

GUIDE TO THE INSTALLATION OF PACKAGED WASTEWATER TREATMENT PLANTS

BRITISH WATER GWWTP FG GI-V 0.1-2020



CONTENTS

01. Scope	3
02. Introduction	3
03. Regulations and permissions	3
04. Plant position	4
05. Power supply	4
06. Depth (invert level) of treatment plant	4
07. Discharge level and sampling	5
08. Access for contractors	5
09. Disposal of the excavated material and site waste	5
10. Ground conditions	5
11. Backfill	5
12. Check the qualification/references of the installing contractor	6
13. Maintenance	6
Other Sources of Information	6

THIS GUIDE HAS BEEN PRODUCED BY THE BRITISH WATER WASTEWATER TREATMENT PLANT FOCUS GROUP

01. SCOPE



To **enable** owners and users to understand the installation of packaged wastewater treatment plants.



To **outline** how a British Water Experienced Installer should correctly install a packaged wastewater treatment plant to avoid polluting the environment.



To **help** owners to understand the duty they have under environmental regulatory standards and the regulatory landscape on waste disposal.

02. INTRODUCTION

It is not a detailed installation guide but a checklist of the factors that should be considered by the owner and the contractor before the system is installed.

It is not a definitive document but it does provide a comprehensive outline of the factors, which need to be considered and so, provides an understanding of the process of installing a packaged wastewater treatment plant.

When installing a packaged wastewater treatment plant or employing a contractor to install a packaged wastewater treatment plant we do recommend that you consider all of the factors listed in this guide.

Please note: The Environment Agency (EA) in England, Natural Resources in Wales (NRW), the Scottish Environment Protection Agency (SEPA) and Northern Ireland Environment Agency (NIEA) support the use of this guide, but the Agencies do not specifically endorse any particular manufacturer's product.

03. REGULATIONS AND PERMISSIONS

Owners have a duty to ensure their Packaged Wastewater Treatment Plant has been correctly installed and complies with building regulations and the environmental regulator's authorisations. The environmental regulators are the Environment Agency (EA) for England, the Scottish Environment Protection Agency (SEPA) for Scotland, Natural Resources Wales (NRW) for Wales and Northern Ireland Environment Agency (NIEA) for Northern Ireland.



04. PLANT POSITION

The positioning of the plant will need to take into account the following:

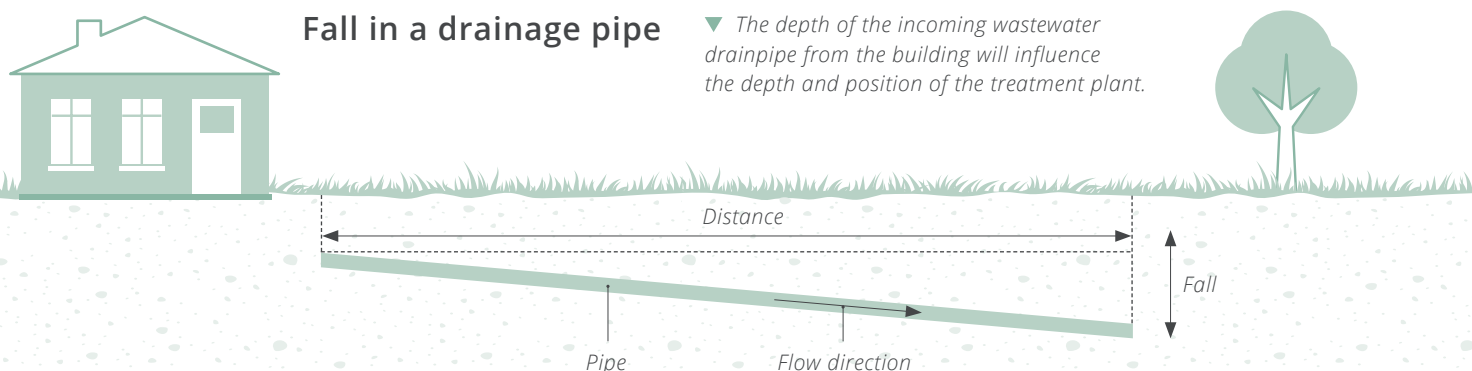
-  **Removal of solids:** The periodical removal of solids (desludging) from inside the treatment plant to ensure that the plant continues to operate satisfactorily. This will require a convenient route for the piping from a tanker to the treatment plant and importantly a suitable hard standing for the tanker, which is no more than 30 metres from the plant.
-  **Distance:** It needs to be at least 7 metres from any habitable part of the premises. If not possible, please seek advice from the local authority.
-  **Positioning:** The positioning of the discharge point for the treated wastewater. The plant should preferably be installed in ground falling away from the house so that the treated wastewater drains away from the house and if possible from regularly used parts of the garden.
-  **Flooding:** Ensure that the equipment and any electrics are not at risk of flooding.
-  **Noise:** Consider the potential for noise. Site the plant to minimise the impact of any noise from an integral motor or pump.
-  **Ventilation:** The plant will require necessary venting and the vent should preferably be out of sight and downwind from the house or occupied buildings to minimise the possibility of odour problems.
-  **Garden use:** The potential impact of possible noise and odours on the use of the garden should be taken into account and minimised by careful planning and positioning of the treatment plant.

05. POWER SUPPLY

The plant will probably require power and so there is a need to consider the source, route, physical protection of the cable and positioning of any service box. The power supply will need to conform to the relevant electrical regulations and be certified by a qualified electrician.

06. DEPTH (INVERT LEVEL) OF TREATMENT PLANT

The depth of the incoming wastewater drainpipe from the building will influence the depth and position of the treatment plant. The final discharge point of the treated wastewater may also influence the depth of the plant.



07. DISCHARGE LEVEL AND SAMPLING

The discharge point for the final treated effluent needs to be convenient and safe for service engineers to access during maintenance. The level of the discharge point relevant to the treatment plant may require a pump to raise the treated effluent to enable it to be discharged satisfactorily. These factors may also influence the selection of the most suitable type of treatment plant for its location/siting. The discharge point for the final treated effluent needs to be convenient and safe for service engineers and regulators to access during maintenance, sampling and inspection.

08. ACCESS FOR CONTRACTORS

The contractor will need to off-load the treatment plant and other equipment and so a convenient hard standing will be needed. Installation Engineers will need to have access to the site for an excavator and possibly other machinery to help with positioning and final installation of the plant and associated pipework. It would be beneficial that these factors are considered during the planning process and before work is scheduled to start.

▼ *The contractor will need access to the site for an excavator and possibly other machinery to help with positioning and final installation of the plant and associated pipework.*

09. DISPOSAL OF THE EXCAVATED MATERIAL AND SITE WASTE

Excavated material will need to be disposed of and probably taken offsite by a registered waste carrier. Ensure your contractor holds a valid waste carrier licence. Plans for the correct disposal need to be included in the contract and it is wise to ensure that any disposal charges are included in the price. Some of the excavated material, especially the surface soil, may be reused to landscape around the packaged plant.

10. GROUND CONDITIONS

The geology and structure of the ground in which the plant is to be sited will have an impact on the method of installation. Specific factors are:



The level of the water table, especially if there is a high water table.



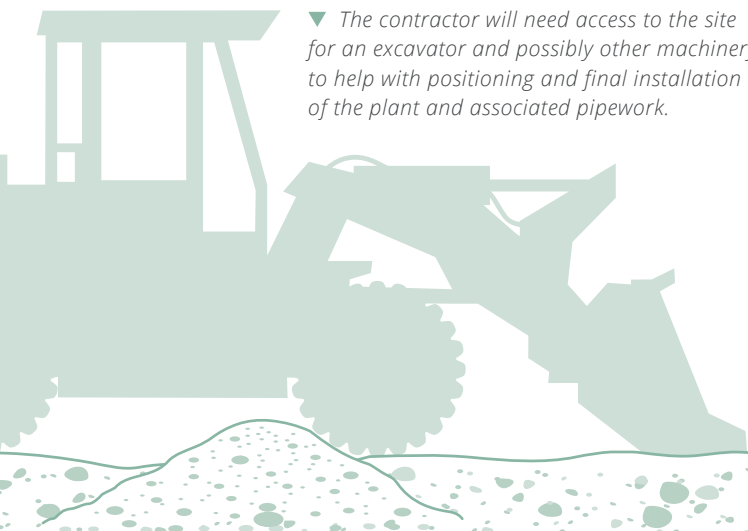
The presence of underlying rock close to the surface.



The strength of the ground, sandy soils with the prospect of “running sand” will require specific installation methods by a specialist contractor.

11. BACKFILL

Backfilling is essential to support, stabilize and maintain the packaged wastewater treatment plant's position firmly in the ground. Manufacturers may provide general guidance on backfill material for their systems. In the absence of sufficient information, seek further advice from a specialist installer.



12. CHECK THE **QUALIFICATION/ REFERENCES OF THE INSTALLING CONTRACTOR**

It is wise to check that the contractor has suitable regard for regulatory compliance, Health and Safety, correct disposal of excavated material and good working practices. Your contractor should be able to provide suitable references for similar installations that have been in operation for more than one year.

Follow this link to search for Experienced Installers registered with British Water:

<https://www.britishwater.co.uk/directory/findengineer.aspx>

Check that the plant that you are installing complies with the relevant European standards- EN 12556 (up to 50 pe) or EN 12255 (>50 pe).

Follow this link for the list of certified small wastewater treatment systems for up to 50 PE:

<https://www.britishwater.co.uk/Accreditation-Certification/certified-small-wastewater-treatment-systems-for-up-to-50-pt.aspx>

13. **MAINTENANCE**

Regular maintenance is essential to ensure the correct operation of the system and to comply with the law.

It is advisable that a service agreement is entered into with a company with a suitably qualified staff, preferably staff who are listed on the British Water list of British Water Wastewater Treatment Plant Accredited Service Technicians which can be viewed at:

<https://www.britishwater.co.uk/Accreditation-Certification/accreditation.aspx>

Notes: The sewage treatment system should be sized in accordance with the British Water design Code of Practice Flows and Loads 4, which can be downloaded from: <https://www.britishwater.co.uk/Publications/codes-of-practice.aspx>

OTHER SOURCES OF INFORMATION

1. British Water's list of Accredited Service Technicians can be viewed at:

<https://www.britishwater.co.uk/directory/findengineer.aspx>

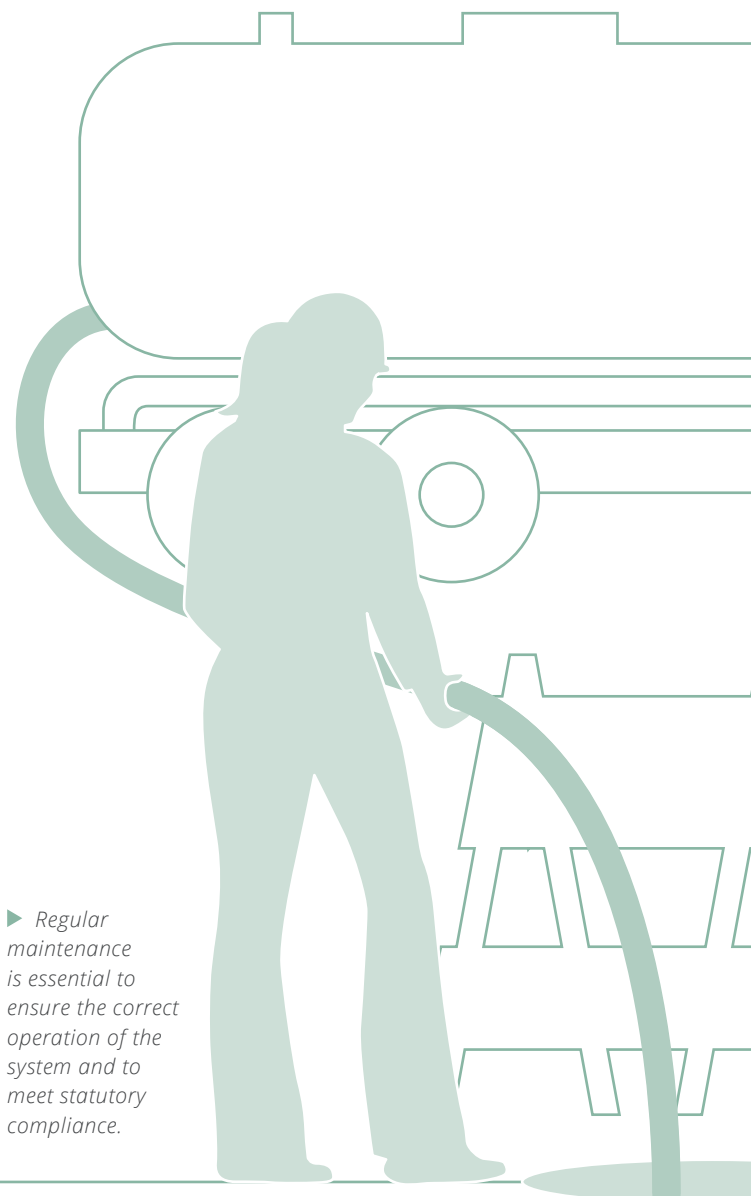
2. Other British Water publications available at www.britishwater.co.uk are:

A. Code of Practice: Guide to the Installation of Sewage Treatment Systems

B. Code of Practice: Guide to Desludging Sewage Treatment Systems

C. Code of Practice: Flows and Loads 4

D. Code of Practice: Maintenance and Servicing by British Water Accredited Technicians



► *Regular maintenance is essential to ensure the correct operation of the system and to meet statutory compliance.*

THE ENVIRONMENTAL REGULATORS ARE:



Environment Agency
(EA) in England



Cyfoeth Naturiol Cymru
Natural Resources Wales



Scottish Environment
Protection Agency (SEPA)



Northern Ireland
Environment Agency (NIEA)

Users can access the websites by clicking on the logos above.

Anyone who makes discharges to the environment, including sewage effluent, has a responsibility to ensure their discharge is not polluting and meets the regulatory requirements that apply to their discharge and location. You should ensure your treatment system is well operated and maintained, and that a new or replacement system is correctly sited and installed.

Further information can be found by clicking on the environmental regulator logos, above, to access their websites.

Note: The Environment Agency, Natural Resources Wales, the Scottish Environment Protection Agency and the Environment and Heritage Service (Northern Ireland) support the use of this code of practice, but the Agencies do not specifically endorse any particular manufacturer's product.

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British Water would like to thank the following people
for their contribution to this updated guide:

Steve Boyer, Marsh Industries Ltd
Craig Finbow, Owls Hall Environmental Ltd
David Bould, Serious Waste Management Ltd
George Mansfield, Wendage Pollution Control Ltd
Jacqueline Mansfield, Wendage Pollution Control Ltd
Andrew Baird, WPL Ltd

Publishing date: BW COP: January/21
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