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Agrément Certificate
06/4303
Product Sheet 1

T-T PUMPS

PLANET RANGE OF PACKAGE PUMPING STATIONS

This Agrément Certificate Product Sheet(1) relates to the Planet Range of Package Pumping Stations, comprising a polyethylene chamber incorporating pump, pipework, valves, controls and extension turret, for use in the conveyance of foul and surface water when connected to water drains.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Strength — the chambers have adequate strength to resist damage from minor impacts during handling and hydrostatic pressure from wet concrete during installation (see section 6).

Resistance to chemicals — the chambers and components will be unaffected by chemicals likely to be found in the specified effluent (see section 7).

Watertightness — the chambers, when correctly installed in accordance with the Certificate holder's instructions, will not allow seepage either into or from the surrounding soil (see section 8).

Durability — the chambers are made from durable materials and with adequate maintenance will continue to be serviceable for the design life of the drainage system (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 19 December 2019

Originally certificated on 1 March 2006

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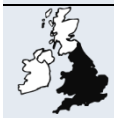
Regulations

In the opinion of the BBA, the Planet Range of Package Pumping Stations, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	**H(1)**	**Foul Water Drainage**
Comment:		The products will carry foul water drained from appliances within the building and will discharge into a sewer and are, therefore, deemed adequate. See section 4.5 of this Certificate.
Requirement:	**H3**	**Rainwater drainage**
Comment:		The products will convey the flow of rainwater and are, therefore, deemed acceptable. See sections 4.2 and 4.4 of this Certificate.
Regulation:	**7**	**Materials and workmanship (applicable to Wales only)**
Regulation:	**7(1)**	**Materials and workmanship (applicable to England only)**
Comment:		The products are acceptable. See section 10 and the *Installation* part of this Certificate.

The Building (Scotland) Regulations 2004 (as amended)

Regulation:	**8(1)(2)**	**Durability, workmanship and fitness of materials**
Comment:		The products are acceptable. See sections 9 and 10 and the *Installation* part of this Certificate.
Regulation:	**9**	**Building standards applicable to construction**
Standard:	3.6(a)	Surface water drainage
Comment:		The products will satisfy the relevant requirements of this Standard, with reference to clauses 3.6.1[(1)(2)], 3.6.2[(1)(2)] and 3.6.3[(1)(2)]. See sections 4.2 and 4.4 of this Certificate.
Standard:	3.7(b)	Wastewater drainage
Comment:		The products will contribute to satisfying this Standard, with reference to clauses 3.7.3[(1)(2)] and 3.7.4[(1)(2)]. See section 4.5 of this Certificate.
Standard:	7.1(a)(b)	Statement of sustainability
Comment:		The products can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	**12**	**Building standards applicable to conversions**
Comment:		All comments given for the products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1[(1)(2)] and schedule 6[(1)(2)].

(1) Technical Handbook (Domestic).
(2) Technical Handbook (Non-Domestic).

The Building Regulations (Northern Ireland) 2012 (as amended)

Regulation:	**23(a)(i)**	**Fitness of materials and workmanship**
Comment:	**(iii)(b)(i)**	The products are acceptable. See section 10 and the *Installation* part of this Certificate.
Regulation:	**79**	**Drainage systems**
Comment:		The products will satisfy the relevant requirements of this Regulation. See sections 4.2, 4.4 and 4.5 of this Certificate.

Construction (Design and Management) Regulations 2015
Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 3 *Delivery and site handling* (3.1) and 11 *General* (11.2 and 11.3) of this Certificate.

The Electrical Equipment (Safety) Regulations 1994 and the Electromagnetic Compatibility Regulations 2016

These Regulations implement the Low Voltage Directive 2014/35/EU and the Electromagnetic Compatibility Directive 2014/30/EU and require manufacturers to carry out assessment of their products against the criteria given in the Directives. Declarations of Conformity have been provided by T-T PUMPS Ltd. The BBA has not assessed the products for compliance with these Directives.

Additional Information

NHBC Standards 2019

In the opinion of the BBA, the Planet Range of Package Pumping Stations, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, *NHBC Standards*, Chapter 5.3 *Drainage below ground*.

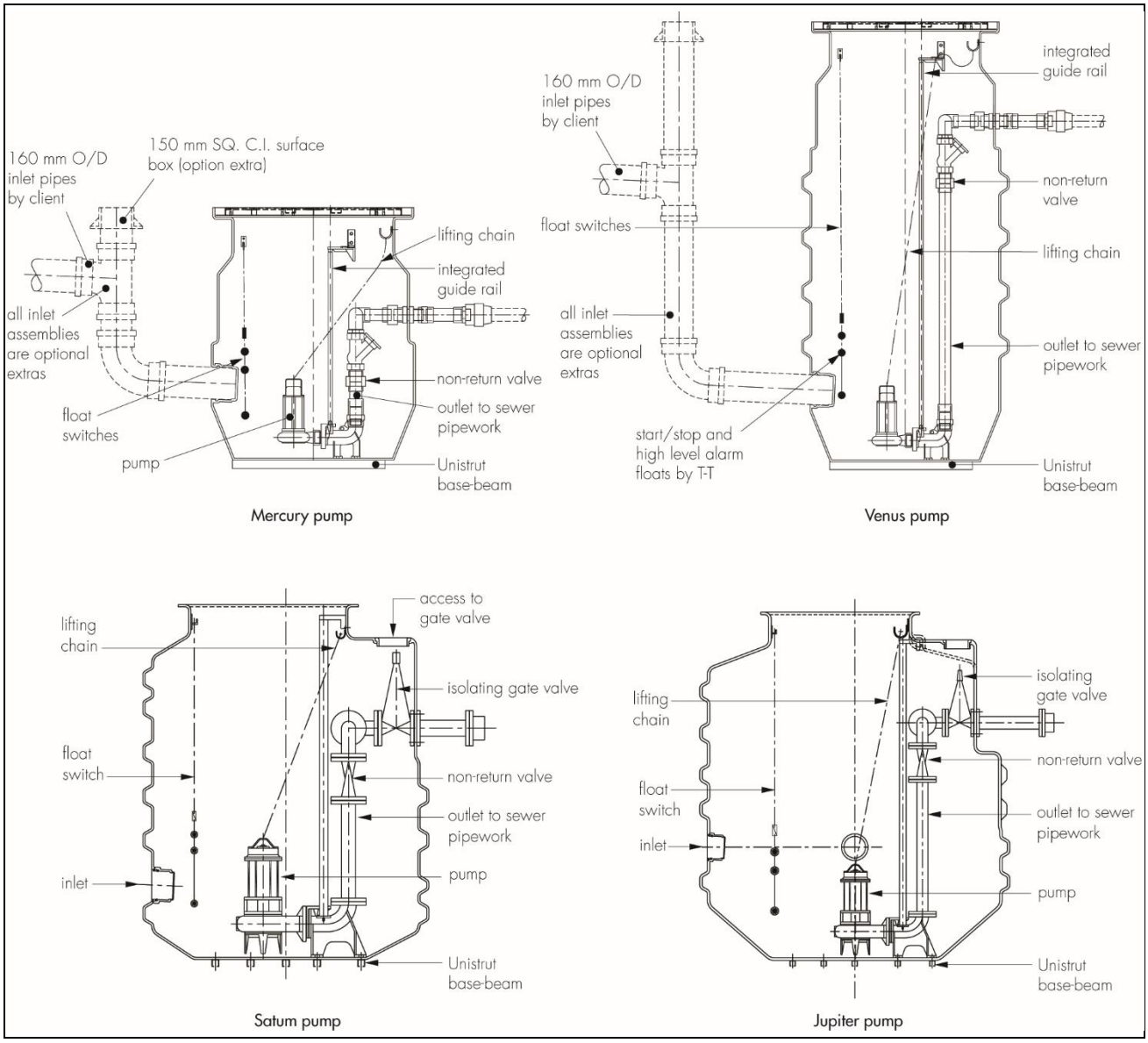
Technical Specification

1 Description

1.1 The Planet Range of Package Pumping Stations are complete packaged units contained within a polyethylene chamber incorporating pump, pipework, valves, float switches(1) and control panel. A range of manhole covers and frames can be supplied. The chambers are surrounded in concrete and capped with a structural slab to transfer external load into the ground. The manhole covers, frames, structural concrete surround and capping are outside the scope of this Certificate. The extension turret allows the installer to change the depth of the chamber installation to suit site specific levels. The extension turret is placed on top of the tank. It is clamped and sealed in place. It can be cut at set increments to adjust the height of the pumping station chamber to suit requirements. The focus on this requirement is to aid in the reduction of installation time and costs, which in turn provides product flexibility in changing site conditions.

(1) Alternative level systems, such as non-contact ultrasonic sensors, are provided to special order.

Figure 1 Cross sections of the Pumping Station range



1.2 The chambers are available in the range given in Table 1 and Figure 1.

Table 1 Range of pump chambers

Type	Diameter (mm)	Length (mm)	No .of pumps
Mercury	1016	1258	1 or 2
Venus	1106	2344	1 or 2
Saturn	1624	2015 to 4500	2
Jupiter	2246	2520 to 4500	2

1.3 Mercury and Venus stations have single pumps as standard or where 50 mm internal pipework is specified dual pumps are available on request. Saturn and Jupiter stations have dual pumps. There are different pumps depending on use (see Table 2).

Table 2 Pump types

Chamber type	Compatible pump type	Pipework size (mm)
Mercury	cutter	80
	grinder	50
	vortex	50/80
Venus	cutter	80
	grinder	50
	vortex	50/80
Saturn	cutter	80/100
	grinder	50/80/100
	vortex	50/80/100
	channel	80/100
Jupiter	cutter	80/100
	grinder	50/80/100
	vortex	50/80/100
	channel	80/100/150

1.4 The pump types are:

- cutter series pump — with shredding action to reduce destructible matter to a manageable size capable of being discharged into small bore piping of 80 to 100 mm in diameter
- grinder series pump — with shredding action to reduce destructible matter to a manageable size capable of being discharged into small bore pipe piping of 50 mm diameter
- vortex and channel impeller — 38 to 150 mm solids passage is available depending on the selected pump type and related chamber pipework diameter.

1.5 In dual pump systems, duty/standby and duty/assist modes are provided with pumps alternating on each cycle.

1.6 The chambers are supplied with three inlet sockets to accept 160 mm outside diameter PVC-U pipework or 110 mm outside diameter pipework with an adaptor. This enables incoming pipework to be connected according to site requirements. Inlet sockets incorporate a type WC elastomeric sealing ring to BS EN 681-1 : 1996. Two cable duct inlets are also provided to accept 110 mm outside diameter cable ducting to BS 4660 : 2000. For 50 mm diameter internal pipework, ABS plastic is specified to BS 5391-1 : 2006 and for 80 to 150 mm diameter outlet pipework ductile iron is specified to BS EN 545 : 2010 (K9/K12 PN16) flanged to BS EN 1092-2 : 1997, Table 9, depending on the pump. A T-T Pumps standard termination coupler is provided from the chamber outlet point to connect to the pump rising main(1). To provide additional strengthening to the base of the chamber, two Unistrut base-beams per pump are externally fixed using M12 setpins. Steel and fibre washers are used to provide an effective watertight seal.

(1) All rising main pipework (outside the scope of this Certificate) is of medium-density polyethylene (MDPE).

1.7 The products are supplied fitted with ductile iron or brass non-return valves, to prevent backflow into the pump. One ductile iron or brass non-return valve is provided for single pump installations and two for dual-pump installations. The ductile iron or brass non-return valves are coated in blue fusion-bonded epoxy or black bitumen.

1.8 A ductile iron or brass gate valve, to BS 5163-1 : 2004 and BS 5163-2 : 2004, is fitted to dual-pump stations after the manifold section. Single-pump stations do not have gate valves fitted.

1.9 Component items used with the pumps, but which are outside the scope of this Certificate, include:

- float switches — provided to sense liquid levels in the stations and to stop or start the pump accordingly. Normally, a single-pump station has two float switches (see Figure 1) and a twin-pump station has three; this number may increase depending on application
- external inlet pipework — optional as part of the package, to accept 160 mm outside diameter PVC-U pipework (or 110 mm outside diameter with adaptor)
- control panels — these are designed and manufactured to individual specification and provide automatic operation. Assessment of the control panels is outside the scope of this Certificate. It is the responsibility of the manufacturer to declare that their products satisfy the relevant electrical directives and are CE marked

- manhole covers and frames — a range of covers manufactured from galvanized steel to BS EN 10025-1 : 2004 and BS EN 10025-2 : 2019 and galvanized to BS EN ISO 1461 : 2009, can be specified for each chamber size. Options include double seal, locking screws, neoprene seal, peephole inspection point and engraved plate indicating service. Two grades of cover to BS EN 124-1 : 2015, BS EN 124-2 : 2015, BS EN 124-3 : 2015, BS EN 124-4 : 2015, BS EN 124-5 : 2015 and BS EN 124-6 : 2015 are available:
  — group 1 — for use in areas subject to loading from pedestrians and pedal cyclists only
  — group 2 — for use on footways, pedestrian and comparable areas, and car parks or car parking decks
- concrete infill — typically C25 grade depending on conditions.

2 Manufacture

2.1 The chambers are rotationally moulded from MDPE and the components of the pumping stations are assembled manually.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of T-T PUMPS Ltd has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by Lloyds (Certificate 10002544).

3 Delivery and site handling

3.1 The products are generally delivered by lorry and must be off-loaded and handled carefully with slings wrapped around the chamber wall ribs.

3.2 Care must be taken when unloading, storing and installing the products to prevent damage to the chamber shell.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on the Planet Range of Package Pumping Stations.

Design Considerations

4 General

4.1 The Planet Range of Package Pumping Stations are satisfactory for use in domestic, commercial and public developments for the conveyance of surface water and domestic sewage as is permitted to be discharged into public sewers by the Water Industry Act 1991, and surface water and sewage as defined by the Sewerage (Scotland) Act 1968 and Water and Sewerage Services (Northern Ireland) Order 1973. The pumps must not be used for the conveyance of untreated trade effluent.

4.2 The general design of the installation should be in accordance with BS 6297 : 2007 and BS EN 752 : 2017. Individual pump specifications should be consulted and the volume of chamber should be sized to cope with peak flow and dry flow conditions, and situations where the pump is not required to start more than 15 times per hour. The temperature of the pumped liquid must not exceed 40°C.

4.3 The pumps can be used to connect low-lying foul and surface water drains to the main sewerage system. Selection of the correct pump depends on the size of the development and type of effluent to be pumped and is made by the use of the pump selection curves [head (m) versus flow (ls^{-1})] calculated by the Certificate holder. The required flow rate is calculated from information supplied by the client regarding the proposed use, and the required head calculated from

the lift required plus head losses due to pipes and fittings. Details of performance data for each pump based on tests carried out in accordance with BS EN ISO 9906 : 2012 are available from the Certificate holder on request.

4.4 Information for required determining pump size and type(1) includes:

- pumping capacity required or type and size of development, facility or property and number of users or occupants
- type and temperature of fluid to be pumped
- the amount of surface water run-off if the system is to be used for pumping surface water, calculated from the area to be drained, the impermeability of the surface to be drained and the design rainfall intensity(1)
- length, lift and diameter of pumping main
- level of incoming inlet.

(1) Guidance for calculating surface water run-off is given in BS EN 12056-3 : 2000 and BS EN 752 : 2017. Typical discharge rates of UK appliances are given in BS EN 12056-2 : 2000.

4.5 For domestic property foul water schemes (based on 150 litres per head per day) a chamber has at least 24 hours of storage capacity if the unit fails. If the breakdown occurs when a service engineer cannot reach the installation within the 24 hour period, the tank may require pumping out depending on usage(1). For large commercial surface water schemes, due to surge flow rates involved, the Planet Range of Package Pumping Stations may not have sufficient capacity and additional storage vessels may be required. The Certificate holder will advise and design a suitable storage scheme for these cases.

(1) The Certificate holder offers a Service Agreement Scheme for regular inspection and necessary maintenance of the units, including repair work.

4.6 Mercury and Venus stations can be used for single dwellings, toilet blocks or small commercial premises. For small housing estates, industrial/commercial developments, small hotels/nursing homes or caravan sites the Saturn dual-pump station should be installed. The Jupiter dual-pump station is suitable for larger housing developments, hotels, hospitals and sewage works. For dual-pumped installations, duty/standby and duty/assist modes are provided with pumps alternating on each cycle.

4.7 Due consideration should be given to prevent surcharging of the main sewer since discharges into it will consist of short-term, high-volume surges.

4.8 Differing flow rates between the main sewer and the station outlet could result in back pressure.

5 Practicability of installation

The products are designed to be installed by a competent drainage contractor experienced with these types of products (see also section 11.2).

6 Strength

6.1 The Certificate holder's design has been assessed as satisfactory. The chambers must be surrounded in concrete and capped with a reinforced concrete slab. A suitably qualified and experienced individual should be employed to design these elements taking into account soil pressure, surcharge from nearby structures, pedestrian or vehicular load. The concrete surround and capping are outside the scope of this Certificate.

6.2 The chambers have adequate strength to resist damage from minor impacts during handling and hydrostatic pressure from wet concrete during installation.

7 Resistance to chemicals

The tanks and components will be unaffected by the types and quantities of chemicals likely to be found in the effluent defined in section 4.1.

8 Watertightness

The products, when correctly installed in accordance with the Certificate holder's instructions, will not allow seepage either into or from the surrounding soil.

9 Maintenance

9.1 The products should be checked for build-up of fatty material at least once every two months. Where large amounts of grease or fats are expected a grease trap should be installed in the drain run. The pumping system must be cleaned and serviced every six months or 1000 operating hours, or more frequently if excessive build-up of solids or debris occurs.

9.2 The chambers incorporate an integrated guide rail system, on which the pumps are mounted, allowing pumps to be lifted and removed for servicing without entering the chamber. Any grease or fats present within the chamber should be treated with household detergent and, after loosening, hosed off. If necessary, a specialist cleaning contractor should be employed. The Certificate holder's service department should be consulted for all maintenance and servicing of pumps.

9.3 After extended use, components such as pumps and valves may need repair or replacement within the life of the drainage system. This can be carried out with minimal disturbance to the drainage system.

10 Durability

The chambers are made from durable materials and with adequate maintenance will continue to be serviceable for the design life of the drainage system.

Installation

11 General

11.1 Installation of the Planet Range of Package Pumping Stations must be strictly in accordance with the Certificate holder's installation instructions and the recommendations of BS 6297 : 2007, BS EN 12056-4 : 2000 and BS EN 752 : 2017 when applicable.

11.2 For electrical safety, the products must be installed by a qualified electrician.

11.3 In England and Wales, all installations must satisfy the requirements of The Building Regulations 2010 (as amended) (England and Wales), Part P — Electrical Safety. Notification should be made to the Local Authority Building Control in advance of installation. As an alternative to this procedure, electrical connections can be carried out by a person registered with a government-approved competent person scheme for electrical work, such as the Electrical Self-Assessment Scheme (ELECSA), using materials suitable for the purpose.

11.4 In Scotland, to satisfy the requirements of Mandatory Standard 4.5, with reference to Clause 4.5.1[(1)(2)] of The Building (Scotland) Regulations 2004, all installations should be designed, constructed and tested such that they are in accordance with the requirements of BS 7671 : 2018.

(1) Technical Handbook — (Domestic).
(2) Technical Handbook — (Non-Domestic).

11.5 Electrical connections must be in strict accordance with the Certificate holder's instructions and must comply with the local electricity distribution authority's regulations. Cables must be protected from accidental damage by a suitable conduit or other means of protection. Two 110 mm diameter inlet points are provided below the chamber top to conform to BS 7671 : 2018 and the relevant guidance documents. The electrical control panel ideally should be located within the building or facility being served. Alternatively, the control panels and electrical meter can be installed in a kiosk housing supplied by the Certificate holder. The kiosk must be sited for accessibility, visibility and awareness of any developed fault, yet protected from weather and accidental damage, eg. by vehicles.

11.6 It is essential to take precautions to prevent damage by site traffic during installation.

11.7 The pump rising main should be continued from the pumping station to the discharge point and should be at a minimum of 450 mm below ground to avoid frost. An outfall chamber must be provided at the discharge point to allow the pumped liquid to be directed into the sewer.

11.8 A suitable location for the pumping station must be selected. This will normally be at the lowest point of the site to ensure that minimum falls in site drainage are maintained. The location must also be located away from the influence of proposed or existing structures.

11.9 The pumping chambers are not capable of resisting pedestrian or vehicular loads as defined in BS EN 124-1 : 2015, BS EN 124-2 : 2015, BS EN 124-3 : 2015, BS EN 124-4 : 2015, BS EN 124-5 : 2015 and BS EN 124-6 : 2015 and must be cased in additional concrete and topped with a structural slab to allow transfer of load into the surrounding ground. The design of the casing and structural slab must be carried out by a suitably qualified and experienced individual to provide necessary calculations and details.

11.10 The Certificate holder is able to provide a range of manhole covers and frames for use with the products depending on location and load classification required in accordance with BS EN 124-1 : 2015, BS EN 124-2 : 2015, BS EN 124-3 : 2015, BS EN 124-4 : 2015, BS EN 124-5 : 2015 and BS EN 124-6 : 2015.

11.11 Underground cables, pipes or service ducts should not exist in the proposed location.

12 Procedure

12.1 The minimum opening in the ground is excavated to receive the chamber and associated pipework to be used.

12.2 The excavation must be large enough to permit construction of supports and shuttering for the concrete(1) surround to the chamber, installation of pipework and conduit and permit easy placing and backfilling. Trenching practice must be carried out in accordance with the HSE document *Safe Working In Confined Spaces*.

(1) Generally, the concrete is of C25 grade but may vary depending on local ground conditions and site investigations.

12.3 A de-watering pump may be required to control any groundwater present.

12.4 Excavation to the required depth in accordance with section 12.2 is made and a minimum depth of 250 mm of concrete is laid in the base depending on design requirements, local ground conditions or invert of inlet pipework. The concrete is allowed to reach its initial set.

12.5 A sufficient mound of concrete is placed on the foundation base to act as a cradle and the pumping chamber is lowered, using slings wrapped around ribs formed within the chamber body, into the mound. The pumping chamber is checked to be vertical and correctly aligned with the inlet(s) and outlet pipe run. The concrete is allowed to reach its initial set.

12.6 A 300 mm minimum length of pipe is connected to the inlet(s) [for connecting to pipe run(s)] and outlet and capped off. Provision should also be made for cable ducting at the same time.

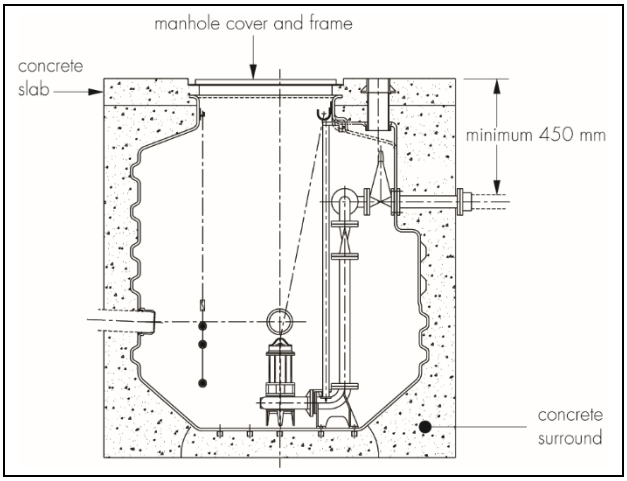
12.7 Shuttering is erected around ends of pipe(s) and concrete is poured, not exceeding a depth of one metre at any time. The depth of water inside the chamber is increased with the concrete depth to avoid flotation.

12.8 The concrete is poured up to the soffit of the structural capping ensuring that the concrete is well consolidated as work proceeds. A poker vibrator may be used for this purpose.

12.9 When the concrete surround has set, the structural capping and rebate is formed for the cover frame, and the pipework and cable ducting is connected.

12.10 The surface of the concrete is finished at the required level, depending on final groundcover required, and the access frame and cover are set in position (see Figure 2).

Figure 2 Installation details



12.11 When the pumping station is installed, the float switches are set at levels such that during normal use the pump does not operate more than 15 times per hour.

Technical Investigations

13 Tests

13.1 Tests were carried out and the results assessed to determine:

- dimensions
- material properties
- resistance to thermal cycling
- endurance
- efficiency of level regulators/activator
- watertightness of joints
- resistance to water pressure.

13.2 An evaluation was made of data relating to:

- finite element analysis relating to pump chambers
- resistance to chemicals
- suitability of materials
- performance of pumps
- durability of materials.

14 Investigations

14.1 A user survey was carried out to determine the performance in use.

14.2 A site visit was made to witness the installation process.

14.3 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 4660 : 2000 *Thermoplastics ancillary fittings of nominal sizes 110 and 160 for below ground gravity drainage and sewerage*

BS 5163-1 : 2004 *Valves for waterworks purposes — Predominantly key-operated cast iron gate valves — Code of practice*

BS 5163-2 : 2004 *Valves for waterworks purposes — Stem caps for use on isolating valves and associated water control apparatus — Specification*

BS 5391-1 : 2006 *Acrylonitrile-butadiene-styrene (ABS) pressure pipe — Specification*

BS 6297 : 2007 + A1 : 2008 *Code of practice for the design and installation of drainage fields for use in wastewater treatment*

BS 7671 : 2018 *Requirements for electrical installations — IET Wiring Regulations*

BS EN 124-1 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Definitions, classification, general principles of design, performance requirements and test methods*
BS EN 124-2 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Gully tops and manhole tops made of cast iron*
BS EN 124-3 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Gully tops and manhole tops made of steel or aluminium alloys*
BS EN 124-4 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Gully tops and manhole tops made of steel reinforced concrete*
BS EN 124-5 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Gully tops and manhole tops made of composite materials*
BS EN 124-6 : 2015 *Gully tops and manhole tops for vehicular and pedestrian areas — Gully tops and manhole tops made of polypropylene (PP), polyethylene (PE) or unplasticized poly(vinyl chloride) (PVC-U)*

BS EN 545 : 2010 *Ductile iron pipes, fittings, accessories and their joints for water pipelines — Requirements and test methods*

BS EN 681-1 : 1996 *Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Vulcanized rubber*

BS EN 752 : 2017 *Drain and sewer systems outside buildings*

BS EN 1092-2 : 1997 *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated — Cast iron flanges*

BS EN 10025-1 : 2004 *Hot rolled products of structural steels — General technical delivery conditions*
BS EN 10025-2 : 2019 *Hot rolled products of structural steels — Technical delivery conditions for non-alloy structural steels*

BS EN 12056-2 : 2000 *Gravity drainage systems inside buildings — Sanitary pipework, layout and calculation*
BS EN 12056-3 : 2000 *Gravity drainage systems inside buildings — Roof drainage, layout and calculation*
BS EN 12056-4 : 2000 *Gravity drainage systems inside buildings — Wastewater lifting plants — Layout and calculation*

BS EN ISO 1461 : 2009 *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

BS EN ISO 9906 : 2012 *Rotodynamic pumps — Hydraulic performance acceptance tests — Grades 1, 2 and 3*

15 Conditions

15.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

15.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

15.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

15.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

15.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

15.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.