2.70 If the excavated material contains stones larger than 40mm, the bedding material must be extended 150mm around the circumference of the pipe. Alternatively, the backfill can be graded to eliminate stones exceeding 40mm, and this selected backfill used for the first 300mm around the circumference of the pipe. The remainder of the trench may be backfilled with suitable excavated material.

Valve chambers and pits

2.71 All chambers and pits shall be constructed of reinforced concrete or of solid concrete blocks to the internal dimensions laid out in BS 5834-4, or of a material approved by the Distribution Company. Chambers and pits shall be designed for the vehicular or other loading to which they will be subjected. Valve chambers, pull chambers, and Water Meter chambers shall not be located in traffic areas including parking areas. Special approval shall be obtained from the Distribution Company if such a requirement cannot be met.

2.72 Foundations to chambers and pits shall be of concrete complying with the relevant clauses of the Concrete Specification and shall finish flush with the chambers and pit sides unless specifically otherwise required.

2.73 The internal surfaces of concrete block walls shall be rendered with cement and sand 1:2 mortar 10mm thick, and the rendering shall be finished with a smooth and even surface. The ends of all pipes shall be built neatly into the blockwork and finished flush with mortar. External surfaces shall be waterproof to prevent external ground or surface water from entering the valve chamber. Valve chambers and pits shall be provided with a soak-away pit filled with gravel. The soak-away shall have a minimum size of 100 x 100 mm plan dimension.

2.74 Where subsequent pipework is to be installed, an adequate length of free end is to be left for later coupling.

2.75 Where the depth of invert of manholes exceeds one metre below the finished ground level, aluminium steps as specified in BS EN 13101 shall be built in at vertical intervals of 300mm, with alternate steps in line vertically and at 225mm centre to centre horizontally.

2.76 Entry to deep manhole chambers (>1500mm) shall be by means of one or more caged vertical aluminium ladders.

2.77 Manhole covers and frames shall be of blue epoxy coated ductile iron complying with BS EN 124 or an equivalent standard, and shall be designed for the loading category to which they will be subjected. Normally, if not exposed to traffic loads, they shall be of minimum Class B125. Any manhole cover located in traffic areas, including parking, are subject to Distribution Company approval.