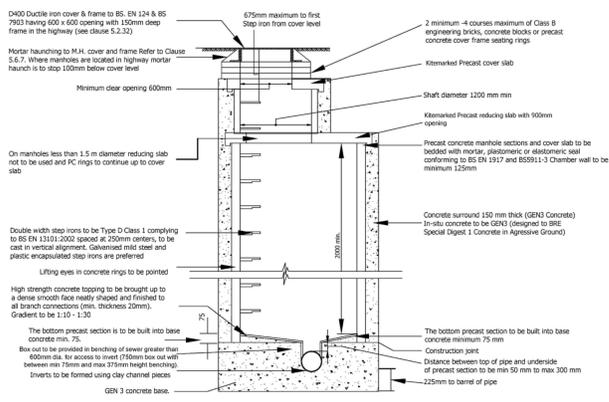


Typical Manhole Construction

Type A1 (Design and Construction Guidance)

For use on manholes of depth from cover level to soffit of pipe between 3000mm and 6000mm

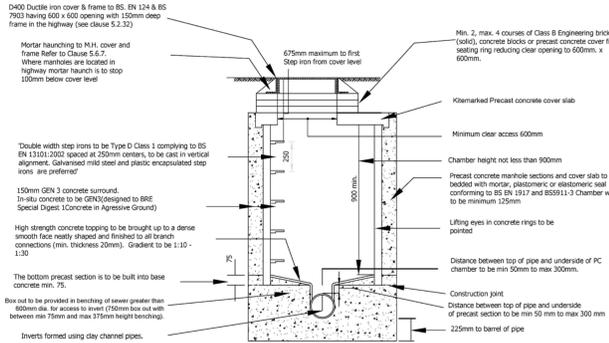


Section View

Typical Manhole Construction

Type B (Design and Construction Guidance)

For use on manholes with maximum depth from cover level to soffit of pipe 3000mm

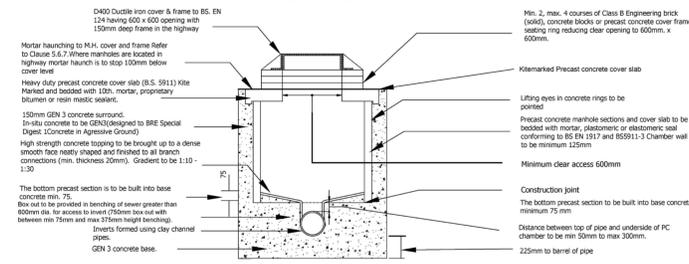


Section View

Shallow Manhole Construction

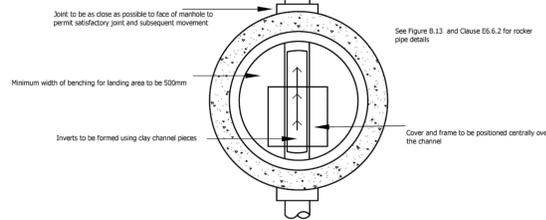
Type C (Design and Construction Guidance)

Construction of manhole where depth from soffit to cover level less than 1.5m



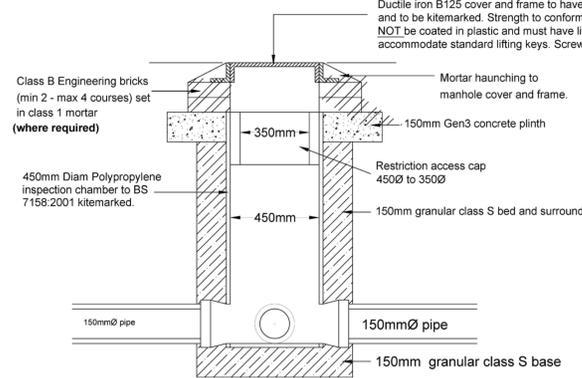
Shallow Manhole Plan View

Type C (Design and Construction Guidance)



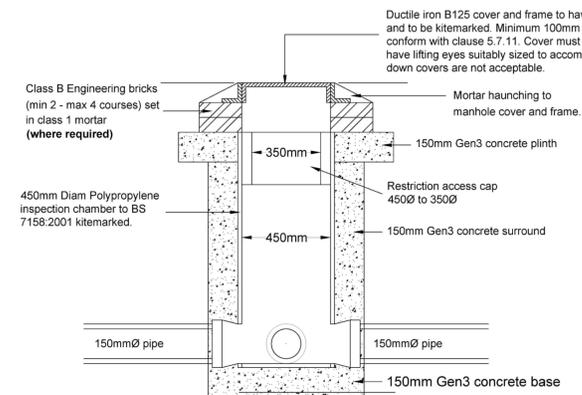
DEMARICATION CHAMBER LOCATED IN GARDENS

For depth of chamber greater than 1200mm maximum depth 3000mm



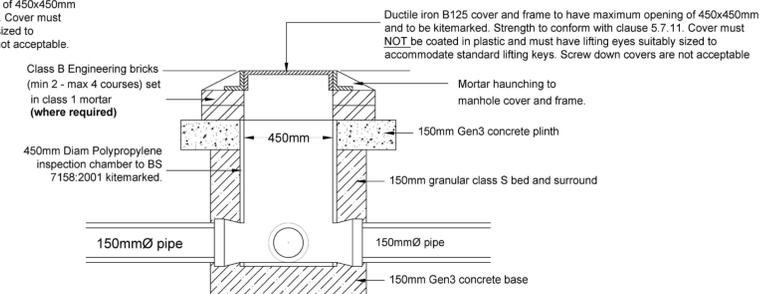
DEMARICATION CHAMBER LOCATED IN DRIVEWAY

For depth of chamber greater than 1200mm maximum depth 3000mm



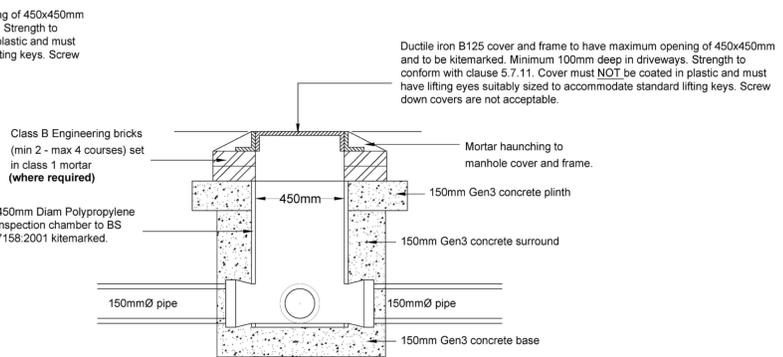
DEMARICATION CHAMBER LOCATED IN GARDENS

For depth of chamber from cover level to invert level of pipe chamber less than 1200mm



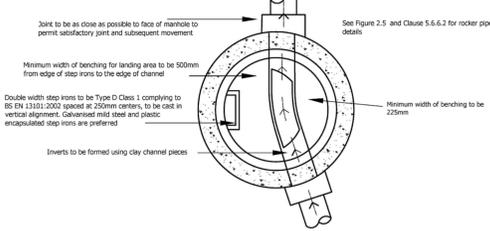
DEMARICATION CHAMBER LOCATED IN DRIVEWAY

For depth of chamber from cover level to invert level of pipe chamber less than 1200mm



Typical Manhole Plan View

Type A and Type B (Design and Construction Guidance)



Manhole Diameters	
Nominal internal diameter of largest pipe in manhole (mm)	Minimum nominal internal dimension of manhole (mm)
Up to 300	1300
375-450	1350
500-700	1500
750-900	1800
Greater than 900	Specific detailed drawing required

Pipes

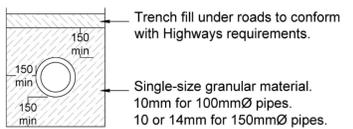
Diameter (mm)	Gradient	
	Foul	S/W
100	1:80	1:80
150	1:80	1:80

Vitrified clay pipes to BS EN 295 kitemarked. Unplasticised PVC pipes to BS 4660:200 & BS EN 1401-1 kitemarked. Structured Wall Unplasticised PVC pipes to WIS 4-35-01 kitemarked.

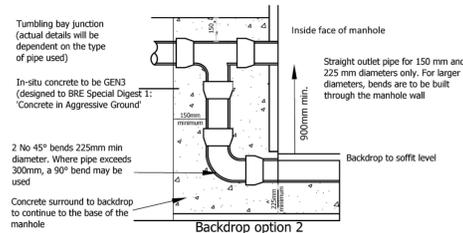
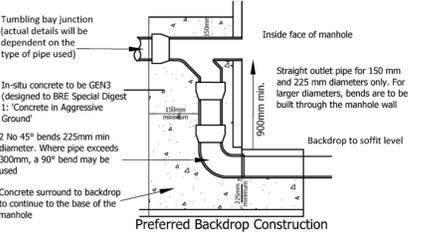
Demarcation Chamber Covers and Frames

Surface	Class (Loading in kN)	Loading
Road	D400	Vehicle Impact
Footway & Driveway	B125	Occasional vehicle loading
Gardens	B125	Pedestrian/cyclist

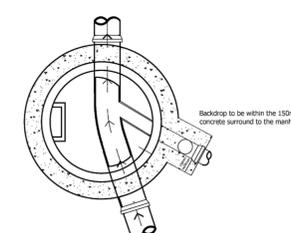
LATERAL DRAIN BEDDING DETAIL



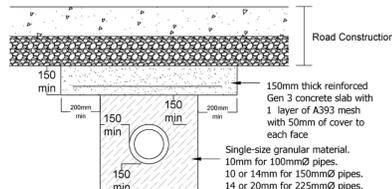
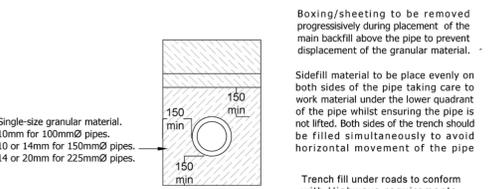
Backdrop Detail



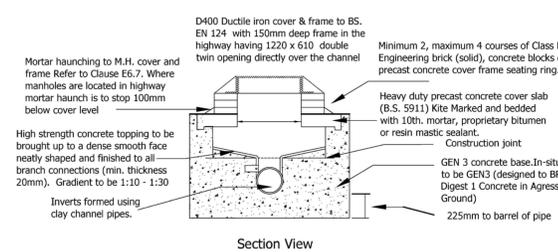
Backdrop Plan View



Pipe Surround Detail



Shallow Manhole Detail



Section View

S104 STANDARD NOTES (IWWL)

- All adoptable sewer works and material to be in accordance with "Code for Adoption", The Relevant British/European and IWWL Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
- Manhole covers shall have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in Highways.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of IWWL before any sewer works are carried out.
- IWWL is not obliged to accept filter drain/land drainage run-off into the public sewer network or adaptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section regarding the disposal of the filter drain/land drainage run-off.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- Sewers must have 5 metres clearance from trees and hedges or the width of the canopy at mature height.
- Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in nonvehicular access areas) then a concrete slab should be provided above granular bed and surround.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
- Adoptable plastic sewer pipes to be BS1 Kitemarked (certified to WIS 4-35-01 and BS/EN13476). Adoptable plastic sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would require clay ware channel in manholes.
- The minimum crushing strength for clay pipes should be as follows: 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 48KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1:2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476.
- Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
- There must be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm: If crossover is near the rocker then the clearance needed may need to be increased.
- Cover slabs must carry the BS1 kitemark and British Standard number or will be rejected by IWWL inspector. Where the clear opening of the kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to the IWWL specified cover size. Please refer to concrete pipe systems association (cpsa), technical bulletin issued autumn 2004 for kitemarked cover slab opening sizes.
- All highway works and material to conform with Barnsley Highways Design specification.
- Gully cover and frames shall be D400 ductile iron and comply with European standard BS EN 124. Those sighted in accessways and news courts must be suitable for use in pedestrian areas.
- Precast concrete manhole units shall comply with the relevant provisions of BS EN 1917 and BS EN1913 and shall be manufactured from concrete with a Design Chemical Class DC-4.
- Precast concrete manhole components shall comply with the relevant provisions of BS EN 1917 and BS EN1913.
- Corbel slabs shall comply with the requirements of BS 5911-3:2010+A1:2014 Table 5 and Figure 8.
- Cover slabs should be installed with a minimum 300mm cover to finished levels to comply with National Specifications.

S185 STANDARD NOTES (YEW)

- All sewer diversion works and material to be in accordance with "Code for Adoption", The Relevant British/European and Yorkshire Water Standards/Requirements/Local Practice for the Adoption of Small Submersible Foul and Surface Water Pumping Stations and Kitemarked.
- Manhole covers shall have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
- Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adaptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section regarding the disposal of the filter drain/land drainage run-off.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- Sewers must have 5 metres clearance from trees and hedges or the width of the canopy at mature height.
- Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in nonvehicular access areas) then a concrete slab should be provided above granular bed and surround.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
- Adoptable plastic sewer pipes to be BS1 Kitemarked (certified to WIS 4-35-01 and BS/EN13476). Adoptable plastic sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would require clay ware channel in manholes.
- The minimum crushing strength for clay pipes should be as follows: 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 48KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1:2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476.
- Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
- There must be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm: If crossover is near the rocker then the clearance needed may need to be increased.
- Cover slabs must carry the BS1 kitemark and British Standard number or will be rejected by Yorkshire Water inspector. Where the clear opening of the kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm for the Yorkshire Water specified cover size. Please refer to concrete pipe systems association (cpsa), technical bulletin issued autumn 2004 for kitemarked cover slab opening sizes.
- All highway works and material to conform with Barnsley Highways Design specification.
- Gully cover and frames shall be D400 ductile iron and comply with European standard BS EN 124. Those sighted in accessways and news courts must be suitable for use in pedestrian areas.
- Precast concrete manhole units shall comply with the relevant provisions of BS EN 1917 and BS EN1913 and shall be manufactured from concrete with a Design Chemical Class DC-4.
- Precast concrete manhole components shall comply with the relevant provisions of BS EN 1917 and BS EN1913.
- Corbel slabs shall comply with the requirements of BS 5911-3:2010+A1:2014 Table 5 and Figure 8.
- Cover slabs should be installed with a minimum 300mm cover to finished levels to comply with National Specifications.

Rev C YW ref no. added, S185 standard notes added 19.01.24 HH
 Rev B Standard notes updated 11.09.23 HH
 Rev A Demarcation chamber details added. Notes amended to suit IWWL 08.09.23 HH

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Client
AVANT HOMES

Project
SMITHYWOOD LANE & CALVER CLOSE, DODWORTH

Detail
STANDARD MANHOLE DETAILS

Dwn HH Chkd Date NOV-22 Scale NTS@A0 Dwg No. E22/8004/006C