



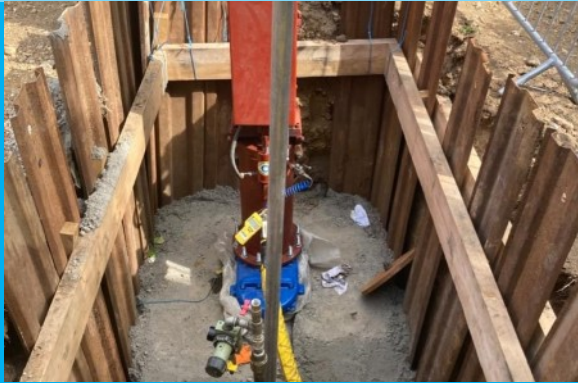
PRODUCTS & SERVICES BROCHURE 2022



LEADERS IN QUALITY PIPEWORK SERVICES







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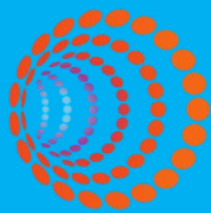
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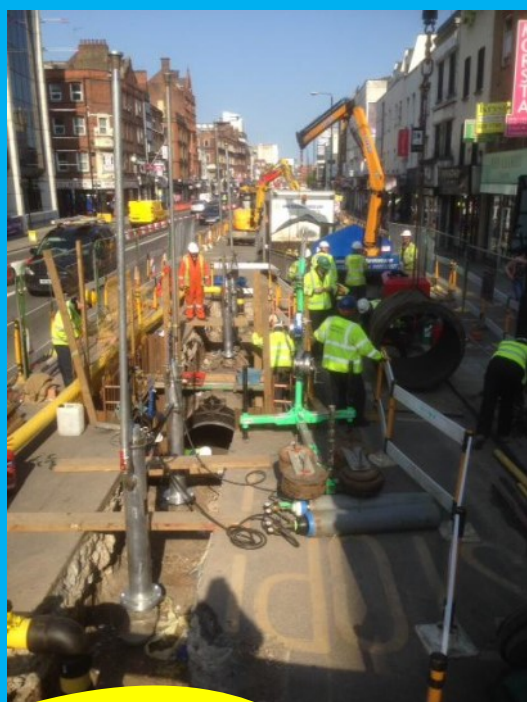
OVERVIEW

Flowstop Services Ltd are an established specialist service company within the gas and water industry. We are able to offer key operations for contracting and utility organizations that range from hydrostatic testing to stopple operations.

Along with our subsidiary company, Flowstop Engineering Ltd, we are also able to supply and install a full range of under pressure fittings that are fully approved by the GDN's.

We are able to offer the following services:

- Full Range of Under Pressure Drillings.
- PE Branch Saddles.
- PE Stopple Operations.
- Metallic Stopple Operations.
- Grouted Tee Installations.
- Grouted Sleeve Installations.
- Window Cuts.
- IP/HP Hot Tapping.
- Small Diameter Bag Stops (PE & Metallic).
- P₁/P₂/P₉ Welding.
- Hydrostatic Testing.
- Pneumatic Testing.
- APT Testing.
- Camera Surveys.
- Machine Cold Cuts.
- Bond and Bolts.
- Window Cuts.
- Exploratory Drillings.
- Direct Purging.



Stopples Tees

- **Wide range of sizes**
- **Remove the need for sacrificial valves.**
- **Full material record books and traceability.**
- **Lower Profiles.**
- **Fully compliant with GIS/CW6.**
- **Manufactured to GIS/LC8-4:2006.**
- **Ability to retrieve plugs for reapplications.**

Installation is available on all sizes.

Various completion plugs available (see page 5)

*****PRICE ON APPLICATION*****



Image shows screw type completion plug

Mechanical Stopples Tee (Sacrificial Valve and Plate not included)

For use with TDW 12/20 Machine

Host Main	14"	15"	16"	18"	20"
Outlet	300mm	300mm	300mm	300mm	300mm

Mechanical Stopples Tee

For use with TDW 16/24 machine or Ipsco Folding Plugger

Host Main	24"
Outlet	400mm

Mechanical Stopples Tee

For use with TDW 24/36 machine or Ipsco Folding Plugger

Host Main	26"	28"	30"	32"	34"	36"
Outlet	600mm	600mm	600mm	600mm	600mm	600mm

Mechanical Stopples Tee

For use with TDW 36/48 machine or Ipsco Folding Plugger

Host Main	40"	44"	48"
Outlet	900mm	900mm	900mm

Completion Plugs

Our Stoppie tees are compatible with various completion plugs. Depending on the operation and preference. As our tees are a bespoke product we are able to manufacture the configuration that best suits your application.



Teemans Seglock Plug ©



For operations using :

TDW 16/24 Machine , 24/36 Machine or Ipsco Folding Plugger

16"/400mm Through To 36"/900mm Outlets

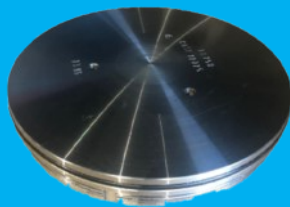
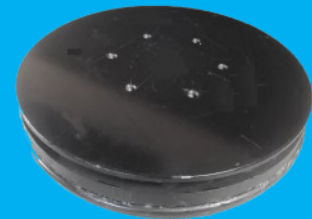
Flowstop Engineering Pin Plug ©



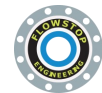
For operations using :

TDW 16/24 Machine , 24/36 Machine or Ipsco Folding Plugger

16"/400mm Through To 36"/900mm Outlets



Flowstop Engineering Screw-type Plug ©



For operations using :

TDW 12/20 Machine

12"/300mm Outlets

Teemans Leaflock Plug ©



For operations using :

SHORTSTOPP II Machine

4"/100mm Through To 12"/300mm Outlets

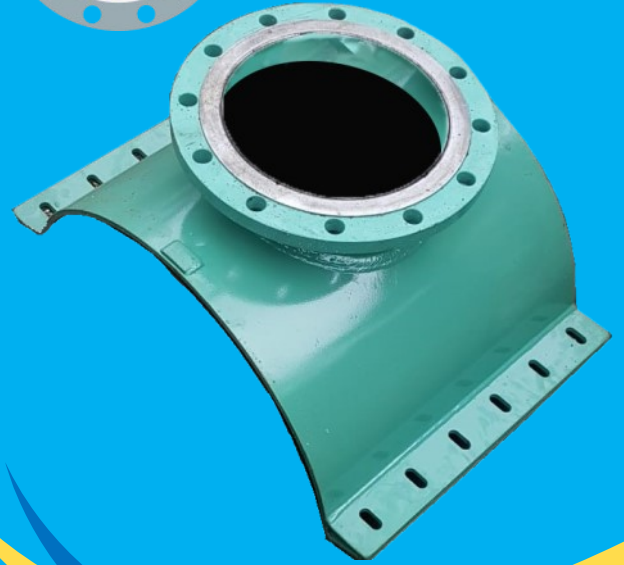
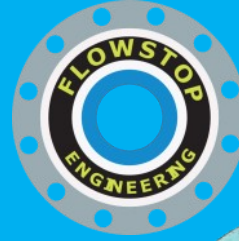


Under Pressure Tees

- **Wide range of sizes**
- **Various configurations.**
- **Full material record books and traceability.**
- **Lower Profiles.**
- **Coating fully compliant with GIS/CW6.**
- **Manufactured to GIS/LC8-4:2006.**
- **Bespoke Identification plate (If required).**

Installation is available on all sizes.

*****PRICE ON APPLICATION*****



Available Sizes (Subject To Callipered Main)

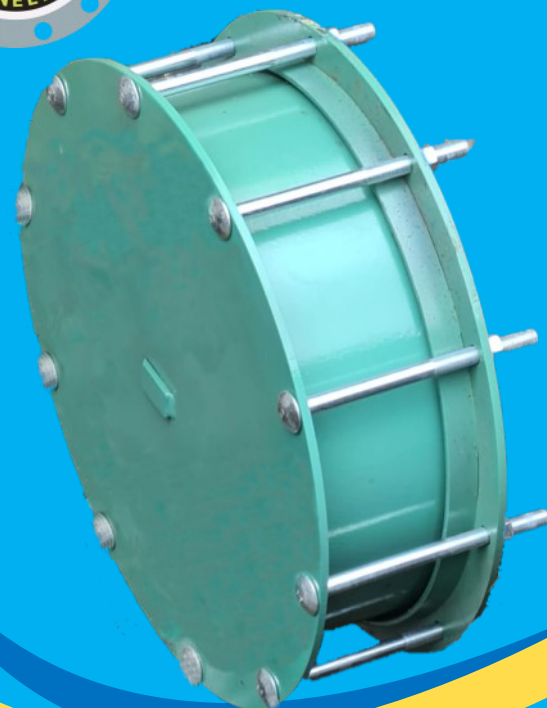
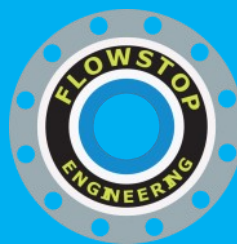
Host Main	14"	15"	16"	18"	20"	24"	26"	27"	28"	30"	32"	34"	36"	40"	42"	44"	48"
Outlet	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
80mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
100mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
150mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
200mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
250mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
350mm		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400mm			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
450mm			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
500mm				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
600mm					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
700mm						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
750mm							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
800mm								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
900mm									✓	✓	✓	✓	✓	✓	✓	✓	✓
1000mm										✓	✓	✓	✓	✓	✓	✓	✓
1100mm											✓	✓	✓	✓	✓	✓	✓
1200mm												✓	✓	✓	✓	✓	✓

End Caps

- **Wide range of sizes**
- **Coating fully compliant with GIS/CW6.**
- **Manufactured to GIS/F13:2012.**
- **Various combinations available.**

Installation is available on all sizes.

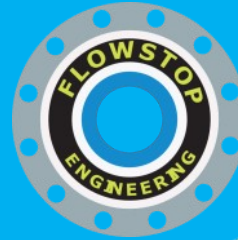
*****PRICE ON APPLICATION*****



Available Sizes (Subject To Callipered Main)

Main Size	Plain	C/W 1" BSP	C/W 2" BSP	C/W 4" Flange	C/W 6" Flange
14"	✓	✓	✓	✓	
15"	✓	✓	✓	✓	
16"	✓	✓	✓	✓	
18"	✓	✓	✓	✓	
20"	✓	✓	✓	✓	
21"	✓	✓	✓	✓	
22"	✓	✓	✓	✓	
24"	✓	✓	✓		✓
26"	✓	✓	✓		✓
27"	✓	✓	✓		✓
28"	✓	✓	✓		✓
30"	✓	✓	✓		✓
32"	✓	✓	✓		✓
36"	✓	✓	✓		✓
40"	✓	✓	✓		✓
42"	✓	✓	✓		✓
48"	✓	✓	✓		✓

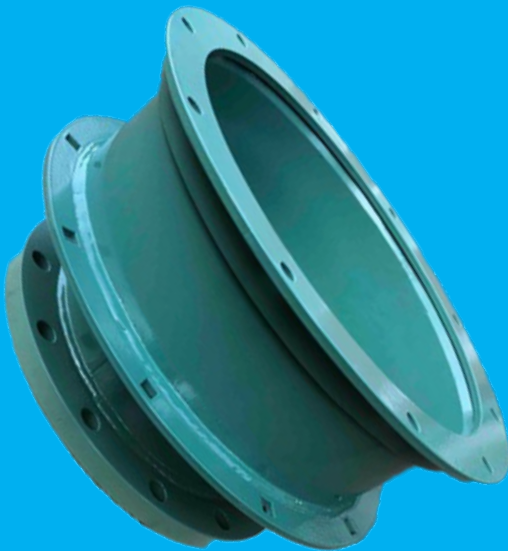
Flange Adapters



- **Wide range of sizes and configurations**
- **Coating fully compliant with GIS/CW6.**
- **Manufactured to GIS/14525.**

Installation is available on all sizes.

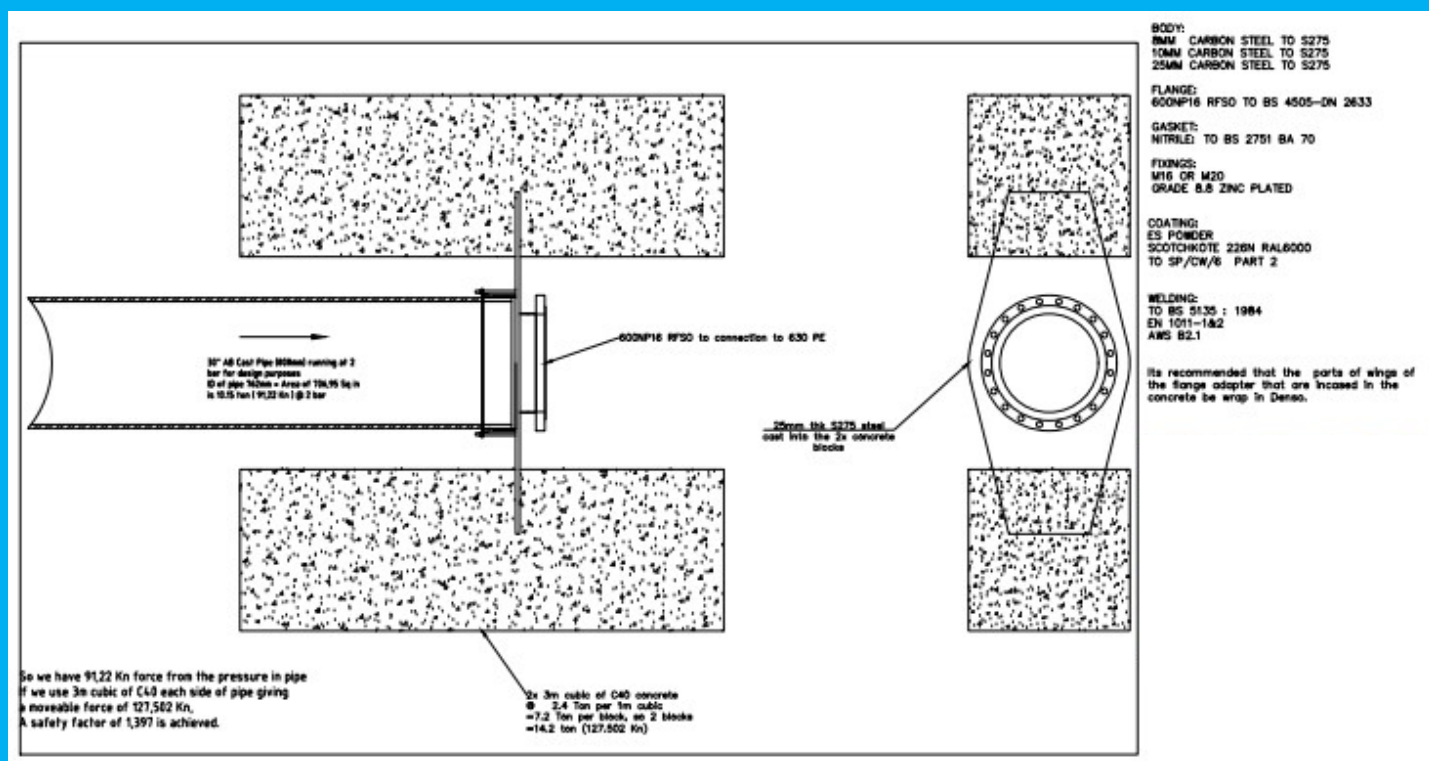
*****PRICE ON APPLICATION*****



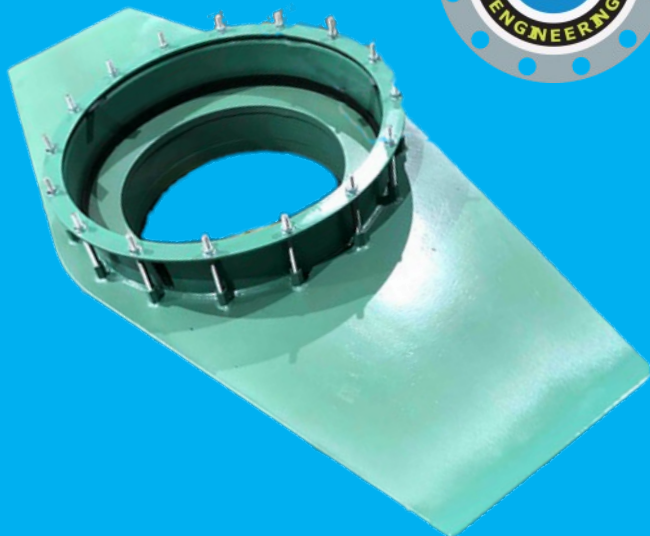
Available Sizes (Subject To Callipered Main)

Host Main	14"	15"	16"	18"	20"	21"	24"	26"	27"	30"	36"	40"	42"	44"	48"
Outlet	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
250mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
300mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
400mm	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
450mm			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
500mm				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
600mm							✓	✓	✓	✓	✓	✓	✓	✓	✓
800mm											✓	✓	✓	✓	✓

Bespoke Application Fittings



Winged Flange Adapt-



Our 'Winged Flange Adapters' have been designed with safety in mind.

The unique winged design allows the flange to be fully supported in the excavation via concrete once the operation has been completed.

(See above example).

- Coating fully compliant with GIS/CW6.

Bespoke Application Fittings

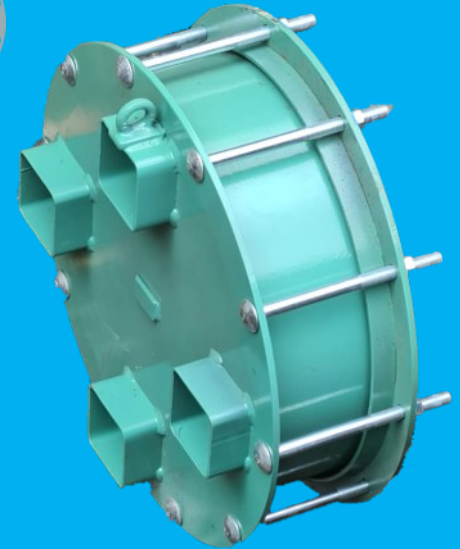
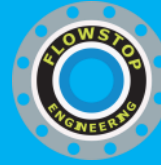
The 'Strut Support End Caps' have been designed with the end user in mind.

The bespoke end cap is configured to the clients application needs, with the mains pressure in mind. The strut support slots allow for the struts to be safely placed into position without the problem of slipping or misalignment.

The mains pressure and pipe size will determine how many slots are required for the cap by calculating the force of the main in Tonnes. The brace gap will determine the length of each strut.

All caps come with BS4074:2000 Compliant Props.

- Coating fully compliant with GIS/CW6.



Strut Support End Caps

Strut Size	Weight	Fully Closed	Fully Extended
No 0	4kg	0.32m	0.47m
No 1	5.8kg	0.49m	0.73m
No 2	7.7kg	0.69m	1.09m
No 3	11kg	1.03m	1.73m

All Struts have a safe working load (SWL) of 3.5T at any extension



Grouted Tees & Sleeves



DNV

- **Multiple uses and bespoke combinations.**
- **Suitable for all types of metallic pipe.**
- **Size range 2" to 56".**

Installation is available on all sizes along with coating and wrapping.

*****PRICE ON APPLICATION*****

See Pages 10 & 11 for FAQ



Grouted Tees FAQ

Frequently Asked Questions :

Q - What pipe size range can the Grouted Tee be used on ?

A - 2" to 56". Non-standard pipe sizes can also be accommodated.

Q - Can the Grouted Tee be used for equal branch to pipeline diameter connections ?

A - Yes.

Q - What type of pipe materials can the Grouted Tee be used on ?

A - Carbon steel, Stainless steel, spun, cast and ductile iron.

Q - What is the thinnest pipe wall thickness the Grouted Tee can be installed on ?

A - The Grouted Tee is suitable for pipelines with diameter/wall thickness ratios up to 120.

Q - When ordering from Flowstop Services what is the expected installation time ?

A - Between 6 and 20 weeks depending on the size and pressure rating.

Q - What pipeline products is the Grouted Tee suitable for ?

A - Natural Gas, water, crude oil, methanol, propylene.

Q - Will weather conditions affect the installation of the Grouted Tee ? For example rain or high humidity ?

A - Standard precautions are taken to ensure that the pipe and fitting remain dry during installation. An approved drying procedure is used for application when the pipeline becomes wet during the installation.

Q - How does the epoxy grout adhere to the wall of the pipe ?

A - The outer surface of the pipeline and inner surface of the Grouted Tee shells are grit blasted to SA 2.5 with a surface profile between 80 and 120 microns. The epoxy based grout has been developed specifically for this type of application. The epoxy grout has been found to be extremely effective even without the bolts. The fitting retains its integrity. The epoxy grout also has a low shrinkage property which ensures the load is transferred effectively from the main pipe to the outer shell.

Q - Are different grouts available ?

A - No, the grout has been specifically developed for this application.

Q - Can i procure the grout, seals and tees locally ?

A - No, these materials will be supplied through Flowstop Services.

Q - What type of surface is required when preparing the pipe for the Grouted Tee installation ?

A - SA 2.5 with a surface profile of 80 to 120 microns.



Grouted Tees FAQ

Frequently Asked Questions Continued :

Q - What approvals have been performed on the Grouted Tee ?

A - The Grouted Tee has been verified by DNV and by the UK gas industry.

Q - What type of seal material is used ?

A - HNBR (high grade nitrile) is currently used as the primary seal material for natural gas, water, crude oil, methanol and propylene applications. Other seal materials can be used to match other products.

Q - What is the operational temperature range for the Grouted Tee ?

A - -50 to +125 celcius. Higher temperatures will be possible subject to testing.

Q - What working pressures are the fittings designed for, i.e ANSI- 300, 600 or 900 ?

A - The fittings have been certified by DNV to ANSI-600. This is a requirement in the UK gas industry. However, tests have been performed, in a limited capacity, up to class 900.

Q - What thickness layer of epoxy grout is needed and is this dependent on the operating pressures of the line ?

A - Grout thickness is not dependent on the operating pressures of the line. The practical thickness is usually from 4mm to 40mm due to ovality in the host pipe. The epoxy grout allows load from the main carrier pipe to be transferred to the outer shells of the fitting.

Q - What amount of time is required to install the tee, and to tap the line, assuming site preparations have been made ?

A - For all sizes (2" to 56") allow one day to install the fitting. Then between 8 and 24 hours for the epoxy grout to cure (temperature dependant). Drilling (hot tapping) can then be carried out. Therefore, a total elapsed time of 2 days.

Q - Can the Grouted Tee be used for flowstop application ?

A - Yes. The Grouted Tee can be used for flow stopping operations. Double branch connections have also been developed for this type of application.

Q - Can the pipeline be hot tapped in the vertical and horizontal position ?

A - Yes, and at any other orientation.

Q - Can the Grouted Tee be used to install pig launchers and receivers ?

A - Yes. A Y-branch fitting (up to 30 degree angle from the pipe axis) can be installed for suchan application.



PE Branch Saddles

SDR 26 SDR 21
SDR 17.6 SDR 11

Flowstop Services are the approved supplier and installer of Minimus PE Branch Saddles, which are manufactured by Radius Subterra Ltd.

The branch saddles are fully approved by the Gas Distribution Networks and remove the need for squeeze-off operations, which can be costly.

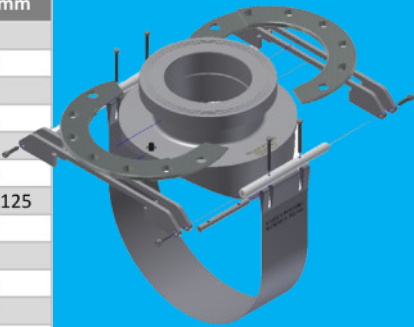
With outlets up to 300mm available ,the branch saddle range caters for a wide spectrum of services including connections , bag stops and stopple operations. (See Below Table).

Also available are 630x32 tapping tees

*****PRICE ON APPLICATION*****



Pipe Diameter mm / inch	Flanged Outlet Size					Spigot Outlet Size		
	DN80	DN100	DN150	DN250	DN300	32 mm	90 mm	125 mm
4"	-	4"xDN100	-	-	-	-	-	-
6"	-	6"xDN100	-	-	-	-	-	-
8"	-	-	8"xDN150	-	-	-	-	-
90mm	90x90	-	-	-	-	-	-	-
125mm	125xDN80	125x125	-	-	-	-	-	-
140mm	-	-	-	-	-	-	140x90	-
180mm	180xDN80	180xDN100	180x180	-	-	-	-	180x125
213mm	-	-	213xDN150	-	-	-	-	-
250mm	250xDN80	250xDN100	250xDN150	250x250	-	-	250x90	-
268mm	268xDN80	-	268xDN150	-	-	-	268x90	-
280mm	280xDN80	-	280xDN150	-	-	-	280x90	-
315mm	315xDN80	315xDN100	315xDN150	315xDN250	-	-	315x90	-
355mm	355xDN80	355xDN100	355xDN150	355xDN250	355xDN300	-	355x90	-
400mm	400xDN80	400xDN100	400xDN150	400xDN250	400xDN300	-	400x90	-
440mm	440xDN80	-	440xDN150	440xDN250	440xDN300	-	440x90	-
450mm	450xDN80	-	450xDN150	450xDN250	450xDN300	450x32	450x90	-
469mm	469xDN80	-	469xDN150	469xDN250	469xDN300	469x32	469x90	-
500mm	500xDN80	-	500xDN150	500xDN250	500xDN300	500x32	500x90	-
560mm	560xDN80	-	560xDN150	560xDN250	560xDN300	560x32	560x90	-
630mm	630xDN80	-	630xDN150	630xDN250	630xDN300	630x32	630x90	-
800mm	-	-	800xDN150	800xDN250	800xDN300	-	-	-



○ Swage Pipe Saddles ● Size on Size Saddles ● Tapping Tees * Coming Soon

Bag Stops (PE & Metallic)

Our bag stopping service is carried out on Steel, Cast Iron and PE. We are able to perform the operations up to 42" pipe using our specialist equipment. This technique for flow stopping is used on Low pressure mains and allows the client to alter the pipeline in a gas free environment.



This operation involves the technique of bags being inserted into the main and inflated to a suitable pressure. The bag tubes that hold the inflated bags are fixed to the main using saddles that have been drilled and tested prior to the tubes being installed onto the main. Additional drillings and saddles are set up for by-passes to maintain the supply and help to carry out decay tests prior to the decommissioning of the main..

Flowstop Services are able to offer a complete operational service which includes testing, drilling and full isolation service.

All of our equipment is fully tested and certified and our technicians are fully competent in the undertaking of bagstop operations.

*****PRICE ON APPLICATION*****



Under Pressure Drillings



Flowstop Services perform a wide range of Under Pressure Drillings and Hot Tap Drillings. We are able to drill anything from 1" up to 48" on mains running from low pressure to high pressure.

Under pressure drilling is the process of drilling a hole into a live pipe system without the need to depressurise the main and maintain the flow. All of this is carried out in a safe gas free environment.



With a large range of drilling machines we are able to cater for every need that our clients would require. All of our drilling machines are maintained to the highest standards and are operated by experienced and fully qualified engineers.

For a full range of drilling sizes contact John.eastwood@flowstopservices.com

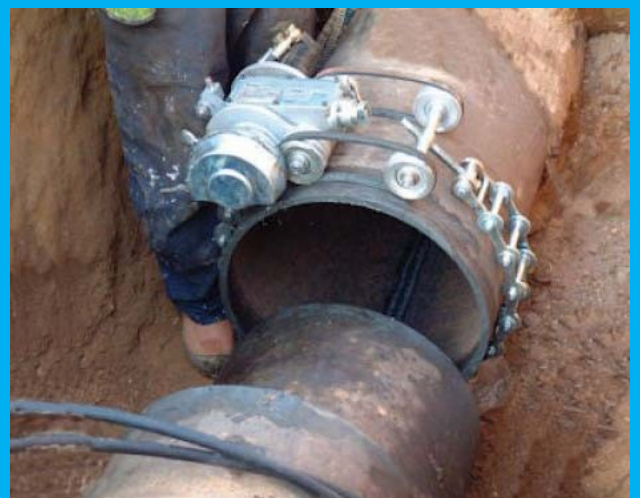


Cold Cutting

Flowstop Services offer a wide range of Cold Cutting solutions designed to suit the various types of material and the clients preferences.

Cold cuts are a way to cut the mains without causing sparks which in turn eliminates the possibility of any ignition during the isolation process, thus creating a safe environment for the operatives on site.

By using the specialist equipment to cut the pipe, we are able to leave a clean edge to aid the installation of the clients fittings.



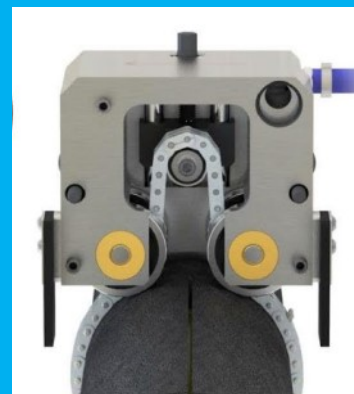
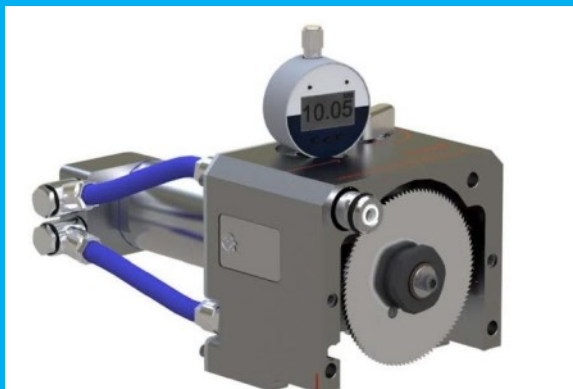
Window Cuts



With the insertion of new Polyethylene pipe into existing metallic pipe now becoming common practice, the need to be able to safely expose the inserted PE for any alterations or connections has now become a common occurrence.

Flowstop Services offer a specialist cutting solution that safely and accurately produces circumferential and longitudinal cuts which create a 'Window' type opening in the carrier pipe. This allows for any applications to the inserted PE pipe to be carried out.

The cutting equipment is calibrated to the thickness of the carrier pipe and will only cut this thickness thus preventing any potential damage to the inserted pipe from occurring.



Metallic & PE Stopples



Large and small diameter stopple operations have become Flowstop Services trademark in the industry. With vast amounts of experience and technical know-how Flowstop Services has become one of the leading Stopples providers.

We are able to stopple up to 48" pipe. Using our self sufficient 18 tonne & 26 tonne mobile workshops which have HIAB cranes installed, Flowstop Services are able to perform large stopple operations safely and efficiently.

Gas free and the ability to isolate higher pressures are just some of the benefits of our stopple operations. With a large range of stopple machines we are able to cater for every need that our clients would require. All of our stopples are maintained to the highest standards and are operated by experienced and fully qualified engineers.

Iris Stops

Flowstop Services are one of the only specialist pipe contractors to be able to perform Iris Stop Operations.

Iris Stops are a medium pressure alternative to stopples with many added benefits. From smaller diameter insertion holes, which help preserve the integrity of the pipe, to a more cost effective operation with expensive fittings no longer being required.

Faster immobilisation times contribute to a saving of at least 2-4 days in leadtimes.

Lightweight equipment in comparison to stopples.

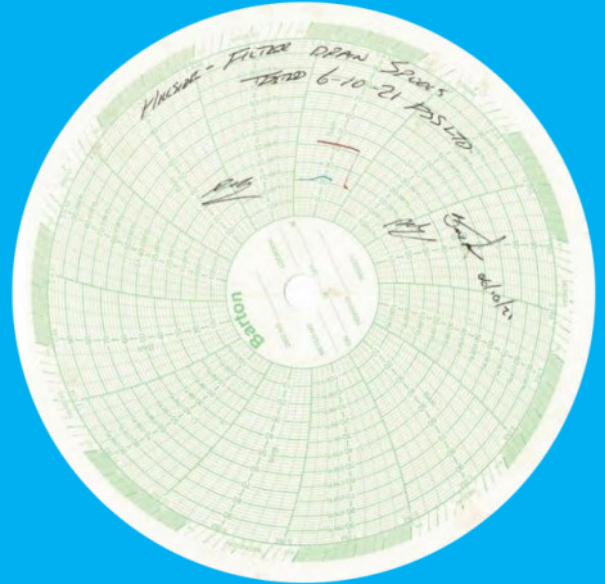
For further details contact :

John.eastwood@flowstopservices.com



Pipe Testing

- **Hydrostatic Testing**
- **Pneumatic Testing**
- **APT Testing**



At Flowstop Services we offer various types of testing that can be performed on new and modified pipework. Our testing is undertaken by fully qualified engineers and full test reports are generated for the client for their records.

The testing processes are designed to prove the integrity of the new pipework and to ascertain if the pipework is capable of withholding the pressures that it will be subjected to.

A **hydrostatic test** is a pressure test in which the pipe or other component is pressurized to evaluate its integrity. This test is used to evaluate the structural integrity of pipeline or other pressure containing infrastructure. During the test, the pipe is filled with water and the water pressure is increased, held for a certain duration, and then released. The test is performed at pressures above the normal operating conditions of the pipeline.

A **Pneumatic test** is a pressure test very much like the hydrostatic test, in which the pipe or other component is pressurized to evaluate its integrity. During the test, the pipe is filled with air or nitrogen and held for a certain duration, and then released. The test is performed at pressures 1.5 times above the normal operating conditions of the pipeline. This normally should not exceed pressures of 7 bar.

APT testing is a way of testing the pipework using soundwaves. This is a technique that can drastically reduce the length of the testing time. It embodies the test principles of the gas networks procedures and also incorporates acoustic technology for monitoring and compensating for temperature changes during the pressure test. This is used to correct the pressure data.

Further Details are available on request.



Camera Surveys



At Flowstop Services we are able to offer a camera service to allow for live internal inspections of pipework. The camera system that we use allows us to inspect pipework from 3" up to 48".

By using this service we can help inform the client the route of the main and any unknown internal features that do not appear on any drawings or maps.

The camera equipment can be inserted into the main via specially designed end caps that can be installed after the pipe has been cut for an operation.

The system is capable of reaching a distance of up to 300m.

For further details please contact us.



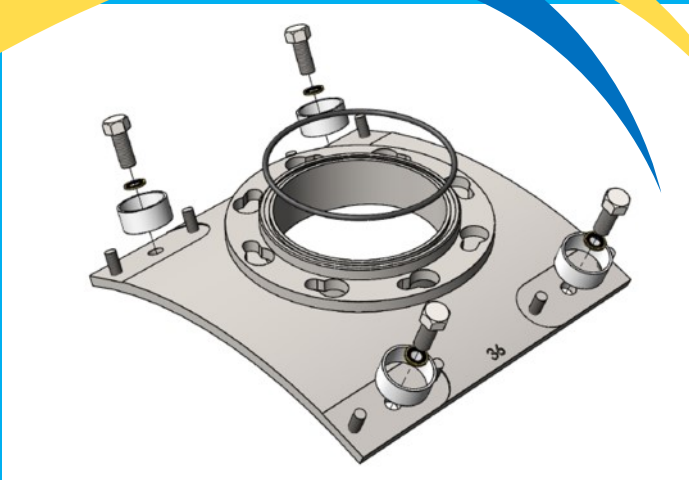
Bond & Bolt

Standard systems require large excavations including underneath the pipe to install chains. The Bond & Bolt saddle only requires the crown of the main to be exposed. The saddles are fixed to the main by means of a specially designed resin that adheres the saddle to the shotblasted main.

There are many benefits to the Bond & Bolt system:

- **Excavation and backfill cost are dramatically reduced.**
- **Pipe support is not required.**
- **Third party damage is vastly reduced.**
- **Drilled pipework can be plugged using standard non-tapped plugs.**

At Flowstops our technicians are fully trained in the installation of Bond & Bolt saddles .





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