

Wastewater Connections Technical Guidance



from
**Southern
Water** 

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Introduction

We've put together this Technical Guidance for Wastewater Connection to provide background information for those wishing to make a connection to a public or private sewer within our region. It'll take you through everything you need to know before making an application.

You might be building new homes, commercial building or changing your drainage layout on site. Unless you are able to dispose of the foul and surface water on site (e.g. soakaway, cesspit, septic tank), it is likely you will need a new sewer connection to the public sewer network.

The following guide explains what you need to think about when preparing your property for a new connection and applying. We will provide you with an understanding our technical standards and our application process. This includes guidance on the materials and workmanship required to meet our technical standards and answer the most common questions through an FAQ.

The S106 Sewer Connection application is for the purpose of obtaining our approval to allow communication to be made to the public sewer under [Section 106 of the Water Industry Act 1991](#). Our approval is for your construction method (mean and mode), rather than confirming that capacity is available in our public sewer network, which can be done through a [preplanning enquiry](#). If you are building a large development or a commercial property, you can assess available capacity with a [pre-planning enquiry wastewater application](#).

You should be aware that it's illegal under [Section 109 of the Water Industry Act 1991](#) to make a connection to the public sewer without our former approval and you must not programme any works to commence until you have our approval.

What is a wastewater connection, and will I need one?

A new wastewater connection is where you are connecting to the public sewer either directly or indirectly through private drains. Both will require an application to be made with us.

- **Direct Connections** – A new connection made directly to the public sewer.
- **Indirect connections** – A new connection to a private drain/sewer that then flows into a public sewer.

Relocating Manholes

When you are looking to move a public manhole on your property or divert a public sewer, we'll need to give permission for this, to ensure we can maintain, repair, and access the sewer going forwards. For new development sites this will need to be through a [sewer diversion](#). For existing premises or where a conversion is taking place, minor relocations or diversions can take place through our [build over a sewer](#) process.

Right to discharge

You will not need to apply, if you're connecting to your private sewer and there are no additional flows or occupants in the property. You can make this connection yourself using certified contractor, without a sewer connection application. This will need to be monitored/signed off by your local building control officer.

However, if there are any large changes to the property, you will require an application, this includes:

- Building a new property
- Building a house extension with the new kitchen, bathroom, toilet
- Changing the use of the property (i.e., from a residential to a commercial property).
- Increasing the number of properties including splitting the plot in two.
- Adding or changing the type of flow (i.e., connecting foul sewerage that previously discharged to a septic tank).
- If you are connecting to the private sewer and adding additional discharge load or splitting the property into additional units.

Before you apply

Confirm sewer capacity

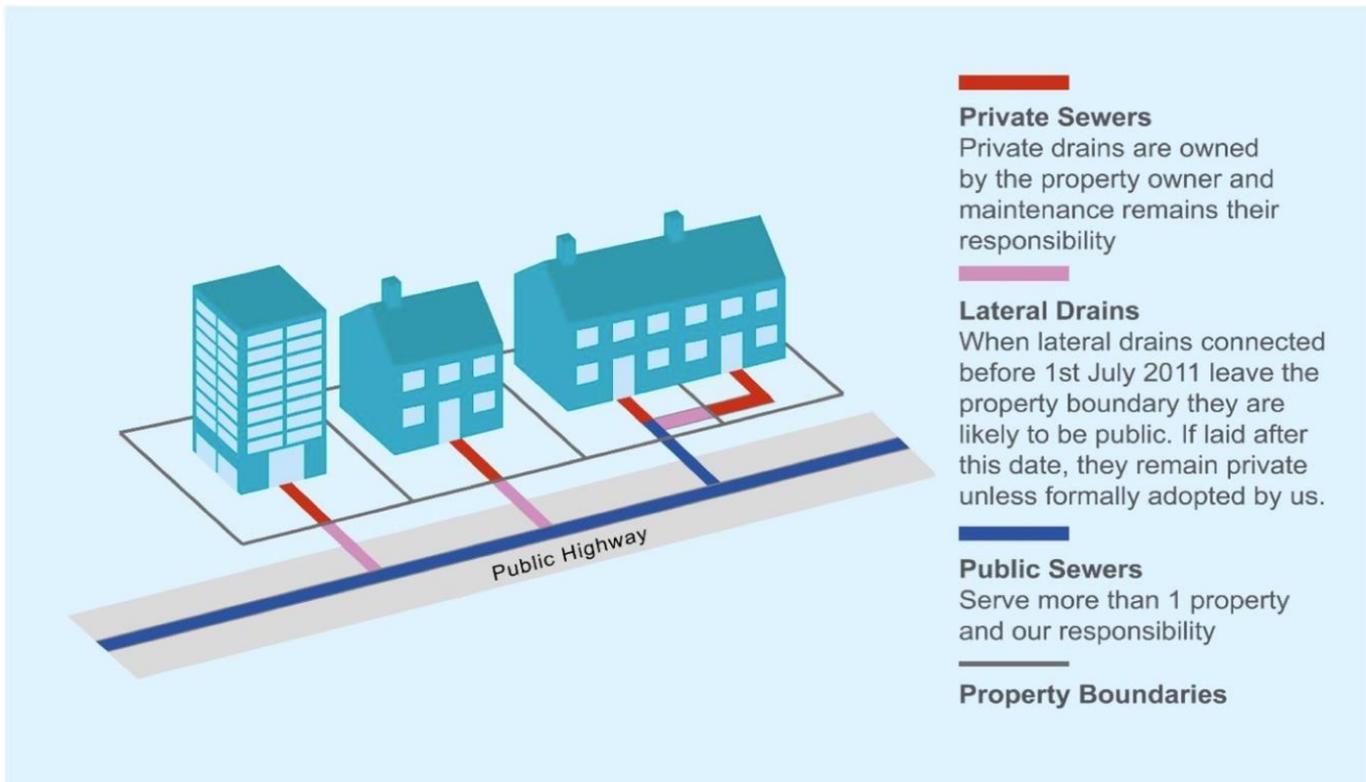
The Wastewater Connection application is only for approving the means and mode of construction – in other words the way your drainage will physically connect to our network – so it's important you also identify that there is capacity to accommodate the proposed flows if you are building a large development or a commercial property, you can assess available capacity with a [pre-planning enquiry wastewater application](#).

Obtain a copy of your planning consent

When you make an application, we will need to see a copy of your planning consent. This ensures we can check you have planning permission for the drainage strategy proposed and any conditions. S106 approval cannot be granted without planning consent.

Who is responsible for what?

Connections can be made directly to a public sewer or indirectly through a private drain that discharges to our public sewers. If you need to lay your pipe through third party land, such as a neighbour's property, then you will need their permission before doing so. The below diagram indicates who is typically responsible for which sewers. The ownership of lateral drains is affected by the Transfer of Private Sewers 2011. [The private sewers transfer regulations - GOV.UK](#)



Types of sewers

Within our network, we have several different types of sewers. The main three are:

- **Foul sewers** – Designed to carry wastewater from toilets, sinks, showers, washing machines etc. from your home or business
- **Surface water sewers** – designed to carry rainwater which runs off roofs and paved areas.
- **Combined sewers** – Designed to carry both foul and surface water.

We also have trunk, trade effluent, siphon and vacuum sewers in our network.

The timescales and supporting documents that you will need to submit with your application will vary depending on the type of sewer you choose to connect to.

Sewer and water maps

You will need to understand the location, size, depth and material of our public sewers in your area so you can plan how your connection will be made.

You can request a [Maps & Searches - Southern Water](#) online.

If there are no records of the sewers on the map, you will need to carry out a drainage survey to check what sewers are available to you.

Once you identified the sewer to connect, you will need to discuss with your contractor the best way to connect.

Surface water hierarchy and sustainable drainage systems (SuDS)

The surface water sewer carries rainwater which runs off the roofs and paved areas. It is good environmental practice for the surface water to be reused or returned to the environment on or near your site where possible. We recommend the following options, in preferential order, for managing your surface water runoff.

- **Water reuse** – explore installing rain harvesting to reduce the demand on the water supply and the quantity of runoff discharged to the sewer.
- **Infiltration into local ground** – drain your surface water via soakaways or infiltration basins or your local council authority for the installation of these assets, which can be requested in your planning application
- **Drain surface water into a watercourse** – if there is a stream or watercourse such as a river, canal, or channel, please drain the surface water that way. You may need to obtain a consent to discharge from the Environmental Agency or local council authority
- **Council or privately owned drainage systems** - Discharge to a watercourse or other surface water body. These systems may be owned by your local council authority or privately and can include such drainage such as Culverted Watercourse, District Council Surface water or Private Network. You will need to obtain a separate approval from the Environment Agency or local council authority for these discharges
- **Discharge into Southern Water surface water sewer**– Discharge to our surface water sewer. You can check whether we have a surface water sewer in the local vicinity by obtaining a map of our assets for the area.
- **Discharge into Southern Water Combined sewer** – Connect to a combined sewer which is designed to drain foul and surface water. This must be attenuated to not increase the risk of the sewer becoming overwhelmed in wet weather.

Where separate foul and surface water sewers are provided, the foul and surface water should drain to their respective sewers.

We will **not** permit:

- Surface water to discharge, either directly or indirectly (e.g., via a private sewer), into the foul water sewer
- Discharge of land drainage or ground water into the public sewers

For new developments we would recommend looking at potential for incorporating SuDS (Sustainable Drainage Systems) at the earliest opportunity for surface water flows. Draining surface water through SuDS on site has many benefits to the local aesthetics, increasing biodiversity and building resilience to flooding and pollution. In many cases this may negate or reduce the need for network reinforcement and allow earlier completion of development.

You should also be aware:

Trade effluent

The discharge of non-domestic effluent is not permitted unless a valid trade effluent consent has been issued by us under [Section 118 of the Water Industry Act 1991](#).

To apply for a trade effluent consent please contact your sewerage Retailer and if you have any trade effluent enquiries you can contact us at trade.effluent@southernwater.co.uk.

Third party/private land

If you need to cross third-party land or connect to a private sewer, you must first get the written permission from the land or sewer owner. We can't give you permission to work in third party land through our approval for the connection.

Constructing the sewer

You will need to employ your own contractor to construct your private drains and complete the connection to our sewers as this is not a service we offer under the S106.

As there are risks associated to working on a public sewer, we need to check your contractor is aware of risks and the work will be carried out safely and to protect the integrity of the sewer network.

If you are connecting to a sewer 5 metres or more deep or 300mm or more in diameter your contractor should provide a Health & Safety policy and a site-specific risk assessment and method statement (RAMS).

Direct connections

When you are looking to make a direct connection into our sewer, connections should be made as follows:

Internal Diameter	Connection Method
< 300mm	Oblique junction/ branch connection
300mm to 450mm	Oblique angled saddle connection
> 450mm	Manhole connection

When discharging to a combined sewer, the separate foul and surface water pipes should be combined at locations immediately upstream of the point where they discharge into the public combined sewer.

Any connection to be made that serves three or more properties, should be made via an existing or new manhole.

All the works carried out should follow the technical standards in the [Design and Construction Guidance](#) (Appendix C).

Highway notices

Before any opening is made in the road, footpath, or verge, you'll need to get a 'road opening notice' from the appropriate Highway Authority. They'll be able to provide you with all associated costs, procedures and timescales required for this.

Sewer inspections

You will need to organise an inspection of the drains or sewers with our Assistant Adoption Manager giving at least 2 days' notice in order for us to provide the final completion letter for the connection. This allows you to begin discharging to the sewer

All necessary prep work including road signing and guarding needs to be carried out and in place before the inspection and the trench should be kept open until the inspection has passed.

Misconnections

If your drain is connected to the wrong sewer, known as a 'misconnection', it is not only illegal but can lead to serious contamination, environmental pollution, and flooding. For this reason, we don't allow foul connections to a surface water sewer.

To avoid misconnections and ensure you can locate the exact position and condition of the sewer on your site, we recommend you carry out a CCTV or topographical survey to trace the line and location of the sewer.

Sewer adoptions

If you wish your sewers as part of a larger development site to be adopted by us, you'll need to construct them in line with the [Sewerage Sector Guidance](#) and then apply to us separately for a [sewer adoption](#).

Sewer requisitions

If you require drainage to our existing sewers because of a new development site or to upgrade existing properties and are unable to complete this yourself, you can apply for us to construct a new sewer main. These are dealt with separately and you'll need to apply for a [Sewer Requisitions - Southern Water](#)

Application fees

An application and administration charge is required for a sewer connection whether made directly onto a public sewer or indirectly via an existing lateral or private sewer. The charge is based on the type of connection as per our [Charges and payments - Southern Water](#): there is an additional charge for construction of a new manhole on the public sewer.

If you have multiple direct connections, then the relevant cost should be multiplied by each direct connection.

Infrastructure charges

An Infrastructure Charge is also applicable for all properties connecting to the public sewer for the first time either directly or indirectly. This is charged in addition to the application fees and is due after the connection has been made. You can find out more by reading our [Charges and payments - Southern Water](#)

Non-domestic premises will be individually assessed according to the number of appliances/fittings producing wastewater. VAT is zero rated for new domestic property connection to the sewerage system. Infrastructure charges are applicable even if the connection is made via a private sewer providing that the private sewer ultimately discharges into the public system.

These costs do not cover the cost of laying the drain from your property to the sewer or making the connection, which is something you will need to arrange with a competent contractor.

Health and safety

All of the contractor's staff should be suitably trained in relation to entry into confined spaces.

The contractor should always provide and adequately maintain approved gas detectors and emergency escape sets, when present in or near confined spaces. Contractor's staff must be fully conversant with this equipment, its use and operation.

You should refer to the [Southern Water Health and Safety Advisory](#).

It will be the contractor's responsibility to adequately support the sides of any excavations. If in the opinion of the Assistant Adoption Manager the excavation is not adequately supported, the contractor should take all the necessary steps to make the trench safe at his own expense before any inspection works are carried out. Additional inspection charges will be levied if the Assistant Adoption Manager has to make additional site visits.

When working in the public highway, all traffic signs, and barriers etc should be provided and maintained in accordance with Chapter 8 of the Traffic Signs manual to meet the requirements of the Police and Highway Agency.

The application process and required documents

Applications to connect to the foul sewers

The most common type of wastewater connection is to connect to the foul sewer. You will need to select foul wastewater connection option in your application, if you need to dispose wastewater from the new kitchen, baths, toilets, showers, washing machines, dishwashers.

Here are the steps that we will take to get you connected:

- Step 1 - You apply online and pay your application fee
- Step 2 – Once all relevant information has been reviewed and accepted we send you our approval
- Step 3 - You carry out your work
- Step 4 - You book your site inspection
- Step 5 - We send you a completion letter

When making your application please have the following information ready:

1. A site location plan
2. A drainage layout plan showing the location of foul and surface water sewers and manholes on your site and up to the connection point ([Sewer Connections Detailed Drainage Examples](#))
3. A copy of your planning consent (if applicable)
4. If you are connecting to the sewers 5 metres or more deep or 300mm and above diameter, your contractor should have a Health and Safety policy. You will need to submit this and a site-specific Risk Assessment and Method Statement (RAMS) with your application

Application to discharge your surface water

The surface water sewers carry rainwater which runs off the roofs and paved areas.

Here are the steps that we will take to get you connected:

- Step 1 - You apply online and pay your application fee
- Step 2 - Once all relevant information has been reviewed and accepted we send you our approval
- Step 3 - You carry out your work
- Step 4 - You book your site inspection
- Step 5 - We send you a completion letter

When making your application, please select option “Surface Water Sewer” or “Combined Sewer” and have the following information ready:

1. A site location plan
2. A drainage layout plan showing the location of foul and surface water sewers and manholes on your site and up to the connection point ([Sewer Connections Detailed Drainage Examples](#))
3. A copy of your planning consent decision letter (if applicable)
4. Percolation test results (a test to determine the water absorption rate of soil)
5. If you are connecting to the sewers 5 metres deep or 300mm and above, your contractor should have a Health and Safety policy. You will need to submit this and a site-specific Risk Assessment and Method Statement (RAMS) with your application

Sewer Connections

Technical Specification

The following technical specification will provide further guidance on the materials and workmanship required to meet our standards for a sewer connection:

We would note that all applications should be to the technical standards set out in the sewerage sector [design and construction guidance](#) (DCG) (Appendix C) which can be found for free online and includes further diagrams and information to help you plan and design your connection.

Pipe material

All materials and fittings should comply with the relevant provisions of current British and/or European standards and be in line with Southern Water requirements.

Our approved materials include:

- Vitrified clay pipes and pipeline fittings.
- Unreinforced or reinforced concrete pipes and fittings.
- Ductile iron pipe fittings and joints.

If you are looking to use plastic pipes, we would need to agree to this, so please contact us. Certificates of conformity will need to be supplied, along with technical specification sheets demonstrating conformity and test certificates showing it can withstand a minimum jetting pressure of 2600 psi in accordance with WIS 4-35-01.

Cement and mortar

Sulphate-resisting Portland cement or a special combination of ground granulated blast furnace slag (GGBS) or pulverised-fuel ash (PFA) should be used in all cases (including precast concrete products) unless the contractor can show that any attack from soils, groundwater or aggressive atmospheres in the existing sewers will be adequately resisted by use of cement.

Mortar should be mixed only as and when required, in the relevant proportions indicated below, until its colour and consistency are uniform. The constituent materials shall be accurately gauged, allowance being made for bulking of sand. Mortar which has begun to set, or which has been site-mixed for a period of more than one hour should not be used

Arrangement of pipework within manholes

Pipework of 100mm to 300mm internal diameter and of a smaller diameter than the main outlet sewer shall terminate with a half section, clay branch channel bend. The angle of the connecting pipework at the point of entry through the manhole wall shall not be more than 90-degrees relative to the direction of flow in the main sewer at the point of exit from the manhole.

Where connecting pipework is in the range of 100mm to 300mm internal diameters and of the same diameter as the outlet sewer, a 45-degree to 90-degree channel junction shall be inserted.

For connecting pipework greater than 300mm internal diameter the branch channel bend shall be formed from class C20 concrete and rendered with granolithic concrete. The connecting angle shall be as above.

Maintenance of flow

Your contractor will be responsible for maintaining the flow in the affected public sewer during the entire course of the works. Internal surfaces of all sewers, drains, manholes or culverts etc shall be kept free of cement, bricks, soil or other matter.

Testing

It is not our normal practice to test any part of the drain or private sewer to be connected. However, we reserve the right to do so if there appears to be a risk of infiltration as a result of high ground water levels. Should we wish to carry out any tests upon the connecting pipework then the contractor shall provide all facilities and testing apparatus on site.

The test, which should be carried out prior to backfilling the trench, shall be in accordance with the air test specified in BS 8005. Failure to pass the test will not preclude acceptance of the connection if a successful water test (as also specified in BS8005) can subsequently be carried out. Refer to section E7 of the DCG for more information.

Access to connecting pipework

Where the connection is not to be made via an existing or new manhole, the requirement under [building regulations](#) to provide an inspection chamber or manhole within 12.5m of the point of connection should be observed. This excludes where multiple properties are being connected.

Connection methods

Connecting to an existing sewer pipe (no manhole)

Branch connections – also known as '*oblique junction*' or '*Y connections*' to a sewer of 300mm internal diameter or less. This is done by inserting a new oblique angled junction pipe using Bandseal/Flexseal couplings or similar approved. The oblique angle should be between 45 and 55 degrees in the direction of flow of the public sewer.

When inserting a new junction, the existing section of pipe shall be removed by cutting the pipes to square ends using a method or system approved by the pipe manufacturer. Cracked pipes must be replaced and the line, level and existing flows maintained at all times.

Oblique angled saddle connections - may be used on sewers with internal diameters equal or greater than 300 mm and less than 450mm. The internal diameter of the connecting pipework must be less than 1/3 of the public sewer.

Pipe saddles for concrete or clay sewers shall be bedded in Class M1 cement mortar and a cement mortar fillet formed to give at least 50mm cover to the base of the saddle. Pipe saddles for uPVC sewer pipes shall be purpose made from uPVC and fixed using the appropriate solvent cement as per the manufacturer's instructions.

Saddle connections will not be permitted on brick, pitch fibre or twin walled plastic (or ribbed) sewers.

The connecting pipe should not protrude into the sewer.

Connection of gravity drains to a manhole

Connection of gravity drains to a manhole where a connection is to be made using a pipe of the same internal diameter as the outlet pipe from the manhole, the connection shall be made at the invert of the main channel.

Where the connection is to be made using a pipe of smaller diameter than the outlet pipe from the manhole, the connection should be made so that the soffits of the connection and outlet pipes are level.

Pipework entering a manhole shall have an external flexible joint within 600mm of the inside face of the manhole connection and a rocker pipe not more than 600mm long to the main pipeline.

In certain circumstances we will consider the use of vertical external backdrop connections. A typical detail showing the approved arrangement is shown in figure B16 in the DCG. Internal backdrop connections will not be permitted.

45-degree ramped connections may be substituted for a backdrop. An oblique junction and a 45-degree bend shall be substituted for the tumbling bay junction and the 90-degree rest bend.

All other construction details shall be as for the external backdrop connection.

The ramped connection on a private drain or sewer will not form part of the public sewerage system.

Connection to a trunk sewer

Connections to a trunk sewer should be via a new or existing manhole in all circumstances and follow the guidance above.

Connections of rising mains (pumped drainage) pipework to a manhole

When connecting rising mains to our network, it will only be permitted if a manhole is constructed at the point of discharge, including if it serves less than 3 properties.

A manhole and minimum 5m length of gravity pipework will be required between the rising main and the public sewer. The connection level requirements of the rising mains shall be the same as those for gravity drains.

Connections to syphon sewers

We don't allow a direct connection to a syphon sewer (foul or surface water) as it causes issues to the function of the syphon. These connections will need to be directed to a sewer which is not classed as a syphon.

Connection to vacuum mains

We don't allow a direct connection to a vacuum main. However, connection via a vacuum pod is permitted.

Any new connection to the existing vacuum system will require you to employ a specialist contractor. The connection method and contractor information will need to be clarified ahead of any approval and a pre-start meeting will be required with our Assistant Adoption Manager.

Frequently Asked Questions

Still have questions?

We understand that all projects are different, and it might be hard to understand what the right and most cost-effective option is. Please refer our [Frequently Asked Questions page](#) for more guidance or simply ask our team member to [call you back](#) and help.

Glossary of terms

Term	Definition
Public Sewer	A sewer that is owned and maintained by the statutory undertaker (Southern Water), typically serving at least two curtilages.
Lateral Drain	The section of drain that extends beyond the property's boundary to connect to the public sewer.
Property Drain	The section of drain that is within the property's boundary and remains private.
Manhole	A covered opening from where a worker can enter to examine or repair a sewer.
Inspection Chamber	A covered opening from where the sewer or drain can be examined or flushed.
Rodding Eye	A small access point that allows for 'rodding' the sewer in cases of blockages.
Combined Sewer	A sewer that carries both foul sewerage and surface water.
Foul Sewer	A sewer that carries only foul sewerage.
Surface Water Sewer	A sewer that carries only surface water.
Invert Level	Is the lowest level inside of the pipe, the flow line level.
Soffit Level	Is the highest level inside the pipe.
Cover Level	Is the highest level on the manhole cover.
Easement	A legal right to ensure a defined stand-off distance is maintained from a length of pipe and therefore not allowed to be built within.
Minor Sewer	Sewers less than 225mm diameter and less than three metres deep (minor sewers).
Critical Sewer	Critical sewers are usually defined as large diameter strategic sewers but may also be classified by material, depth and/or location.