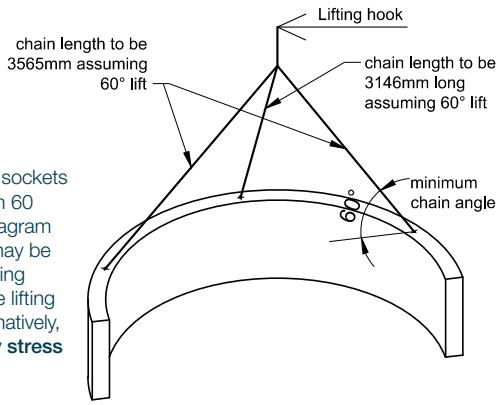
Cover slabs are manufactured in two sections, supplied with standard openings. Standard cover slabs are designed to withstand 30 units of Type HB loading, applied in accordance with BS 5911. If required, cover slabs can be designed to withstand 45 units of Type HB loading. For special opening cover slabs, an engineering drawing and steel specification may be required in order to achieve the desired loading requirement.

FP McCann will provide a technical installation sheet which must be adhered to when installing DN4000 manhole chambers. This is available online or from our sales team.

DN4000 LIFTING/HANDLING & INSTALLATION GUIDE

1. LIFTING

Single units (half ring) are lifted using 3 no. threaded lifting loops connected into threaded lifting sockets that are cast into the units, all of which must be used. The chain angle should not be less than 60 degrees to the horizontal. In order to lift without tilt, the chain lengths will differ. Refer to the diagram opposite for explanation of minimum chain angle and lengths. Alternatively, a spreader beam may be used. Complete units (full ring) are lifted using 4 threaded lifting loops attached to threaded lifting sockets cast into the units. Refer to the diagram opposite for explanation of the location of the lifting sockets to be used. The chain angle should not be less than 60 degrees to the horizontal. Alternatively, a spreader beam may be used. **Note: Using 3 chains to lift a full ring will put unnecessary stress on the concrete and may cause the concrete around the join to crack.**

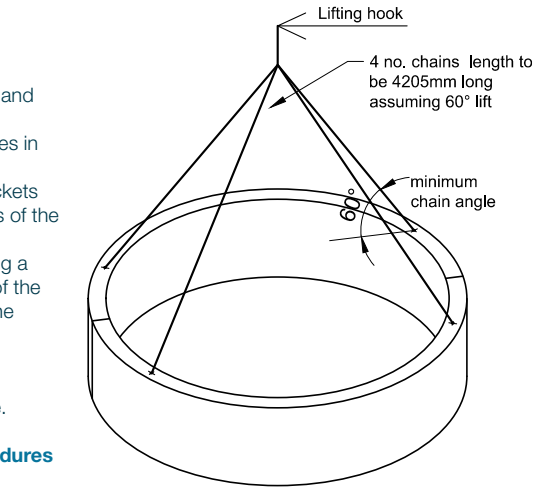


Unit weight and identification of lifting points will be marked on each casting for information.

2. HANDLING & INSTALLATION

It is recommended that the two piece chamber ring is jointed before lifting into place:

- Place the two units on a level surface, ideally on 2 skids to reduce resistance when jointing and also to maintain a clean joint
- Place both halves side by side, ensuring both are at the correct orientation i.e. with bolt holes in line with threaded sockets
- Insert the M24x200 threaded pins with the 60mm threaded side placed into the cast-in sockets
- Place a strip of bituminous sealant along the small recess of the vertical joint on both halves of the ring
- Once bolts and sealant are in position, the 2 halves of the unit must be pulled together using a ratchet system e.g. a chain block fixed to the cast-in M24 x 80 sockets on opposite ends of the units. (Do not use the wall end bolting system to pull the units together as this may crack the concrete and damage the joint)
- The completed ring can then be manoeuvred into place, as detailed above



Half-rings can be lifted into final position and the chamber can be built up, a half unit at a time.

Please note it is the end-user's responsibility to ensure safe access and lifting procedures are followed at all times.

WIDE WALL MANHOLE CHAMBER

FP McCann's precast concrete wide wall manholes have been designed with a tongue and groove dimension to accommodate the use of bituminous sealant. FP McCann's approved sealant should be used at all times. The sealant requirement for wide wall manholes is 12mm x 120mm x 6m. When placing the sealing strip into position during installation, the ends of the strips must be overlapped by a minimum of 30mm and cut at an angle of 60 degree. The cut ends must then be pressed together. Full installation guidelines can be provided upon request or obtained from our website www.fpmccann.co.uk



DN1200, 1500 AND 1800MM WIDE WALL MANHOLE CHAMBERS

A 130mm thick wide wall chamber, in combination with the Easi-Base™ unit, provides a sealed watertight manhole system. This robust design means that the requirement for a concrete surround is eliminated.



PRODUCT BENEFITS

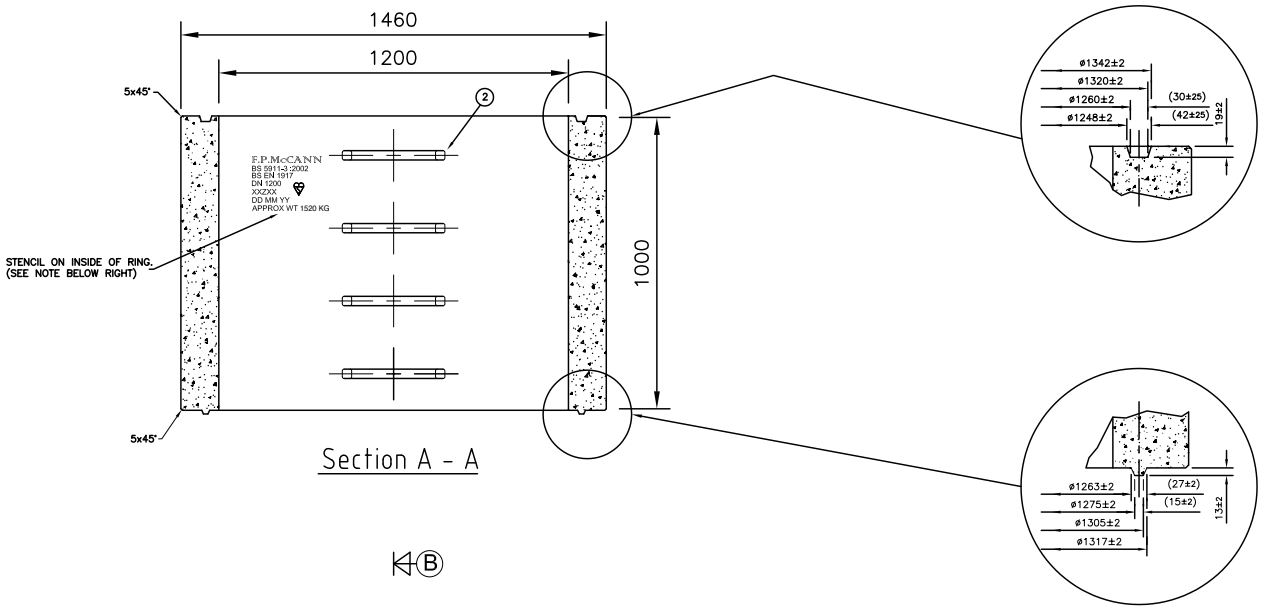
- Quick and easy installation
- Watertight structure
- Safe anchor lifting system (spherical head lifting system)
- Greater cost savings associated with using precast concrete over a traditional system
- No concrete back fill required, in accordance with 'Sewers for Adoption' 7th edition
- More environmentally friendly than a traditional system, almost 40% less carbon omitted during the concrete casting process
- Significant reduction in health and safety risks associated with using precast concrete



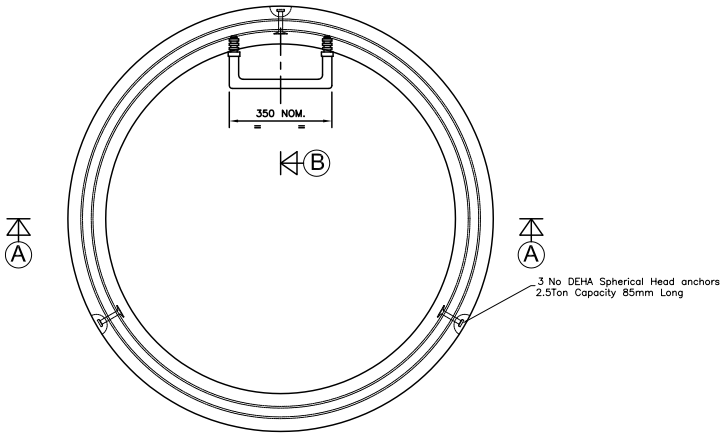
Please note: Wide Wall Manhole Chambers are manufactured with 3 x 45mm diameter lifting points to facilitate the safe anchor lifting system (spherical head lifting system).

WIDE WALL MANHOLE CHAMBER DIMENSIONS

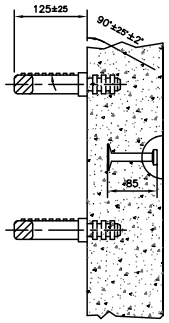




Section A - A



Plan View



Enlarged Section B-B

Nominal Size DN (mm)	Available Depth of Section				Wall Thickness (mm)	Barrel Diameter (mm)	Approx Weight Kg. (p/metre)	Approx. Products per load Qty. (metre)	36mm Lifting Pin 0.7t SWL	42mm Lifting Pin 3.5t SWL	3 leg lifting chain SWL 3.1t
	250mm (±25mm)	500mm (±25mm)	750mm (±50mm)	1000mm (±50mm)							
1200	✓	✓	✓	✓	130	1460	1520	16	Lifting clutches. FP McCann supplies recommended and approved lifting clutches.		✓
1500	✓	✓	✓	✓	130	1760	1645	14			✓
1800	✓	✓	✓	✓	130	2060	1970	12			✓

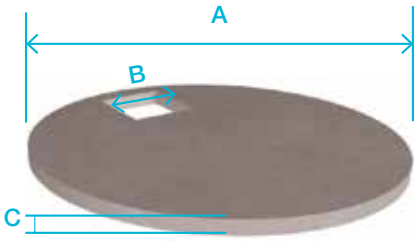
MANHOLE COVER SLABS & ACCESSORIES

STANDARD LANDING SLABS				
Chamber Section (DN)	Outside Diameter (A)	Opening Diameter (B)	Slab Thickness (C)	Approx. Weight (Kg)
1500	1730	900	200	826
1800	2050	900	200	1292
2100	2375	900	200	2030
2400	2705	900	200	2600
2700	3025	900	200	3880
3000	3330	900	200	4500

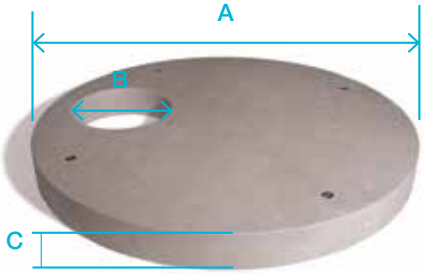
NB: All dimensions are in mm, unless stated otherwise

			STANDARD COVER SLABS			STANDARD REDUCING SLABS		
Chamber DN (mm)	Outside Diameter (A) (mm)	Slab Thickness (C) (mm)	Opening Configuration B		Approx. Weight (kg)	Opening Diameter B (mm)	Effective Depth (mm)	Approx. Weight (kg)
			Size (mm)	Location				
900	1080	150	600x600 675x675	CENTRAL	215			
1050	1240	150	600x600 675x675	ECCENTRIC	315			
			750x750	CENTRAL				
1200	1450	150	600x600 675x675 750x600	ECCENTRIC	455	900	200	385
1350	1580	170	600x600 675x675 750x600	ECCENTRIC	650	1050	200	695
			1200x675	CENTRAL		1200	200	550
1500	1740	175	600x600 675x675 750x600	ECCENTRIC	980	900 1050 1200	200 200 200	981 835 680
			1200x675	CENTRAL				
1800	2070	175	600x600 675x675 750x600 1200x675	ECCENTRIC	1460	900 1050 1200	200 200 200	1495 1350 1220
2100	2380	200	600x600 675x675 750x600 1200x675	ECCENTRIC	2180	900 1050 1200	200 200 200	2130 2690 2540
2400	2710	200	600x600 675x675 750x600 1200x675	ECCENTRIC	2800	900 1050 1200	200 200 200	2815 2690 2540
2700	3030	230	600x600 675x675 750x600 1200x675	ECCENTRIC	3750	900 1050 1200	200 200 250	3695 3550 3410
3000	3420	200	600x600 675x675 750x600 1200x675	ECCENTRIC	4970	900 1050 1200	200 200 200	4970 4970 4970
*3600 Two Piece	4000	300	600x600 675x675 750x600 1200x675	ECCENTRIC	9250	Covers to suit Manholes greater than or equal to 1.5m deep cover level to pipe soffit.		
*4000 Two Piece	4500	300	600x600 675x675 750x600 1200x675	ECCENTRIC	11700	*3600mm and 4000mm diameter cover slabs come in a 2 piece unit		

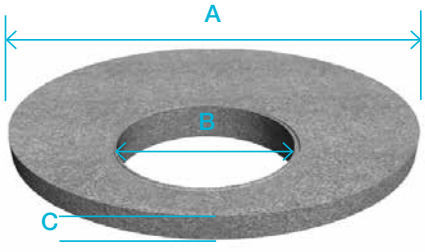
COVER SLABS



LANDING SLABS



REDUCING SLABS



Multiple access/other access sized cover slabs can be made to order

Note:
Cover Slab sizes 900-3000 are manufactured in accordance with BS 5911-3. DN3600 and 4000 cover slabs are generally designed in accordance with BS EN 1992-1-1, (for 30 units of Type HB loading, can also be designed to withstand 45 units of Type HB loading).
* Weights for DN3600 and DN4000 are estimated weights based on solid slabs.

ADJUSTING UNITS & CORBEL SLABS

Manhole Type	Diameter (mm)	Opening Size (mm)	No. per Pack	Thickness (mm)	Weight (kg)
Type 2	1050	600 x 600	15	65	70
Type 2	1050	675 x 675	15	65	55
Type 2	1050	750 x 600	15	65	60
Type 2	1050	750 x 750	10	65	45
Type 2	1575 x 1050	1200 x 675	6	75	160
Type 1	1175 x 1025	600 x 600	10	65	125

Note: A 600 x 600 eccentric corbel slab is also available when using a ladder BS EN 1917 and BS 5911

FP McCann manufactures a full range of adjusting units and corbel slabs that have the following advantages:

- Designed as seating for manhole cover
- Eliminates laying engineering bricks on-site
- Quicker to lay, ensuring reduced labour costs
- 65mm thick – similar to brickwork
- Sits on top of the manhole cover slab
- Eliminates brickwork vertical joint weakspots
- Quality product produced by vibration process
- Comprehensive strength, similar to Class B.Eng bricks

Type 2
600x600



Type 2
675x675



Type 2
750x600



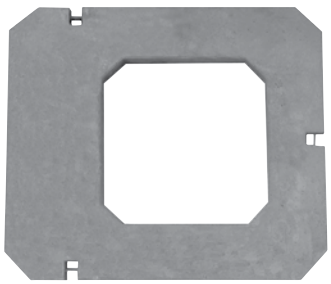
Type 2
750x750



Type 2 1200x675

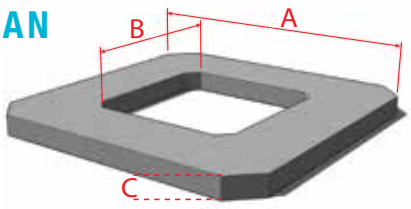


Type 1 600x600 Eccentric (Corbel)



Size (A) (mm)	Slab Thickness (C) (mm)	Openings (B) (mm)	Approx. Weight (kg)
1125x1125	75	600x600/675x675/750x600	140
1125x1125	150	600x600/675x675/750x600	290

LOTHIAN SLAB



MANHOLE CONSTRUCTION

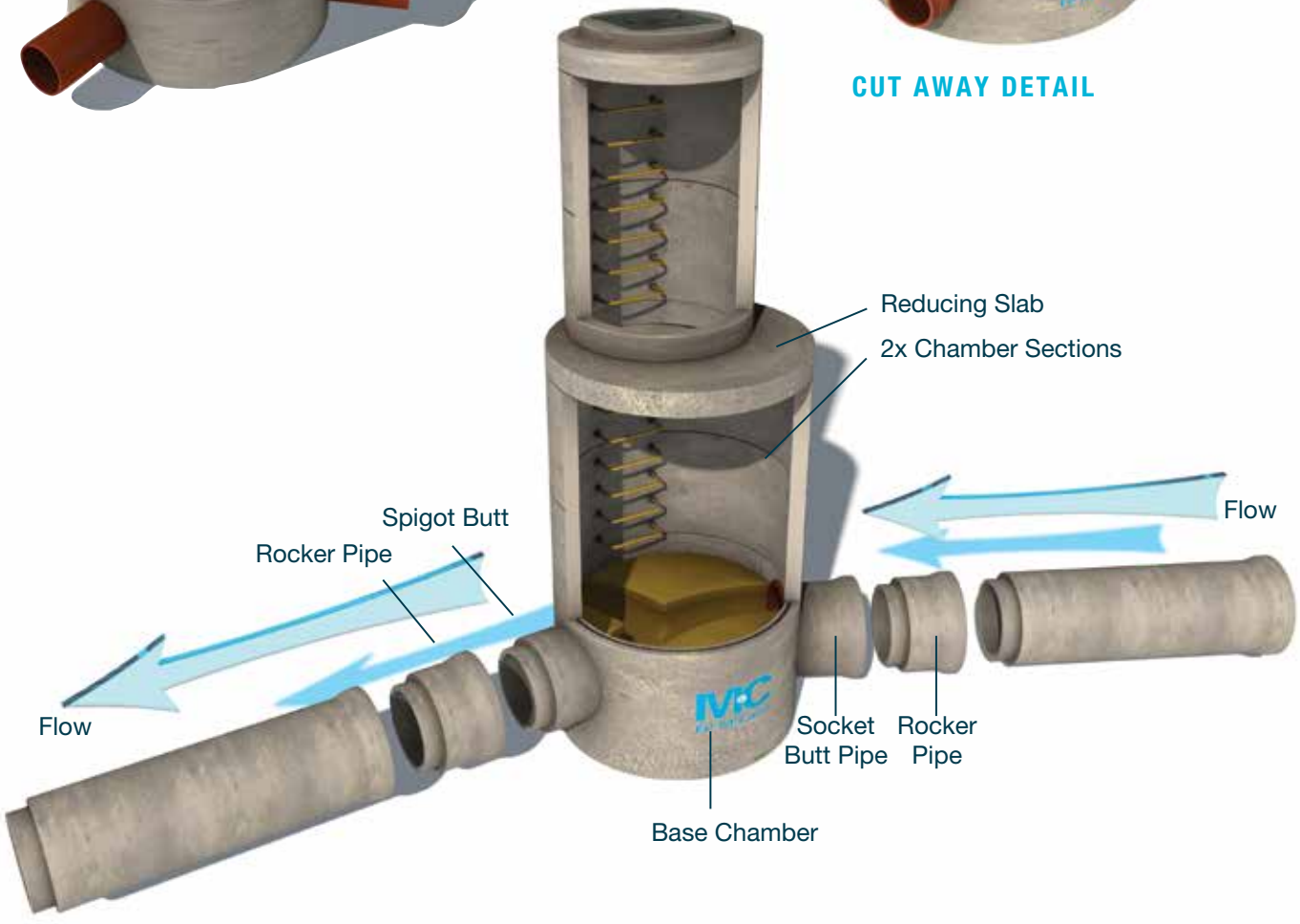


DETAIL OF MANHOLE CONSTRUCTION





CUT AWAY DETAIL



DN1200 EASI-BASE™

FP McCann's DN1200 Easi-Base™ is a prefabricated manhole base unit with integral benching, channels and connectors, that provides an immediate and long-lasting watertight solution in the management of waste water.

PRODUCT BENEFITS

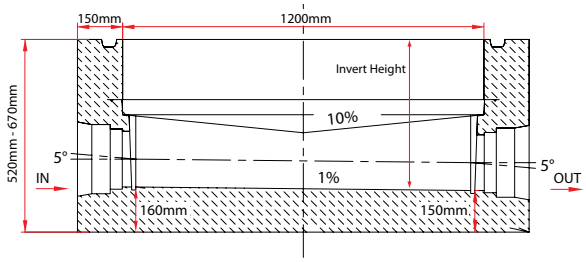
- An extremely fast, efficient and economical method of constructing manhole bases on-site
- Accepted by all UK water companies
- Significant health and safety benefits
- An immediate watertight structure, allowing other trades to instantly follow on
- Factory prefabrication provides a quality finish to channelling and benching, and enables accurate combinations and variations for entry/exit pipes
- Connects with any type of pipe and is compatible with the DN1200 130mm thick wide wall chamber ring which eliminates the need for backfilling.
- Maintenance of channels and benches are aided by clean access for inspection
- Eliminates the risk of water pollution that is associated with traditional methods of manhole construction, such as concrete base formation integrity failures due to bad weather conditions, which results in groundwater being contaminated with polluted raw sewerage and clean groundwater infiltrating the already overloaded raw sewerage system of pipelines and treatment plants
- The 7th Edition of Sewers for adoption has now been published to include precast bases; Easi-Base™s are in full accordance with the guidance provided.
- Easi-Base™ is a kitemark product, manufactured and tested to BS EN1917
- WRc tested and approved
- An 80 year guaranteed base



The unique DN1200 Easi-Base™ utilises a polypropylene liner with prefabricated benching and channels. Pipe connection bells are pushed into the inlet and outlet points and the liner is then encased and embedded in concrete to provide its structural strength and integrity. The DN1200 Easi-Base™ is manufactured as a monolithic precast unit; it utilises the standard manhole tongue and groove joint and is ready for immediate use, in combination with either a standard 90mm thick manhole chamber or the new 130mm thick wide wall chamber ring.

The Easi-Base™ system connects with most type of pipe including Single wall uPVC, Twin wall, Concrete, Ductile Iron and Clay.

The DN1200 unit allows connection to channel diameters DN150 to DN300. FP McCann has developed a selection of adaptors to increase the range of pipe types accommodated. The type of pipe must be disclosed prior to placing the order, so that the correct adapters and seals are fitted.



DN1200 EASI-BASE™ UNITS					
Diameter	Internal Diameter	Size	Invert Level (for take off)	Depth	Weight
DN1200	150	SMALL	370	520	1.7
DN1200	150	MEDIUM	445	595	1.8
DN1200	150	LARGE	520	670	1.9
DN1200	225	SMALL	470	620	2.2
DN1200	225	MEDIUM	545	695	2.4
DN1200	225	LARGE	620	770	2.5
DN1200	300	SMALL	520	670	2.4
DN1200	300	MEDIUM	595	745	2.5
DN1200	300	LARGE	670	820	2.7

All sizes are in mm

PRODUCT FEATURES

- The DN1200 Easi-Base™ is made to an internal diameter of 1200mm with a tongue and groove joint profile to match standard DN1200 manhole chamber rings
- Wall thickness is 150mm
- The base has a 150mm floor thickness with the outlet invert at approximately 150mm from ground level
- A 1% fall exists across the channel toward the outlet (1:100)
- A gradient of 1:10 is present at the benching with the run-off toward the channel
- The height of the DN1200 Easi-Base™ unit varies in accordance with the diameter of the main channel running through the unit. (Please refer to the above table for heights)

DN1200 RANGE OF LINER ORIENTATIONS

Pipe Size (mm)	PREDL REFERENCE
150	P1, P13, P135, P13579, P14, P147, P149, P15, P157, P158, P159, P16, P169 P17, P18, P19, P2-, P2, P24, P248, P25, P258, P259, P26, P268, P27, P28, P29 P3-, P3, P35, P357, P358, P359, P36, P37, P38, P39, P4-, P4, P45, P46, P469 P47, P48, P49, P5-, P5, P5+, P56, P57, P579, P58, P59, P6, P6+, P68, P69, P7, P7+, P79, P8, P8+, P9
200 *	P1, P15, P159, P19, P2, P3, P4, P5, P59, P6, P7, P8, P9
225	P1, P14, P149, P15, P157, P158, P159, P16, P169, P17, P18, P19, P2-, P2, P248, P25, P257, P258, P259, P26, P27, P28, P29, P3-, P3, P35, P357, P358, P359, P37, P38, P39, P4-, P4, P46, P48, P49, P5-, P5, P5+, P57, P58, P59, P6, P6+, P69, P7, P7+, P8, P8+, P9
250 *	P1, P15, P159, P19, P2, P25, P3, P35, P4, P5, P57, P58, P59, P6, P7, P8, P9
300	P1, P15, P159, P17, P18, P19, P2-, P2, P25, P27, P28, P29, P3-, P3, P35, P37, P38, P39, P4-, P4, P5-, P5, P5+, P57, P58, P59, P6, P7, P7+, P8, P8+, P9

150 Pipe: PVC (EN1401), Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay

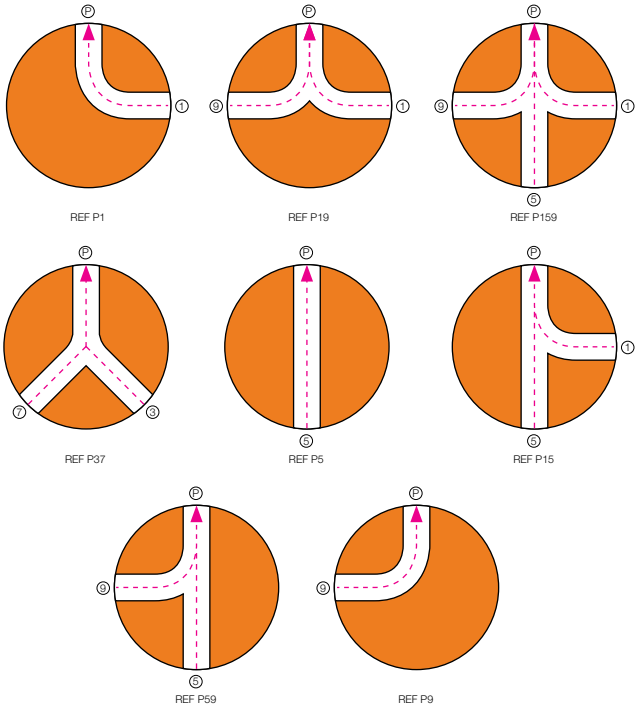
200 Pipe: PVC (EN1401)

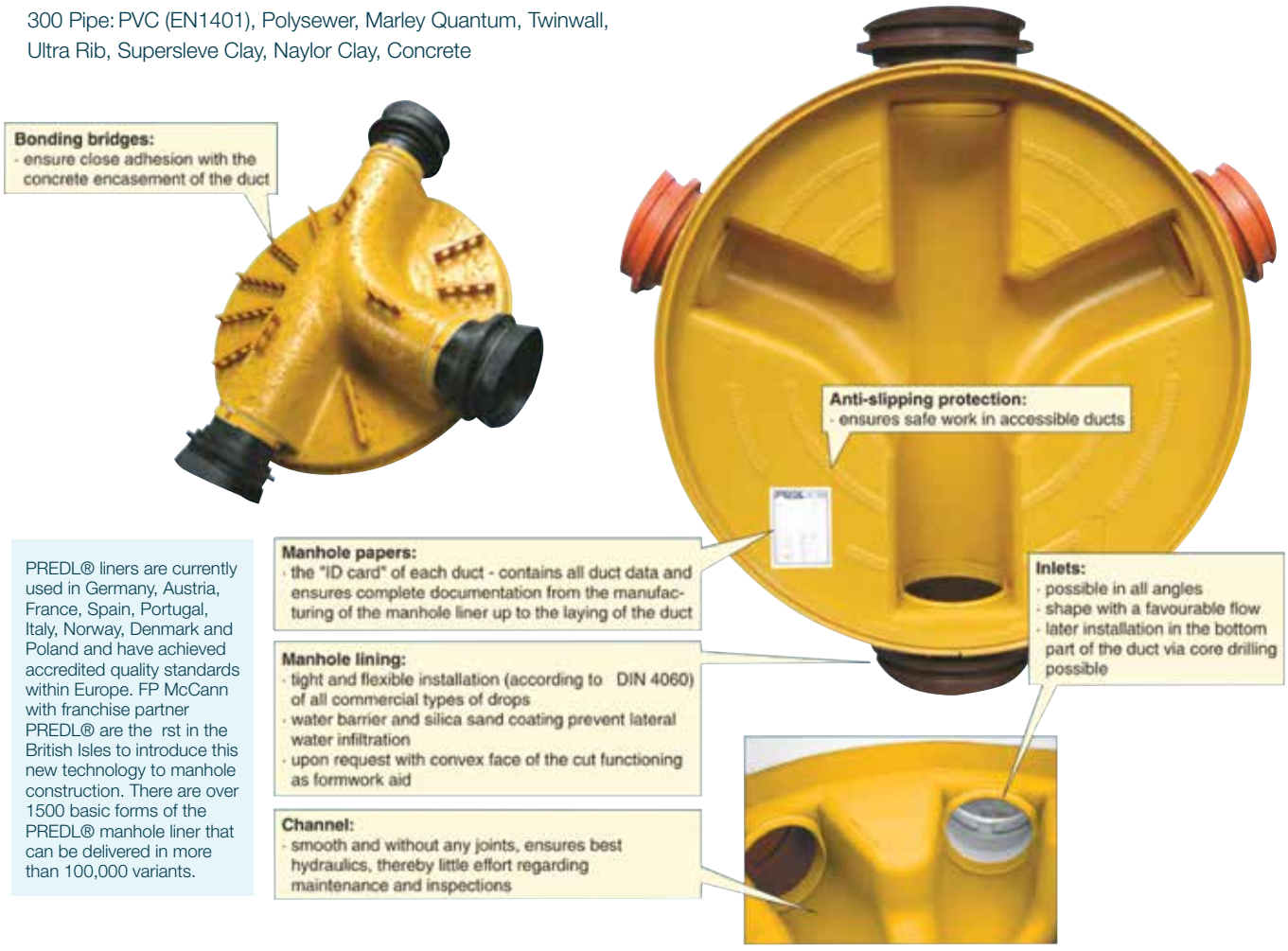
225 Pipe: Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay

250 Pipe: PVC (EN1401)

300 Pipe: PVC (EN1401), Polysewer, Marley Quantum, Twinwall, Ultra Rib, Supersleve Clay, Naylor Clay, Concrete

EXAMPLES OF PREDL LINERS STANDARD STOCK





PREDL® liners are currently used in Germany, Austria, France, Spain, Portugal, Italy, Norway, Denmark and Poland and have achieved accredited quality standards within Europe. FP McCann with franchise partner PREDL® are the first in the British Isles to introduce this new technology to manhole construction. There are over 1500 basic forms of the PREDL® manhole liner that can be delivered in more than 100,000 variants.

EASI-BASE™ ORDER FORM

ORDER DETAILS

Merchant: .....

Merchant Contact: .....

Contractor: .....

Contact Name: .....

Contact Tel: .....

Job Details / Address: .....

Manhole Ref: .....

Chamber Dia (mm): .....

Order your Easi-Base™ using the PREDL Clock diagram. The outlet is 'P' with inlets available in any combination from 1-9. Any angles from 90°- 270° are available in accordance with the latest sewers for adoption compliance.

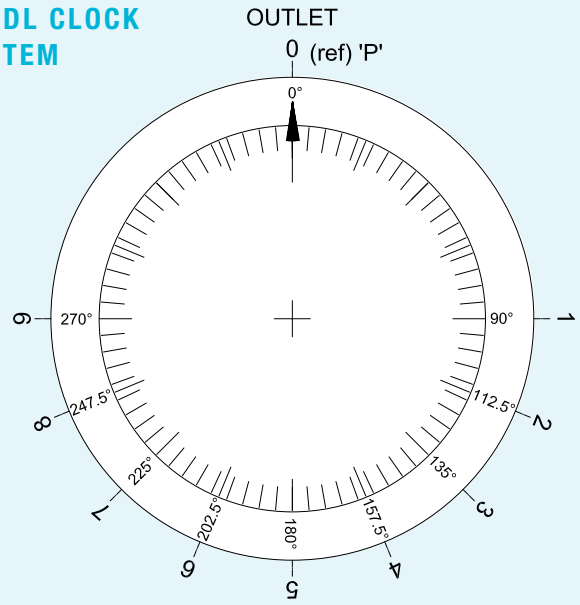
Please consider the example, and use the table below to place your order. One form is required per Easi-Base™.

We can offer a bespoke take-off service on all manholes upon placement of order.

NOTES

1. One form required per Easi-Base™.
2. It is essential the pipe type is given correctly to ensure the correct pipe seals are provided.

PREDL CLOCK SYSTEM



SPECIFYING AND ORDERING YOUR EASI-BASE UNIT

Combinations and variants in entry pipe diameters and orientations can be chosen from the PREDL Clock diagram.

When ordering, it is important to remember that the 'P' refers to the position of the outlet leading from the manhole. All other orientations are specified as a reference from the 'P' position; the next reference is then given as the main channel; each inlet is then referenced firstly by the largest diameter, then by numerical order.

Please see the examples below.

- P5 is a DN1200 Easi-Base™ with straight-through inlet at 180° from the outlet position. Note a 1% fall in the channel exists towards the outlet position 'P'.
- P59 refers to a DN1200 Easi-Base™ with the main channel inlet at 180° from the outlet 'P' position and an additional second inlet at 270°.

Using the PREDL clock reference system, FP McCann can ensure the accuracy of each channel connection.

	Outlet	Inlet 1	Inlet 2	Inlet 3	Inlet 4	Inlet 5
PREDEL Ref.	P					
Angle	0˚					
Pipe Size						
Pipe Type						
Add. Info.						
EXAMPLE - P519						
PREDEL Ref.	P	1	5	9	-	-
Angle	0˚	90˚	180˚	270˚	-	-
Pipe Size	300mm	150mm	300mm	150mm	-	-
Pipe Type	Wavin Ultrarib	Wavin Ultrarib	Wavin Ultrarib	Wavin Ultrarib	-	-
Add. Info.						

DN1500 - DN3000 EASI-BASES™



FP McCann's bespoke Easi-Bases™ from DN1500 to DN3000 complement our existing manhole ranges and are produced as monolithic units, utilising standard manhole tongue and groove joints for connection with standard manhole chambers. These units are produced wholly from concrete and provide a variety of connection orientations using the Predl Clock System. They can accommodate concrete, clay, twinwall, ductile iron and uPVC pipes from 150mm to 1200mm.

The table below gives the dimensions associated with each size, including the overall height of the unit, the invert level for each different pipe diameter and the combination of pipe diameters accommodated. All Easi-Base™s are made level to soffit, (i.e. level-benching).





DN1500 - DN3000 EASI-BASE™ UNIT SIZES				
Diameter	Internal Diameter	Invert Level (for take off)	Finished Height	Weight Tonnes
DN1500	150	470	750	3.5
DN1500	225	545	750	3.5
DN1500	300	600	750	3.5
DN1500	375	705	1000	4.6
DN1500	450	810	1000	4.4
DN1500	525	920	1250	4.7
DN1500	600	1000	1250	4.75
DN1800	150	470	750	6
DN1800	225	545	750	6
DN1800	300	600	750	6
DN1800	375	705	1000	6.5
DN1800	450	810	1000	6.5
DN1800	525	920	1250	7
DN1800	600	1000	1250	6.5
DN1800	675	1150	1400	8
DN1800	750	1200	1500	7.75
DN1800	825	1300	1500	7.5
DN1800	900	1300	1500	6.75
DN2100*	†150 - 1200	1900	2436	Δ 10.5
DN2400*	150 -1200	1900	2436	Δ 10.5
DN2400*	150 - 450	675	1175	Δ 7.8
DN2400*	525	775	1275	Δ 8.1
DN2400*	600	925	1425	Δ 8.5
DN2400*	675 - 825	1185	1685	Δ 7
DN2400*	900	1435	1935	Δ 7
DN2400*	1050	1685	2185	Δ 7.8
DN2400*	1200	1935	2435	Δ 8.5
DN2700*	150 - 450	675	1175	Δ 9.7
DN2700*	525	775	1275	Δ 10.1
DN2700*	600	925	1425	Δ 10.6
DN2700*	675 - 825	1185	1685	Δ 8.8
DN2700*	900	1435	1935	Δ 8.8
DN2700*	1050	1685	2185	Δ 9.7
DN2700*	1200	1935	2435	Δ 10.6
DN3000*	150 - 450	675	1175	Δ 10.8
DN3000*	525	775	1275	Δ 11.1
DN3000*	600	925	1425	Δ 12
DN3000*	675 - 825	1185	1685	Δ9.6
DN3000*	900	1435	1935	Δ 9.6
DN3000*	1050	1685	2185	Δ 10.8
DN3000*	1200	1935	2435	Δ 12

* 2 part unit / max Δ per unit

† 1 unit ex Knockloughrim depot

All sizes are in mm

WEIGHTS AND LIFTING MECHANISM DETAIL

Easi-Base™ (DN)	Lifting Mechanism	Quantity of Lifters Used per unit	Safe Working Load (S.W.L) per lifter (Tonnes)	Easi-Base™ Unit Max. weight (Tonnes)
1200	M24	3	2.5	1.5 - 2.5
1500	M36	3	6.3	3.5 - 5.0
1800	M36	3	6.3	6.0 - 8.0
2100	M36	3	6.3	6.5
* 2100	Utility Anchors & M36	3 & 3	5 & 6.3	11.0
2400	M36	3	6.3	7.8
* 2400	Utility Anchors	3	5.0	14.0
2700	M36	3	6.3	9.7
3000	M42	3	8.0	11.0

* Manufactured in NI
(Please note, weights will vary dependent upon pipe size and number of inlets/outlets.)

Our Easi-Base™ manhole systems are manufactured with cast-in lifting sockets to allow chains to be hooked on to lift the base in a safe manner, which will prevent damage during handling. It also negates the requirement to drill holes through the Easi-Base, thus ensuring absolute water tightness when installing in wet ground.



EASI-BASE™ WITH INTEGRAL SEAL



FP McCann's integral seal is a simple, reliable rubber compression connector which is embedded in the concrete when the manhole is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.

FP McCann is the first precast concrete manufacturer in the UK to offer an integral seal on our Easi-Base™ DN1500 and DN1800 units. Our new integral seal system is a simple, reliable rubber compression connector which is embedded in the concrete when the manhole is cast. The seal is compressed between the pipe and the concrete, creating a flexible watertight seal.





FEATURES

- Connector is placed in the sealing position at the precast plant
- Manhole arrives at the jobsite ready to receive the pipe
- Pipe is beveled and lubricated, and then inserted through connector
- Manhole may be back filled immediately

BENEFITS

- Integrally cast into the *structure when the concrete is poured
- Requires low insertion force
- No clamps to tighten or forget
- Fast and easy installation
- Less time in the excavation
- Durable, reusable casting forms
- Reusable tooling holds connector in position during casting process.

* 1050mm and above pipe sizes require grouting using a e-proxy resin or similar approved product

SEALANT

DN1200	12mm x 120mm x 4.2m
DN1500	12mm x 120mm x 5.2m
DN1800/DN2100	12mm x 120mm x 6.0m

EASI-BASE ADAPTORS AND SEALS

Part No.	Size	Pipe O/D	Type	Description
FPM 101	225	250	Adaptor	PVC TW & Ultra Rib
FPM 102	225	N/A	Adaptor	End cap Stock
FPM 103	225	263	Adaptor	Clay (SuperSleve)
FPM 104	225/150	N/A	Adaptor	Level Invert Reducer
FPM 105	225	268	Adaptor	PE Twin Wall
FPM 106	225	N/A	Seal	Uni bell Seal
FPM 107	225	263	Seal	Clay Adaptor Seal
FPM 108	150	170	Adaptor	Ultra Rib
FPM 109	150	N/A	Adaptor	End Cap
FPM 110	150	178	Adaptor	Twin Wall PE
FPM 111	150	178	Adaptor	Clay (SuperSleve)
FPM 112	300	335	Adaptor	Ultra Rib
FPM 113	150	188	Adaptor	Naylor Densleeve
FPM 114	300	353	Adaptor	Twin Wall
FPM 115	150	160	Adaptor	Twin Wall PVC
FPM 116	225	278	Adaptor	Naylor Densleeve

Please note: all adaptors and seals are available from stock

DN1050 HIGHWAYS AGENCY CATCHPIT

HIGHWAYS AGENCY COMPLIANT EPDM FLEXIBLE SEAL DN1050 CATCHPIT

With its flexible rubber pipe connector seals, precast concrete catchpits can be utilised on a single lane carriageway, replacing the requirement to cast a base sump in-situ and construct the catchpit from a standard DN1050 manhole ring.

The innovative EPDM 40 flexible rubber seal at the connection points can accommodate pipe sizes DN150, DN225 and DN300. This negates the need to saw cut openings in the concrete wall and the use of wet mortar trades to seal the pipe surround.

Catchpits are supplied with factory fitted pre-marked EPDM 40 rubber blanks. The unique rubber blank/seal has preformed cutting grooves around the three DN entry sizes indicated. This allows for accurate cutting out to pipe diameter requirement. There is no similar system available on the market. Once pipes are fitted into the seal, up to 45 degrees of pipe deflection is permitted without breaking the seal.

Significant savings in time eliminates the need for follow-up finishing gangs. Reduced safety risks because the operative time in excavation is minimal and no power tools are required to cut concrete. Indirect cost benefits arise from saving up to 26 hours of labour time, related to the curing of wet trades on a traditional build.

FP McCann's catchpit products are manufactured under BSI Kitemark approval to comply with BS EN 1917 and BS 5911, and are therefore fully compliant to HA's MCHW specification.

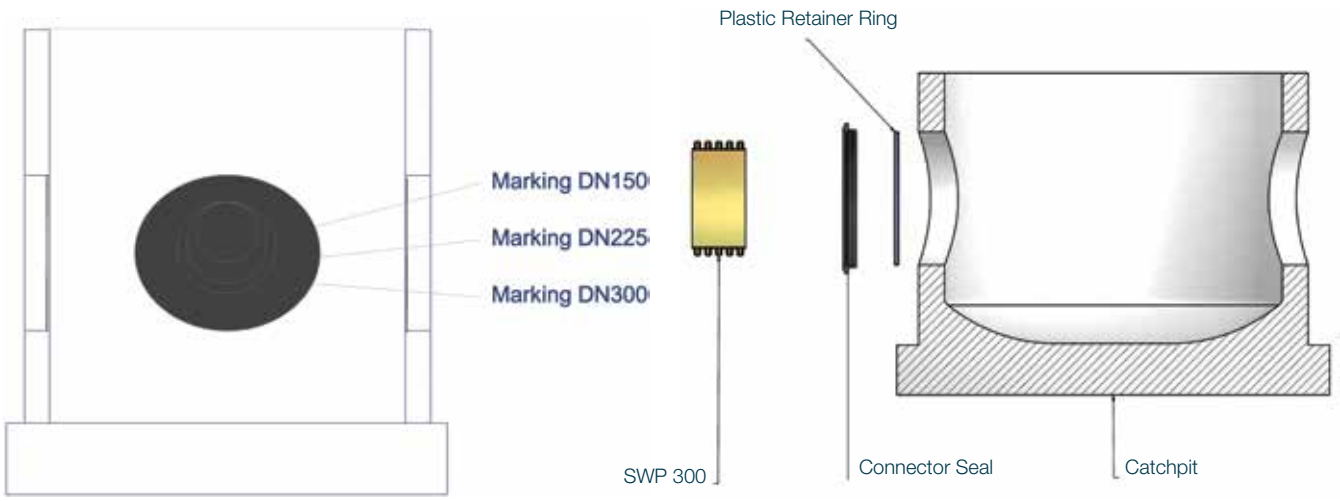




Can be used in straight through, 90° connection or straight through with a cross drain.



Once pipe is fitted to the connector, up to 45° of deflection is possible without breaking the seal.



CATCHPIT



The catchpit effectively provides a sealed sump manhole, a monolithic precast concrete unit fitted with connector seals, which can be used to connect to the following types of pipe: uPVC, twinwall, clay, ductile iron and concrete. The catchpit is designed to accommodate pipe sizes DN150 to DN1800 and is in line with highway specification.

PRODUCT BENEFITS

- Creates an immediate watertight structure
- Prefabricated off-site (minimising on-site labour and costs)
- Quick and efficient to install
- Accommodates connection to all types of pipe used in road and manhole construction
- Safety benefits gained in the construction of manholes as the pre-formed sump and connect seals eliminate on-site construction, thus greatly reducing labour activity within the manhole
- Quality is greatly increased as construction is within the factory environment and complies with BS EN 1917 and BS 5911
- Eliminates material wastage associated with current in-situ method
- Yields environmental benefits such as lower carbon footprint, less concrete used on-site and less excavated material removed from site
- Bespoke designs available



Catchpit Chamber

Nominal Size (dn)	Height (mm)	+ Max. Pipe Size (mm)	Chamber OD (mm)	Wall Thick-ness (mm)	Capacity (l)	**Approx. Weight (kg)		No.of Units per Load	Lifting Hole Qty/ da/ per unit
DN1050	* 1000	300	1210	80	650	1380		19	3no. ø45 lifting holes
DN1200	* 1000	300	1380	90	870	1600		16	3no. ø16 sockets and loops
DN1500T1	* 1400	600	1800	150	1800	4700		5	3no. utility anchors
DN1500T2	* 2400	675	1800	150	3300	7700		4	3no. utility anchors
DN1800T1	* 1500	600	2100	150	2700	^ 6300		4	3no. utility anchors
DN1800T2	* 2400	900	2100	150	5100	8300		3	3no. utility anchors
DN2100	* 2400	1350	2400	150	7000	^ 9000	11000	3	3no. utility anchors
DN2400	* 2700	1800	2700	150	10,500	^ 11700	14000	2	3no. utility anchors

* Height can be reduced to suit customers' requirements Based on 300mm sump. If a non-standard invert level is required, please specify when ordering

^ Lightweight catchpits (available on request)

** Maximum weight of a solid, full height unit with no holes

\+ Based on a standard catchpit only. If larger pipe sizes are required, please contact FP McCann

VALVE CHAMBER

FP McCann designs and manufactures a bespoke range of reinforced valve chambers capable of housing any size and type of valve/pump. Valve chambers consist of a precast concrete sealed sump manhole with factory-fitted saddles to house the pump, and are used in the management of water, oils and chemicals.





Chamber Diameter	1200 - 3000mm
Chamber Height	900mm
Stool	Bespoke to project requirements
Pipe Size	150 - 375mm
Inlets / Outlets	Will vary to accommodate pipe size
Cover Slab Thickness	Will vary in accordance with chamber diameter
Base Thickness	250mm



PRODUCT BENEFITS

- Immediate watertight structure
- Reduced installation time/costs
- Accommodates connection to all types of pipe, including concrete, metallic, HDPE and clay
- Pump is raised off the ground and sits on a preformed concrete stool
- Easy and clean access for operation and inspection





wrc approved™
PT/398/0217

STORMBRAKE™

A NEW FORCE IN VORTEX FLOW TECHNOLOGY

Vortex Flow Controls are commonly used in drainage schemes to regulate the stormwater runoff from urban areas. Through the use of vortex flow technology, FP McCann's StormBrake™ provides a solution to a variety of stormwater management problems. These include accurately controlling stormwater flow, minimising upstream storage requirements and reducing the risk of blockages compared to traditional orifice plates.

FP McCann's StormBrake™ flow control chamber combines an integral base and side walls with provision for inlet and outlet connections.

It can be used in a number of applications, including:

- As a silt-trap
- As a valve chamber
- As a flow rate controller (requires installation of FP McCann's StormBrake™ flow control device, sold separately)

SIZES AVAILABLE

StormBrake™ flow control chambers are available between DN1200 - DN3000 Bespoke larger units can be manufactured to client specification.

FLOW RATE CONTROL

FP McCann's StormBrake™ vortex flow control device is designed to limit stormwater outflow to a specific discharge rate. For further details, contact our drainage sales team.

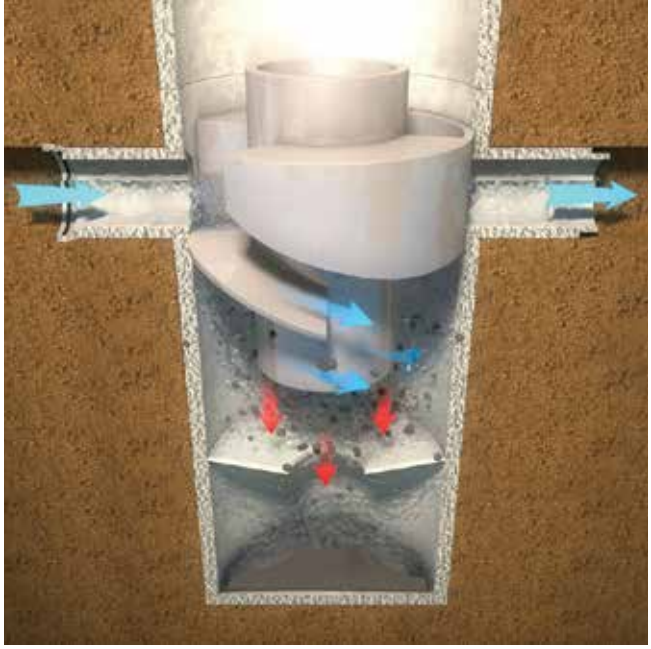
PRODUCT BENEFITS

- Minimal maintenance required after installation. FP McCann's StormBrake™ is self-activating and functions without any mechanical components
- Outlet areas of up to 6 times larger than an equivalent orifice plate, significantly reducing the risk of blockages and the associated maintenance costs
- Reduces the amount of upstream storage required, minimising the cost of providing attenuation facilities
- Accurately designed to meet a wide range of design conditions. For design conditions outside of this range, please contact FP McCann directly
- Contains a bypass door which can be manually opened at ground level using a pull cable to allow easy access for inspection or blockage removal
- Provides minimal flow restriction at low upstream heads to allow fast discharge of water during the initial stages of a storm



STORMCLEANSER™

HYDRODYNAMIC SEPARATOR



FP McCann has designed and developed a new range of hydrodynamic separators for the treatment of urban catchment stormwater run-off. StormCleanser™ provides a cost-effective solution for designers, engineers and contractors involved in the provision of Sustainable urban Drainage Systems (SuDS). The unit has no moving parts, requires no power and is constructed within standard precast reinforced concrete chamber rings. All internal flow components are manufactured in GRP, ensuring long life performance.

INDEPENDENT TESTING

FP McCann's StormCleanser™ (1200mm diameter model) has been independently tested by WRc at their research and development centre and achieved excellent total solids and hydrocarbon removal at design flow rates.Total solid removal rates ranging from 85% to 92% have been recorded.

The StormCleanser™ has demonstrated high level removal rates when design flows were exceeded.

The system is also effective in the removal of hydrocarbons, litter and other stormwater debris.

OPERATION

The StormCleanser™ is specifically designed to remove suspended solids, hydrocarbons and floatable debris from the stormwater run-off. Water and pollutants enter the system via the inlet pipe and launder channel arrangement. Low energy vortex flow patterns allow the floatables to gather and solids to settle to the bottom of the treatment chamber for subsequent removal. Resuspension of the solids is minimised by the provision of a GRP baffle plate, positioned above the solids storage sump. Floatable debris is retained within the StormCleanser™, allowing easy access for suction cleansing. Stormwater surges in excess of the maximum flow rate, overflow the weir, bypass the treatment zone and are directly discharged through the outlet pipe. This helps to minimize the effects of scour within the treatment compartment and optimises the performance of the hydrodynamic separator.

PRODUCT BENEFITS

- WRc tested and easy to install and maintain
- Effectively removes and treats wide flow range
- Complies with SuDS legislation
- Cost-effective downstream defense mechanism

PRODUCT APPLICATIONS

- Housing developments
- Highway drainage projects
- Commercial/Industrial sites
- Leisure facilities
- Existing surface water sewer discharges
- Pre-treatment for pond and wetland areas
- Sustainable Urban Drainage Schemes (SuDS)

SELECTION CHART

Part Number	PRE EHS/1200	PRE EHS/1500	PRE EHS/1800	PRE EHS/2100
Chamber Diameter (mm)	1200	1500	1800	2100
Treatment Flow Rate (l/sec)	25	35	50	75
Maximum Flow Rate (l/sec)	35	50	100	150
Inlet Pipe Diameter (mm)	300	375	450	525
Outlet Pipe Diameter (mm)	300	375	450	525
Minimum Sediment Storage Sump (m^3)	0.82	1.24	1.64	2.17

STORMCHANNEL™

THE HEAVY DUTY PRECAST DRAINAGE CHANNEL DESIGNED TO REMOVE SURFACE WATER

WHAT IS STORMCHANNEL™?

FP McCann's StormChannel™ is a heavy duty, precast concrete slotted drainage channel designed to remove surface water from many areas, including roads, motorways, car parks, industrial, commercial and residential areas. This helps to prevent flooding and run-off.

FP McCann offers two types of StormChannel™:

1. A precast concrete bullnosed kerb drainage channel has a linear slot drain and a profiled, oblong drainage channel.
2. A standard precast concrete drainage channel with an interrupted slot and stabiliser bars for increased stability.

StormChannel™	Length (mm)	Height (mm)	Weight (kg)	Width (mm)
300 Standard	2500	550	1400	520
400 Standard	2500	740	1700	520
400 Kerb	2500	790	1700	520
500 Standard	2500	805	2300	700
600 Standard	2500	990	2600	700

BENEFITS:

- Quick installation
- Minimal maintenance
- Excellent flow rates even at zero or shallow gradients
- Modular system
- Robust product
- Economical product
- Integrated watertight seal
- No concrete surround required
- Conforms to EN 1433

FEATURES:

- Resilient up to classes D400kN, E600kN or F900kN
- 2% surface slope to the slot
- Supplied with interrupted slot only – slot width 30mm
- Standard inner diameter: 480mm x 300mm
- Drainage cross section: 0.125m²
- Spigot and socket end for correct alignment and joining

Additional connections can be provided on request. Junction box sump unit also available in all sizes.



300 Standard | 400 Standard | 400 Kerb | 500 Standard | 600 Standard

HOUSE INSPECTION CHAMBERS



FP McCann's precast concrete inspection chambers are available in four common sizes: 600 x 450, 750 x 600, 1000 x 675 and 1200 x 750mm. Manufactured in accordance with BS EN 1917 / BS5911, each section has a tongue and groove joint and can be sealed with a sand and cement mortar or bitumen sealant, in the same fashion as a circular manhole and chamber ring.

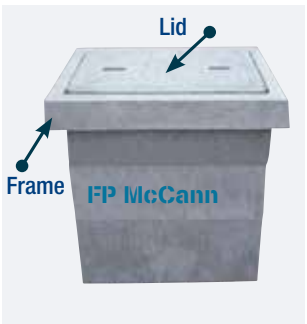
To complete the chamber, FP McCann has a range of covers and ground level components. FP McCann's frame (also known as a surround) and lid combination is designed to sit flush with the top course, such as tarmac or concrete surfacing or in grassy areas.

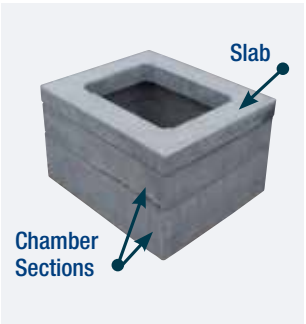
The lid itself features an anti-slip chequered finish and recessed lifting points to allow removal from the frame by use of standard lifting eyes.

Chamber Size (mm)	Cover
600x450	Frame and lid places straight on top of unit
750x600	Below surface slab with 600x450 access, allowing use of frame and lid
1000x675	Below surface slab with 600x450 access, allowing use of frame and lid
1200x750	Light or heavy duty below surface slab with 600x600 access, allowing use of standard steel access hole cover

Description Units (mm)	**Weight per unit (mm)	No. of units per pallet	Wall/ Slab thickness (mm)
600x450x150 section	40	12	40
600x450x225 section	65	8	40
600x450x300 section	85	6	40
600x450x100 frame	45	8	100
600x450x55 lid	50	16	55
750x600x150 section	60	6	55
750x600x250 section	100	4	55
750x600x70 cover slab (600x450 access)	75	8	*70
1000x675x150 section	94	6	60
1000x675x250 section	130	4	60
1000 x 675 x 76 cover slab (600x450 access)	130	8	*75
1200x750x150 section	120	6	75
1200x750x250 section	200	4	75
1200x750x80 cover slab (600x600 access)	185	6	*80

* Effective thickness
** Approximate weights



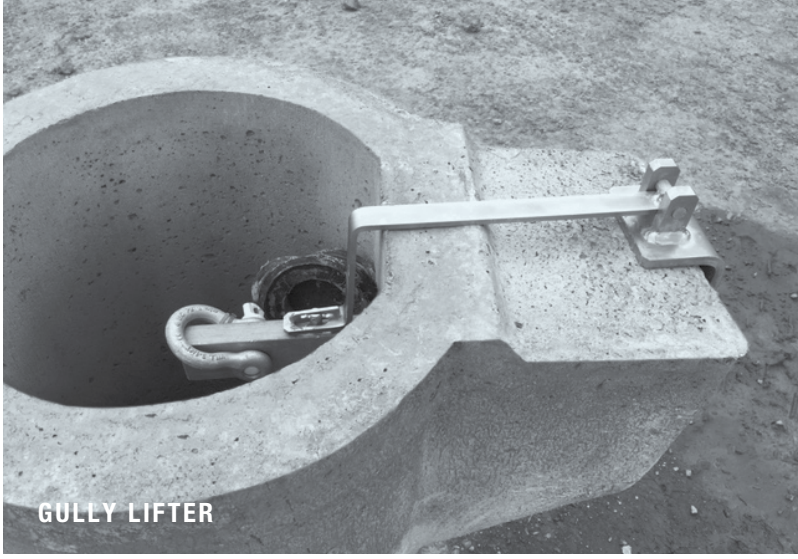




NOTE: For HIC's placed in depths greater than 1.5m, we recommend the use of a concrete surround.

GULLIES & SLABS RANGE





GULLY LIFTER

GULLIES

Dimensions (mm)			Nominal Weight (Kg)	Approx. Capacity (litres)	No. per load
Diameter Internal	Depth	Outlet			
375	750	150	180	51	66
375	900	150	200	67	66
450	750	150	215	71	60
450	900	150	255	95	60
450	1050	150	270	118	60
450	1200	150	280	142	60

GULLY COVER SLABS

Dimensions (mm)	Standard	Horseshoe
Length (mm)	750	600
Width (mm)	650	650
Thickness (mm)	100	100
Weight (kg)	70	58
Hole Size (mm)	450	450
Qty/Pack	12	12

The Gully Cover Slab is designed as seating for a gully grate

PRODUCT BENEFITS

- The seal has been cast-in, thus preventing loss or damage on-site
- An integral seal and rodding eye for universal sealing characteristics
- The rodding eye closure has been recessed into the concrete to help eliminate dislodgment
- Reduced thickness, giving reduced weight and a smaller footprint for better vehicle utilisation
- Improved system that helps prevent any discharge of oil
- The gully is fully universal, suitable for all plastic and clay drainage products from 160mm to 186mm diameter
- Does not lose shape
- Does not float (self weight inhibits flotation)

PRODUCT BENEFITS

- Quicker to lay, ensuring reduced labour costs
- Use on top of 450mm diameter gully
- Eliminates laying engineering bricks on-site
- Sits flush to kerb for enhanced stability
- 100mm thick single piece unit
- Eliminates brickwork vertical joint ‘weakspots’
- Greater stability than brickwork
- Quality product produced by vibration process
- Compressive strength similar to Class B.Eng. bricks

STANDARD GULLY COVER



HORSESHOE GULLY COVER



Note: Gullies and Gully cover slabs manufactured in accordance with BS 5911-6

FALL ARREST SYSTEM

AWARD-WINNING SAFETY SOLUTION FOR MANHOLE CONSTRUCTION

Clients, consultant engineers, contractors and suppliers all have a duty to mitigate hazards on-site, whenever reasonably practicable. One such hazard identified is the risk of operatives falling through manhole openings, particularly during the construction process and also in follow-up maintenance work.

Working with partners Severn Trent Water, engineer Grontmij and contractor to the water sector, Morgan Sindall plc, FP McCann has designed an award-winning safety solution. Our fall arrest system allows for safe working around the manhole opening prior to the fitting of the ironwork.

In the construction of a manhole, operatives often work unprotected from the opening at surface level when the final stages of completion occur. This includes the final brickwork up to the manhole frame and the mortar bedding of the frame itself.

With most standard cover slabs, the access point for man entry is open and it is left to the contractor to cover on-site. In many site situations, these openings remain for a number of days while phases of work are completed. Our fall arrest system immediately addresses this problem. The future production of all standard access cover slabs will incorporate the optional protective grid, which will remain in the slab even when the final D400 steel cover and frame are set in place at surface level.

The galvanised mild steel grid is available in four standard sizes:

- 610mm x 610mm
- 675mm x 675mm
- 750mm x 600mm
- 1200mm x 675mm

The fall arrest grid is seated on load-bearing corners cast into a standard range of manhole cover slabs. If a temporary fall arrest system is required, once the construction of the manhole is complete, the grid can be removed prior to the fitting of the ironwork. Alternatively, it can be a permanent fixture, left in place beneath the manhole lid. The spacing between the bars allows for ease of inspection and jetting of the manhole base during maintenance work.







RAIN HARVESTING CHAMBERS

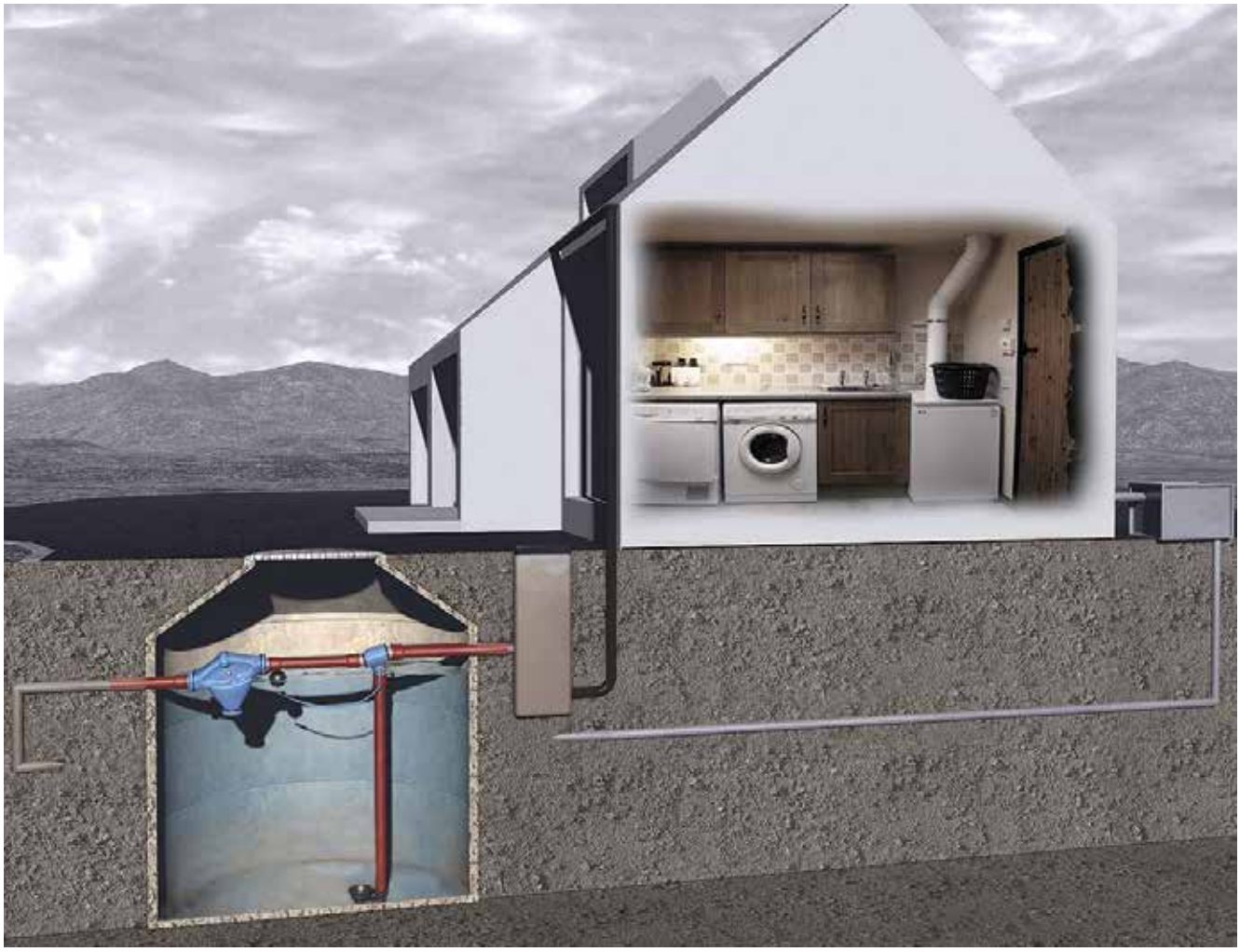


FP McCann's rain harvesting chamber is a bespoke precast water storage chamber that is compatible with water harvesting systems for residential, industrial/commercial and agricultural installations. Capturing rainwater for re-use offers significant cost savings for the user and benefits the environment by increasing water resources and further enhancing water amenity. The chamber complies with Environment Agency SuDS (Sustainable Urban Drainage System) directives.

The basic concept of harvesting rainwater is simple - rainwater is mostly collected from the roofs of buildings - it flows through gutters and downspouts and is then filtered and collected by a storage tank. From the tank, it can be recirculated or treated to produce a better quality of recycled water.

VOLUME CAPACITY OF STORAGE CHAMBERS

Internal Diameter (x1000mm)	Capacity (Litres)	Weight (kg)
DN1800	1200	1800
DN1800	1500	1900
DN2400	3000	5900
DN2400	5000	7250
DN2400	7000	8700



ADD-A-STEP®

MODULAR MANHOLE LADDER



ADD-A-STEP® modular ladders are designed to allow easy access to chambers and are approved for use in potable water, waste water, highly corrosive and general construction applications. They are a cheaper, safer and a more user-friendly alternative to traditional stainless steel ladders.

The ADD-A-STEP® modular ladder system is designed to provide a product that can be supplied off-the-shelf for next day delivery. Each module of the ADD-A-STEP® ladder consists of two stiles, one rung and two retaining clips. Each stile measures 360mm long, 80mm wide and 32mm thick maximum dimension. The ladder width outside the stiles (upright) is 435mm.

The ADD-A-STEP® ladder has 30mm diameter rungs at 300mm centre spacing and the width or foot space inside the stiles is 375mm. Two types of wall brackets are supplied as standard, one for circular and one for square chambers. The ladder can be assembled on-site using the number of modules to achieve any length and can be trimmed to length using a standard hand saw without the need for expensive cutting equipment.

ASSEMBLED IN MINUTES

STAINLESS STEEL PULL-UPS AVAILABLE TO SUIT EX STOCK

BENEFITS

The modular design allows for more economical transportation than fully assembled ladders. The ADD-A-STEP® ladder requires no maintenance other than occasional cleaning with a pressure hose, if desired. The ladder has excellent insulation properties so it can be used in applications where electrical cables are present. Constructed from polybutylene (PBT), which is UV tolerant, it is a non-corrosive and a fully recyclable material; it can easily be cut on-site with no harmful shards or dust given off.

The ADD-A-STEP® ladder helps to reduce potential health and safety risks. At approximately 5kg per linear metre, the ladder is significantly lighter than galvanized or stainless steel alternatives and its yellow colour gives it high visibility properties, making it clearly visible when the manhole cover is raised. It is also a cheaper and more user-friendly alternative to traditional stainless steel manhole ladders. The ADD-A-STEP® system is fully compliant and tested to BS EN 14396, and is the only CE marked modular ladder system in the UK.



PLASTIC ENCAPSULATED LADDERS & RUNGS

This system ladder gives the user benefits of a durable plastic encapsulated ladder without the need to specify an exact length or fit on-site. In addition, a single specification can be used for all depths of access.

PRODUCT SPECIFICATIONS

BS EN 13101 Plastic Encapsulated Steps

WIS 4-33-01: 1990 Polypropylene Encapsulated Steps

PRODUCT APPLICATIONS

Concrete manholes and inspection chambers.
Renovation of existing structures.

MATERIALS

The plastic encapsulated ladder has a bright yellow coating and is made from high impact virgin polypropylene copolymer plastic. If the ladder is to be subject to prolonged exposure to daylight then black or UV stabilised material should be specified. It is reinforced with structural steel.

PERFORMANCE

Pull out load:	7.5kN minimum, when fitted in accordance with manufacturer's instructions
Deflection under load:	5mm maximum at 2.5kN
Permanent Set:	0 mm at 2.5kN
Impact:	20kg weight from 1 metre, no cracking
Chemical Resistance:	At least pH2 to 12
Integrity of plastic:	2M ohm at 500 volts DC
Thickness of plastic:	3mm minimum
Minimum cross section:	25mm diameter

PRODUCT BENEFITS

- Excellent corrosion resistance
- Visibility
- No sharp edges
- Eliminates need to specify exact length or fit on-site
- Steel reinforcement gives predictable deflection under load without causing brittle failure





HANDHOLD ENTRY POLE SYSTEM

The handhold entry pole system is suitable for aiding maintenance engineers in the initial entry into a manhole from the surface level. Once fitted, the entry pole is a permanent fixture within the manhole, which is stored in the lowered position beneath the level of the cover. When required, the entry pole can be easily extended by simply hooking the easy-to-reach loop located at the top of the pole, pulling the handle upwards and twisting, locking into position. The handhold then provides a stable support to aid the entrance of the manhole, as well as a clear visual indication of the location of the manhole, when open. This helps prevent injury of other people in the area. Once the engineer has used the entry pole to aid their return to the surface, the pole is simply twisted to unlock it from the raised position and lowered back into the manhole, ready for the next time it is needed.



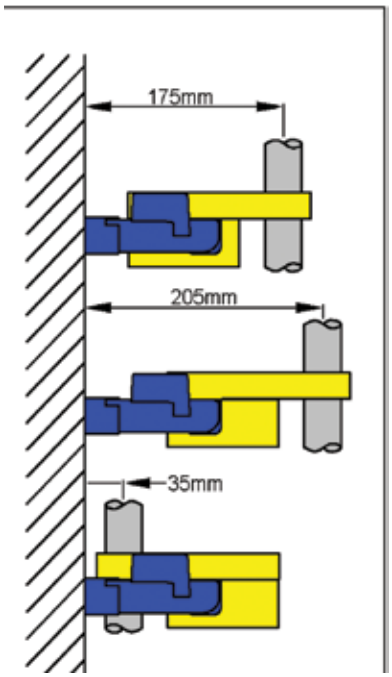


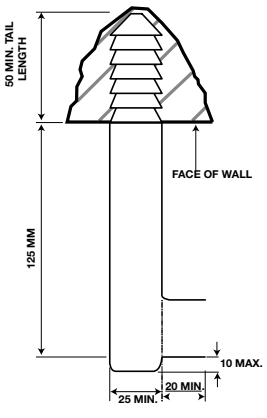
SPECIFICATION

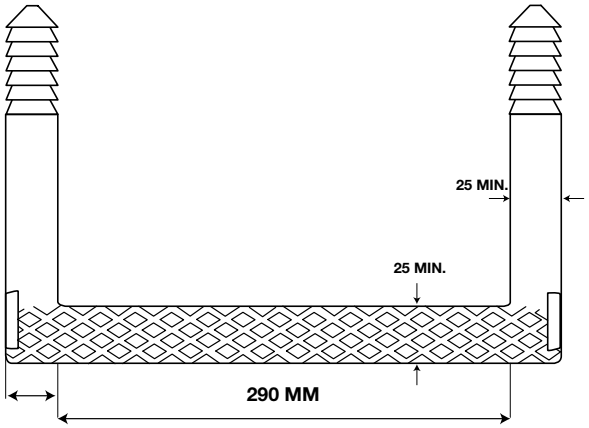
The handhold has a pole length of 1200mm and can be assembled to give three different distances from the pole to the wall. This is designed to accommodate different cover positions.

PRODUCT BENEFITS

- Helps the user find the first step safely
- Creates visual aid to indicate location of manhole to other people in the area
- Easy to fit
- Easy to raise and lower
- High strength for ultimate safety
- Low cost
- Can be fitted to any Caswick step
- Two projections for round or flat walled manholes







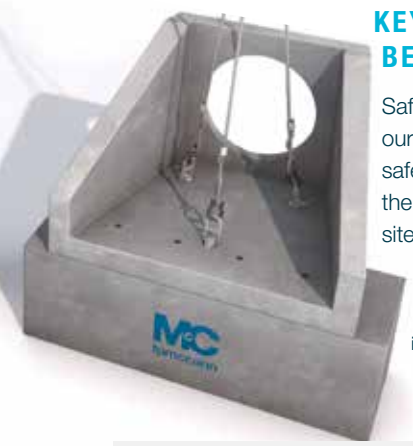
HEADWALLS

FP McCann's precast concrete headwalls provide an ideal end connection point to outfall pipes into open watercourses such as rivers, culverts, collection and balancing ponds. They are a very efficient alternative to intrusive shuttering of soil embankments and costly on-site formwork with ready-mixed concrete, making them particularly suitable for use in hard-to-reach locations and in environmentally sensitive areas.

Where time constraints exist such as in tidal flow situations, concrete headwalls can be quickly positioned, secured and backfilled, providing immediate stability around the point of water discharge.

The FP McCann headwall range can accommodate pipe sizes from DN150 to DN2100 and is suitable for usage with box culverts. Additionally, accessories such as flap valves, penstocks, silt traps, handrails and safety grating can be added as part of the specification.

A front weir wall can be fabricated onto any of the standard headwall range, on request, and installation is quick and easy.



KEY SITE SAFETY BENEFITS

Safety hand rails can be used with our full range of headwalls. Health and safety risks are minimised because the construction work takes place off-site and installation is quick and easy.

Please note: Bespoke grates and handrails are available on request. Please contact FP McCann for information on correct installation



SMALL HEADWALL



MEDIUM HEADWALL



LARGE HEADWALL



XL-T4 HEADWALL



XXL-T2 HEADWALL



PRODUCT BENEFITS

- Headwalls are designed to EC2 and manufactured to BS EN 13369. (Full design calculations available to illustrate design assumptions).
- Prefabricated off-site
- Speedy and efficient to install
- Durable, long-lasting and low maintenance
- No on-site shuttering or formwork required
- Provides immediate stability and reduces soil erosion
- Valve and safety accessories available
- Cost-effective solution
- Significantly reduces the potential for floating debris to block the watercourse
- Installation with 2 or 3 lifting anchors
- Flap valves and grates available
- Reduces carbon footprint as no need to bring in lorries to site to pour in-situ
- The extended toe unit is available for all sizes making the entire headwall range compliant with Sewers for Adoption (SFA) and Sewers for Scotland
- Headwalls meet the requirements indicated in Fig. C.5 (typical details) of Sewers for Adoption

Headwall Range	Up to & including Pipe Sizes	Max Pipe O.D. mm	Approx. Weight (Kg)
HW Small 100	300	450	1100
HW Small 150	300	450	1390
HW Medium 100	450	630	1540
HW Medium 150	450	630	2020
HW Large 100	900	1080	3020
HW Large 200	900	1080	4740
HW XL-T1	1500	1800	Part A / B 4725
HW XL-T2	1050	1260	Part A / B 4095
HW XL-T3	675	885	Part A / B 3465
HW XL-T4	375	505	Part A / B 2646
HW XXL-T1	2100	2460	Part A / B 10,150
HW XXL-T2	1500	1800	Part A / B 9205
HW XXL-T3	1050	1260	Part A / B 8421
HW XXL-T4	525	675	Part A / B 6915

NB: The above dimensions are in mm.

ACCESSORIES

Please note: Bespoke grates and handrails are available on request. Please contact FP McCann for information on correct installation



TYPICAL FRONT WALL GRATE



TYPICAL BASKET GRATE



TYPICAL HANDRAIL



MECHANICAL CONCRETE PIPE LIFTER

Fit a pipe lifter to your excavator and you can lay concrete pipes in around half the time with less cost and less hassle – but with greater safety.

Safer. No operative needed on vehicle during off-loading or in trench during pipe laying.

Easier. Simple to use. No special equipment & minimal training required.

Faster. Around 50% saving on installation time.

Cheaper. Fewer operatives plus greater productivity.

The Concrete Pipe Lifter makes light work of the installation of waste water pipelines. Within seconds, it can be attached to your excavator using a quick-hitch coupling. There are no hydraulic links or additional energy requirements.

There is no need for anyone to stand on the bed of the vehicle during off-loading (the biggest cause of accidents during pipe laying). There's no need for anyone to stand in the trench during installation and there are no slings or chains to trap hands and fingers. The whole operation is around 50% faster and you can reduce the size of your pipe laying team, so costs are lower too.

The Concrete Pipe Lifter is suitable for standard UK specification BS EN1916 concrete pipes from DN300 to DN1200.

The Manhole Lifter is a companion device that makes lifting manhole rings a safe and easy, one-man operation. It eliminates the risk of vehicle falls during off-loading. There are two versions available for precast concrete manhole rings from DN900 to DN1800 and from DN2100 to DN3000. It's capable of lifting rings from 250 mm to 1000 mm deep.

To buy or rent the Pipe Lifter, contact BPDA's supply partners visit: concretepipelifter.co.uk for details



KNOW YOUR LIFTERS

All of the precast concrete drainage products manufactured by FP McCann feature a lifting system to allow safe off-loading and installation in an efficient manner. Each system is suited to each type of product.



The information below will allow you to determine what lifting attachments are required. This list is not exhaustive and may be subject to change. Please contact FP McCann's technical department if you are unsure about any aspect of lifting. Please be aware that it is the contractor's responsibility to ensure all lifts are safe and compliant with legal requirements.

If you do not have the correct lifting equipment, please contact our sales department who will be happy to assist. **Please ensure you have ordered lifting equipment to arrive on-site, ready for when your load is delivered!**

Unless otherwise stated, FP McCann will only supply the eyes or attachments. Correct chains will need to be sourced by the contractor. Unless otherwise specified, access to the trailer will be required to insert the attachments.

PRODUCT	LIFTERS REQUIRED		NOTES
900 to 1800 Standard Chamber Rings and Soak-away	3No M24 Lifting Eye Pins inserted into holes through the ring wall.		Eyes should be on the INSIDE of the ring.
2100 to 3000 Standard Chamber Rings and Soak-away	4No M30 Lifting Eye Pins inserted into holes through the ring wall.		Eyes should be on the INSIDE of the ring.
3600 Standard Chamber Rings	3No RD30 Lifting Loops screwed into the top face of the ring		Please be aware that the loops are not intended for prolonged use.
4000 Standard Chamber Rings (2 part)	4No RD36 Lifting Loops screwed into the top face of the ring		Please be aware that the loops are not intended for prolonged use. Instructions for handling are shown on the product itself.
1200 to 1800 Wide-Wall Chamber Rings	3No 5t Spherical Head Clutch		Attach to the OUTSIDE of the ring.
300 to 1200 Standard Pipes and Fittings	Pipe Grab (below) or Slings		Slings are not supplied by FP McCann. **DO NOT USE HOOKS!** These can damage the pipes and can be dangerous!
1350 to 2100 Standard Pipes and Fittings	10t Spherical Head Clutch and Chain Sling Set		Clutches and chains allow safe lift and easy installation of units.
2400 Standard Pipes and Fittings	20t Spherical Head Clutch and Chain Sling Set		12-20 tonne shackle 2 leg lifting chain only
All Diameters of Standard Cover Slabs	None		Chain Hooks can be attached directly to all of our standard slabs without further equipment required.
Small Headwalls	2 No. 24mm Lifting Loops		Please be aware that the loops are not intended for prolonged use. Instructions for handling are shown on the product itself.
Medium & Large Headwalls	3 No. 24mm Lifting Loops		

MECHANICAL GRABS - The quicker, easier and safer option for handling rings and pipes. These attachments connect to site plant and allow off-loading and installation without any need for access to the trailer bed. Mechanical grabs are available for pipe diameters DN300 to 1200 and for ring diameters of DN900 to 3000. For further information, contact your sales representative. Easi-bases, headwalls and flow-control chambers come supplied with the correct lifters ready for use. Catchpits should be handled with a mechanical grab. All lifters supplied by FP McCann come with appropriate certification and are ready for use. Lifters should be incorporated into the contractors lifting equipment inspection regime under LOLER regulations or disposed of after use.

SAFE LIFTING OF STANDARD PRECAST CHAMBER RING SECTIONS

When lifting chamber ring sections with lifting eyes, it is important that the eyes are passed from the inside of the ring and the nut is attached to the outside of the ring to secure the pin. Hooks must be attached to the eyes on the inside of the chamber and lifted in a safe and controlled manner.

Lifting with the pins installed in any other way is dangerous and should not be attempted in any circumstances.

Lifting with the eyes on the outside is NOT safe and can crush the concrete section. When using lifting eye bolts with the nut not attached, the ring can become damaged or the eyes can pull out of the concrete.

Please be aware that precast concrete rings are fragile. They have thin walls and are not reinforced, and can be easily broken when handled incorrectly.

INCORRECT



Eyes passed through from the outside with hooks connected to the outer face of the ring. Pins can come loose if nuts not applied or the self-locking mechanism has not engaged and the concrete can be crushed by the chains.

CORRECT



Eyes passed through from the inside with the plate and nut applied to the thread on the outside, or self-locking mechanism engaged. Hooks are connected to the inside of the ring to allow for a safe lift with straight chains.

For safe lifting in situations when access to the product is restricted (i.e. when stacked high or on a trailer bed, a mechanical grab should be employed). Wide wall chamber rings are lifted via a different method (see page 18).

Bespoke chamber components such as Easi-Bases™ and StormBrake™ Flow Control Chambers will feature a separate handling method. Reference should be made to appropriate drawings or handling information.

STORMSTORE™ RANGE OF TANKS & CHAMBER SYSTEMS

FP McCann's Stormstore™ range of precast tank and chamber systems is the most extensive in the UK. Products manufactured include StormTank™ bespoke precast concrete panel system, StormChamber™ bespoke precast concrete chamber system, a precast concrete storm and waste water management system called Modular Tank System and StormHold™ stormwater management system. Complementary products include StormCleanser™ hydrodynamic separator, StormBrake™ vortex flow control system and StormChannel™ heavy-duty precast concrete slotted drainage channel.

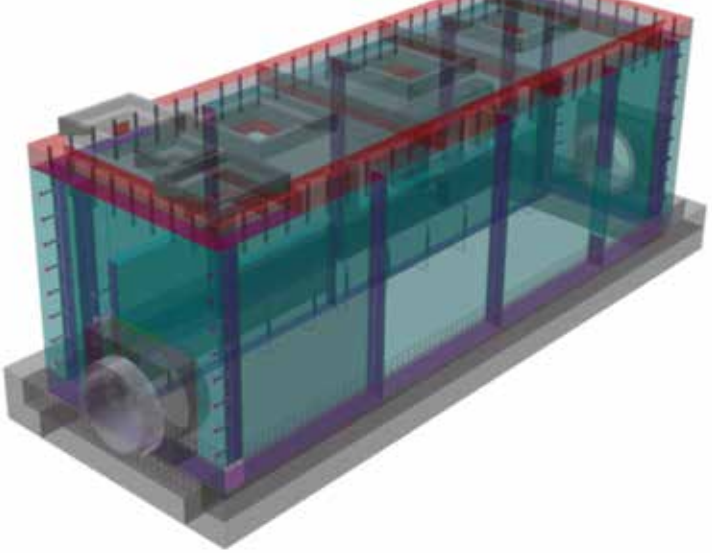
KEY ADVANTAGES OF OUR RANGE

- From receiving the specification, designs can be returned within 2 days
- Complete design package provided, including calculations and drawings
- Manufactured off-site, including factory-fitted pipework and flow control connections, ensures consistent quality, lower construction costs, faster installation and lower health and safety issues
- Design service life of 100 years
- Overall cost of the project can be estimated no matter how complicated the design
- Bespoke designs can be used for reproductions and for future alterations
- No vertical shuttering required, unless an in-situ floor is installed
- Complies with all relevant British Standards and Eurocodes



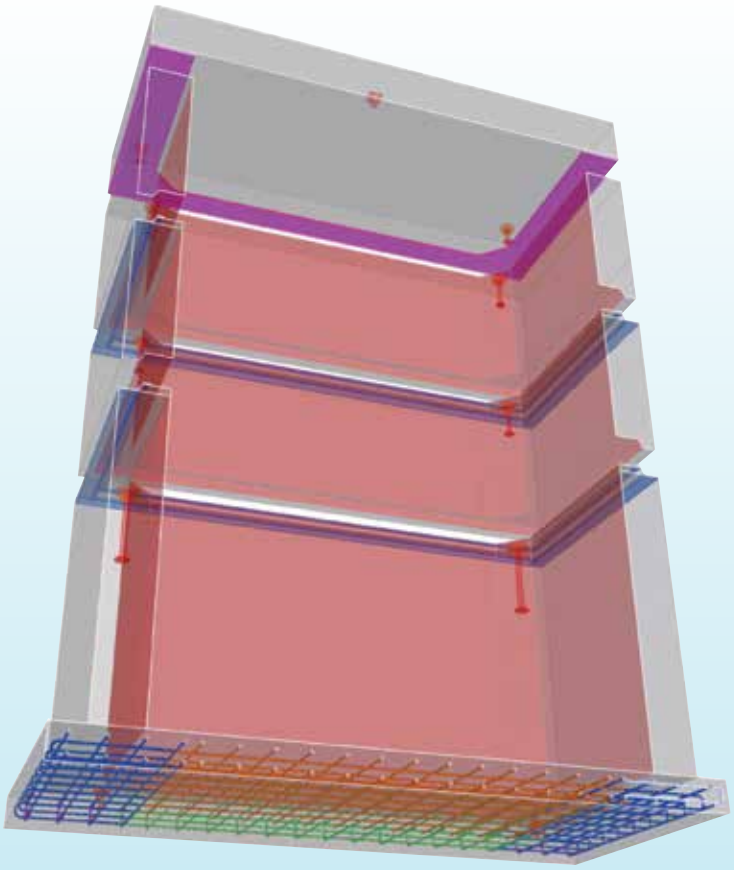
PARAMETRIC DESIGN

ONE DESIGN FOR ALL STRUCTURES



FP McCann's precast tank and chamber systems are designed using parametric 3D modelling. Specification details such as length, width, depth and loading category are entered into our in-house system by our design team; along with additional options such as pipe entries, which will instantly produce the drawings, schedules, price etc.

All multi-purpose chamber and panel systems are designed to BS EN 1992 and are CE marked.



THE DESIGN PROCESS...

DESIGN PARAMETERS ARE ENTERED ON THE SYSTEM BY FP MCCANN

↓

RUDIMENTARY DETAILS PRODUCED, INCLUDING PRICE AND DRAWING

↓

ONCE APPROVED, ADDITIONAL DESIGN DETAILS ARE ENTERED ON THE SYSTEM

↓

SYSTEM PRODUCES AUTOMATIC PRODUCTION DRAWINGS, STEEL SCHEDULES, CUSTOMER DRAWINGS AND DEDICATED CALCULATIONS

↓

APPROVAL OBTAINED FROM CLIENT BY SIGNING DRAWINGS AND CALCULATIONS

↓

PRODUCTION COMMENCES

STORMCHAMBER™

MULTIPURPOSE CHAMBER SYSTEM



FP McCann's StormChamber™ multipurpose chamber system is a single piece chamber system made up of a base unit, risers and cover slab to suit chamber depth and the specific application. A 3D dimensional drawing is available on request. This flexible modular system is suitable for most tank and chamber applications.

STORMCHAMBER™ – INTERNAL DIMENSIONS

1250 x 1250mm	**2500 x 2000mm**
1500 x 1500mm	**2500 x 2500mm**
2000 x 1500mm	**3000 x 2500mm**
2000 x 2000mm	**3000 x 3000mm**

The above size range do not generally have toe units.

Sizes above 3000x3000mm up to a maximum size of 5000x3500mm. The length and width of these chambers can be adjusted up/down in 250mm increments to suit requirements. The height of the chamber is flexible up to 6 metres, with 8 metres possible, subject to calculations.

If chamber dimensions are critical and don't fit with the above range, we can usually offer a solution.

TYPICAL CONSTRUCTION/ INSTALLATION

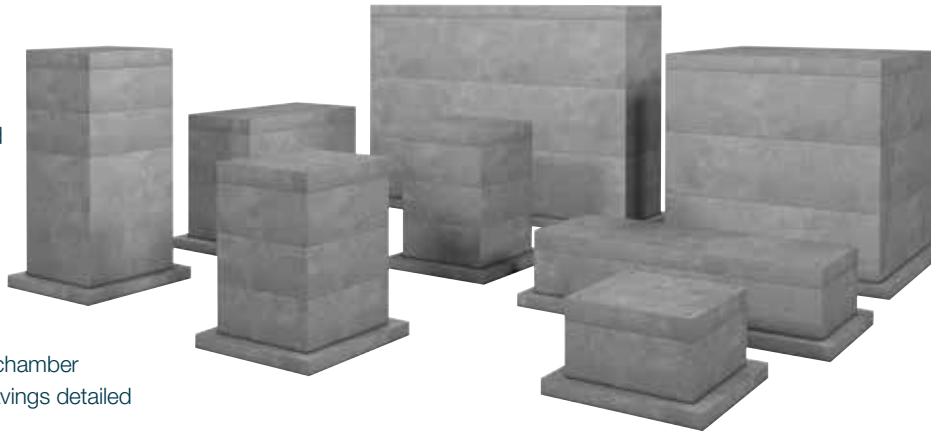
(Subject to specific application)

- Base unit is placed on level concrete blinding or type 1 sub base
- Riser unit/s are placed onto the base unit, if required
- Hydrophilic swell, butyl sealant and bearing strips are placed in the joint between the base unit and riser unit/s
- Internal wall is fitted at factory or at site and is connected with threaded rod, nuts and washers
- Pipework is connected and backfilling takes place
- Cover slab is bedded on with high strength mortar, contained to the inside by butyl sealant strip

You should consider the overall installed cost of the chamber when taking into account all the benefits and cost savings detailed below, not the upfront material cost.

BENEFITS

- Concrete surround is not required, saving time and money on site installation. Up to 85% reduction in on-site construction programme
- Pipe penetrations are done at the factory, avoiding the need for cutting or core drilling on site
- Weir walls, flow controls etc can be factory fitted, if required. Up to 95% reduction in site man-hours for pit construction
- Virtual elimination of on-site waste
- 55% reduction in lorry movements for deliveries
- Traffic calming/ management reduction
- Elimination of need for confined space working
- Significant reduction in site noise
- Clear openings to suit requirements
- Reduces enclosed spaces work and working at depth
- Reduction in Health and Safety and Dynamic Risk Assessment issues
- Enhanced functionality - product can be designed for future alterations
- A flexible modular system with a high quality factory finish
- Greatly reduces long term maintenance costs
- Smaller units may be adjusted using alternative increments, if required



STORMTANK™

MULTIPURPOSE PANEL SYSTEM

The StormTank™ multipurpose panel system is an underground structure consisting of wall panels, an in-situ or precast concrete base and cover slab, which are assembled on-site by the contractor or an approved installer using a range of standard jointing types. The panels can be made with cast-in pipe connections, recesses and openings and have penstocks or flap valves pre-installed. Internal weir-walls, overflows, underpasses and baffle walls can also be incorporated into the structure.

This system can be used for a variety of uses such as CSO chambers, storage tanks, large size manholes, pumping stations, valve chambers etc. The main advantage of using this system is that there is no size limitation, except for the height, which cannot exceed six metres, with a two metre overburden. A detailed installation guide is available. Please contact FP McCann for further details.

PRODUCT APPLICATIONS

- Air-infiltration chambers
- Hydro-brake chambers
- Large CSO chambers
- Water storage tanks
- Pumping stations
- Attenuation tanks
- Large manholes
- ASP structures
- Sludge tanks
- Basements
- Headwalls

wrc approved™
PT/433/0119



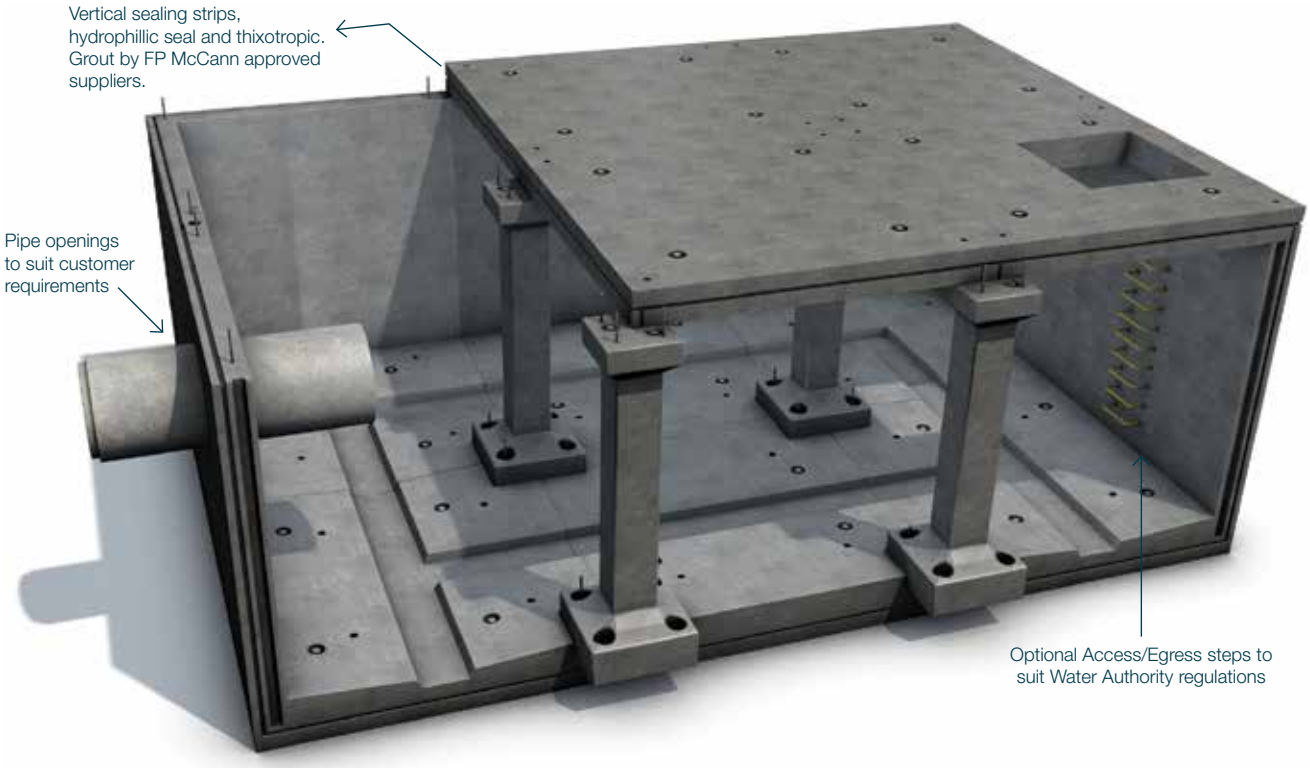




MODULAR TANK SYSTEM

wrc approved™
PT/363/0715

StormStore (storm and waste water management system) provides a multifunctional, durable solution for the detention, retention, infiltration, harvesting and treatment of water, comprising of a combination of standardised precast concrete elements, which are designed to solve your storm and waste water management needs.



DETENTION

StormStore™ provides a cost-effective solution for site applications where stormwater needs to be detained and allowed to discharge at a controlled rate.

RETENTION

StormStore™ retention systems are ideal for applications where the goal is to retain rainwater or stormwater for some type of harvest and reuse applications.

INFILTRATION

Eliminate the issues created with discharging stormwater off-site by using a StormStore™ to infiltrate stormwater into the soil for natural treatment and to replenish local aquifiers.

HARVESTING

Water harvesting is the collection, storage, cleaning and recycling of stormwater to replace or reduce the consumption of municipal potable water.

TREATMENT

Stormwater treatment options such as pre-treatment, post-treatment and oil water separators are available as stand-alone systems, as well as integration with StormStore.

BENEFITS OF MODULAR TANK SYSTEM

MANUFACTURING BENEFITS

- Manufactured locally
- Bespoke inlets and outlets
- An adoptable system which can cater for the 1 in 30 and 1 in 100 year storm event
- FP McCann uses state-of-the-art tooling to manufacture products of the highest quality
- A fully modular system encompassing inherent health and safety benefits

MAINTENANCE AND CLEANING BENEFITS

- The StormStore system excels where most other systems fail, incorporating features that provide maximum system performance and life cycles. As with all stormwater systems, inspection and maintenance of the StormStore system is vital for satisfactory performance and extended life cycle of the stormwater management system
- A self-cleansing and easy maintainable system which includes silt collection areas
- Designed to create safe walking channels during the maintenance, cleaning and inspection process
- Easily inspected visually, offering reduced inspection costs
- System provides clear lines of sight to aid health and safety during maintenance and cleaning

DESIGN BENEFITS

- Complies with BS EN 1992
- Grated inlets may also be incorporated to accommodate surface stormwater flows directly into the StormStore system, reducing the requirements for conventional site drainage components. Any grated inlets may also include pre-treatment devices for pollutant removal
- Standard units reduce design cost
- No requirement for in-situ structural topping to roof slab – offering reduced fill depths and cost savings
- Fully accessible system with the option of including step rungs or ladders
- A fully modular system that brings with it inherent health and safety benefits
- The design and performance meets CESWI 7th edition
- Standard internal heights from underside of roof slab to the channel inverts of 1500, 1800, 2100 and 2400mm. All available with either 1 in 4 or 1 in 20 benching gradients
- The system fully meets CE Marking requirements
- The system and installation is approved by WRc
- Complies with Sewers for Adoption 7th edition and Sewers for Scotland 3rd Edition 2015



- Precast elements manufactured using concrete with a DC4 design chemical class in accordance with BRE SD1
- Up to 2.5m overburden with a 10kN/m2 surcharge
- 100 year design life
- Complies with watertightness class 1 of BS EN 1992-3
- Assumed water table at roof slab level
- Suitable for use within wastewater and stormwater drainage systems

INSTALLATION BENEFITS

- Potential savings on temporary works
- Reduced disruption due to speed of installation
- No need to wait 28 days before back filling. Backfilling can follow on after installation
- No requirement for in-situ concrete topping to roof slab
- No requirement for on-site in-situ benching
- No requirement for in-situ joint-stitching



STORM-HOLD™

LARGE DIAMETER PIPE STORMWATER MANAGEMENT SYSTEM

The production of water-impermeable surfaces in construction is inevitable. This includes roof areas on buildings, car parks, loading bays and road pavements. The provision of these surfaces interrupts the natural drainage process, creating increased stormwater run-off in respect of both volume and flow rate.

In many cases, this increase in stormwater flow and volume is a problem as the local sewer or watercourse does not have the sufficient capacity to cope. This problem could be alleviated by an increase in the size of the stormwater sewer or watercourse, thus providing the capacity within the drainage system to cope with the increased surface water. This, however, may be expensive, cause major infrastructure disruption, and can often be completely unfeasible.

Legislation under Planning Policy Statement 25 and Building Regulations approved Document H3 for flood risk assessment (SuDS), has created the need for planners and developers to design and install effective stormwater management systems.

The types of systems that can be employed to overcome these issues are well documented and varied. Quite often they can be very technically demanding in their operation, maintenance and construction. The selection of a system will depend on site constraints, position, expected loading, geographical limitations and inevitably cost.

The Storm-Hold system offers a complete solution to the stormwater attenuation problem and utilises a tried, tested and approved method of stormwater storage. FP McCann can provide the complete package of design, product specification and supply of products and installation advice.

PRODUCT FEATURES

- Available in a range of sizes
- Can use and combine a number of techniques and products such as pipes, culverts, tanks, manifold systems and soakaways
- A complete solution with all connections
- Established and familiar products
- Can be laid in short lengths
- The system can be adapted to load-bearing and non-load bearing applications
- 120 year design life
- Adoptable by water companies
- Manufactured in accordance with a BSI accredited quality management system conforming to ISO 9001
- Available straight from stock





STRUCTURAL

The inherent structural strength of concrete is well documented and can be designed to meet the severest of loading criteria.

Storm-Hold systems can be tailored to suit low load situations, for example, when the tank is to be situated below verges or gardens.

BENEFITS

- System can be designed specifically to suit the application
- Quick construction using a standard joint
- No need for fabrication on-site or external specialist contractors
- Straightforward installation using known techniques, no need to retrain
- Can be installed under roads and car parks
- Can cope with construction plant loading
- Flotation is not a concern – no need for geotechnical anchors when located below the water table
- Long term solution

DESIGN

The design of the system can be tailored to suit most structural and hydraulic criteria.

RELEVANT LEGISLATION/ INFORMATION

- Planning Policy Statement 25 (PPS25) December 2009
- Department of Communities and Local Government (DCLG)
- Future Water February 2008, Department for Environment, Food and Rural Affairs (DEFRA)
- The Pitt Review, Learning Lessons from the 2007 floods by
- Sir Michael Pitt
- The Code for Sustainable Homes February 2008, Department for Communities and Local Government (DCLG)
- The SuDS Manual 2007, CIRIA C697
- Sustainable drainage systems - Hydraulic, structural and water quality advice 2004, CIRIA C609
- Flood and Water Management Act 2010

FP McCann's Storm-Hold systems can be designed to suit a wide range of construction projects and drainage schemes. Precast concrete attenuation components include products such as side entry manholes, stop end bends and spigot and socket end wall pipes. These products

can either be engineered into an on-line sewer pipe system or utilised off-line as single or multiple stormwater holding tanks. All FP McCann storm attenuation products comply with the requirements set out within 'Sewers for Adoption 7th Edition' and are made from Kite marked precast concrete components, which comply with the relevant Standards: BS EN 1916 / BS 5911-1 and Manholes BS EN 1917.

STORM-HOLD™

LARGE DIAMETER PIPE STORMWATER MANAGEMENT SYSTEM

EXAMPLES

Spigot and Socket Tank End Wall Pipes (Adaptor/Fitting - BS EN 1916)

- Consists of a standard 2500mm long flex pipe with a cast-in end wall. Inlet/outlet holes are generally cored into the wall

Side Entry Manholes (Junction - BS EN 1916)

- Entry shafts factory-fitted to pipes 900mm diameter and above
- Ideal for use in restrictive locations where conventional manhole build is not possible
- Can be supplied in left or right hand configuration. Access steps can be fitted, if required
- Can be used in conjunction with an end wall pipe
- Additional chamber sections or a reducing slab can be used to build height

Stop End Bends (Bend - BS EN 1916)

- Tank end access for pipes 900m diameter and above
- Access steps fitted, if required
- Drainage inlet/outlet holes cored, as requested
- Additional chamber sections or a reducing slab can be used to build height

Side Entry Manhole with Bend (Junction/Bend -BS EN 1916)

- 2500mm long Easi-Flex standard pipe with cast-in bend
- Entry shaft fitted to pipes 900mm diameter and above

Mid Entry Manholes (Junction/Bend BS EN 1916)

- Standard pipe with a sealed manhole joint, complete with fitted slab
- Manhole joint and slab factory-fitted to pipes 1200mm and above
- Access to the tank via winch or removable ladder. Reduced access via slab, available on request
- Additional chamber sections or a reducing slab can be used to build height

End Entry Manholes (Junction - BS EN 1916)

- Standard pipe with a sealed manhole joint, fitted slab and cast-in end wall
- Manhole joint and slab factory-fitted to pipes 1500mm diameter and above
- Drainage inlet/outlet holes cored, as requested
- Access steps factory-fitted, if required

PRODUCT BENEFITS

1. Flexibility of design - adaptable to meet client requirements
2. Products can be used in space restrictive on-line sewer systems, providing the required storage volume
3. Reduction in construction times
4. Quality assured and kite marked products used
5. Sustainable systems with design life in excess of 100 years
6. Site safety benefits related to reduction of man hours spent in excavation
7. Ease of access for maintenance
8. Can be linked to other SuDS related systems such as rainwater capture and re-use

Note: Concrete haunching should be used to provide local stiffening to the concrete pipes with manhole entries. Use a minimum 150mm thickness surround to the pipe, extending to a height of 300mm above the pipe, in order to support the shaft joint.



DRY WEATHER FLOW CHANNELS

Prefabricated dry weather flow channels for pipes and box culverts are available. Half round (or equivalent) channels can be cast into the floor of the units at any position, with a choice of equivalent half round diameters.



BOX CULVERTS

TYPICAL CULVERT

Units are available in internal span sizes from 1000mm to 6000mm and internal heights from 500mm to 3600mm, with unit lengths to a maximum of 2000mm, dependent on final mould configuration (please refer to internal dimensions chart opposite).



DRY WEATHER FLOW CHANNELS

Half round (or equivalent) channels can be cast into the floor of the units at any position, we offer a choice of equivalent half round diameters.



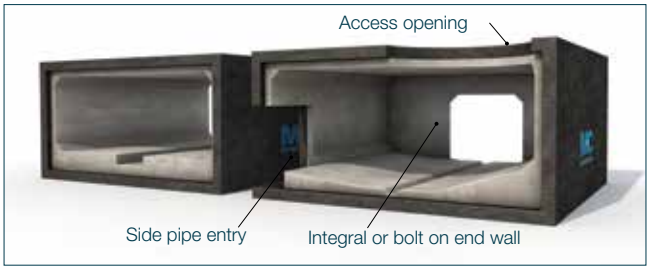
BENCHING

Combined with either a channel or cast as a “vee”, benching improves self-cleansing flow rates.



MAMMAL LEDGES

Cast-in mammal ledges allow access through the culvert to wildlife without the requirement for extra site provisions.



SPECIALS

Bespoke units accommodating a variety of features can be manufactured to our customers’ design requirements.

The proven strength and performance characteristics of precast concrete box culverts, together with their excellent service life, make them ideal for a wide variety of civil engineering and construction applications. Box culvert sections can be manufactured in a variety of internal profiles and sizes, offering exceptional versatility in the uses to which they can be applied.

In addition to the more common use for diverting water courses, box culverts have been used in an array of applications including balancing tanks, pedestrian subways, access shafts, service tunnels, sea outfalls, road crossings and many other situations where the whole life costing consideration requires strength, durability and economy to be of paramount importance.

Unlike other materials such as steel, precast concrete box culverts do not require additional treatments to prolong their life or improve performance. The concrete surface will not rust and the smooth internal finish of the box culvert ensures optimum flow of water through the concrete structure.

Precast concrete box culverts fulfil the current design life requirements for buried structures. With minimum maintenance and the ability to provide many years of service, precast concrete box culverts are the most cost-effective means of diverting water courses, especially with the ever present risk of corrosive elements in the water or soil.

Whilst the methods and procedures for the installation of precast concrete box culverts are familiar to contractors, careful attention to detail will lead to safer working, a smoother flow of operations and a higher standard of finished culvert. Box Culvert installation and jointing details can be downloaded from **www.fpmccann.co.uk/box-culverts**

This guide provides a reliable checklist for anyone engaged in the installation of box culverts. It is published to encourage good practice in the use of precast box culverts.

INSTALLATION GUIDELINES

For installation and jointing details, refer to the Box Culvert Installation Guide which can be downloaded from our website.

DESIGN CRITERIA

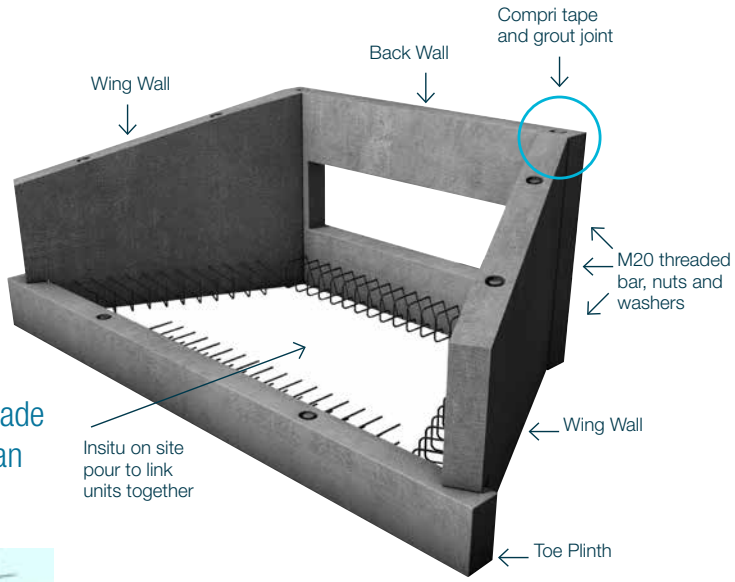
Design loading criteria is generally specified by the scheme engineer and ideally should include, as a minimum, the information below:

- Internal span
- Internal height
- Metres required
- Number of runs
- Minimum depth of fill over the culvert unit
- Maximum depth of fill over the culvert unit
- Culvert usage
- Surface loading conditions : green field, highway etc
- Invert type

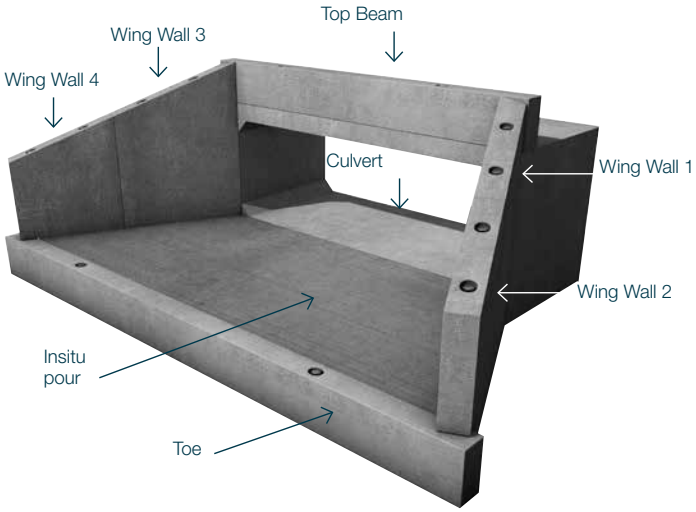
Exposure conditions should be specified and, where available, design codes provided. Further design requirements may be required for inlet/outlet points, access holes and end walls.

BOX CULVERT HEADWALLS

FP McCann offers a bespoke headwall solution suitable for box culverts. These headwalls are made up of a number of precast panels and tied with an in-situ stitch.







INTERNAL DIMENSIONS

(Based on flat invert culvert units) Key: **Flow area m² / Discharge rate m³/sec**

Internal height mm	Width mm (internal span)															
	1000	1200	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800	5100	5400
500	0.46 0.40	0.56 0.51	0.71 0.67	0.86 0.84	1.01 1.00	-	-	-	-	-	-	-	-	-	-	-
600	0.56 0.53	0.68 0.67	0.86 0.89	1.04 1.11	1.22 1.33	-	-	-	-	-	-	-	-	-	-	-
650	0.61 0.60	0.74 0.76	0.93 1.00	1.13 1.25	1.32 1.50	1.52 1.75	1.71 2.00	-	-	-	-	-	-	-	-	-
800	0.76 0.81	0.92 1.03	1.13 1.33	1.37 1.67	1.61 2.01	1.85 2.36	2.09 2.71	2.33 3.06	2.57 3.42	2.81 3.77	3.05 4.12	-	-	-	-	-
1000	0.96 1.10	1.16 1.40	1.43 1.84	1.73 2.32	2.03 2.80	2.33 3.29	2.63 3.79	2.93 4.29	3.23 4.79	3.53 5.30	3.83 5.80	4.13 6.30	4.43 6.81	4.73 7.32	-	-
1200	-	1.37 1.76	1.73 2.37	2.09 3.00	2.45 3.64	2.81 4.29	3.17 4.95	3.53 5.61	3.89 6.28	4.25 6.95	4.61 7.62	4.97 8.29	5.33 8.97	5.69 9.64	6.05 10.32	6.41 11.00
1500	-	-	2.18 3.21	2.63 4.09	3.08 4.98	3.53 5.89	3.98 6.81	4.43 7.74	4.88 8.68	5.33 9.62	5.78 10.57	6.23 11.52	6.68 12.48	7.13 13.44	7.58 14.40	8.03 15.37
1800	-	-	-	3.17 5.21	3.71 6.38	4.25 7.57	4.79 8.78	5.33 10.00	5.87 11.24	6.41 12.48	6.95 13.74	7.49 15.00	8.03 16.27	8.57 17.54	9.11 18.82	9.65 20.10
2100	-	-	-	-	4.34 7.83	4.97 9.31	5.60 10.83	6.23 12.36	6.86 13.92	7.49 15.49	8.12 17.07	8.75 18.67	9.38 20.27	10.01 21.89	10.64 23.50	11.27 25.13
2400	-	-	-	-	-	5.69 11.11	6.41 12.94	7.13 14.81	7.85 16.70	8.57 18.62	9.29 20.55	10.01 22.50	10.73 24.46	11.45 26.44	12.17 28.42	12.89 30.41
2700	-	-	-	-	-	-	7.22 15.11	8.03 17.32	8.84 19.57	9.65 21.84	10.46 24.14	11.27 26.46	12.08 28.80	12.89 31.16	13.70 33.53	14.51 35.91
3000	-	-	-	-	-	-	-	8.93 19.89	9.83 22.50	10.73 25.15	11.63 27.83	12.53 30.54	13.43 33.27	14.33 36.03	15.23 38.80	16.13 41.59
3300	-	-	-	-	-	-	-	-	10.82 25.49	11.81 28.52	12.80 31.60	13.79 34.71	14.78 37.86	15.77 41.03	16.76 44.22	17.75 47.43
3600	-	-	-	-	-	-	-	-	-	12.89 31.96	13.97 35.44	15.05 38.97	16.13 42.53	17.21 46.13	18.29 49.76	19.37 53.42

Please note: These figures are a guide only and will be dependent on the mould configuration used in manufacture. Discharge rates are calculated using Colebrooke-White equation for a fully wetted perimeter under uniform flow conditions and assuming a flat invert culvert unit. The assumed laying gradient (s) is 1:1000 with a roughness co-efficient (k) of 0.3. Where different values maybe required, please contact the office number below to discuss your specific requirements. The hydraulic design of a box culvert should always be undertaken by the overall scheme designer, as they are able to take into account the upstream and downstream conditions and other parameters such as freeboard, restriction due to silt build-up and need for the culvert to be free flowing at all times. Due to the lack of this information, FP McCann will only give discharge rates for an idealised culvert, which may not suit the local conditions.

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sales@fpmccann.co.uk

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Knockloughrim
Magherafelt
BT45 8NR
T 028 7954 9026
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AGRICULTURE
Lydney 01594 847500 Grantham 01476 562277

ARCHITECTURAL PRECAST
London 020 3905 7640

BOX CULVERTS
Weston Underwood 01335 361269

BUILDING PRODUCTS
Cadeby 01455 290780

DOCK LEVELLER PITS
Weston Underwood 01335 361269

DRAINAGE
Ellistown 01530 240000 (England/Wales) Magherafelt 028 7954 9026 (Scotland/NI)

FENCING
Cadeby 01455 290780

FILTER BED SYSTEMS
Wellesbourne 01789 336960

FLOORING
Weston Underwood 01335 361269 Uddingston 01698 803300

POWER & INFRASTRUCTURE
Littleport 01353 861416

RAIL
Littleport 01353 861416

SPECIALIST PRECAST
Littleport 01353 861416

STRUCTURAL PRECAST
Byley 01606 843500 Grantham 01476 562277

STOMRTANK™ - TANKS & CHAMBERS
Wellesbourne 01789 336960

TUNNELS & SHAFTS
Cadeby 01455 290780

WALLING
Grantham 01476 562277 Lydney 01594 847500
Uddingston 01698 803 300 (Scotland) Magherafelt 028 7954 9026 (NI)

FPMCCANN.CO.UK



ACO StormBrixx SD Parts List

Project Title

Rochdale Road, Manchester

Tank Reference

ACO Reference

OPP088437

Notes

Proposed dimensions are based on a tank invert level of 47.7m, minimum cover level of 51.29m and maximum cover level of 51.29m
A length of 20m, width of 4m and height of 1.8m have been used to determine originally specified gross volume
An original porosity of 0.95 has been assumed to determine original storage/net volume
No access has been included but is available upon request
No pipe connectors are included but are available upon request

Length (m)	Width (m)	Height (m)	Void Ratio	Gross Volume (m³)
				142.80
18.600	4.200	1.828	97%	Net Volume (m³)
				138.52



Selected	Part No.	Product Description	Quantity
Main Components			
		StormBrixx SD	
✓	314090	StormBrixx SD Half Body	434
✓	314091	StormBrixx SD/HD900 Side Panel	152
✓	314092	StormBrixx SD/HD900 Top Cover	217
✓	314093	StormBrixx SD/HD900 Clips	326
	314094	StormBrixx SD/HD900 Cover Plate	
	314098	StormBrixx SD/HD900 Half Side Panel	
		StormBrixx HD	
	314061	StormBrixx HD Half Body	
	314062	StormBrixx HD Side Panel	
	314022	StormBrixx HD Top Cover	
	314023	StormBrixx HD Clips	
		StormBrixx HD900	
	314154	StormBrixx HD900 Half Body	
	314091	StormBrixx SD/HD900 Side Panel	
	314092	StormBrixx SD/HD900 Top Cover	
	314093	StormBrixx SD/HD900 Clips	
	314094	StormBrixx SD/HD900 Cover Plate	
	314098	StormBrixx SD/HD900 Half Side Panel	
Accessories			
		Access	
	27034	StormBrixx HD Remote Access Chamber	
	314075	StormBrixx Remote Access Plate	
	314038	StormBrixx Inspection/Rising Shaft	
	27018	Vertical Inspection Point Connector	
		Access Covers	
	314055	Vented Φ450mm D400 Ductile Iron Access Cover	
	314056	Non-Vented Φ450mm D400 Ductile Iron Access Cover	
	314057	Vented Φ600mm D400 Ductile Iron Access Cover	
	314045	Non-Vented Φ225mm D400 Ductile Iron Inspection Cover	
		Universal Pipe Connectors	
	27056	Horizontal pipe connector Φ100mm	
	27057	Horizontal pipe connector Φ150mm	
	27058	Horizontal pipe connector Φ225mm	
	27059	Horizontal pipe connector Φ300mm	

		SD/HD900 Pipe Connectors	
	27262	Horizontal pipe connector Φ375mm	
	27263	Horizontal pipe connector Φ400mm	
	27264	Horizontal pipe connector Φ450mm	
	27265	Horizontal pipe connector Φ500mm	

		HD Pipe Connectors	
	27105	Horizontal pipe connector Φ375mm	
	27101	Horizontal pipe connector Φ450mm	
	27102	Horizontal pipe connector Φ500mm	

		Flexible Top Hats	
	27045	Flexible Top Hat Φ110mm	
	27046	Flexible Top Hat Φ160mm	
	27047	Flexible Top Hat Φ225mm	
	27048	Flexible Top Hat Φ300mm	

		Geotextiles and Geomembranes	
✓	27041	ACOTex Plus Protection Fleece 4 x 100m	275.54m2 1 rolls
✓	27042	ACOWrap Impermeable Geomembrane 4 x 12.5m	275.54m2 6 rolls
	27038	ACOTex Infiltration Geotextile 4 x 100m	
✓	27044	StormBrixx Sealing Tape	12 rolls

Uniclass	EPIC
L21239:P42	B213:X411
CI/SfB	
12 (52.9) Xh1	

PETER SAVAGE LIMITED

Ductile / Grey Iron

Access Covers & Gully Gratings

& Ancillary Items



access covers



drainage gratings



surface boxes

BS EN124
KM 45942

FM 37799
BS ENISO
9001:2000

issue 5

www.Peter-Savage.co.uk

Peter Savage Ltd have been supplying the construction industry since 1976. Over this period we have grown into one of the most successful companies for the supply of access covers, gully gratings and associated products. The company's uncompromising approach to quality and service has increased its stature within the industry and elevated us to one of the largest and strongest manufacturers and distributors of such products



Today our range of products is one of the most comprehensive in the market and has seen our company's involvement in some of the UK's most demanding and prestigious projects. This brochure details our ductile and grey iron range of products, many of which hold BS EN124 B.S.I. Kitemark certification and where applicable also meet the addittional recommendations of BS 7903: 1997 HA104/02.



Our sales teams have unrivelled product and market knowledge and can advise clients on such things as product designs and suitability for application.

We also have the capability of manufacturing products to customer requirements / designs and have a proven track record of turning those ideas into actual working products.





Peter Savage Limited is certified by the British Standards Institute (B.S.I.), to BS ISO 9001:2000 which covers all aspects of our business from product design and manufacture through to administration, order processing and stockholding. We maintain significant stock levels and this coupled with our flexible transport infrastructure enable our company to give first class support to our national & international customers

BSI REGISTERED
UKAS QUALITY MANAGEMENT 003

CERTIFICATE No. FM37799
ISO 9001: 2000

PETER SAVAGE LIMITED

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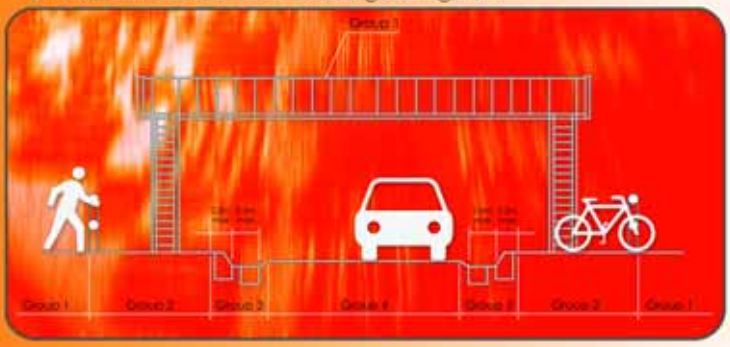
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British European Standard - **BS EN124:1994**

STANDARD classification loading categories



GROUP 1 For use in pedestrian areas where motor vehicles have no access. Minimum load class A15. BS EN124 **A15**

GROUP 2 For use in car parks & pedestrian areas where infrequent motorised vehicular access is likely. Minimum load class B125. BS EN124 **B125**

GROUP 3 For access covers & gully gratings in areas where slow moving heavy traffic have access & for gully gratings in carriageway application areas not exceeding 500mm from the kerbside. Minimum load class C250. BS EN124 **C250**

GROUP 4 For use in all carriageways & main roads where fast moving traffic is present. Minimum load class D400. BS EN124 **D400**

GROUP 5 For use in areas where high wheel loads are apparent. Minimum load class E600. BS EN124 **E600**

GROUP 6 For use in areas where extremely high wheel loads are evident. Load class F900. BS EN124 **F900**

LOADING	BS EN 124 CLASS	BS497 CLASS Withdrawn	BS EN 124 TEST LOAD	(A)	(B)
Group 1	A15	Grade C	15kN	53.7%	-
Group 2	B125	Grade B	125kN	16.6%	24.2%
Group 3	C250	Grade A	250kN	2.7%	11.6%
Group 4	D400	Grade A	400kN	39.2%	44.7%
Group 5	E600	-	600kN	-	9% over BS 497
Group 6	F900	-	900kN	-	-

(A) Effective increase in test load of BS EN124 over BS497 (with effect of test block size)
(B) Effective increase in test load of BS EN124 Savage kitemarked products over BS 497 (with effect of test block size)

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PROJECT EXAMPLES

Over the years we have been involved in many major and interesting projects. Here are just a few examples.

M1 / M5 / M18/M180

Motorway Communication Works supplied to various sections of the M1 / M5 / M18 & M180 Motorways.
Materials supplied include:
KD10, KD9, KD19, KD3440.

INTERNATIONAL TECHNOLOGY PARK

Hamilton International
Technology Park
Hamilton
Glasgow
Materials supplied include :
KD10/SW, KD10/FW, KD500, KD3475.

DOCKYARD

Southampton Dockyard
Western Dock
Southampton
Hampshire
Materials supplied include :
KD3440S, KD3540, KD19, KD18, KD10, E10C1, KD17-6, KD14.

UNIVERSITY

Heriot Watt University
Mains Road
Heriot Watt University
Glasgow
Materials supplied include :
KD14, KD12, KD17-6, KD43D, KD10.

BMW ENGINE PLANT

New BMW Engine Plant
Faraday Avenue
Hams Hall
Coleshill
West Midlands
Materials supplied include :
KD10E, KD10, KD41D.

S.A.S INSTITUTE

Who Dares Wins Institute
Henly Road
Marlow
Buckinghamshire
Materials supplied include :
KD10E, KD10, KD41D, KD3440.

SILVERSTONE CIRCUIT

Access Roads
Boulevard Drainage
Coach / Car Park
Silverstone
Northampton
Materials supplied include :
KD10, KD19, KD41D.

SUPERSTORE

Morrisons Superstore
Kingston
Surrey
Materials supplied include :
KD16, KD65C, KD62C, KD3740, KD10.

M25 / M6

Motorway Improvement Works
Supplied to various sections of the M6 & M25 Motorways
Materials supplied include :
KD41D, KD10, KD62C, KD61C, KD19, KD43D.

SPORTS STADIUM

Headingley Cricket Ground
Headingley
Yorkshire
Leeds
Materials supplied include :
KD10, KD3440S, KD3740, KD500N.

LINK ROAD

Fortress Link Road
Port of Tilbury
Tilbury
Essex
Materials supplied include :
KD19, KD43D, KD3440.

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Ultra

BS EN124
KM 45942

HA104/02
2002

BS 7903
compliant

BS EN124
1994

CARRIAGEWAYS

SAVAGE
HIGH STRENGTH BEDDING MORTAR (HA104/02)
see page 23

"The premature failure of chamber top and gully top installations has been shown to be a major contributory factor to the annual maintenance budget of UK roads".

Highways Agency HA104/02

Highway advice note HA104/02 sets out procedures and defines materials which will provide the best possible performance of road chamber top and gully top installations in trunk roads and motorways. Its recommendations may be applied to other roads and traffic conditions, as appropriate.

All advice specified in this document supersedes advice given in the Preferred Method 7, and complements all relevant guidance and standards provided in the Manual of Contract Documents for Highway Works (MCHW) and (BDMRB).

Put simply this means that any specifier, contractor or body executing maintenance or remedial work, or any contractor or body executing work to build, modify or extend a highway should follow the guidance laid down in the new Highways Advice note.

All Savage Ultra products meet the requirements of HA104/02.

Ultra products are indicated in this brochure by the Ultra logo next to the product code and product details being highlighted in orange.

Savage Ultra products fully comply with the Highways Agency Advice note HA104/02, which forms part of 'Design Manual for Roads & Bridges' (DMRB) volume 4, section 2, part 5, which came into force in August 2002.
http://www.standardsforhighways.co.uk/dmrb/vol4/section2/ha10402.pdf

Savage Ultra products feature AMP's (anti-movement pockets), a patented design which gives maximum opportunity for the frame to key with a suitable bedding /fixing material, helping to prevent lateral movement in any direction.

Savage Ultra products fully comply with BS 7903:1987. Crucially many recommendations of BS7903 have been incorporated within HA104/02.

Savage Ultra products fully comply with BS EN124:1994. Additionally Savage Ultra products are manufactured to achieve a safety test of +10% over BS EN124 ultimate test loads.

Savage Ultra products are B.S.I. Kitemark certificated to guarantee third party assurance of quality.

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AMP's PATENTED TECHNOLOGY

Peter Savage's patented AMP's (anti-movement pockets) system combined with a solid 75mm flange as per BS7903, gives maximum opportunity for the frame to key on to suitable bedding/fixing material to prevent movement in any direction during trafficking, whilst spreading the load to achieve a bearing pressure of less than 2.1N/mm²*.
(As asked for by the Highways Agency in HA104/02.)
*on 600 x 600mm clear opening and above.





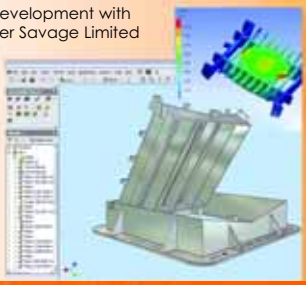
Pockets on underside ("mating face") of frame to help improve the bond with the bedding mortar.

AMP's on all four sides, help prevent lateral movement along every axis.

PRODUCT DEVELOPMENT

Peter Savage Limited operate a policy of continual product development. At every opportunity we look to improve our range to give our customers the best possible products. A recent project was centred around increasing frame bedding performance by producing frames with Anti Movement Pockets (AMP). This innovative 'amps' system is already incorporated into many frames of our D400 products and will ultimately be a feature of all class D400 access covers and gully gratings within our range.

Alongside product development with existing patterns, Peter Savage Limited are constantly adding new products to the range. Many of these products fulfil new specific requirements and are bespoke designs developed in conjunction with our clients.



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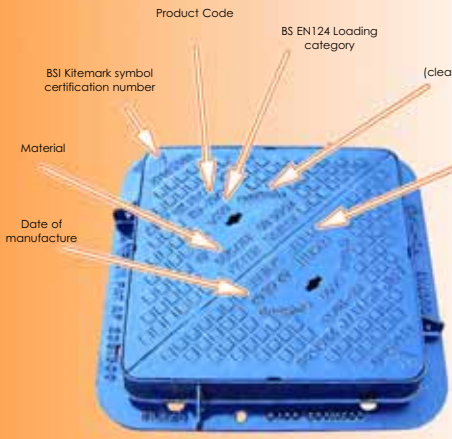
BS7903:1997

BS 7903 is a British Standards Institute guide to the selection and use of gully gratings and access covers for installation within the highway. This is a particularly important standard, which is relevant to the performance required of a grating.

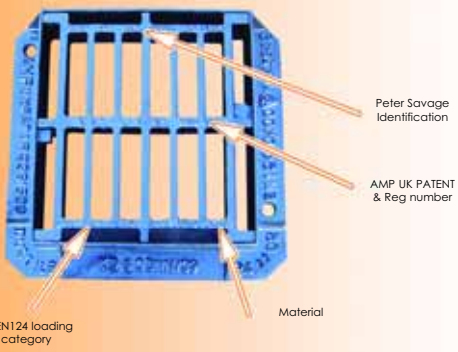
"This standard is not a substitute for BS EN124." "Although BS EN124 purports to be a performance standard, it is not yet comprehensive enough in its requirements for product performance. It also incorporates certain minimum dimensional requirements, which being minimum, may not necessarily ensure that the product is fit for its purpose in all traffic conditions."

Taken from the British Standards Institute BS 7903:1997

Access covers & gully gratings are advised under the BS 7903 recommendations to have a depth of insertion (depth of cover/grating immediatley adjacent to the frame) of not less than 80mm. Under traffic conditions this increases the cover/grating security within the frame. The standard also recommends the solid bedding width of frames shall be no less than 75mm all around, which gives improved frame bedding for longer and safer performance. Additionally, gully gratings under BS 7903 improvements denote units are manufactured with a much larger waterway than specified in BS EN124 and therefore offer significantly improved drainage of surface water.









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section a

manhole covers

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

100mm deep - Ultra Hinged Heavy Duty Ductile Iron Access Cover
Usage:Group 4-for use in carriageways & main roads



Ultra
BS EN124 KM 45942
EN124 D400
100
HA104/02 2002
BS 7903 compliant
CARRIAGEWAYS
SAVAGE HIGH STRENGTH BEDDING MORTAR (HA104/02)
see page 28

OPTIONAL EXTRAS

GRP sealing plate
High security locking
Badging i.e. FW, SW, Motorway Comms etc
Pressure plates
Safety grids
Lifting keys
Long handled lifting keys

amp anti-movement technology

(A.M.P's) Anti-movement technology

FEATURES

Manufactured to **BS EN124 class D400**
Kitemarked for third party assurance of quality
Ultra products comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02**
Ultra products additionally conform to **BS 7903**
Suitable for carriageway & fast moving traffic
Easi-hinge design for single person operation
Captive hinge which locks at 110 deg
Fully removable lids for easy access
Individual lid weights = 25Kg's
Suitable for GRP sealing plate
Locked as standard
Inverted 'T' frame for maximum distribution of loads
(A.M.P.'s) Anti-movement technology
80mm depth of cover insertion into frames
75mm solid bedding width
40 tonne safe test load
Works safety tested to 44 tonnes = +10%
Non-rock three point suspension for stability & silent operation
Ductile iron for improved weight to strength ratio
Black coated finish

PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	LID OPEN POSITION	MASS apx Kg's
*KD10H	600x600mm	100mm	80mm	790x760mm	1.66N/mm^2	110	99

Please contact sales for general release date.

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 F900

150mm deep - Ultra Heavy Duty Ductile Iron Access Cover & Drainage Grating
Usage : Group 6-Extremely high wheel load areas i.e. Airports & Docks etc.



FEATURES

Manufactured to **BS EN124 class F900.**
Kitemarked for third party assurance of quality.
Ultra products comply with Design Manual for.
Roads & Bridges Vol 4, Section 2, part 5. **HA104/02**
Ultra products additionally conform to **BS 7903.**
Suitable for airport aprons, runways & docks etc.
(A.M.P.'s) Anti-movement technology.
100mm depth of cover insertion into frames.
155mm solid bedding width (KD10F).
90 tonne safe test load.
Works safety tested to 99 tonnes = +10%.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.



Ultra Heavy Duty Access Cover & Frame

PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	MASS apx Kg's
KD10F	640x640mm	150mm	100mm	950x950mm	1.2N/mm^2	99

Ultra Heavy Duty Gully Grating & Frame

PRODUCT CODE	OVER GRATE	FRAME DEPTH	GRATE DEPTH OF INSERTION	OVERALL FRAME	WATERWAY APX cm^2	HA102 REF	MASS apx	SUITS GULLY SIZE
KD41F	450x450mm	150mm	100mm	610x542mm	1028	R	91	450mm

**More F900 patterns in design stage, please contact sales for details*

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 E600

150mm deep - Ultra Heavy Duty Ductile Iron Access Cover
Usage : Group 4&5-for high wheel loads & traffic usage



Ultra
BS EN124 KM 45942
EN124 E600
150
HA104/02 2002
BS 7903 compliant
CARRIAGEWAYS

FEATURES

Manufactured to **BS EN124 class E600.**
Kitemarked for third party assurance of quality.
Ultra products comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway, fast moving traffic & high wheel loads.
(A.M.P.'s) Anti-movement technology.
Stiffened frame & extra wide flanges for increased bonding.
125mm depth of cover insertion into frames.
140mm solid bedding width.
60 tonne safe test load.
Works safety tested to 66 tonnes = +10%.
Dimensions increased to allow seatings to be positioned.
beyond clear opening for extra stability.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

Locking - Standard Bolts
Locking - Approved High security bolts/keys
Badging i.e. FW, SW, Motorway Comms etc
Sealing plates
Pressure plates
Ventilation
Safety grids
Lifting keys - key ref: Hkey
Long handled lifting keys - key ref: LHkey

PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	MASS apx Kg's
KD10E	600x600mm	150mm	125mm	885x885mm	1.5N/mm^2	160
KD12E	675x675mm	150mm	125mm	955x955mm	1.4N/mm^2	150
KD19E	1220x675mm	150mm	125mm	1370x825mm	1.3N/mm^2	225

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

150mm deep - Heavy Duty Ductile Iron Access Cover
Usage : Group 4-for use in carriageways & main roads



FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design.
Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80 / 125mm depth of cover insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
Works safety tested to 44 tonnes = +10%.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

Locking - Standard Bolts
Locking - Approved High security bolts/keys
Badging i.e. FW, SW, Motorway Comms etc
Sealing plates
Pressure plates
Ventilation
Safety grids
Lifting keys - key ref: Hkey
Long handled lifting keys - key ref: LHkey

ULTRA SPEC	PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	MASS apx Kg's
	KD100-6	600x600mm	150mm	80mm	690x690mm	-	85
Ultra	KD10-6	600x600mm	150mm	80mm	750x750mm	1.93N/mm^2	94
Ultra	KD10-6-125	600x600mm	150mm	125mm	750x750mm	1.93N/mm^2	103
	KD120-6	675x675mm	150mm	55mm	775x775mm	-	116
Ultra	KD12-6	675x675mm	150mm	80mm	825x825mm	1.74N/mm^2	132
Ultra	KD12-6-125	675x675mm	150mm	125mm	825x825mm	1.74N/mm^2	135
Ultra	KD14-6	750x600mm	150mm	80mm	900x750mm	1.79N/mm^2	145
Ultra	KD15-6	750x750mm	150mm	80mm	910x905mm	1.61N/mm^2	166
Ultra	KD16-6	900x600mm	150mm	80mm	1050x750mm	1.62N/mm^2	184
Ultra	KD17-6	900x900mm	150mm	80mm	1050x1050mm	1.34N/mm^2	265
Ultra	KD18-6	1000x1000mm	150mm	80mm	1160x1160mm	1.16N/mm^2	241
Ultra	KD22-6	900x750mm	150mm	80mm	1060x910mm	1.4N/mm^2	197

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FM 37799
BS EN ISO 9001: 2000

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

100mm deep - Heavy Duty Ductile Iron Access Cover
Usage : Group 4-for use in carriageways & main roads



BS EN124
KM 45942

EN124
D400

100

HA104/02
2002

BS 7903
compliant

CARRIAGEWAYS

FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80 / 60mm depth of cover insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
Works safety tested to 44 tonnes = +10%.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

GRP sealing plate
High security locking
Badging i.e. FW, SW, Motorway Comms etc
Sealing plates
Pressure plates
Ventilation
Safety grids
Lifting keys
Long handled lifting keys

ULTRA SPEC	PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	MASS apx Kg's
	KD8	450x450mm	100mm	80mm	600x600mm	-	66
	KD9	600x450mm	100mm	80mm	750x600mm	-	77
	KD100	600x600mm	100mm	80mm	700x700mm	-	80
Ultra	KD10	600x600mm	100mm	80mm	750x750mm	1.93N/mm^2	89
	KD10CH	600mm Dia	100mm	65mm	800x800mm	-	62
	KD10ST	600x600mm	100mm	80mm	700x700mm	-	82
	KD10-600	600mm Dia	100mm	80mm	700x700mm	-	75
	KD11CH	660mm Dia	100mm	55mm	880x880mm	-	72
	KD120	675x675mm	100mm	80mm	775x775mm	-	107
Ultra	KD12	675x675mm	100mm	80mm	825x825mm	1.74N/mm^2	115
Ultra	KD14	750x600mm	100mm	80mm	900x750mm	1.79N/mm^2	127
Ultra	KD15	750x750mm	100mm	80mm	900x900mm	1.61N/mm^2	139
Ultra	KD16	900x600mm	100mm	80mm	1050x750mm	1.62N/mm^2	156
Ultra	KD17	900x900mm	100mm	80mm	1050x1050mm	1.5N/mm^2	227
	KD190	1220x675mm	100mm	80mm	1320x775mm	-	176
Ultra	KD19	1220x675mm	100mm	80mm	1370x825mm	1.3N/mm^2	194

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

150mm deep - Heavy Duty Ductile Iron Access Cover
Usage : Group 4-Carriageways. High Traffic Usage.



BS EN124
KM 45942

EN124
D400

150

HA104/02
2002

BS 7903
compliant

CARRIAGEWAYS

SAVAGE
HIGH STRENGTH BEDDING MORTAR (HA104/02)

FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design.
Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80/125mm depth of cover insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
Works safety tested to 44 tonnes = +10%.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

Locking - Standard Bolts
Locking - Approved High security bolts/keys
Badging i.e. FW, SW, Motorway Comms etc
Sealing plates
Pressure plates
Ventilation
Safety grids
Lifting keys - key ref: Hkey
Long handled lifting keys - key ref: LHkey

ULTRA SPEC	PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	COVER DEPTH OF INSERTION	OVERALL FRAME	FRAME AREA BEARING PRESSURE	MASS apx Kg's
Ultra	KD19-6	1220x675mm	150mm	80mm	1370x825mm	1.3N/mm^2	232
Ultra	KD19-6-125	1220x675mm	150mm	125mm	1370x825mm	1.3N/mm^2	232
Ultra	KD20-6	1830x675mm	150mm	80mm	1980x825mm	1.1N/mm^2	348
Ultra	KD21-6	1200x900mm	150mm	80mm	1350x1050mm	1.2N/mm^2	290

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BSI KITEMARKED - BS EN124 C250

75mm deep - Heavy Duty Ductile Iron Single Seal Solid Top Access Covers
Usage : Group 3-slow moving heavy traffic





Approved High Security Locking

FEATURES

Manufactured to **BS EN124 class C250.**
Kitemarked for third party assurance of quality.
Full single seal gives airtight seal when packed with grease.
Suitable for slow moving heavy traffic.
25 tonne safe test load.
Works safety tested to 27.5 tonnes = +10%.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

Locking - Standard Bolts
Locking - Approved High security bolts/keys
Badging i.e. FW, SW, CATV etc
Sealing plates
Pressure plates
Ventilation
Safety grids
Lifting keys - key ref: Hkey
Long handled lifting keys - key ref: LHkey

PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's
*KD59C	450x300mm	50mm	540x390mm	30
KD60C	450x450mm	75mm	550x550mm	49
KD61C	600x450mm	75mm	700x550mm	60
KD62C	600x600mm	75mm	700x700mm	75
KD63C	750x600mm	75mm	850x750mm	89
KD64C	750x750mm	75mm	850x850mm	119
KD65C	900x600mm	75mm	990x690mm	119
KD66C	900x900mm	75mm	1000x1000mm	160

**Embossed Traffic Signals as standard*

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BS EN124
EM 45342
EN 124
B125

Pavements
Car parks & Driveways

SAVAGE
HIGH STRENGTH BEDDING MORTAR (HA594/02)
see page 28

BSI KITEMARKED - BS EN124 B125

Medium Duty Ductile Iron Access Covers
Usage : Group 2-For use in car parks, pedestrian areas and driveways.





FEATURES

Manufactured to **BS EN124 class B125.**
Kitemarked for third party assurance of quality.
Single seal versions are airtight when packed with grease.
Slide-out units are un-sealed and allow easy removal.
Suitable for car parks, footways & driveways.
12.5 tonne safe test load.
Works safety tested to 13.75 tonnes = +10%.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

Locking - Standard Bolts or Approved High security bolts/keys
Badging i.e. FW, SW, CATV etc
Sealing plates or Pressure plates
Ventilation
Safety grids
Lifting keys - key ref: Lkey

PRODUCT CODE	CLEAR OPENING	TYPE	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's
KD30	450mm dia	square to round	31mm	536x536mm	26
#KD31	450mm dia	single seal	25mm	550mm dia	19
*KD31L	450mm dia	single seal	25mm	555mm dia	19
KD3240	450x450mm	single seal	40mm	540x540mm	30
KD3340	600x450mm	single seal	40mm	690x540mm	38
KD3340S	600x450mm	slide-out	40mm	690x540mm	34
KD3375W	600x450mm	slide-out	75mm	760x610mm	41
KD34C	600mm dia	single seal	75mm	750x750mm	43
KD3440	600x600mm	single seal	40mm	690x690mm	47
KD3440S	600x600mm	slide-out	40mm	690x690mm	40
KD3475	600x600mm	plain	75mm	690x690mm	50
KD34AS	675x675mm	slide-out	40mm	765x765mm	50
KD3540	750x600mm	single seal	40mm	840x690mm	60
KD3640S	750x750mm	slide-out	40mm	850x850mm	72
KD3740	900x600mm	single seal	40mm	990x690mm	66
KD3840S	1220x675mm	slide-out	40mm	1320x775mm	110
KD39	900X900mm	single-seal	60mm	1000x1000mm	111

#KD31 has a frame spigot to suit PPI chambers.
*KD31L as KD31 but locked as standard

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FM 37799
EN 124
A15
Pedestrian

BS EN124 - A15

Light Duty Grey Iron Single/Double Seal Access Covers
Usage : Group 1-Areas accessible only to pedestrians and pedal cyclists





FEATURES

Manufactured to **BS EN124 class A15.**
Single seal versions are airtight when packed with grease.
Double seal versions for additional sealing.
Suitable for areas only accessible by foot traffic & cyclists.
1.5 tonne safe test load.
Black coated finish.

OPTIONAL EXTRAS

Badging i.e. FW, SW, CATV etc
Lifting keys - key ref: Lkey



PRODUCT CODE	CLEAR OPENING	FRAME DEPTH	OVERALL FRAME	FEATURE	MASS apx Kg's
E10A1	450x450mm	29mm	532x532mm	SS, ST	28
E10B1	600x450mm	27mm	682x532mm	SS, ST	22
E10C	600mm dia	35mm	682mm dia	SS, ST	30
E10C1	600x600mm	32mm	682x682mm	SS, ST	31
E10D	750x600mm	42mm	836x686mm	SS, ST	59
E10F	900x600mm	42mm	986x686mm	SS, ST	80
E11B	600x450mm	42mm	732x582mm	DS, ST	52
E11C	600x600mm	45mm	740x740mm	DS, ST	62
E15B	600x450mm	75mm	710x560mm	SS, REC	46
E15C	600x600mm	75mm	714x714mm	SS, REC	58
E16B	600x450mm	75mm	732x582mm	DS, REC	68
Covers & frames to suit PPI chambers					
#E10APL	450mm dia	30mm	550mm dia	SS,ST,LS,PC,PF	5
E10AC	450mm dia	33mm	540mm dia	SS, ST,CF	15.5
E10ACP	450mm dia	38mm	540mm dia	SS, ST, PF	13
E10ADS	450mm dia	43mm	675mm dia	DS, ST	38

#E10APL - 35Kn, 3.5 tonnes test load.

This 3D diagram illustrates a PPI chamber with a Peter Savage Limited Locking Cover. The Frame can also be fixed to the plastic chamber with self tapping screws (not provided).



FEATURE KEY: SS= single seal, **DS=** double seal, **ST=** solid top, **REC=** recessed, **LS=** locked as standard, **PC=** plastic cover, **CF=** iron frame, **PF=** plastic frame

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section b

drainage gratings



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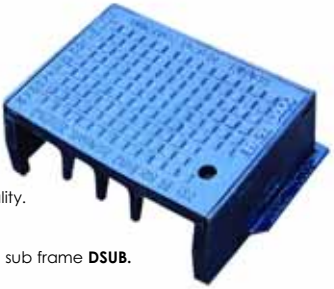
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BS EN124
KM 45942
CARRIAGEWAYS
EN 124
D400

BSI KITEMARKED - BS EN124 D400

Heavy Duty Ductile Iron Kerb Gully Units
Usage : Group 4-for use in carriageways & main roads



FEATURES

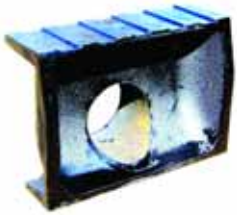
Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Standard unit is 150mm deep.
(A.M.P.'s) Anti-movement technology.
Depth increased to 190mm when used with sub frame **DSUB.**
40 tonne safe test load.
Works safety tested to 44 tonnes = +10%.
Captive hinged design for easy access and increased security.
Ductile iron for improved weight to strength ratio.
Black coated finish.

PRODUCT CODE	KERB PROFILE	CLEAR OPENING	OVER BASE	UNIT DEPTH	MASS apx Kg	LOADING	PREV BS.497 REF
KD115HB	HALF BATTER	495x355mm	590x420mm	150mm	65	D400	GK-115
KD115SP	SPLAYED	495x355mm	590x420mm	150mm	85	D400	GK-115
DSUB	Increases KD115 depth to 190mm		590x420mm	40mm	9.5	D400	#

#GK165 when combined with KD115 product

FM 37799
C250

Kerb Gully Outlet



FEATURES

Manufactured to **load class C250.**
For water drainage through the kerb.
Ductile iron for improved weight to strength ratio.
Black coated finish.

PRODUCT CODE	KERB PROFILE	CLEAR OPENING	UNIT DEPTH	MASS apx Kg	LOADING
C44HBA	HALF BATTER	562x263mm	175mm	33	C250
C44HBB	HALF BATTER	370x250mm	175mm	19	C250
C44SPB	SPLAYED	370x250mm	175mm	19	C250

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Ultra

BS EN124
KM 45962

EN124
D400

HA104/02
2002

BS 7903
compliant

CARRIAGEWAYS

SAVAGE
HIGH STRENGTH BEDDING MORTAR (HA104/02)
see page 28

ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

100 & 150mm deep - Heavy Duty Ductile Iron Double Triangular Gratings
Usage : Group 4-for use in carriageways & main roads for fast moving traffic



FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80mm depth of grating insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
3 flanged products are for group 3 areas.
Works safety tested to 44 tonnes = +10%.
Non-rock three point suspension for stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

ULTRA SPEC	PRODUCT CODE	OVER GRATE	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's	WATERWAY apx cm^2	SUITS GULLY	HA102 REF	GRATING DEPTH OF INSERTION
Ultra	*KD41DNN	400x440mm	100mm	550x520mm	40	1180	450mm	R	80mm
Ultra	*KD41D6NN	400x440mm	150mm	550x520mm	50	1180	450mm	R	80mm
Ultra	KD43DN	600x600mm	100mm	750x750mm	82	2020	600mm	P	80mm
Ultra	KD43D6N	600x600mm	150mm	750x750mm	92	2020	600mm	P	80mm
Ultra	KD44D6	1000x450mm	150mm	1170x540mm	98	3805	-	P	80mm

**Group 4 when installed in the kerbside*

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

100mm deep - Heavy Duty Ductile Iron Gully Gratings
Usage : Group 4-for use in carriageways & main roads







BS EN124
KM 45942

EN124
D400

HA104/02
2002

BS 7903
compliant

CARRIAGEWAYS

SAVAGE
HIGH STRENGTH BEDDING MORTAR (HA104/02)
see page 28

FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80mm depth of grating insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
3 flanged products are for group 3 areas.
Works safety tested to 44 tonnes = +10%.
Non rock captive reversible side hinge for increased stability & silent operation.
Pedestrianised design on KD50DP & KD51DP products - pushchair/trolley and cycle friendly.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONAL EXTRAS

see-pages 27&28 for full specifications

Left hand opening (Standard)
Right hand opening (reversible prior to fitting)
Locking - standard bolts
Locking - approved high security bolts/keys

ULTRA SPEC	PRODUCT CODE	OVER GRATE	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's	WATERWAY apx cm^2	SUITS GULLY	HA102 REF	GRATING DEPTH OF INSERTION
	*KD50DP	420x420mm	100mm	570x500mm	48	785	450mm	S	80mm
Ultra	KD50DNN	400x440mm	100mm	550x520mm	38	1167	450mm	R	80mm
Ultra	KD50D6N	400x440mm	150mm	550x530mm	58	1171	450mm	R	80mm
	KD51D	380x310mm	100mm	565x410mm	32	659	375mm	T	80mm
	*KD51DP	380x310mm	100mm	560x410mm	36	328	375mm	T	80mm
	KD52D	500x350mm	100mm	640x425mm	42	982	450mm	R	80mm
Ultra	#KD52D6N	500x350mm	150mm	645x450mm	52	730	450mm	R	80mm
	KD53D	450x450mm	100mm	580x525mm	33	1428	450mm	R	80mm
Ultra	#KD56D	400x440mm	100mm	550x525mm	38	1100	450mm	R	80mm
	KD58DH	430x430mm	200mm	580x517mm	62	991	450mm	R	135mm

**KD50DP & KD51DP have square mesh pedestrianised style gratings. #KD56D Rear kerb hinged.*

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ULTRA SPECIFICATION - BSI KITEMARKED - BS EN124 D400

Heavy Duty Ductile Iron Hinged , Non-rocking Gully Gratings
Usage : Group 4-for use in carriageways & main roads

RETROmax

Designed to alleviate common problems associated with grating replacements for local authorities and highway maintenance companies, due to large overbase size.









V-MAX®

FEATURES

Manufactured to **BS EN124 class D400.**
Kitemarked for third party assurance of quality.
Ultra products highlighted on this page comply with Design Manual for Roads & Bridges Vol 4, Section 2, part 5. **HA104/02.**
Ultra products additionally conform to **BS 7903.**
Suitable for carriageway & fast moving traffic.
(A.M.P.'s) Anti-movement technology.
80 / 125mm depth of grating insertion into frames.
75mm solid bedding width.
40 tonne safe test load.
3 flanged products are for group 3 areas.
Works safety tested to 44 tonnes = +10%.
Non-rock design for increased stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

V-MAX ®
KD55V - Designed for use in profiled drainage channels parallel to main carriageways 1:5 profile

+ SAVE TIME + SAVE LABOUR + SAVE MONEY + INCREASE DRAINAGE CAPACITY +

ULTRA SPEC	PRODUCT CODE	OVER GRATE	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's	WATERWAY apx cm^2	SUITS GULLY	HA102 REF
	Hinged wedge seating non-rock design							
Ultra	RETROMAX-KD54D	600x450mm	100mm	750x550mm	54	1610	450mm	Q
Ultra	RETROMAX-KD57D	750x450mm	150mm	910x542mm	90	2216	450mm	Q
Ultra	V-MAX-KD55V	630x630mm	150mm	794x794mm	93	2380	600mm	P
Ultra	V-MAX-KD19V	1220x675mm	150mm	1380x835mm	200	4715	-	P

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BSI KITEMARKED - BS EN124 C250

Heavy Duty Ductile Iron Hinged & Double Triangular Gully Gratings

Usage : Group 3-for slow moving heavy traffic & areas not exceeding 500mm from the kerbside



KD50CN



KD51C



KD70



KD73

BS EN124 KM 45942

EN 124 C250

KERBSIDE CARRIAGEWAYS

SAVAGE HIGH STRENGTH BEDDING MORTAR (HA104/02)

see page 28

FEATURES

Manufactured to **BS EN124 class C250.**
Kitemarked for third party assurance of quality.
Suitable for carriageway applications not exceeding 500mm from the kerbside.
25 tonne safe test load.
3 flanged products are for group 3 areas.
Works safety tested to 27.5 tonnes = +10%.
Yard gullies with flat top & dished types available.
Non-rock design for increased stability & silent operation.
Ductile iron for improved weight to strength ratio.
Black coated finish.

OPTIONS *(See pages 27 & 28 for full details)*

Locking - standard bolts
Locking - approved high security bolts / keys

PRODUCT CODE	OVER GRATE	FRAME DEPTH	OVERALL FRAME	MASS apx Kg's	WATERWAY apx cm^2	SUITS GULLY	HA102 REF
Captive hinged design							
KD51C	380x310mm	75mm	472x370mm	22	764	375mm	S
KD51CB	380x310mm	75mm	555x410mm	22	764	375mm	S
*KD51CPL	380x310mm	75mm	555x410mm	28	543	375mm	T
KD50CN	420x420mm	75mm	520x510mm	29	1100	450mm	R
Non rock double triangular							
KD41C	445x445mm	75mm	535x500mm	38	950	450mm	R
Proprietary yard gully gratings							TYPE
KD70	225x225mm	50mm	285x265mm	9	228	228mm	Flat top
KD71	225x225mm	50mm	285x265mm	9	228	228mm	Dished
KD72C	325x325mm	75mm	365x385mm	16	497	304mm	Flat top
KD73C	325x325mm	75mm	365x385mm	16	497	304mm	Dished

**KD51CPL has a pedestrianised grating & is locked as standard*

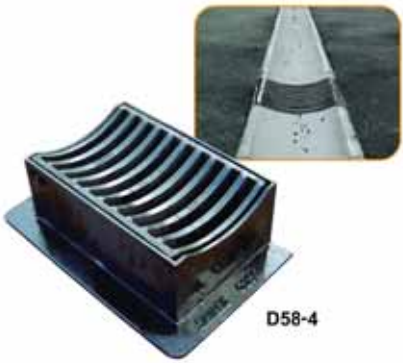
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FM 37799

C250


D58-2


D58-4


D58-1

FEATURES

Manufactured to **class C250** where appropriate.
Suitable for areas with slow moving heavy traffic.
Captive hinged design (except D46-1).
25 tonne safe test load.
3 flanged products are for group 3 areas.
Ductile iron for improved weight to strength ratio.
Black coated finish.


D46-1

PRODUCT CODE	OVER GRATE	FRAME DEPTH	OVER TOP OF FRAME	OVER BASE	DEPTH OF DISH	No of Flanges
Savage Blogully						
D58-2	340x170mm	145mm	400x200mm	450x270mm	15mm	3
D58-3	340x170mm	145mm	400x200mm	450x320mm	15mm	4
D58-1	170x170mm	125mm	200x200mm	300x250mm	15mm	3
Dished to suit proprietary block paving drainage channel systems with a block size of 200x200mm (O/Top)						
Savage Congully						
D58-4	360x240mm	145mm	375x250mm	480x305mm	30mm	3
D58-5	360x240mm	145mm	375x250mm	480x355mm	30mm	4
Dished to suit proprietary 225 x 125mm (10"x5") concrete channel systems						

Savage Gully Chute Connector

	Top catchment	Spigot	Overall	Bottom catchment	Catchment depth	Overall depth
D46-1	420x330mm	150mm	530x415mm	170x160mm	175mm	185mm

Gully chute connector for sub-kerb gully grating installation. This item does not require a loading category.
Suitable for : all KD41D, KD50D & KD115 patterns, KD52D, KD50CN, KD41C & DSUB.

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section C

surface boxes & ancillary products



NUNEATON : 024 7664 1777 : 024 7637 5250 : iron@peter-savage.co.uk
WAKEFIELD : 01924 258 381 : 01924 258 382 : wakefield@peter-savage.co.uk

FM 37799
BS EN ISO 9001: 2000
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BS 5834 P.2
BS 5834 P.3
KM 93597

GRADE - A
Heavy Duty

Pedestrian Duty

SURFACE BOXES - BSI KITEMARKED - BS 5834

Heavy Duty Non-rock Ductile Iron Surface Boxes
Light Duty Hinged Grey Iron Surface Boxes



KB4D



KFH1
Fire Hydrant Cover

FEATURES

Manufactured to **BS 5834 part 2: 1983, part 3: 1985** as detailed.
BSI KITEMARKED for third party assurance of quality (where applicable).
Grade A = Heavy duty, Non rock suitable for use in carriageways carrying fast moving normal commercial vehicles with wheel loads up to 5 tonnes.
Grey iron **Pedestrian loading** as detailed.
(A.M.P.'s) Anti-movement technology (where applicable).
Solid top, double triangular & hinged solid top as detailed.
Ductile iron for improved weight to strength ratio.
Black coated finish.



KB1D
Cable Loop box



TYPE-A
Hinged surface box

OPTIONS *(See pages 27 & 28 for full details)*

Locking (may encroach on clear opening)
Locking - approved high security bolts / keys
Badging - i.e. GAS, SV, WATER etc

PRODUCT CODE	CLEAR OPENING	DEPTH	OVERALL FRAME	COVER TYPE	LOADING	STANDARD	MASS apx Kg
KB1BH	140x115mm	78mm	197x172mm	Hinged Solid Top	Grade B	BS5834 P2	8
KB1D	150x150mm	150mm	230x230mm	Double Triangular	Grade A	BS5834 P2	11
KB1D has a slotted frame for traffic loop cable							
KB1AD	150x150mm	230mm	225x225mm	Solid Top	Grade A	BS5834 P2	8
KB2D	150x150mm	100mm	230x230mm	Double Triangular	Grade A	BS5834 P2	9
KB2ST	150x150mm	100mm	245x245mm	Solid Top	Grade A	BS5834 P2	8
KB3BH	215x215mm	75mm	270x270mm	Hinged Solid Top	Grade B	BS5834 P	7
KB3D	229x229mm	100mm	310x310mm	Double Triangular	Grade A	BS5834 P2	19
KB4D	300x300mm	100mm	385x385mm	Double Triangular	Grade A	BS5834 P2	26
KFH125	380x230mm	125mm	500x350mm	Solid Top	Grade A	BS5834 P3	24
KFH2D	430x280mm	100mm	535x385mm	Double Triangular	Grade A	BS5834 P3	30
KFH2	430x280mm	105mm	535x385mm	Solid Top	Grade A	BS5834 P3	25
TYPE-A	140x115mm	75mm	152x127mm	Hinged Solid Top	Pedestrian	-	4
D110A	140x115mm	75mm	152x152mm	Hinged Solid Top	Pedestrian	-	3
D110C	203x190mm	75mm	229x229mm	Hinged Solid Top	Pedestrian	-	8
D1106	267x241mm	102mm	305x305mm	Hinged Solid Top	Pedestrian	-	20

KB1AD is badged W & SV as standard, KFH products are badged FH as standard,
KB1BH & KB3BH are badged WATER as standard, KB2ST is badged SV as standard, can be badged to customer requirements

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ancillary options



SAVAGE **STEP IRONS**

Manufactured from Ductile Iron to BS EN 1301:2002 complete with anti slip design on top face. All Step irons are hot dip galvanised to BS EN ISO 1461 : 1999. Double steps have a raised side to prevent foot slippage. For specification and order purposes please use product code /CSTEP-1 (single step - 115mm tail), / CSTEP-2 (single step – 225mm tail), / CSTEP-B (single step – BOLT ON not shown in illustration). *For Access Ladders please see our Fabricated Steel Products Brochure.



SAVAGE **PLASTIC COATED STEP IRONS**

Polypropylene copolymer plastic completely encapsulating either structural carbon or stainless steel step irons. Manufactured to WIS 4-33-01 : 1990. Single or double steps are available for building into chamber or fitting to existing chambers. For specification and order purposes please use product code /PSTEP-1 (single step), / PSTEP-2 (double step) stainless steel steps , / PSTEP-1S (single step), / PSTEP-2S (double step). *For Access Ladders please see our Fabricated Steel Products Brochure.



SAVAGE **PENSTOCKS**

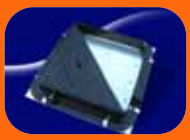
A range of penstocks manufactured from grey iron to BS1452. These are suitable for a duty of 5 metre head 'on-seating' and 2.5 metre head 'off-seating'. Penstocks can be arranged for fixing to walls, thimbles, pipes etc. For specification purposes please use savage code PEN/ and suffix with dimension required. ie PEN/225



SAVAGE **TIDAL FLAP VALVES**

Ductile Iron, double hung tidal flap valves with stainless steel hinge pins. Non ferrous valve seats are machined to give superior surface finish. Suitable for both wall & pipe fixing. For specification and order purposes use savage code TIDE/ and suffix with dimension required. ie TIDE/150

optional extras



SAVAGE **SEALING PLATE**

Galvanised steel sealing plate fitted to the underside of the access cover. The plate is bolted to a subframe, which is fitted with a neoprene seal. Prevents the ingress of surface water and the egress of odours at normal atmospheric pressure. For specification and order purposes please suffix product code with /SP. i.e. KD14/SP



SAVAGE **PRESSURE PLATES**

Galvanised steel pressure plate fitted to the underside of the access cover. The plate is locked into opsition by M10 bolts at approximatley 100mm centres and is fitted with a neoprene seal. Designed to withstand 0.5 bar pressure (5 metre head). For specification and order purposes please suffix product code with /PP. i.e. KD14/PP *(non-standard pressure plate illustrated)*.



SAVAGE **SECURITY GRILLE**

High security hinged galvanised mild steel grille, complete with hasp & staple for a user/authority padlock to help prevent un-authorized access. For specification and order purposes please suffix product code with /SCG. ie KD10/SCG

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WAKEFIELD : 01924 258 381 : 01924 258 382 : wakefield@peter-savage.co.uk



SAVAGE **SAFETY GRID**

Standard safety grid designed to prevent the access cover accidentally falling into the chamber when being lifted. The grid is suspended below the access cover. For specification and order purposes please suffix product code with /SG. ie KD62C/SG



SAVAGE **LIFTING KEYS**

L/KEY - Light duty type lifting key (T.key type)
H/KEY - Heavy duty type lifting key (Hoop handle)
LH/KEY - Heavy duty long handled type lifting key (Hoop handle)
* Special lifting keys available.



SAVAGE **LOCKING**

Most products are available fitted with stainless steel locking screws/bolts. Allen head type are also available. For specification and order purposes please suffix product code with /L for standard screws & /LA for allen key head. ie KD33-40S/LA



SAVAGE **APPROVED HIGH SECURITY LOCKING**

The majority of products are also available with security hex-pin locking screws which require a special ratchet bit to operate. For specification and order purposes please suffix product code with /Hpin for hex-pin screws & /Tpin for torx-pin screws. (See illustration on page 15). e.g. KD33-40S/ Hpin



SAVAGE **BEDDING MORTAR**

Savage Bedding Mortar, a rapid setting polyester resin compound that meets the requirements of HA104/02. When this mortar is combined with Savage Ultra products it gives a complete system that meets the requirements of HA104/02. Savage Ultra products along with this mortar will help prevent the premature failure of the ironwork installation and hence give an excellent overall whole life product cost. The polyester resin bedding mortar is a two component system consisting of a liquid resin and a powder hardener, which can be mixed in varying ratios to accommodate a wide variety of applications. The mortar demonstrates high early strength gain and hence prevents failure through early loading from traffic. The material may also be used for bedding of kerbs, paviors or sets where speed is of paramount importance. Product code : MH-LEV/13/



SAVAGE **DRAINAGE & AIR RELEASE HOLES**

Access Covers drilled with six number 19mm diameter holes per unit. This increases proportionally for twin and triple units. Venting to BS EN124 also available. For specification and order purposes please suffix product code with /V19.



SAVAGE **BADGING**

Badging available includes. GAS, CATV, FH, AV, SV, WO, SW, FW, WATER, TRAFFIC SIGNALS, CCTV, TfL, VALVE, STREET LIGHTING, etc. Special badging is available upon request. For specification and order purposes please suffix product code with the name of badge required /GAS. ie KB3D/GAS

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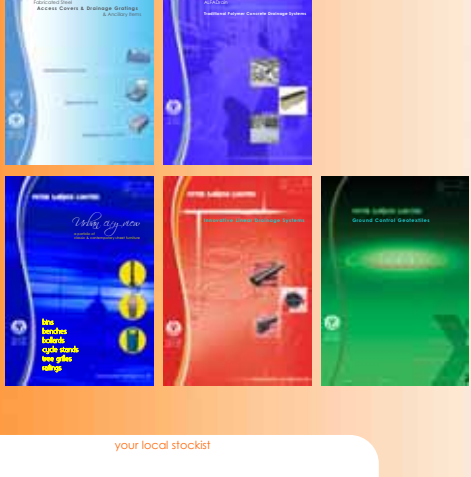
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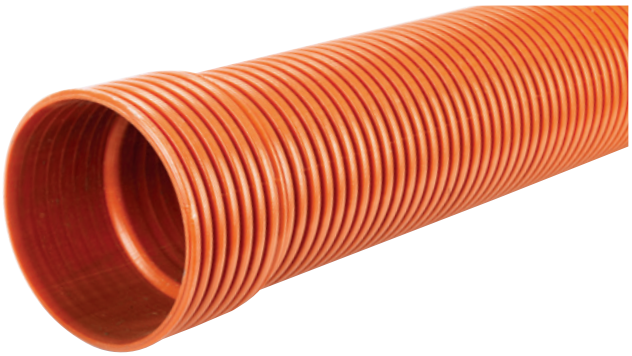
Polysewer

Data Sheet

PRODUCT INFORMATION **P1** **ISSUE 2 - APR 2017**

Polysewer is a range of PVCu structured wall gravity sewer pipes and fittings available in diameters from 150-300mm. The complete system includes a range of couplings, seals, bends, junctions and accessories.

The system is manufactured in accordance to BS EN 13476-1 and WIS 4-35-01 v2, and has adequate resistance to the type and quantities of chemicals likely to be found in domestic sewerage.



Applications

Polysewer provides robust, chemical and sewer gas resistant sewer pipes for new and replacement gravity sewer systems.

Performance

Polysewer has a design life in excess of 100 years.

Key benefits

- Fully compliant with BS EN 13476-1 and WIS 4-35-01 v2
- BSI Kitemarked and BBA approved
- Adoptable by water companies
- Manufactured to stiffness classification 8
- Lighter in weight for increased Health and Safety benefits
- Durable, long life PVCu
- Structured wall pipe for high ring stiffness and strength
- Integral sockets for quicker installation and greater leak tightness
- Strong, flexible pipe wall withstands ground movement and differential settlement
- Chemical, impact and abrasion resistant
- Resistant to sulphate attack and corrosion by sewer gas
- Saddle connectors are available
- Meets WRc Code of Practice for high pressure water jetting tolerance

KM55698 KM582885

POLYSEWER INTEGRALLY SOCKETED PIPE

NOMINAL SIZE (mm)	ID (mm)	OD (mm)	CODE	LENGTH (m)	PACK QTY
150	146	160	PS632	3	46
225	229	250	PS1032	3	23
300	301	330	PS1232	3	8

6m lengths available, subject to minimum order quantity and lead times.

JOINTING

NOMINAL SIZE (mm)	COUPLING CODE	SEAL CODE
150	PS601	PSSP1
225	PS1001	PSSP2
300	PS1201	PSSP3

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DATA SHEET

BITUMEN JOINTING STRIP – SUSTAINABILITY AND RECYCLING

PROSOLVE BITUMEN JOINTING STRIP (PVBJS40, PVBJS60, PVBJS80, PVBJS120)

ProSolve Bitumen Jointing Strip is a user friendly, high performance joint sealant that provides a watertight and flexible seal. ProSolve Bitumen Jointing Strip is used to joint precast concrete box culverts, manholes, inspection chambers, shafts, caissons, tunnels and ogee pipes.

PROSOLVE BITUMEN JOINTING STRIP POLYMER MODIFIED BITUMINOUS JOINT SEALANT

ProSolve Bitumen Jointing Strip is a polymer modified bituminous compound incorporating temperature extenders.

ProSolve Bitumen Jointing Strip is made in various cross-sections designed to seal all types and sizes of joints in precast concrete manholes, box culverts, inspection chambers, pipes etc. Plastoelastic properties and high adhesion provide a permanent watertight seal during and after settlement, ground movements, side loadings etc.

ProSolve Bitumen Jointing Strip is resistant to sulphates, acids, alkalis, salts, groundwater, trade effluent, grease, sewage and micro-organism.

ProSolve Bitumen Jointing Strip enables the contractor to install watertight culverts, manholes and other precast concrete structures quickly and economically without the need for in situ concrete surrounds while still meeting full life cycle durability requirements. ProSolve Bitumen Jointing Strip is supplied in rolls with siliconized release plastic.

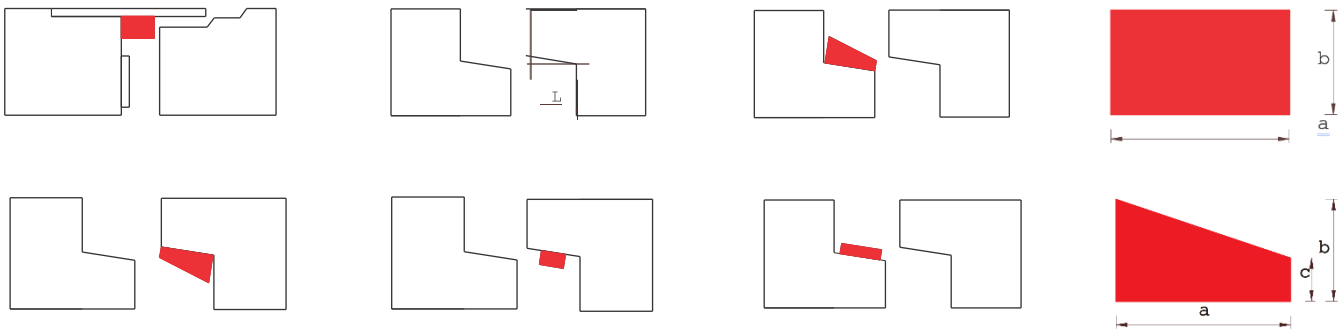
ProSolve Bitumen Jointing Strip is created after many years of research and development work made together with leading precast concrete manufacturers. ProSolve Bitumen Jointing Strip has been tested in applicable parts based on standards like DIN 4062 and functional needs. Also tests are carried out by concrete manufacturers showing that ProSolve Bitumen Jointing Strip meets the requirements of EN 1917 (new European standard for concrete manholes and joints.) This enables the concrete manufacturer to supply units that meet the new standard.

PROPERTIES

Composition	polymer modified bituminous incorporating temperature extenders, elastomer and mineral powder
Specific gravity	1.46 g/cm3 at 25°C
Specific volume	685 cm3/kg
Colour	black
Temperature range	application –5° to +40°C
Water tightness	minimum 0.5 bar / 15 mins at 20°C, tested to 5.0 bar/15 mins at 20°C
Water absorption	0.03% (DIN 4062)
Chemical resistance	very good (acids and alkalis pH 2 to 12)
Microbiological	excellent

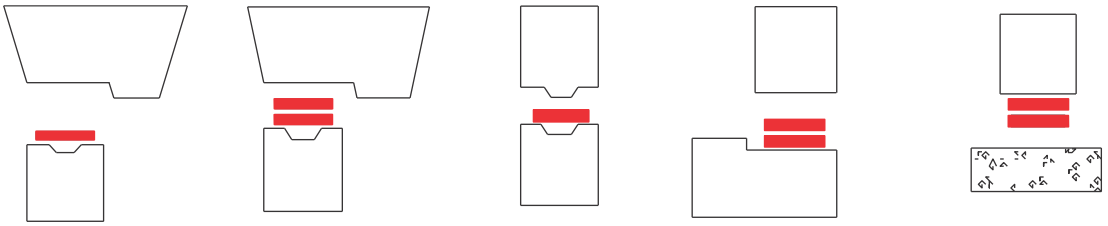
BOX CULVERTS JOINTS

Socket Nib Length x offset L x 0 mm	**Cross-section a x b x c/axb mm**	**Cross - section area sq mm**	**Reels per carton no. x length**	**Metres per carton (m)**	**Approx carton weight (Kg)**	**Length per 1 litre primer (L)**	**Primer req'd per carton**
Trapezoidal ProSolve Bitumen Jointing Strip							
70 x 7	70 x 32 x 14	1610	3 x 3m	9	22	17	0.5
70 x 10	80 x 32 x 14	1840	3 x 3m	9	25	15	0.6
75 x 9	80 x 32 x 14	1840	3 x 3m	9	25	15	0.6
75 x 10	80 x 32 x 14	1840	3 x 3m	9	25	15	0.6
Rectangular ProSolve Bitumen Jointing Strip							
70 x 7	30 x 22	660	7 x 3.5m	24.5	25	20	1.2
70 x 10	40 x 25	1000	5 x 3m	15	23	20	0.8
75 x 9	40 x 25	1000	5 x 3m	15	23	20	0.8



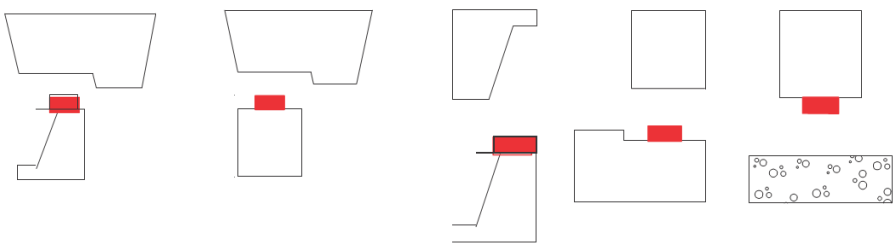
MANHOLES WITH TONGUED AND GROOVED JOINTS

Manhole Diameter DN	Cross-section a x b mm	Length per joint m	Reels per carton no. x length	Metres per carton (m)	Approx ctn. wt (kg)	Length per 1 litre primer (m)	Primer req'd per carton (L)
900	60 x 12	3.1	4 x 6m	24	27	26	0.9
1050	60 x 12	3.6	4 x 6m	24	27	23	1.0
1200	80 x 12	4.1	3 x 6m	18	27	21	0.9
1350	80 x 12	4.6	3 x 6m	18	27	19	0.9
1500	80 x 12	5.1	3 x 6m	18	27	18	1.0
1800	80 x 12	6.1	3 x 6m	18	27	17	1.1
2100	120 x 12	7.0	2 x 6m	12	27	14	0.9
2400	120 x 12	8.0	2 x 6m	12	27	13	0.9
2700	120 x 12	9.0	2 x 6m	12	27	12	1.0
3000	120 x 12	10.0	2 x 6m	12	27	11	1.1



MANHOLES WITH REBATED OR OGEE JOINTS

Manhole Diameter DN	Cross-section a x b mm	Length per joint m	Reels per carton no. x length	Metres per carton (m)	Approx ctn. wt (kg)	Length per 1 litre primer (m)	Primer req'd per carton (L)
900	25 x 20	3.1	8x 4m	32	25	50	0.6
1050	25 x 20	3.6	8 x 4m	32	25	42	0.8
1200	30 x 22	4.1	7 x 3.5m	24.5	25	38	0.6
1350	30 x 22	4.6	7 x 3.5m	24.5	25	36	0.7
1500	30 x 22	5.1	7 x 3.5m	24.5	25	33	0.7
1800	30 x 22	6.1	7 x 3.5m	24.5	25	31	0.8
2100	40 x 25	7.0	5 x 3m	15	23	26	0.6
2400	40 x 25	8.0	5 x 3m	15	23	24	0.6
2700	40 x 25	9.0	5 x 3m	15	23	23	0.7
3000	40 x 25	10.0	5 x 3m	15	23	21	0.7



PROSOLVE BITUMEN JOINTING STRIP APPLICATION

PRIMING

All joint faces must be clean and dry and any loose material must be removed. Possible surface moisture should be removed with a blow-torch. Then ProSolve Bitumen Jointing Strip Primer is brushed onto both sides of the joint. (Avoid the caulking groove present on some culverts). Primer is allowed to dry before starting the ProSolve Bitumen Jointing Strip installation. Non-disposable brushes can be cleaned in white spirit.

APPLICATION

After the primer has dried apply ProSolve Bitumen Jointing Strip within 8 hours, ensuring that all joint faces are clean and dry. It may be necessary to warm ProSolve Bitumen Jointing Strip with a blow-torch to increase tack.

Apply ProSolve Bitumen Jointing Strip of the correct size to the joint, as shown in the drawings page 2, taking care to discard the interleaving paper.

On box culverts and ogee pipes heat the surface of the ProSolve Bitumen Jointing Strip with the flame of a gas torch to obtain initial adhesion if needed. Don't heat more than to get the surface glossy.

POSITIONING OF PROSOLVE BITUMEN JOINTING STRIP

On box culverts position the trapezoidal section of ProSolve Bitumen Jointing Strip to cover the sloping face of the socket. The traditional rectangular cross-sections which are smaller and should be positioned on the middle of the sloping face of the socket.

On ogee pipes position the ProSolve Bitumen Jointing Strip on the sloping face of the spigot.

JOINING PROSOLVE BITUMEN JOINTING STRIP

On manholes, box culverts and ogee pipes join the ends of the strip in a scarf joint by overlapping the ends then cutting through at 45° with a hot knife, playing a flame on the cut faces and smoothing over.

On box culverts cut the strip into the corners with a mitre joint.

MANHOLES AND INSPECTION CHAMBERS

On manholes with tongued and grooved joints of DN 1350 to 3000, use a double strip on the base and top joints. On all manholes and inspection chambers trim off any excess compound which extrudes internally.

On manholes the imposed loading from the upper units should be sufficient to compress the ProSolve Bitumen Jointing Strip. Ensure that the ProSolve Bitumen Jointing Strip is compressed by at least half its thickness before any water test.

BOX CULVERTS AND OGEE PIPES

On box culverts and ogee pipes close the joint to an internal gap of 10 mm using a mechanical cable puller. The trapezoidal (wedge shaped) ProSolve Bitumen Jointing Strip will fill the joint in the middle and inside on box culverts and in the middle and outside on ogee pipes. Any squeeze-out should be cut off and smoothed flush to the wall or the back of the caulking groove if there is a secondary sealant.

LEAKAGE

If a joint should leak, check for the absence of primer, gaps between the ends of the strips or poor fit between the concrete units.

IMPORTANT NOTICE

All statements, technical information and recommendations are based on tests we believe to be reliable as at the date of hereof, but the accuracy or completeness thereof is not guaranteed. Please ensure before using the product that it is suitable for your intended use. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, other than for fraudulent misrepresentation, ProSolve expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

BEFORE USE, CONSULT THE SAFETY DATA SHEET OF THE PRODUCT.

POLYPIPE BUILDING PRODUCTS LTD
MATERIAL SAFETY DATA SHEET

1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE

1.1 Product Identity

Product Name: Polypipe Building Products PVC-u Below Ground Products – Underground Drainage, Polysewer, Sewer drain, Ducting, Land Drain and Civils

1.2 Relevant Identified Uses:

Recommended use: Below Ground Systems

1.3 Details of Supplier

POLYPIPE BUILDING PRODUCTS
BROOMHOUSE LANE
EDLINGTON
DONCASTER
DN12 1ES

1.4 Contact details / Emergency contact details

TELEPHONE: 01709 770000
EMERGENCY: 01709 770000 (Mon to Fri 08.00 to 17.30)
EMAIL: bp.datasheets@polypipe.com

The following information is based upon our current knowledge and experience of our products and is not exhaustive. It applies to the product range outlined above. The potential hazards identified, together with the recommended precautions for storage, handling and use, give the basic information for conducting workplace risk assessments and adequate control measures under the Control of Substances Hazardous to Health Regulations 2002, Control of Substances Hazardous to Health (Amendment) Regulations 2004, The CLP Regulations and the Approved Code of Practice

2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Non-Hazardous under normal conditions and use

2.2 Label elements

Not applicable

2.3 Other hazards

Non-Hazardous under normal conditions and use. Fine particles released during cutting may cause irritation to the eyes and respiratory tract.

3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

PVC-u

Calcium hydroxide - Stabilizer

Natural Calcium Carbonate - Filler

Chemical Name	EC No	CAS No.	Weight %	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
Poly (vinyl chloride)	-	009002-86-2	>99		-
Natural Calcium Carbonate	215-279-6	1317-65-3	>=85-<100		
Calcium hydroxide	215-137-3	1305-62-0	<20	STOT SE 3; H335 Skin Irrit. 2; H315 Eye Dam. 1; H318	01-2119475151-45-xxxx

4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice

Inhalation: Not applicable in normal use. If thermal decomposition occurs and vapours have been inhaled, affected person is to be moved to fresh air and seek medical attention.

Skin Contact: Not applicable under normal use. Fine particles released during cutting - wash with soap and water

Eye contact: Not applicable under normal use. Fine particles released during cutting – rinse with clean water for up to 10 minutes holding eyelids apart. Seek medical advice.

Ingestion: Not applicable in normal use. If ingestion of dust occurs during cutting, rinse mouth out with water and seek medical advice. Do not induce vomiting.

5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media Water, Foam, CO2, Sand or Earth

Unsuitable Extinguishing Media Do NOT use water

5.2. Special hazards arising from the substance or mixture

Combustible but not readily ignited under normal conditions.

Combustion or thermal decomposition will evolve toxic and irritant vapours – Hydrogen Chloride, Carbon Monoxide & Carbon Dioxide, Smoke & Fire Soot

5.3. Advice for firefighters

With large fires self-contained breathing apparatus and protective clothing must be worn. Combustion will cease on flame removal.

6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions: Not applicable under normal conditions. Avoid build of dust during any cutting process

6.2. Environmental precautions

Not applicable under normal conditions.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Material should be collected in clean containers and recycled where practicable.

6.4. Reference to other sections

Reference to other sections: Sections 8 & 13

7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Ensure safe lifting techniques are applied when handling the product.
The use of Personal Protective Equipment (PPE) is recommended when working with this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions

Store under cover away from sources of heat and ignition and strong acids
Store in a dry location

8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Chemical Name	CAS No.	LTEL 8 hr TWA ppm	LTEL 8 hr TWA mg/m3	STEL ppm	STEL mg/m3	Note:
PVC Dust (Respirable)	009002-86-2	-	1.5	-	COM	01-2119457290-43-XXXX
Natural Calcium Carbonate (Inhalable) (Respirable)	1317-65-3		10 4			
Calcium hydroxide (Inhalable)	1305-62-0		5			

8.2. Exposure controls

Engineering Controls Not applicable in normal use.

Personal Protective Equipment

General & hygienic measures Wash hands before breaks and at the end of work
Avoid contact with the eyes

Eye/Face Protection Suitable safety goggles should be worn to reduce the potential risk due to cutting swarf and dust

Respiratory Protection Wear suitable dust mask if cutting operation creates dust

Protection of Hands Abrasive resistant gloves should be worn to reduce the potential risk of small cuts and abrasions, which may occur during the installation process

9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State:	Solid PVC-u product
Odour:	Slight
Auto ignition Temperature:	450 ℃
Explosive properties	Deposited dust is weakly flammable and has no self-sustained flame. This product is not classified as a dust explosive
Solubility (Water):	Insoluble
Solubility (Other):	Soluble in: cyclohexanone, tetrahydrofuran, 1,2 Dicloroethane
Specific Gravity:	1, 4 at 20 Deg C

10: STABILITY AND REACTIVITY

10.1. Reactivity
Stable under normal handling and storage conditions

10.2. Chemical stability
Stable under normal conditions

10.3. Possibility of hazardous reactions
PVC-u
With the exception of sulphuric acid (> 90%) and nitric acid (>50%), PVC is resistant to acids and alkalis up to 60 Deg C. However, above this temperature the polymer is attacked by the stronger acids.

Calcium Carbonate (filler)
Reacts with acids to form carbon dioxide.

10.4. Conditions to avoid
Dust accumulation

10.5 Incompatible materials
PVC-u see 10.3
Calcium Hydroxide – Stabiliser – Strong oxidising agents

10.6. Hazardous decomposition products
PVC-u
Thermal decomposition will evolve toxic vapours. (hydrogen chloride, carbon monoxide, carbon dioxide and fire soot).

11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

PVC-u

Inhalation	PVC products may contain traces of vinyl chloride monomer
Ingestion	High concentrations of dust may be irritant to the respiratory system
Skin	May cause abrasion in contact with skin
Eyes	May cause abrasion on contact with eyes

12: ECOLOGICAL INFORMATION

General information:

There is no risk to the environment from the use of this product. The product in insoluble in water. The product has no mobility in soil. There is no evidence for biodegradability in water or soil. The product is not harmful to organisms.

13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover and recycle if possible. Dispose of waste material in accordance with national and local regulations

14. TRANSPORT INFORMATION

These products are not classified as dangerous goods for carriage

15: REGULATORY INFORMATION

Not classified as hazardous for supply

16: OTHER INFORMATION

Training Advice Provide adequate information, instruction, and training for operator

This product should be used in accordance with the manufacturer's instructions

It is the user's responsibility to adhere to both National and Local Safety Regulations.

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006
Disclaimer

The information provided in this Safety Data Sheet was compiled using current safety information supplied by distributors of the component materials. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This safety data sheet. Recipients of the product must take responsibility for observing existing laws and regulations. This Safety Data Sheet is in REACH Annex II format and supersedes all previous issues, and users are cautioned to ensure it is the current version.

Destroy all previous revisions and refer to the supplier on +44 1709 770000 for queries regarding this data sheet.

Hepworth SuperSleve Drainage Specification

Client name – Date -

Site address –

1 Manufacturer details

Wavin Limited,
Edlington Lane,
Edlington,
Doncaster,
DN12 1BY

T: 0844 856 5165
E: drainage@hepworth.co.uk
W: www.hepworthclay.co.uk
W: www.cpda.co.uk
W: www.myportal.wavin.co.uk

Overview

Hepworth SuperSleve clay drainage system comprises a range of vitrified clay pipes, bends, junctions and fittings available in 100mm, 150mm, 225mm and 300mm diameters, supplied complete with factory-fitted push-fit flexible couplings or plain ended with separate couplings to be fitted on site. SuperSleve products are suitable for foul and surface water drainage in housing, adoptable, commercial, industrial and highway drainage applications. Correctly installed it has a lifetime expectancy of over 100 years.

Benefits of Hepworth Clay

Sustainability – Clay is a future-proof material, 100% natural and 100% recyclable.
Quality – Kitemarked to BS EN 295-1, supported by a declaration of performance and CE mark.
Strength and durability – Naturally high product strength enhances in-use performance resulting in a lifetime expectancy of over 100 years.
Bedding performance – Recycled aggregates arising from selected construction demolition waste are approved for use with clay pipes.
Jetting performance – Hepworth SuperSleve pipes carry a lifetime jetting guarantee, jet proof to 7500 psi* *please refer to current trade price list for details.*
Chemical resistance – Clay is inert, so is unaffected by any effluent approved for discharge into a public sewer.

Product Standards and Specification Clause

BS EN 295-1:2013 Vitrified clay pipe systems for drains and sewers.
Requirements for pipes, fittings and joints
BS EN 295-5:2013 Vitrified clay pipe systems for drains and sewers.
Requirements for perforated pipes and fittings
BS EN 681-1:1996 Elastomeric seals. Material requirements for pipe joint seals used in water and drainage applications. Vulcanized rubber

Drains and sewers from 100mm to 300mm diameter shall be constructed using Hepworth SuperSleve Vitrified Clay Pipes, fittings and push fit flexible couplings kitemarked to BS EN 295-1:2013, with joint system E. Installed in accordance with the manufacturers recommendations with the following minimum pipe crushing strengths.

Minimum Pipe Crushing strength

100 mm – 40 kN/m	Pipe class – not required
150 mm – 40 kN/m	Pipe class – not required
225 mm – 45 kN/m	Class 200
300 mm – 72 kN/m	Class 240

Quality Assurance

BS EN ISO 9001:2008 Quality Management Systems – Requirements
BS EN ISO 14001:2004 Environmental Management Systems. Certificate No. 42231

2 Installation

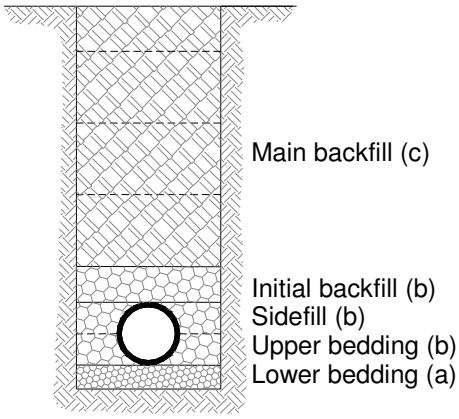
2.1 Excavation
Set aside turf, topsoil, sub-base and good quality subsoil for use in re-instatement. Trench width to be as small as is practicable but no less than pipe o.d. plus 300 mm to allow working space. Locally increase excavation size to allow installation of inspection chambers and manholes.

2.2 Pipe bedding
The following specification is suitable in all areas other than –
Beneath non-trafficked areas where the cover to the crown of the pipe is less than 450 mm. (On private drains or sewers only, adoptable sewers to have min 0.9 metres cover). See section 2.3

Beneath ground bearing concrete slabs where the clearance between pipe crown and slab underside is less than 300 mm. See section 2.3

Beneath trafficked flexible pavement where clearance between pipe crown and the underside of construction is less than 450 mm. (On private drains or sewers only, adoptable sewers to have min 1.2 metres cover). See section 2.3

In ground where the trench formation has little bearing strength e.g. soft ground, running sand etc.
(For detailed advice see Technical note No 1 in the Hepworth literature).



Bedding Class F
Bedding Factor 1.9
Max cover depth in trafficked and non-trafficked areas - 7.5 metres (all pipe diameters)

a) **Lower bedding** (between trench bottom and underside of pipe)
To be minimum 50 mm depth of granular material of either –
20 mm single-sized, or
20 mm graded, or
20 mm single sized re-cycled aggregate material to BRE Digest 433 class RCA (II) or RCA (III) with a compaction fraction value < 0.2, or
20 mm down re-cycled aggregate material to BRE Digest 433 class RCA (II) or RCA (III) with a compaction fraction value < 0.2

b) **Upper bedding** (between lower bedding and half-pipe level),
Sidefill (between lower bedding and pipe crown),
Initial backfill (minimum 150 mm above crown of pipe)
All to be either –
As-dug material (if suitable i.e. free from stones greater than 40 mm and lumps of clay greater than 100 mm), or
Other compactable material (free from particles greater than 40 mm e.g. Sand, all-in aggregate or other granular material)
20 mm single sized re-cycled aggregate material to BRE Digest 433 class RCA (II) or RCA (III) with a compaction fraction value < 0.2, or
20 mm down re-cycled aggregate material to BRE Digest 433 class RCA (II) or RCA (III) with a compaction fraction value < 0.2

c) **Main Backfill** (above initial backfill)
To be either –
As-dug material, or
D.O.T. Type 1

No mechanical compaction should be used until the first 300 mm has been placed. The remainder should be compacted in 300 mm layers.

2.3 Concrete protection
Where the pipe bedding detail is not suitable a minimum 150 mm Concrete surround (min strength C20P) should be applied. A flexible joint should be inserted at the end of each coupling joint of minimum thickness 18 mm, which should extend to the edge of the encasement. Alternatively, where pipes are laid beneath concrete slabs the may be cast-in monolithically in a local thickening of the slab without the need for flexible boards. A flexible coupling joint should always be placed within 150 mm of the face of any concrete with a further joint no more than 600 mm away, where pipes emerge into flexible bedding.
(note – this detail does not apply in poor ground – see note above).

2.4 Pipe cutting
Pipe cutting can be minimized by using pre-cut lengths available in 100, 150, 225 and 300 mm diameters in 300, 600 and 1000 mm lengths
Appropriate personal protective equipment should be used at all times when cutting clayware pipes.
Lever type chain cutters should be used on 100 and 150 mm pipes.
For 225 and 300 mm pipes use a masonry saw fitted with a diamond tipped blade or standard carborundum blade.
Cut pipe ends should be trimmed using the pipe trimmer (code MPT1) for 100 and 150 mm diameters or an emery stone for larger sizes.

2.5 Pipe jointing
Always use purpose made Hepworth pipe lubricant. Clean and lubricate the pipe end to be jointed. Push a coupling onto the lubricated end until the pipe reaches the central rib. Clean and lubricate the other end of the pipe. Push the pipe (lubricated end first) into the coupling of the previously laid pipe. Take care not to let soil or stones enter the joint. For 100 and 150 mm diameters pipes need not be mechanically supported. For larger diameters slings should be used to support the pipe but the jointing force must still be applied by hand.

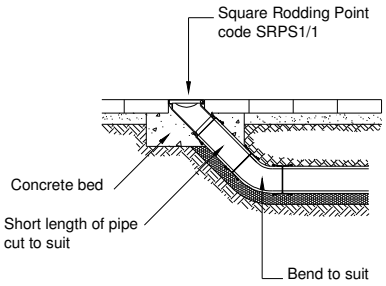
2.6 Workmanship
Installation of private drains and sewers should conform to BS EN 752 “Drains and Sewer Systems outside buildings”, BS EN 1610 “construction and testing of drains and sewers” and part H of the building regulations. Adoptable sewers should be installed in accordance with the current edition of the “Sewers for Adoption” manual and the relevant Water Company requirements.

3 Access points

Various types of pre-formed access points are available from Hepworth, please see the tick box to determine which products are applicable to this particular development.

AP1 – Rodding point

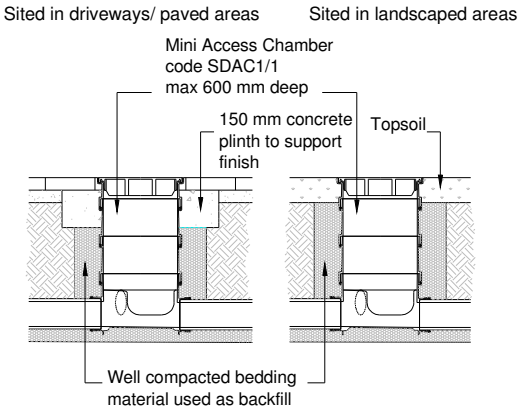
Applicable √ ☐



Max depth – n/a
Loading 35 kn (1 tonne wheel load)
Airtight
Screwed down cover

AP2 – Mini Access Chamber

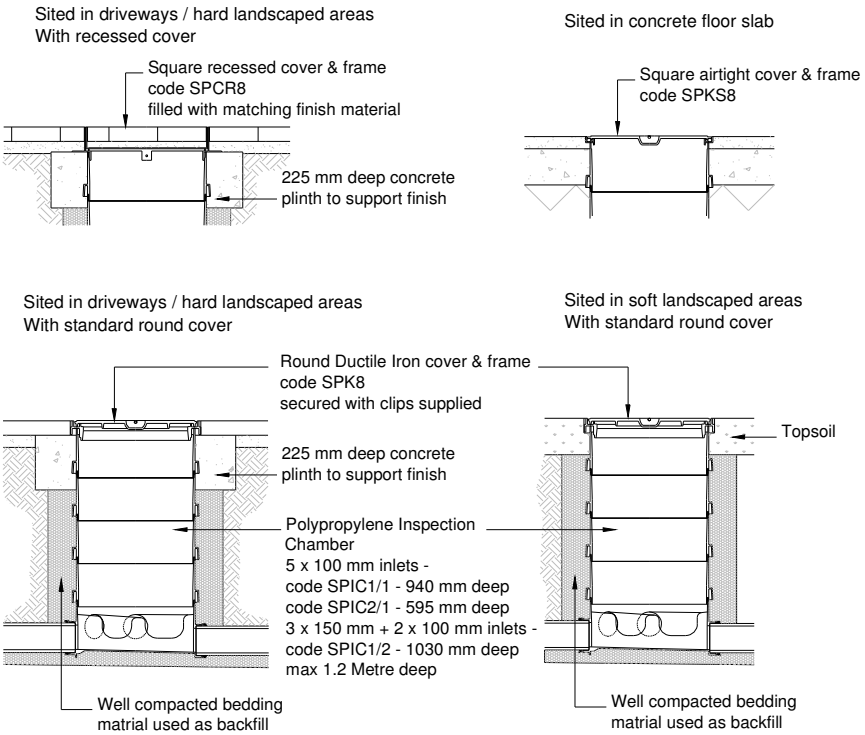
Applicable √ ☐



Max depth – 0.6 metres
Loading 35 kN (1 tonne wheel load)
Airtight
Screwed down cover
Main channel – 100 mm
Side inlets – 2 no 100 mm at 45 °

AP3 – Polypropylene Inspection Chamber

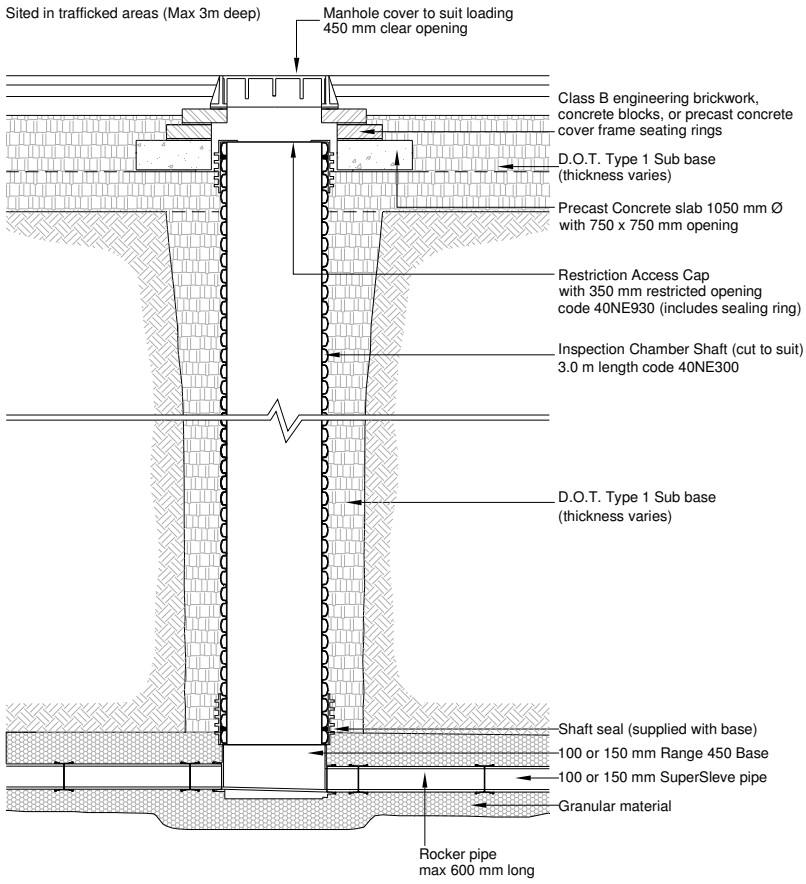
Applicable √ ☐



Max depth – 1.2 metres
Loading 35 Kn (1 tonne wheel load)
Airtight – square cover only
Screwed down – square cover only
SPIC1/1 & SPIC2/1 –
Main channel – 100 mm
Side inlets – 2 no 100 mm at 45 °
- 2 no 100 mm at 90 °
SPIC1/2 –
Main channel – 150 mm
Side inlets – 2 no 100 mm at 45 °
- 2 no 150 mm at 90 °
Standard depth units can be raised
Using a 175 mm raising piece – code
SPIC4 and a seal code SPIC5

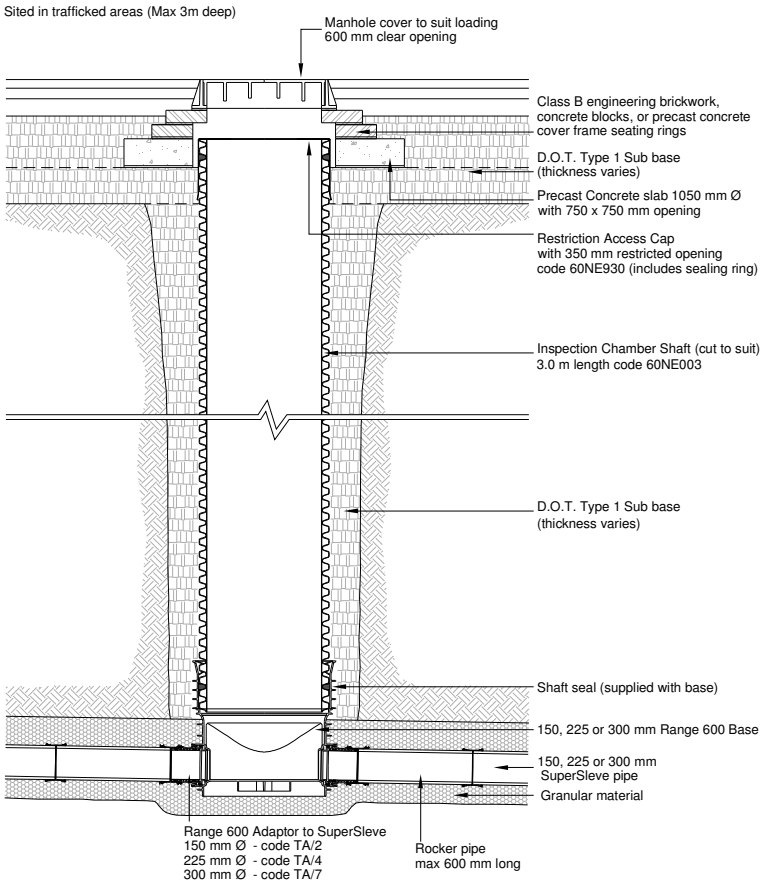
AP7 – Range 450 Inspection Chamber

Applicable √



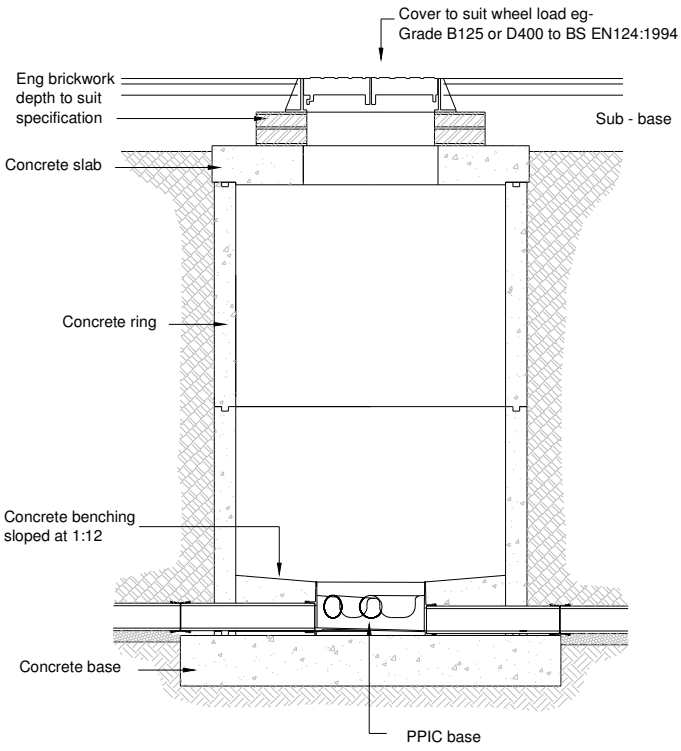
AP8 – Range 600 Inspection Chamber

Applicable √



AP6 - Concrete ring manhole with PPIC base

Applicable √



Max depth – dependant on pipe diameter, ring diameter and type of access (i.e. steps ladder or winch)
Loading – dependant on type of cover.
Airtight - dependant on type of cover.
Screwed down – dependant on type of cover.
PPIC base alternatives –
SPIC6/1 –
Main channel – 100 mm
Side inlets – 2 no 100 mm at 45 °
- 2 no 100 mm at 90 °
SPIC6/2 –
Main channel – 150 mm
Side inlets – 2 no 100 mm at 45 °
- 2 no 150 mm at 90 °

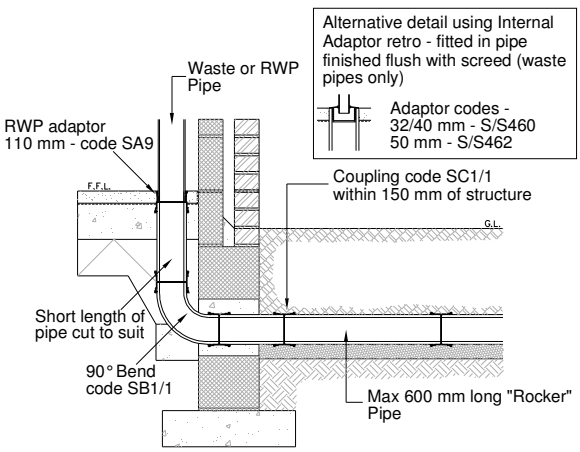
4 Terminal connection points

4.1 Direct Connections

Direct connections are made to the drainage system through a 90 ° bend and the appropriate adaptor. Please read the tick box to determine which products are applicable to this particular development.

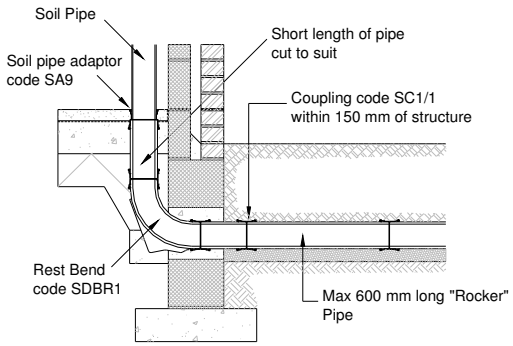
Applicable √

DC1 – internal waste pipe connection



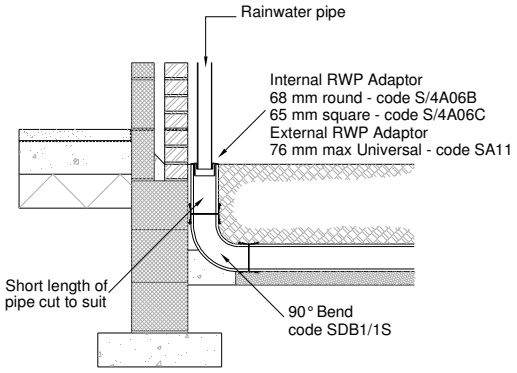
Applicable √

DC2 – Soil stack / Stub stack / WC connection



Applicable √

DC4 – External Rainwater pipe connection

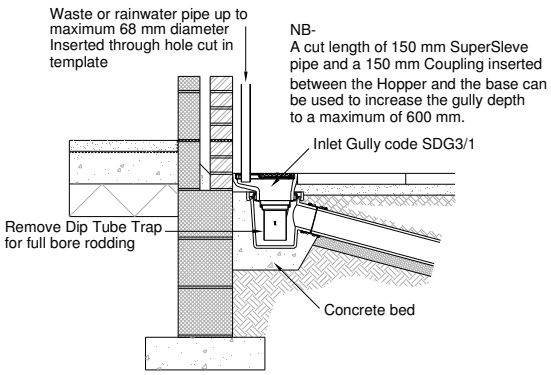


4.2 Gully connections (Trapped)

The selection of the correct gully will depend on the diameter and shape of the waste or rainwater pipe, the need for rodding access and the security of the grid. Hopper and trap combinations are not roddable. Please read the tick box to determine which products are applicable to this particular development.

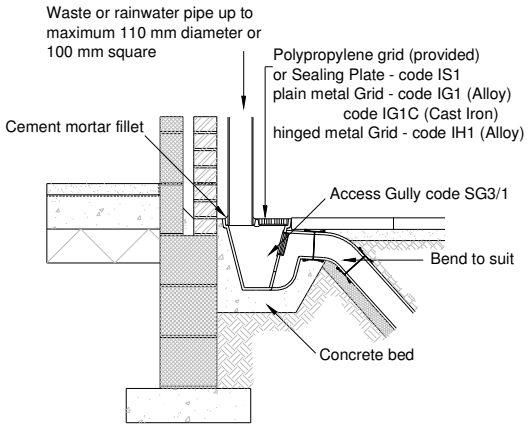
Applicable √

GC1 – inlet Gully connection



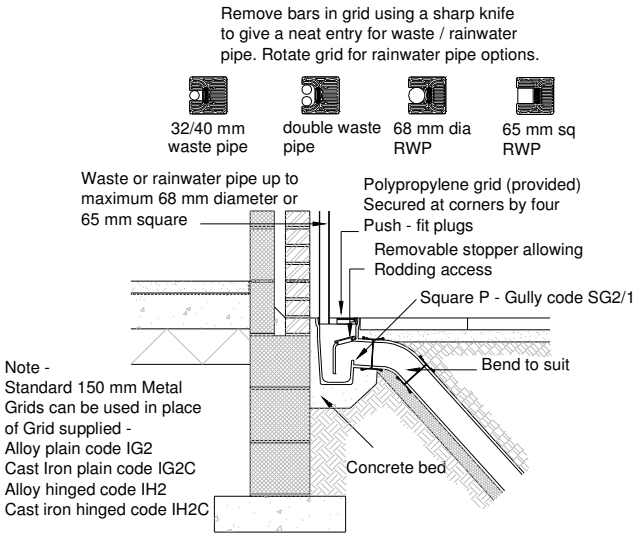
GC2 – Access Gully Connection

Applicable √



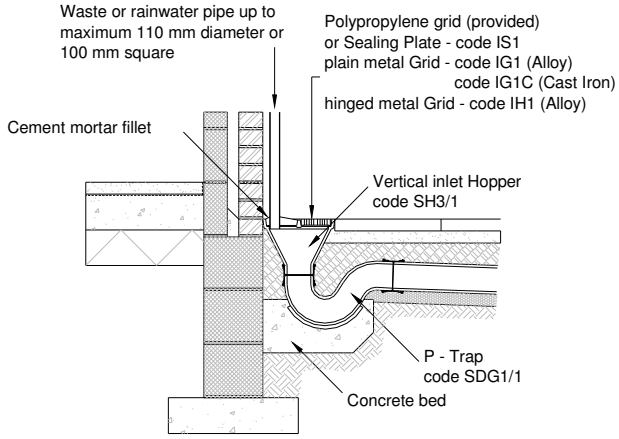
GC3 – Square P-Gully Connection

Applicable √



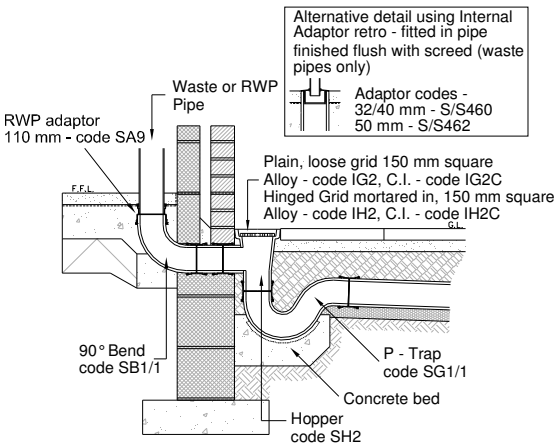
GC4 – Vertical inlet Hopper connection (trapped)

Applicable √



GC5 – Horizontal Inlet Hopper connection (trapped)

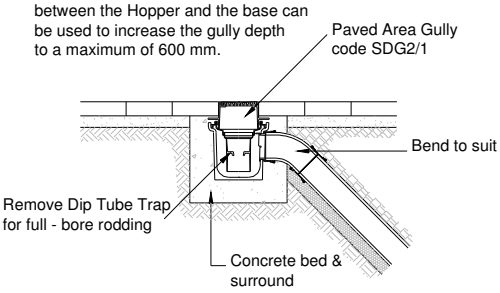
Applicable √



GC6 – Paved Area Gully connection

Applicable √

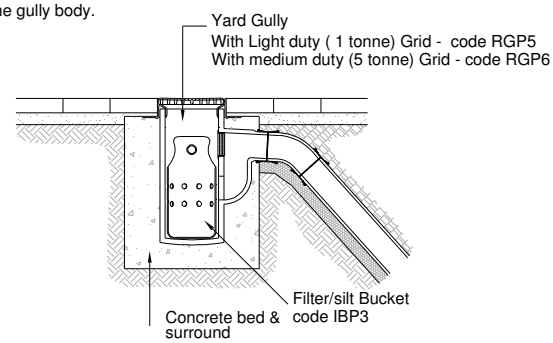
NB-
A cut length of 150 mm SuperSleve pipe and a 150 mm Coupling inserted between the Hopper and the base can be used to increase the gully depth to a maximum of 600 mm.



GC8 – Yard Gully connection

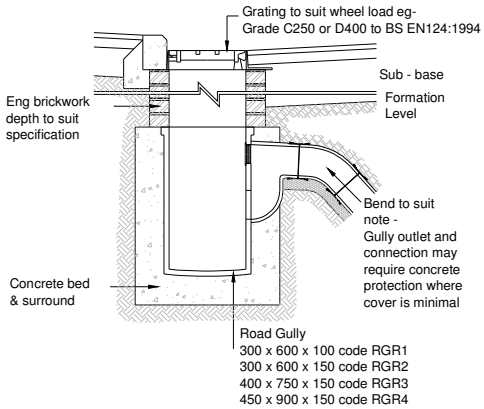
Applicable √

NB-
The depth of the gully can be increased by up to 300 mm by fitting a 225 mm coupling code SC1/5 and a 300 mm high raising piece code SP030/5 between the frame and the gully body.



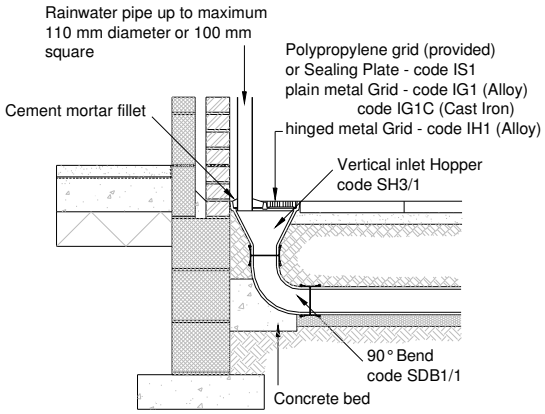
GC9 – Road Gully connection

Applicable √



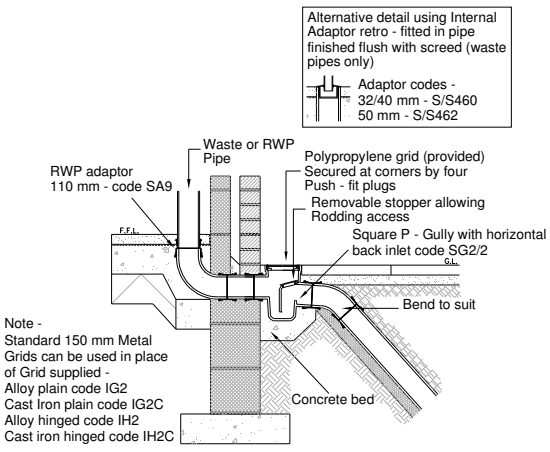
GC10 - Vertical inlet Hopper connection (untrapped)

Applicable √



GC13 - horizontal Inlet Square – P Gully connection

Applicable √



5 Testing

A test for watertightness using the air or water test should be applied initially after the system has been installed, before any backfilling, and again after backfilling is complete.

5.1 Cleaning

Flush out the whole of the system with water to remove any silt and debris before final tests are applied.

5.2 Air test

For pipes up to 300 mm diameter apply a pressure of 110 mm water gauge for approximately 5 minutes before testing. The pipe should then hold an initial 100 mm pressure with a maximum loss of head on a manometer of 25 mm, in 5 minutes for 100, 150 and 225 mm pipelines, or 7 minutes for 300 mm pipelines.

5.3 Water test

For pipes up to 300 mm diameter fill the system with water to a maximum depth of 5 metres above the lowest invert in the test section and a minimum depth of 1 metre above the highest invert in the test section. On steep runs it may be necessary to test in sections, to avoid exceeding the maximum head. This should then be left for one hour to condition the pipeline. The level of water should then be maintained for a period of 30 minutes by topping up to within 100 mm of the required level throughout the test. The quantity of water used should be recorded.
The loss per square metre of internal pipe surface area should not exceed –
0.15 litres for test lengths consisting of pipes only,
0.20 litres for test lengths including pipes and manholes,
0.40 litres for tests on inspection chambers or manholes only.

As a guideline, per 10 metres of pipe run, this equates to –

Pipe diameter	100 mm	150 mm	225 mm	300mm
Permitted loss (litres)	0.47	0.72	1.07	1.41

Please note –
No responsibility for any errors or omissions will be accepted.

Hepworth CLAY
Fired to Perfection



Material Safety Data Sheet

Fired Clay Products/Materials

June 2014

01 Identification of the substance/preparation and company details

Substance:	Fired clay product and materials.
Manufacturer:	Wavin Limited, Crow Edge, Sheffield, S36 4HG.
Telephone:	01709 856300
Web:	**www.hepworthclay.co.uk**

02 Composition/information on ingredients

Hazardous ingredients:	None as finished goods and products.
Types of materials:	Clay products are a blend of naturally occuring clays fired to a range of vitrification temperatures which renders them inert for all practical purposes.

03 Hazard identification

Nature of hazard:	Under normal conditions of use the products and materials do not present any health hazard. Some products may contain pigments and stabilising or conditioning chemicals and chemical glazes. These will not be extracted from the products under conditions of use. Dusts from cut ceramics contain potentially toxic Respiratory Crystalline Silica (RCS), an invisibly small dust requiring respiratory protection to FFP2 standard.

04 First-aid measures

Eye contact:	Particles and dusts may cause physical irritation. Irrigate thoroughly with water and seek medical assistance if irritation persists.
Skin contact:	Not applicable.
Inhalation:	Not applicable.
Ingestion:	Not expected to have any toxic effects.

05 Fire-fighting measures

Not applicable.

06 Accidental release measures

Not applicable.

07 Handling and storage

Handling:	Manual handling operations require assessment where appropriate and should follow the HSE hierarchy of control, as set out in the Manual Handling Operations Regulations 1992 (as amended). There are no hazards associated with the finished goods. Where ceramic products have to be cut or machined, prevent inhalation of dusts, which contain crystalline silica. Take care with sharp edges especially on cut product.
Storage:	Take care to stack goods carefully and securely, especially round pipe that may slip or collapse.

08 Exposure controls/personal protection

Skin contact: Dust is abrasive, no specific requirement but minimise skin contact. Fired clay can be sharp; wear cut-resistant gloves when handling.

Eye contact: Dust is irritating to eyes, no specific requirement but minimise eye contact.

Ingestion: No specific requirement, wash hands before eating or drinking.

Inhalation: Invisible RCS dust is generated when cutting – harmful by inhalation – wear respiratory protection to FFP2 standard.

09 Physical and chemical properties

Not applicable.

10 Stability and reactivity

Not applicable.

11 Toxicological information

Dusts from cut ceramics contain potentially toxic Respiratory Crystalline Silica (RCS), an invisibly small dust requiring respiratory protection to FFP2 standard.

12 Ecological information

Natural clayware products are not harmful to the environment.

13 Disposal considerations

Method: Landfill as normal builders waste.

14 Transport information

Not applicable.

15 Regulatory information

Not applicable.

16 Other information

This Material Safety Data Sheet (MSDS) has been compiled by Wavin Limited, using the original manufacturer's information where Wavin are not the original manufacturer.

In such cases the original manufacturer's details (name and address) are shown.
This information is provided without any representation to its accuracy and does not constitute a guarantee of the product or its properties.
As the handling, storage, use and disposal of the product are beyond our control, Wavin Limited disclaim all liability for loss, damage, injury or expense in any way connected with such activities and further make no warranties, express or implied, as to the suitability of the product for any particular use.

17 Additional information

This Material Safety Data Sheet in the CHIP format supersedes all previous issues, and users are cautioned to ensure it is current. Destroy all previous copies, and if in doubt contact Wavin Limited.

Grano Dust
Technical Data Sheet

PACK SIZE

Available in Maxipack and Bulk bags

DESCRIPTION

4mm granitic material conforming to the requirements of BS EN 12620.



USES

When mixed with sand and cement produces a mortar ideally suited for floor screeds, monolithic and granolithic.

SUGGESTED MIX DESIGN

The below are only suggested mix designs. The user should carry out trials and adapt designs to their own needs.

	Heavy Duty 12mm Depth	Heavy Duty 20-34mm Depth
Cement	50kg	50kg
Dried Sharp Sand	88kg	-
3mm Sand	-	150kg
Grano Dust	88kg	50kg

RECOMMENDATIONS

Do not use when the air temperature is below 2°C or when the ground is frozen.
Wet mortar should be protected from drying out too rapidly. Cover placed material with plastic sheet or wet hessian.
Allow mortar to dry sufficiently (time dependent on ambient conditions) prior to proceeding with further work.

TECHNICAL SUPPORT

For further advice please contact Hanson Cement's Technical Helpline on 0330 123 2441.

HEALTH AND SAFETY

Please refer to Material Safety Data Sheet for full information.

For further information contact:
Hanson Cement
Ketton
Stamford
Lincolnshire
PE9 3SX
Hanson-packedproducts.co.uk

Customer Services:
Tel: 0330 123 4525
Email: cement@hanson.com

Sharp Sand
Technical Data Sheet

PACK SIZE

Available in Maxipack and Bulk bags

DESCRIPTION

A washed sand conforming to BS EN 13139 Aggregates for mortar. The typical moisture content is 5%.



USES

Production of concrete, renders and screeds. Can also be used for laying paving slabs and block paving.

Mix Design

For detailed advice on concrete mixes and their constituent materials please consult BS 8500 Parts 1 and 2. For general guidance refer to www.hanson-packedproducts.co.uk/en/products/cements.

HEALTH AND SAFETY

As with all naturally-occurring silica sands, small amounts of respirable silica may be present.

If inhaled in excessive quantities over extended periods, respirable silica can constitute a long-term health hazard. Refer to full Material Safety Data Sheet for further information.

For cementitious mixes, follow health and safety advice detailed for cement.

For further information contact:

Hanson Cement
Ketton
Stamford
Lincolnshire
PE9 3SX

Hanson-packedproducts.co.uk

Customer Services:

Tel: 0330 123 4525

Email: cement@hanson.com

FIRESTOP CAST-IN DEVICE CFS-CID

Technical manual

European technical assessment
ETA-20/1233

Issue 12/2020



FIRESTOP CAST-IN DEVICE CFS-CID





Applications

- Concrete slabs built with traditional formwork
- New building construction
- Sealing combustible and non-combustible pipe penetrations
- Tested with pipe elbows, which allows reduced service zone

Advantages

- One-step firestop solution for a variety of pipe materials and diameters – no additional backfilling required
- Modular connection allows close placement of multiple penetrations
- Quick and simple installation
- Integrated moisture and smoke seal
- Lid strong enough to carry foot traffic and light access equipment





Technical Data

Base materials	Concrete
Approvals	EN 13501-2: 2007+A1:2009, EN 1366-3:2009
Height	250 mm
Application temperature range	–5 – 50 °C
Temperature resistance range	–20 – 100 °C
Colour	Red
Re-penetration	Easy
Reaction to fire class (EN 13501-1)	E



Ordering description	Pipe diameter – range	Sales pack quantity	Item number
CFS-CID 50	32–63 mm	1 pc	2124523
CFS-CID 75	50–75 mm	1 pc	2124524
CFS-CID 110	80–110 mm	1 pc	2124525
CFS-CID 160	125–160 mm	1 pc	2124526

MANIFOLD ADAPTER CFS-CID

Applications

- Creation of a 70 mm deep recess in the slab
- For use in conjunction with the appropriate cast-in device
- Creates an underside void for the installation of an elbow-connector system

Technical Data

Base materials	Concrete
Height	77 mm
Application temperature range	–5 – 50 °C
Colour	Red

Advantages

- Allows a manifold to be accommodated and thus simplifies plumbing installations
- Accommodates manifold connections and shower traps for walk-in showers and wet rooms
- Reduces final ceiling height by creating a 70 mm recess in the slab
- Pipes can be installed closer to the ceiling, thus reducing spacing



Ordering description	Sales pack quantity	Item number
CFS-CID Manifold adapter	1 pc	2124527

HEIGHT EXTENSIONS CFS-CID

Applications

- For use with CFS-CID cast-in devices

Technical Data

Base materials	Concrete
Height	150 mm
Application temperature range	–5 – 50 °C
Colour	Red

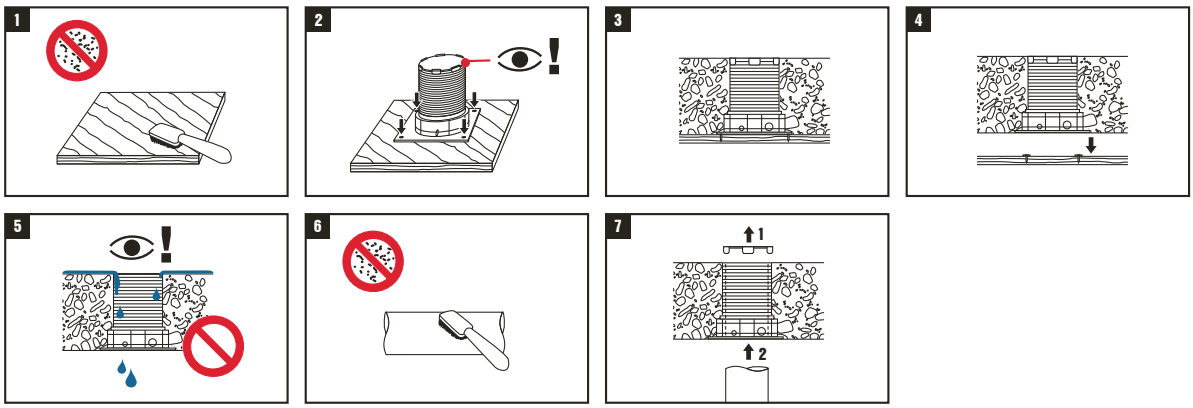
Advantages

- “Screw on” feature promotes a secure connection to the device and cover cap
- Adds 150 mm of height to pre-formed firestop devices



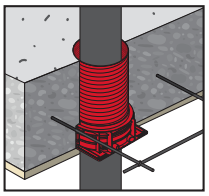
Ordering description	Pipe diameter – range	Sales pack quantity	Item number
Extension tube 6" CP 680-P 2"	32 – 63 mm	1 pc	244252
Extension tube 6" CP 680-P 3"	50 – 75 mm	1 pc	244253
Extension tube 6" CP 680-P 4"	90 – 110 mm	1 pc	244254
Extension tube 6" CP 680-P 6"	125 – 160 mm	1 pc	244255

GENERAL INSTRUCTIONS FOR USE



GENERAL INFORMATION





Partition	Rigid Floor
Base material thickness (t_E)	≥ 150 mm
Distance between devices	Zero for all pipe types
Fixing to formwork	Wood nails
Gap filling	No backfilling required
Penetrant	Combustible and Non-combustible Pipes

MAIN APPROVED APPLICATIONS

Application	Pipe material	Pipe Ø mm	Classification in rigid floor
Waste Water, Roof drainage	**PE/PE-HD** EN 1519-1, EN 12666-1 (covers EN 12201-2, EN 1519-1, EN 12666-1, EN 1455-1 (ABS), EN 1565-1(SAN+PVC)) EN ISO 15494 (Industrial), DIN 8074	40 – 160	EI 180 U/U
	PVC-U EN 1329-1 or EN 1453-1 or EN 1452-1 (covers EN 1329-1, EN 1453-1, EN 1452-1, EN 1566-1), EN ISO 15493 (Industrial, equivalent EN 1452)	63 – 160 50 – 160	EI 180 U/U EI 120 U/U
	PE S2 Geberit db20 (Non Regulated)	56 – 160	EI 180 U/U
	PP (EN 1451-1, DIN 4102)*	40 – 160	EI 180 U/U
Drinking Water	**PP-R DIN 8077/8078 (**e.g. Aquatherm)	32 – 160	EI 180 U/C
	PE-Xa Rehau Rautitan Flex	32 – 63	EI 180 U/U
	AL-composite pipes with elastomeric insulation (e.g Geberit Mepla, etc)	40	EI 180 U/C
Heating	Copper, Steel, Stainless Steel and Cast Iron with elastomeric, glass or mineral wool insulation	18 – 89	EI 180 C/U

* Coes “Blue Power”, Coes “PhoNoFire”, “Geberit Silent PP”, Marley Silent, Ostendorf “Skolan-dB”, Pipelife “Master 3”, POLOPLAST “Polokal NG”, POLOPLAST “Polokal 3S”, “POLOPLAST Polokal XS”, Rehau “Raupiano Plus”, Wavin “AS”, KeKelit “Phonex AS”, Wavin “SiTech”, Valsire “Triplus”, Valsire “Silere”

Excerpt of ETA document. Check the exact field of application for each pipe (type, diameter and pipe wall thickness) in the ETA-20/1233 document.

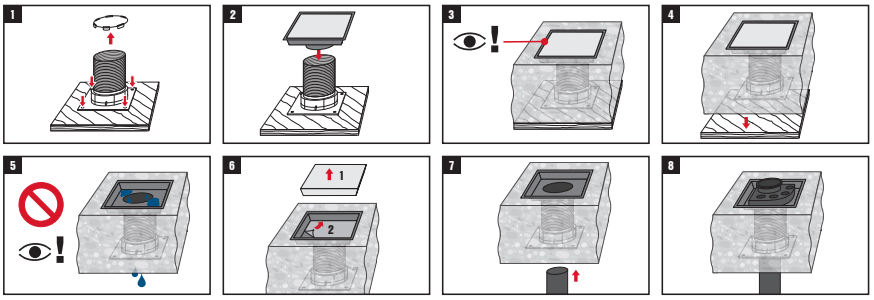
OTHER APPROVED APPLICATIONS

CFS-CID Manifold Adapter
Dimensions:
280 × 280 × 75 mm

To use with Firestop Cast-in CFS-CID 110 mm

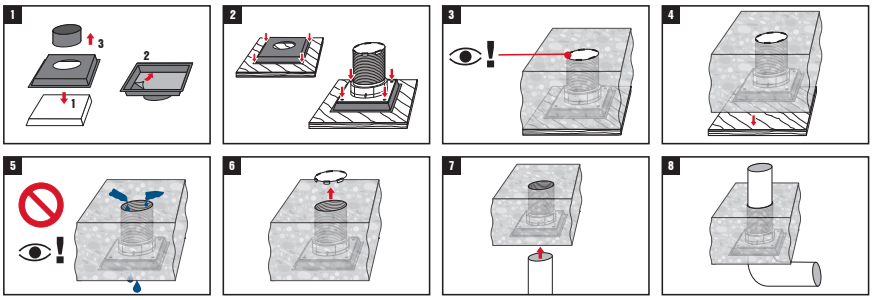


Recess for pipe junctions



Recess for pipe elbow couplers
EI 180 U/U for PVC and HD-PE pipes Ø = 110 mm





Firestop Cast-in Extensions

To add an extra 150 mm to the Cast-in devices with a strong and stable connection.

Coupler and extensions available for all CFS-CID diameters.



Firestop Cast-in CFS-CID without pipe penetrations

All sizes tested and approved only with the lid on top.



See ETA-20/1233 for details of approved pipes.

Zero distance between Cast-in Devices

Possibility to assemble Firesto Cast-in devices with zero separation between them.



See ETA-20/1233 for details of approved pipes.

CHARACTERISTICS OF CFS-CID

Characteristics	Assessment of characteristics	Norm, standard, test
Health and the environment Emission test	CFS-CID was tested for VOC emissions according to ISO 16000 and was deemed compliant to the AgBB regulations (version 2010). The concentration of SVOC after 3 and 28 days was < 5 µg/m³. The concentration of the total emission of VOC after 3 and 28 days was ≤25 µg/m³	Material safety data sheet
Protection against noise Airborne sound insulation	Hilti CFS-CID 50 $D_{n,w}$ = 55 dB Hilti CFS-CID 75 $D_{n,w}$ = 51 dB Hilti CFS-CID 110 $D_{n,w}$ = 48 dB Hilti CFS-CID 160 $D_{n,w}$ = 46 dB	EN ISO 10140-1 EN ISO 10140-2 EN ISO717-1
Durability and serviceability	Category Y2 (suitable for penetration seals for use in dry indoor conditions at temperature below 0 °C with with no exposure to rain nor UV.	EAD 350454-00-1104
Reaction to fire	Class E	EN 13501-1

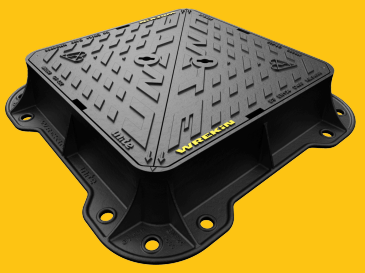
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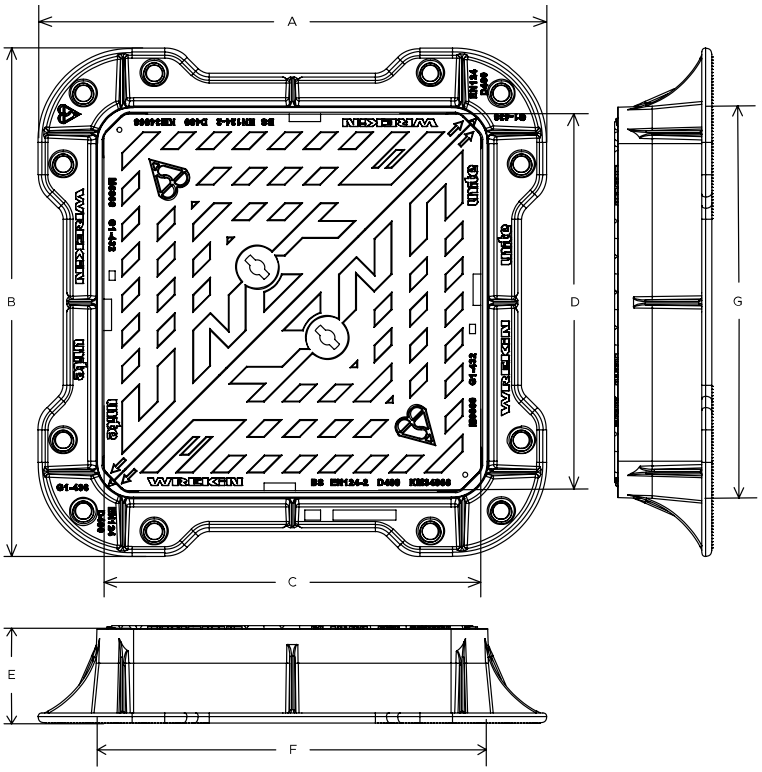
Unite D400 manhole cover 600mm x 600mm clear opening with 150mm frame depth



RANGE	CLEAR OPENING (MM)	OVERALL FRAME (MM)	FRAME DEPTH (MM)	OPTIONS
Unite	600 x 600	810 x 810	150	☐ Flood and odour control plate ☐ Safety grille ☐ Screw locking ☐ Ventilation holes ☐ Integral badging

FEATURES

- GritBlocker™ anti-blockage keyway insert comes pre-installed.
- Safety keyway prevents accidental disengagement of the lifting key during the handling process.
- Unite is available with a 10 year warranty (subject to terms).
- Meets the requirements of CD 534 v0.1.0 (formerly HA 104/09).
- The covers feature a universal beam (also known as an I beam) providing significant improvements to rigidity, reducing seat wear for an enhanced service life.
- Frame gussets are supports which reinforce the corners where the frame sections meet, distributing stress evenly, preventing damage to the frame or the access cover.
- Unlike sharp, square-edged frames, rounded edges reduce stress concentrations and minimise crack formation.
- The enlarged frame corners help to dissipate loads onto the foundation, providing a longer service life and increased reliability.
- 70+ PSRV tested at top surface of chequer by UKAS accredited 3rd party.
- The high seating position ensures that forces are transmitted more directly downwards, meaning conversion of traffic loads into mortar-compatible compression forces.
- Indexed corners ensure correct orientation first time, every time.
- Non rocking 3-point suspension design, for silent operation.
- Holes in the frame flange where mortar can pass between the underside and top side, creating an interlock, providing greater strength.



SPECIFICATION

General information

Stock code	DMT0D6/6060/KU
Primary material	Ductile iron
Range	Unite
Category	Manhole cover
Flanges	4

Standards, classes and groupings

Standards	BS EN 124-2 BS7903 DMRB MCHW CD 534 v0.1.0

BS EN 124 Class	D400
BS EN 124 Group	4
Third party certified	Kitemark

Dimensions

Frame shape	Square
Manhole shape	Square
Overall frame (A x B)	810 mm x 810 mm
Clear opening (C x D)	600 mm x 600 mm
Frame depth (E)	150mm
Base opening (F x G)	630 mm x 630 mm

AVAILABLE OPTIONS

- **Flood and odour control plate**
  The flood and odour control plate is manufactured from steel and provides resistance to flood-water ingress and the chamber-odour egress.
- **Screw locking**
  Screw locking deters unauthorised access to the chamber. An extended shank socket set is required to engage the locking screw.
- **Industry standard badging**
  Integral industry-standard badging e.g. SW (Storm Water) and FW (Foul Water). Details are taken at point of order.
- **Safety grille**
  Safety grilles prevent accidental chamber falls. Available in a variety of configurations; including bars and mesh as drop-in or hinged.
- **Ventilation holes**
  Provide additional cover ventilation in addition to the product's natural ventilation, up to the BS EN 124 allowance.

ACCESSORIES

STOCK CODE	DESCRIPTION
PC/UNIFORM/151076	Uniform chamber adjustment unit 760mm x 100mm x 15mm
PC/UNIFORM/251076	Uniform chamber adjustment unit 760mm x 100mm x 25mm
PC/UNIWEDGE/755012	Uniform support wedge 120mm x 50mm x 75mm

Tel: 01543 440 440
wrekinproducts.com

STOCK CODE	DESCRIPTION
YPCR/U12.5	12.5Kg Unipak® rapid curing polyester resin mortar
YPCR/U25	25Kg Unipak® rapid curing polyester resin mortar
SCREWLIFT	Simple and rapid manhole frame levelling system. Simply push the bushes into the holes in the flange and adjust the levelling screws to the required height.
KEY/LONG	Large cover lifting keys with a long handle (sold as a pair)
KEYS/L	Small cover combined lifting key
KEYSHEAVY	Large cover lifting keys with a standard handle (sold as a pair)

NOTES

- Please note, this product is only compatible with our factory fitted flood and odour control plate. The retrofittable seal plate will only work with stock codes ending "/KUE".
- All values stated are nominal within 2.5% tolerance.

1. Wrekin Products Ltd is continually seeking to improve our products and therefore reserves the right to alter product specifications without prior notice.
2. It is the responsibility of all users to satisfy themselves the above data is current.
3. Installation details are available on request.
4. All Wrekin products are supplied subject to our Terms and Conditions of Sale

