Wastewater Connections

Technical Guidance

from Southern Water

Contents

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, 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 and do when preparing your property for a new connection. We will provide you with an understanding of our technical standards.

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

The 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 pre-planning 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.

The background

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 and both will require an application to be made to 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 you're not splitting the property into additional units, 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, will require an application, including:

- 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, you will need to apply the Wastewater Connection Application (Section 106).

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 connects 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.

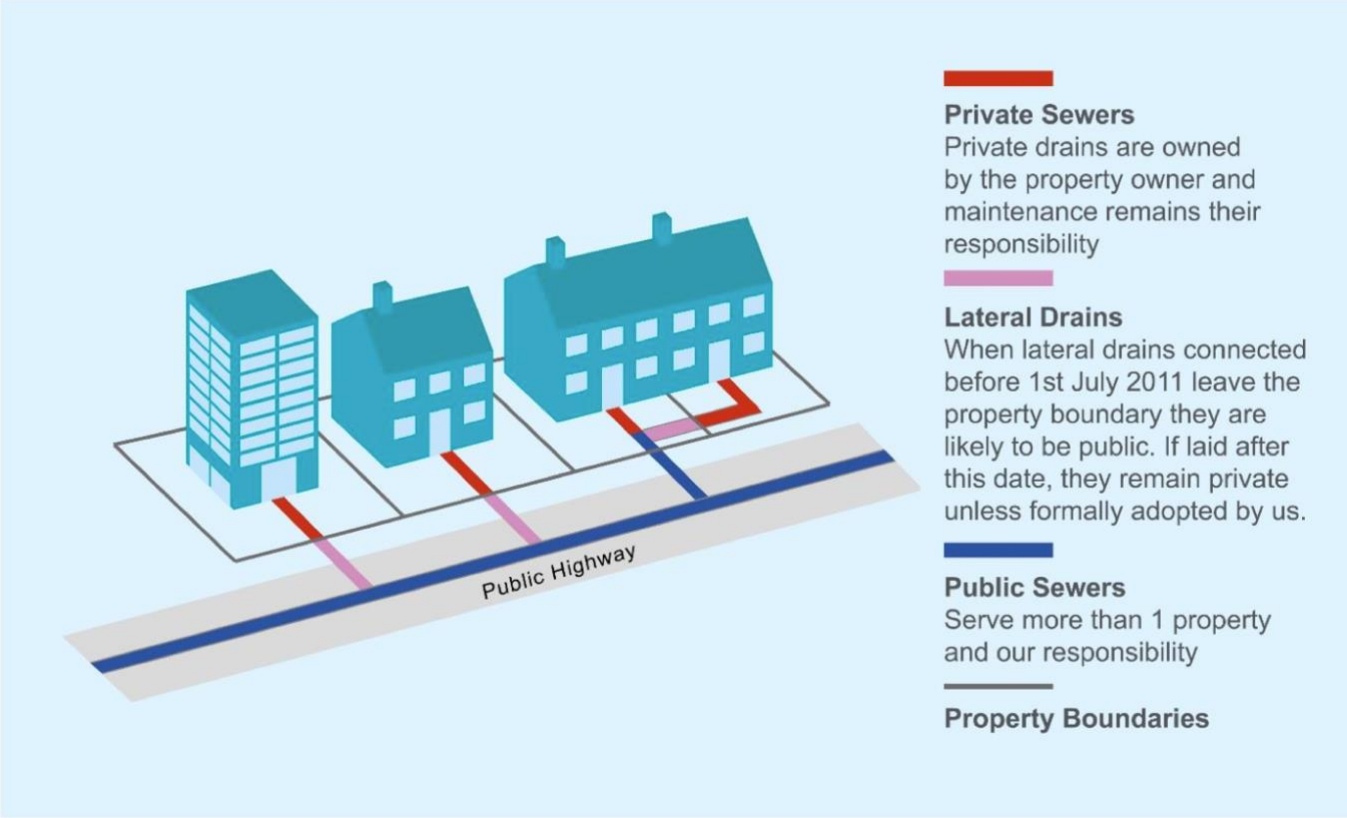
Also, if you are applying for Surface Water sewer connection or a Combined sewer connection, you will also need to go down this route and start a process by requesting your capacity check report. Once you have obtained your capacity check report, you will then need to apply for S106 Wastewater connection and submit this along with other documents.

Obtain a copy of your planning consent

When you make an application, we will need to see a copy of your planning consent (if applicable, i.e., for new developments/extensions). This ensures we can check you have planning permission for the drainage strategy proposed and any conditions (i.e., maximum permitted flows).

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.



Types of sewers

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

- **Foul sewers** – Carry wastewater from toilets, sinks, showers, washing machines etc. from your home or business
- **Surface water sewers** – Carry rainwater which runs off roofs and paved areas.
- **Combined sewers** – 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.

The surface water hierarchy and sustainable drainage systems (SuDS)

The surface water carry rainwater which runs off the roofs and paved areas. It is good environmental practice is 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. You will need an approval from building control at 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 of water such as river, canal, or the 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/drainage board
- **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. Before making your application, you will need to get the capacity checks completed (by submitting a pre-planning enquiry wastewater application.), to check available capacity at your point of connection before you can connect to the surface water sewer.
- **Discharge into Southern Water Combined sewer –** Connect to a combined sewer which drains foul and surface water if one is in the local vicinity. This must not increase the risk of a combined Sewer Overflow becoming overwhelmed in wet weather and you will need to get the capacity checks completed (by submitting a pre-planning enquiry wastewater application.), to check available capacity at your point of connection before you can connect to the combined sewer.

If you have explored all the above and it has been confirmed that they are not achievable, **only** then will we consider the option of discharging surface water into the foul only sewer.

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

We won't permit:

- Foul water to be discharged to the surface water sewer
- Surface water to discharge, either directly or indirectly (e.g., via a private sewer or drain), into the foul water sewer
- We do not permit connections to pumping mains, or the 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.

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 sewer or water map 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. There are many contractors that can help with this, such as InSewer, Dyno (Isle of White area). Once you identified the sewer to connect, you will need to discuss with your contractor the best way to connect.

I 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 in order to make the connection, 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.

As there are risks associated to working on a public sewer, we have to check your contractor is aware of those risks and the work will be carried out safely whilst minimising the risk to those on site, to the public and to the integrity of the sewer network.

Your contractor should have a Health and Safety policy and you will need to submit this and a site-specific risk assessment and method statement (RAMS) with your application, if you are connecting to the sewers 5 metres deep or 300mm.

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

So we can provide the final completion letter for the connection - which allows you to begin discharging to the sewer - you will need to organise an inspection of the drains or sewers with our assistant adoption manager giving at least 2 days' notice.

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. We have prepared a site inspection checklist so that inspection of your sewer connection can be passed first time.

Misconnections

If your drain is connected to the wrong sewer, also 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. For applications using a pre-existing connection, this is a way of providing evidence to prove the existing connections.

Sewer adoptions

If you wish your lateral drain (or 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 are building 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 requisition

Direct connections

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

Internal diameter	Connection method
< 225mm	Oblique junction branch connections
225mm to 450mm	Oblique angled saddle connections
> 450mm	Splay cut connections

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 existing combined sewer system.

Any connection to be made that serves three or more properties and in other cases where deemed appropriate, the connection to the public sewer should be made via an access point (manhole/inspection chamber).

All the works carried out should follow the technical standards in the sewerage sector Design and Construction Guidance (Appendix C).

Indirect connections

When connecting to an existing lateral drain, an inspection chamber or manhole would normally be required at the head of the lateral drain. For instance, at the property boundary. This is for maintenance purposes.

Application fees

An application and administration charge are required for each 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 charging arrangements:

Connection Type	Cost per connection (£)
New manhole connection	£373.00 (inc. 20% VAT)
Connection to existing sewer/manhole	£291.00 (inc. 20% VAT)

If you have multiple connections, then the relevant cost should be multiplied as appropriate per each additional connection.

Infrastructure charges

An Infrastructure Charge is also applicable for all properties connecting to the public sewer (or a sewer or drain which discharges to the public sewer) for the first time. It 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 connection charging arrangements.

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

The contractor should always provide and adequately maintain in full working order approved gas detectors and emergency escape sets, one set per person, 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.

No working in confined spaces will be allowed to proceed until this equipment is present and fully operational at the work site.

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 - 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 "Foul sewer" and have the following information ready:

1. A site location plan– (site location example)
2. A drainage layout plan showing the location of 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. An application fee of £291.00 (inc 20% VAT) per connection. If you need a wastewater connection and a new manhole chamber, then your fee will be a £373.00 (inc 20% VAT)

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

Application to discharge your surface water

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

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

Step 1 - Complete your capacity checks report
Step 2 - You apply online and pay your application fee
Step 3 - We send you our approval
Step 4 - You carry out your work
Step 5 - You book your site inspection
Step 6 - 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. Capacity check report
2. A site location plan (site location example)
3. A drainage layout plan showing the location of sewers and manholes on your site and up to the connection point (Sewer Connections Detailed Drainage Examples)
4. A copy of your planning consent decision letter (if applicable)
5. Percolation test results (a test to determine the water absorption rate of soil)
6. Geographical survey showing no viable watercourse available
7. An application fee of £291.00 (inc 20% VAT) per connection. If you need a wastewater connection and a new manhole chamber, then your fee will be a £373.00 (inc 20% VAT)
8. 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

Discharging surface water to a 'foul only' sewer

Section 106 of the Water Industry Act does not permit the discharging of surface water into a foul only sewer unless there are no other surface water provisions available. This is supported by regulatory guidance which states that robust evidence must be provided to the water company supporting the proposal.

Should you wish to discharge surface water into a foul only sewer, you will need provide the following evidence to support your application –

1. A capacity check report (by submitting a pre-planning enquiry wastewater application.)of the foul sewer you propose to discharge to
2. A Percolation test confirming your surface water cannot be discharged into the local ground
3. Confirmation from your Local Lead Floor Authority and Local Planning Authority that it is not reasonably practicable to discharge surface water to the ground via infiltration or to a watercourse for the whole or part of the site
4. Written confirmation from you that there are no surface water sewers, drainage systems or watercourses that can receive the discharged surface water

Surface water discharging into a foul only sewer can increase the risk of that sewer becoming overwhelmed in wet weather, causing issues such as

flooding and restricted use of facilities for customers. As such we will only permit it as the last available option.

Any surface water flows proposed for discharge into a foul only sewer must be attenuated and controlled at source, this is to ensure that the flow does not cause a reduction to the level of service provided to existing customers.

Sewer Connections
Technical Specification

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.

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 in line with our Southern Water requirements.

Our approved materials include:

- Vitrified clay pipes and pipeline fittings with flexible mechanical joints.
- Unreinforced or reinforced concrete pipes and fittings with flexible joints.
- 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 (in date) will need to be supplied, as will technical specification sheets demonstrating conformity with the DCG, 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.

Alternative Nominal Mixes by Volume		
Cement : lime : sand	Cement : sand	Cement : sand with palsticiser
1 : ¼ : 3	1 : 3	1 : 2 ½ to 3

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 less 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. Approval must be sought for any alternative proposal.

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. Details as to how it is proposed to do this should be included with the application before starting work on site. Internal surfaces of all sewers, drains, manholes or culverts etc shall be kept free of cement, bricks, soil or other superfluous 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.

When connecting to an existing lateral drain, an inspection chamber or manhole would normally be required at the head of the lateral drain.

Connection methods

Connecting to an existing sewer pipe (no manhole)

Branch connections – also known as '*oblique junction*' or *'Y connections'* to a sewer of 225mm internal diameter or less, should discharge its contents in the direction of flow in the existing sewer 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 order that standard pipework fittings can be utilised.

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 or equal to 450mm provided that the internal diameter of the connecting pipework is less than a third 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. The connecting pipe should not protrude into the sewer.

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

Splay cut connections - may be made to sewers with an internal diameter in excess of 450mm where oblique junctions may not be available.

Where a splay cut connection is to be made, the pipes shall be cut to ensure an oblique entry so that discharge is in the direction of flow in the main sewer. The connecting pipework shall be cut to ensure that its socket rests on the outside barrel of the sewer and that there is no projection inside the main sewer. The pipes should then be pointed in cement mortar both internally and externally.

The ends of connections not intended for immediate use shall be closed with a purpose made stopper. The location of all such joints shall be recorded by the contractor by measurement from the manhole immediately downstream and notified to the Assistant Adoption Manager prior to backfilling being carried out.

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 figures B16 or 17 as appropriate in the DCG. Internal backdrop connections will not be permitted, except with our express permission.

45-degree ramped connections may be substituted for a backdrop. In such cases an oblique junction and a 45-degree bend shall be substituted for the tumbling bay junction and the 90-degree rest bend respectively.

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 short length of gravity pipework will normally be required between the rising main and the public sewer. If the length of gravity sewer is not required, then a Viking-Johnson or similar approved coupling shall be installed within 600mm of the external face of the manhole. 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.

Combined connections are not allowed to a vacuum main.

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.