Gas Service Insertion

Products & techniques for renewing old steel gas services through insertion of PE pipe.

The technique of renewing old steel gas services by inserting PE pipe has been in routine use throughout the UK since the 1980s.

Its major advantage is avoiding the need for excavations in the road, footpath or on consumers' premises, apart from one small excavation just outside the building to gain access to the service.

Steve Vick International has been involved in the development of this technique since its inception and has been responsible for producing approved sealants for filling the annular space between the old service and the inserted PE and for designing the required application equipment.

Dead Service Insertion

The annular space in dead inserted services can be filled either with FULLSEAL™ or with FOAMPACK™ resin foam. FULLSEAL™ is premixed whilst FOAMPACK™ is a two-part foam and hardener which is easily mixed in sealed sachets for operator convenience and safety.

Live Service Insertion

The Live Service Insertion technique, using our patented FOAMPACK™ product, allows companies to renew gas services without interrupting the mains supply and without excavating in the road or footpath. This technique enables a substantial cost saving per service as well as significant safety benefits resulting from operators not working in the highway.

Rapid Service Isolation

The Rapid Service Isolator offers a safe and fast method of isolating a metallic low-pressure service under 'no gas' conditions, enabling the service to be safely cut and subsequently dead inserted with new PE pipe. From start to finish the process takes less than 3 minutes.

Equipment

Our range of equipment for Service Insertion includes a Service Taper tool which is a fast and safe method of chamfering the leading edge of PE prior to insertion. We have also developed a Live Service Removal Tool which solves the longstanding problem of how to remove a section of steel service inserted with PE.

GAS

WATER

NUCLEAR

CONTRACT SERVICES

SMARTESTER

HIRE

Gas Service Insertion Toolkit for ¾” Metallic Services

Using 17.5mm PE and FULLSEAL™ Annular Sealant

FULLSEAL™

FULLSEAL™ is a thixotropic sealant designed to fill the annular gap between the newly inserted plastic pipe and the existing steel service. It is suitable for services up to 2” diameter.

Benefits

- ***Cost Effective - the most cost-effective sealant on the market and can be used when either PE or Serviflex™ pipe has been inserted.***
- *Easy to use – designed to be user friendly, FULLSEAL™ is supplied ready mixed in a cartridge avoiding the hassle of preparation.*
- ***Safe - FULLSEAL™ is completely inert, containing no harmful chemicals.***
- *Adaptable – while the sealant stabilises in the annulus, it doesn’t cure, allowing the service to be easily removed should any third-party damage occur.*
- ***Environmentally friendly – can be disposed of in general waste and the cartridges can be recycled.***

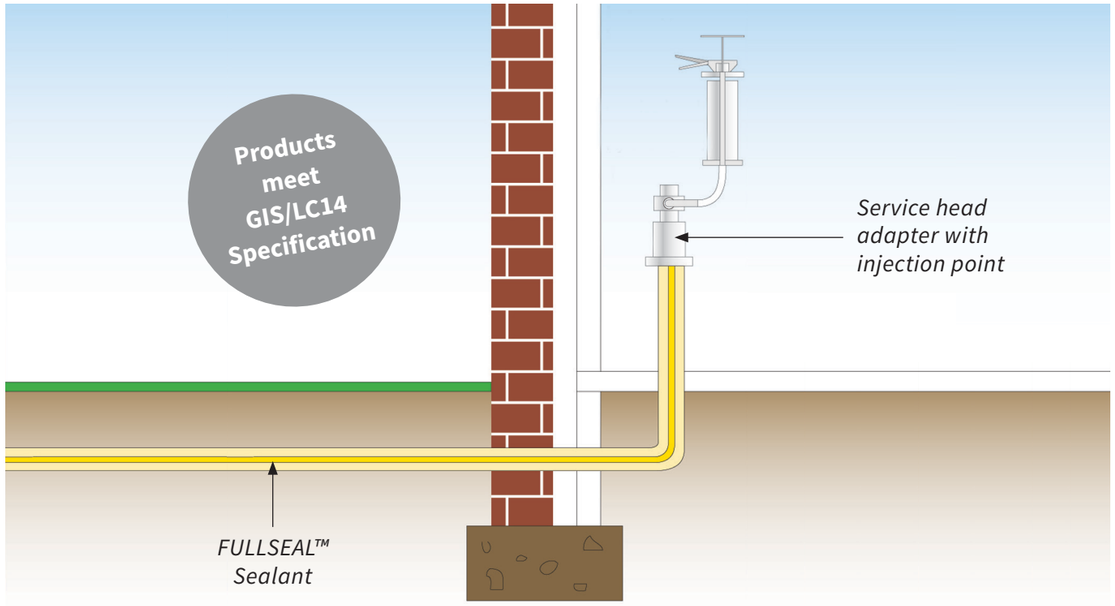
Application

FULLSEAL™ is injected through the service head adapter inside the building.

FULLSEAL™ is supplied in ready-to-use cartridges which are injected using the Steve Vick International Applicator Gun via the filling port at the service head adapter. Clear instructions are given on each kit to determine the correct volume of sealant required to fill the annulus to a point two metres beyond the building line. For example, one cartridge of FULLSEAL™ will fill 4.5 metres of 1” steel pipe inserted with 20mm PE.

A FULLSEAL™ kit comprises three 1 litre cartridges, three injection nozzles, waste bags, disposable gloves and an instruction leaflet. The only additional tooling required is the Steve Vick International FULLSEAL™ Applicator Gun. Please note that cartridges can be recycled.

FULLSEAL™ kit



FOAMPACK™

FOAMPACK™ is an annular sealant that can be used when a steel service has been inserted with PE pipe. FOAMPACK™ comprises PU foam and hardener contained in a two-part sachet. Once the central strip is removed from the sachet, the contents can be thoroughly mixed together without the operator coming into contact with the product.

Benefits

Extensive Distance – being an expanding sealant, FOAMPACK™ provides an extensive distance of travel when longer lengths of annual space need to be filled.

Application

Once the foam is mixed, it is placed in a cartridge supplied in the kit and pumped into the service head adapter using the Steve Vick International Applicator Gun.

FOAMPACK™ kits, with pre-measured sachets of foam, are available for the length and diameter of the service being inserted. A table showing the correct volume for each application is included in the kit.

FOAMPACK™ kit and applicator gun

Live Service Insertion

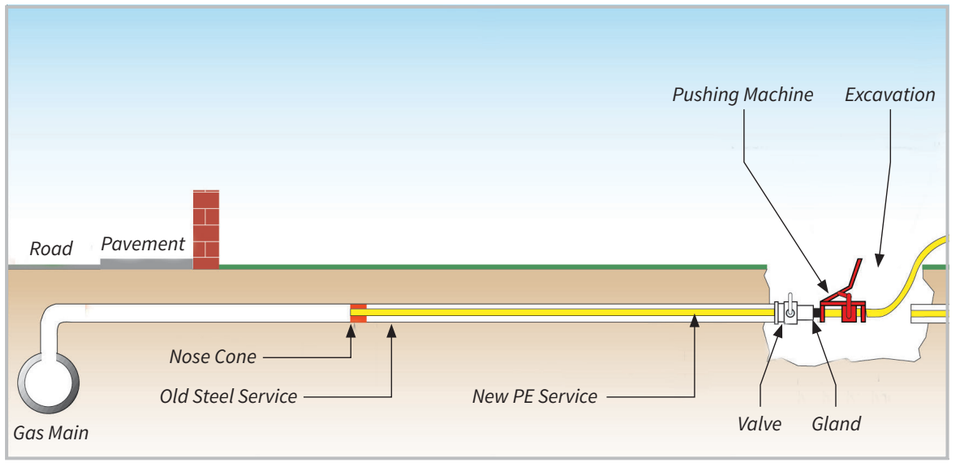
The Live Service Insertion Technique has been designed for steel services up to 2” in diameter operating at low pressure. An excavation is usually made at a suitable location within the property boundary. If required, no-gas cut off may be carried out prior to insertion.

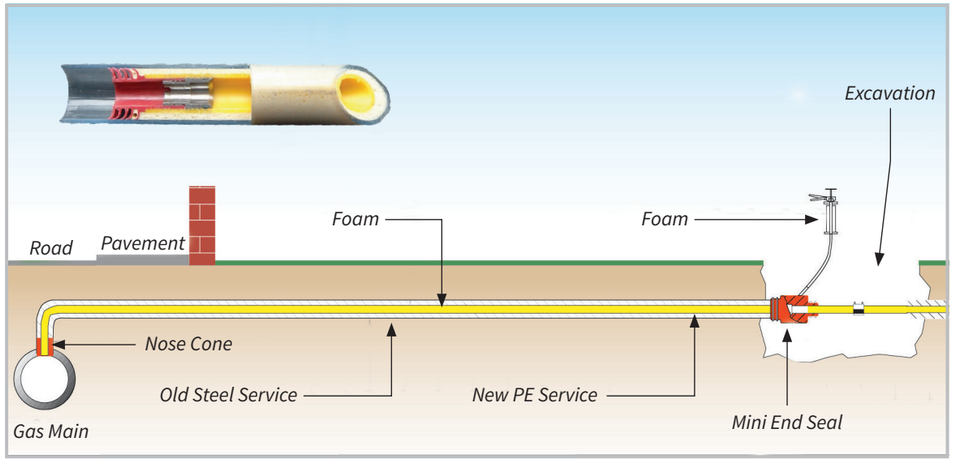
Benefits

- ***Cost Effective – substantial cost saving as a repair or cut-off method and reduced reinstatement costs.***
- *Minimises Disruption – no need to excavate in the road or footpath.*
- ***Improved Safety – avoids the risk of personnel working in the highway and equipment is lightweight.***
- *Support – training, technical support and step-by-step guides are available.*

Method

After disconnecting the meter, a flexible stopper is used to temporarily seal the live service pipe and a valved gland assembly is fitted to the end of the carrier pipe. The stopper is then withdrawn into the gland. The gland and stopper are removed, and the gland unit is refitted to allow the service to be measured with a flexible rod, whilst the gas pressure is monitored. When the nose cone enters the main, the pressure should rise to full district pressure. The nose cone is then pulled back into the carrier pipe by 50mm. This reverses the position of the fins and creates an effective seal against mains pressure.





Rapid Service Isolator

Developed by Steve Vick International, this technique allows an operative to isolate a live, metallic low-pressure service (up to 75mbar) under ‘no gas’ conditions to enable the service to be safely cut and subsequently dead inserted with a new PE pipe.

The Rapid Service Isolator technique has been designed as a safe alternative to the common practice of isolating a live service by first wrapping it in grease-based tape and cutting through the tape and the service to minimise blow.

Coming Soon the RSI Sealant Removal Kit!

Benefits

- ***Safety – a safe method of cutting through live services in ‘no gas’ conditions prior to dead insertion.***
- *Minimises Disruption – service can be isolated close to the main to minimise excavation.*
- ***Speed – only take a minute to drill the service (5mm hole) and the entire process takes less than 3 minutes. There is no waiting time once the sealant is injected – the service can be cut immediately.***
- *Compatibility - Modified jaw locking pliers fit all sizes in the range (¾” to 1¼”).*
- ***Non-Hazardous – sealant is inert – no health/handling hazards.***
- *Environmentally Friendly – part used cartridges can be re-used.*
- ***Flexible – can be used on bends/sockets and top tees.***
- *Zero Interference – if sealant accidentally enters the main it crumbles presenting no interference.*
- ***User friendly – kit is compact and lightweight.***

The Rapid Service Isolator Kit contains everything required to carry out the technique; the sealant is purchased separately.


Applicator Gun


Air Drill


*Sealant**


Drill Bit Gland


Barrel Nipple

Method

The procedure allows the service to be cut as close to the main as possible to minimise the size of the excavation required.

1. *A pair of specially modified jaw locking pliers with a built-in gland and rubber seal is attached to the service at the point of isolation (this can be on a vertical or horizontal section) close to the main.*

2. *Using an air operated drill and a 5mm bit, drill through the gland and into the service. Once drilling is complete, withdraw the drill to the point where the valve can be closed. Remove the gland and attach the barrel nipple.*

3. *Screw the sealant cartridge onto the barrel nipple then slide the RSI applicator gun over the cartridge. Open the valve and inject the correct quantity of sealant. This is marked on the cartridge, e.g. half a cartridge for a 1” service. The cartridge may be resealed for later use.*

4. *Test for a gas-tight seal and cut through the service. Place a temporary cap over the cut end of the service and remove stub following approved procedures. Fit either a plug or new top tee to main.*

The above steps must be carried out following approved procedures.


Drill Bit - Short fluted 150mm


Specially modified jaw locking pliers

Equipment & Consumables

LIVE SERVICE INSERTION

Red Mini ENDSEALS™ are available for 1”, 1¼”, 1½” and 2” diameter.

Red Nose Cones are available for 20mm in 1”, 25mm in 1¼”, 32mm in 1½” and 32mm in 2”. Only Red Mini ENDSEALS™ and Red Nose cones can be used in the Live Service Insertion technique.

FOAMPACK™ Kits are available in various sizes from 200ml to 1200ml to accommodate the diameter and length of the service being inserted.

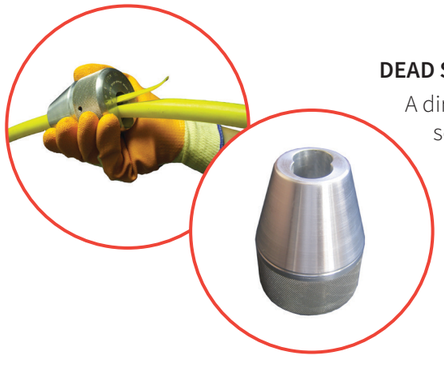
The use of the manual Pipe Pushing Machine is vital in the Live Service Insertion technique to ensure even pressure on the PE as it is inserted, to avoid excessive damage to the fins of the nose cone.

The Live Service Insertion Hardware Tool Kit contains everything required to carry out the procedure.

The Rapid Service Isolator offers a safe, fast method of severing a live gas metallic service in ‘no gas’ conditions. Suitable for services from ¾” to 1¼”.

The Live Service Removal Tool solves the longstanding problem of successfully removing a section of metallic pipe to expose the PE.

This heavy duty FourWheel Cutter is especially adapted for cutting inserted steel services and is designed for work in areas where a complete turn is impossible.



DEAD SERVICE INSERTION

A direct replacement for grout, FULLSEAL™ is an annular sealant for dead service insertion. It is cost effective, environmentally friendly and easy to use.

When dead inserting gas services it is routine to chamfer the leading edges of PE to aid speedy insertion. The Service Taper Tool avoids the unsafe method of achieving the chamfer using a knife or hacksaw which could lead to serious injury.

Gas Service Insertion Toolkit for ¾” Metallic Services

Using 17.5mm PE and FULLSEAL™ Annular Sealant

This toolkit enables an existing ¾” metallic gas service to be relined with 17.5mm PE from a small excavation outside the property back to the existing meter, thus avoiding the need to relay the service or re-site the meter.

The toolkit has been developed by a PE manufacturer, in conjunction with Steve Vick International, to ensure that the 17.5mm service pipe is installed correctly whilst minimising any installation damage to the PE. Insertion of the new PE pipe is via a push/guide technique using the dedicated components contained within the toolkit in order to minimise undue stress on the PE.

Benefits

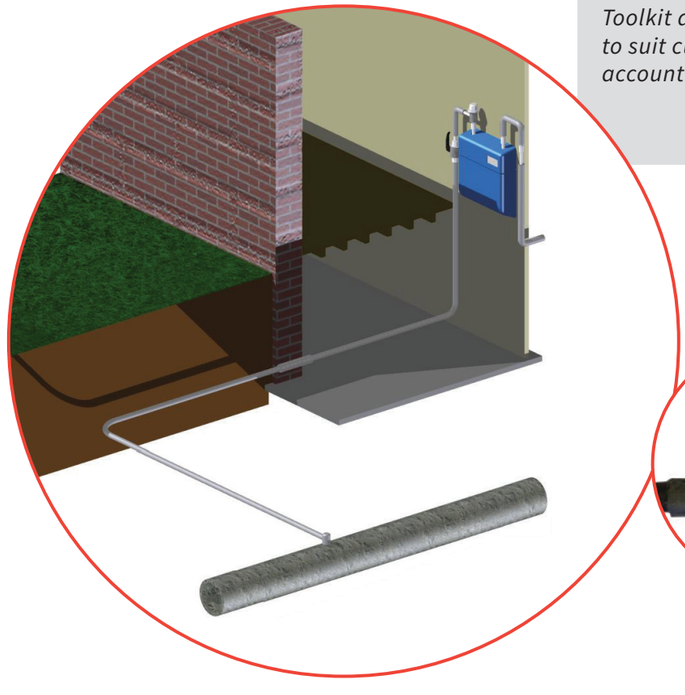
- ***Increased Supply Capacity - Being able to insert 17.5mm PE directly into an old ¾” metallic service significantly increases the supply capacity compared with the traditional 16mm PE.***
- *Compatibility - Pipe manufacturers designed 17.5mm PE specifically to offer adequate clearance for insertion through a ¾” metallic service whilst offering the largest possible internal bore for gas flow characteristics.*
- ***Speed - utilities who have used the technique found that they were able to achieve service renewals in just 30-40 minutes per property which compares very favourably with relaying the service or re-siting the meter.***

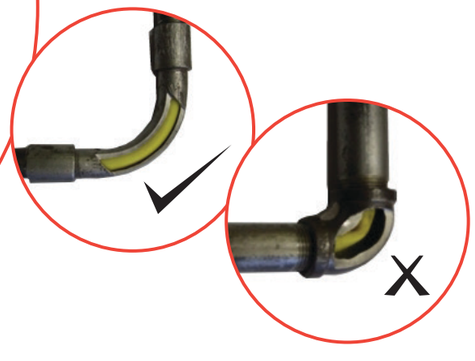
Application

The technique for inserting existing ¾” steel services with 17.5mm PE is suitable for low pressure services that have no more than three bends. The PE manufacturer supplies an 8.3m reel in order to ensure no more than 8m of 17.5mm is installed to maintain pressure and flow of gas to the property. For longer service lengths the 17.5mm can be electrofused to a larger PE pipe coming off the gas main but must always adhere to relevant codes of practice.

As with all newly inserted service pipes, the annular gap needs to be filled in accordance with network/ GISLC14 specification. For this technique, FULLSEAL™ sealant is injected via the service head adapter and comes premixed, removing the need for any preparation on-site (see page 2).

On the next page are the contents of a typical Toolkit although these may be customised to suit customers’ requirements taking into account existing tooling.





Gas Service Insertion Toolkit for ¾” Metallic Services

Items found in a typical Toolkit

About Steve Vick International

We are experts in innovative engineering for trenchless renovation and decommissioning of pipes worldwide.

Since our foundation in 1981, we have been dedicated to delivering cost-saving solutions for damaged, redundant or outdated underground pipe work. We are at the forefront in developing products and techniques across gas, water, nuclear and contract service sectors on a worldwide basis.

We are proud of our reputation for innovative product development, strong technical support and after sales care.

For more information on any of the products and services featured here, please contact: ***info@stevevick.com***

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