

600 mm x 600 mm clear opening cover complying with BS EN 124 and BS 7903
See Clause E2.32

Mortar bedding and haunching to cover and frame to Clause E5.7

Minimum 2 courses of Class B engineering bricks or precast concrete cover frame seating rings

675 mm maximum to first step rung from cover level

Lifting eyes in concrete rings to be pointed

In-situ concrete to be GEN3 (designed to BRE Special Digest 1 Concrete in Aggressive Ground)

High-strength concrete topping to be brought up to a dense, smooth face, neatly shaped and finished to all branch connections (minimum thickness 20 mm)

Construction joint

Self-cleaning toe holes to be provided where channel exceeds 600 mm wide

Inverts to be formed using channel pipes

Joint to be as close as possible to face of manhole to permit satisfactory joint and subsequent movement

Pipe joint with channel to be located minimum 100 mm inside face of manhole

Double step rungs in accordance with BS EN 13101
See Clause E2.33 for double step details

Minimum clear access 600 mm

Precast concrete manhole sections and cover slab to be bedded with mortar, plasticomeric or elastomeric seal conforming to BS EN 1917 and BS 5911-3
See Clause E2.29

150 mm concrete surround

Chamber height (not less than 900 mm)

Benching slope to be 1:10 to 1:30

The bottom precast manhole ring to be built into base concrete minimum 75 mm

Distance between top of pipe and underside of precast section to be minimum 50 mm to maximum 300 mm

225 mm to underside of channel

See Figure B.14 and Clause E5.6.2 for rocker pipe details

Minimum width of benching to be 225 mm

500 mm minimum from edge of stepping

Technical drawing of a manhole structure, showing various components and dimensions. The drawing is a cross-section view of a vertical manhole shaft.

Components and Dimensions:

- Manhole cover to suit BS EN 124 loading:** minimum 300 mm x 300 mm clear opening.
- Surface course**
- Binder course**
- Base course**
- Cover slab with access opening restricted to 350 mm diameter or 300 mm x 300 mm.** If depth of chamber to invert is > 1 m.
- Precast concrete sections to be jointed with elastomeric or plasticum seals.**
- Minimum internal dimensions:** 450 mm diameter or 450 mm x 450 mm.
- DOT Type 1 sub base (thickness varies) or concrete surround.**
- Base unit to have all connections with soffit levels set no lower than that of the main pipe.**
- Joint to be as close as possible to face of chamber to permit satisfactory joint and subsequent movement.**
- See Figure B.14 and Clause E6.2 for rocker pipe details.**
- Invert of connecting pipe at least 50 mm above that of the main pipe.**
- Granular bedding material.**
- 100 mm precast base or 150 mm in-situ formed.**
- Pipes built into chamber wall or joint formed with watertight seals.**
- Temporarily cap manhole shaft during construction.**
- DOT Type 1 sub base (thickness varies).**
- 1-4 precast concrete cover frame seating rings with 350 mm diameter or 300 mm x 300 mm opening or class B engineering bricks.**
- Mortar bedding and haunching to cover and frame to Clause E6.7.**

Ground Level

Minimum 200mm topsoil to landscape architects details

150mm x 600mm deep French Drain with 150mm perforated pipe

surround

10 - 63mm size stone

Technical drawing of a shaft with a hole. The drawing shows a cross-section of a shaft with a hole. The dimensions are labeled as follows: the total length of the shaft is $x + 600$ max, the minimum length is $x + 300$ min, the diameter of the hole is $\varnothing 150$, and the distance from the left end to the center of the hole is x .

LEGEND:

	Selected fill: free from stones larger than 40mm, lumps of clay over 100mm, timber frozen material and vegetable matter
	Granular material: should conform to BS 882:1983 table 4 or BS 8301:1985 Appendix D. Compaction fraction > 0.3 for class N > 0.2 for class F and B.
	Selected fill or granular fill free from stones larger than 40mm

'x' - Denotes external pipe diameter.

Detail for VCC trench

1:100yr storm + Climate change Water Level 4.557

Maintained Reservoir Water Level 3.850

1:2.5 bank

See Headwall Detail

Top of Bank 4.600

150mmØ Overflow Pipe

SW-07 Hydrobrake 20 l/s CL 4.600 IL pipe out 3.600 Base 3.100

Reservoir Bed 1.500

To existing ditch

Min 1500 or Pipe Ø + 1200mm

800 Max Centres

Nominal 125mm x 500mm

Outlet pipe
See GA for diameter

Staked with hooked 12mm reinforcing I

See GA for height

Material and depth of swale 1 of discharge above be dependant upon location. See GA

Steel Spikes to hook over top of bagwork

1:2 Bank

Outlet pipe See GA for diameter

Pipe cut to profile of ditch

Min 50mm

Backfill behind bagwork to be placed and tamped as work proceeds

Unsuitable material in foundation to be excavated and backfilled with ST4 concrete

50-100mm thick PCC paving slab laid on class 1 mortar bed

200

150

HEADWALL SECTION

Diagram illustrating the trench profile and foundation preparation for a pipe installation. The diagram shows a cross-section of a trench with a 1:2 bank. The trench is filled with backfill material (represented by a hatched pattern) and a layer of gravel (represented by a dotted pattern). The pipe is shown cut to the profile of the ditch. The diagram also indicates the location of the outlet pipe, which should be cut to the diameter of the ditch. The foundation material is shown to be excavated and backfilled with suitable material.

Labels in the diagram include:

- Steel Spikes to hook over top of bagwork
- 1:2 Bank
- Outlet pipe See GA for diameter
- Pipe cut to profile of ditch
- Backfill behind bagwork to be placed and tamped as work proceeds
- Unsuitable material in foundation to be excavated and backfilled
- Level and depth of swale and amount of discharge above will be dependant upon location. See GA

150mm dia pipe

800 Max Centres

Staked with hooked 12mm reinforcing bar

Nominal 125mm x 500mm

1:2

50-100mm thick PCC paving slab laid on 50mm class 1 mortar bed

Outlet pipe See GA for diameter

Isolation joint

Isolation joint

Invert Depths
 S200 2300 unit = 279mm
 S300 2400 unit = 360mm

mm minimum Class GEN1 concrete bed and surround or as specified by channel drain supplier.