

New Build Guidance Document

March 2021



## Disclaimer:

Although the greatest of care has been taken in the compilation and preparation of this document, Phoenix Natural Gas respectfully accepts no responsibility for any errors, omissions or alterations or for any consequences arising from the use, or reliance upon the information in this document.



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## Definitions

**Low Pressure:** The usual operating pressure of the network, which does not exceed 75mbar (gauge)

**Medium Pressure:** The operating pressure in the Gas Main and Service when it exceeds 75mbar (gauge). In these circumstances additional safety features apply to the design of the meter installation.

**Gas Main:** Underground pipe network for distributing gas throughout the property development, feeding more than one property.

**Gas Service:** Underground pipe for conveying gas to premises from the gas main

**Installation Pipe:** The pipe work in a consumer's premises between the outlet of the meter and the appliances

**Meter Box:** A purpose made glass reinforced polyester moulding to house domestic and small non-domestic meters.

**Meter Compartment:** A room or cupboard specifically designed to house the meter installation

**External Service Riser:** A riser attached to the outside of a building, feeding an internal gas supply

**Regulator:** A device whose function is to control pressure in a gas stream

**ECV:** Emergency Control Valve. Used to isolate an individual installation

**Ventilation:** The movement of air and its replacement with fresh air because of wind and temperature gradients

**Gas Transporter:** A company licensed under the Gas Act to operate pipes on a network and has control over them for conveying gas

**N.J.U.G:** National Joint Utilities Group



## 1. Introduction

These guidelines will provide Architects, Developers, Builders and Construction Workers with the relevant information and guidance on the installation of natural gas apparatus within domestic new build developments.

Phoenix Natural Gas New Build Sales Managers and Engineers will, where possible assist you with any enquiries you may have regarding the installation of natural gas apparatus within your Development.

## 2. Scope / British Standards:

Information contained within this document includes gas mains and service requirements. This document contains practical guidance and should not be a substitute for current British Standards, Gas Safety (Management) Regulations (Northern Ireland) 1997, and IGEM gas standards.

As stated in Gas Safety (Management) Regulations (NI) 1997, only competent persons are permitted to design, construct and commission gas installation pipework. The standard also states that competent personnel should only commission gas consuming equipment and appliances.

In the event of any conflict between this document and the relevant British Standard or IGEM gas standard, the current edition of the British/IGEM Standard should prevail.

## 3. Communications

For general queries regarding natural gas installations on your Development please contact us on:

Tel: 07800 626010

Email: [Eunice.mcclune@phoenixnaturalgas.com](mailto:Eunice.mcclune@phoenixnaturalgas.com)

## 4. Safety Information

### 4.1 Safe Place of Work

Safety legislation dictates that Phoenix Natural Gas Ltd has a duty of care to ensure that a safe place of work is provided for all of its Workers and Contractors.

In order to facilitate this requirement, it is the responsibility of all Builders to ensure that their site is maintained as a safe place to work whilst our Workers and Contractors are onsite.



Upon arrival to site, all Phoenix Natural Gas Workers and appointed Contractors shall report to the Site Manager/Supervisor and where necessary receive a safety site induction.

Upon entering the site, the workers will complete a dynamic risk assessment prior to starting any works.

If following this assessment, it is deemed that the works cannot be undertaken safely, the Site Manager will be informed and the issues identified during the assessment will be discussed.

Until a safe working environment is achieved, no activities will be undertaken.

Phoenix Natural Gas (or its Contractors) will refuse to work on any site which is not deemed to be safe. Any lost time as a result of this will be at the Developer's costs.

## 4.2 Site Rules

All site information should be made available to our workers upon arrival to site (either via a site induction or during the signing on stage).

## 4.3 Machinery, Equipment and Materials

The Site Manager shall ensure that all machinery, equipment and materials under their control is operated and stored in such a manner that they do not become a hazard to our workers whilst they complete gas installation works.

## 4.4 Scaffolding

Where works are to take place within an excavation to lay underground pipework the Site Manager is responsible for ensuring that all scaffolding is removed prior to our arrival on site.

Under no circumstances will Phoenix Natural Gas workers or any of its Contractors work in an excavation near or under scaffold.

## 4.5 Competence

Any staff and/or appointed Contractor working on behalf of Phoenix Natural Gas shall have the appropriate training, technical knowledge and experience to carry out the intended works in a safe and efficient manner.

## 4.6 Construction Design Management Regulations (CDM)

Phoenix Natural Gas Ltd. will act as the 'Designer' and 'Contractor' for the construction and commissioning of gas networks on new property developments.



The gas mains, services and meters that will be installed on the development will remain the property of Phoenix Natural Gas Ltd.

Phoenix Natural Gas Ltd will be responsible for the operation and maintenance of the network on behalf of the Gas supplier.

As gas apparatus is installed within the site, Phoenix will supply updated utility records to the Builder to highlight its location.

It is recommended that before any further excavation/groundworks are completed in the vicinity of gas apparatus, that all relevant workers be fully briefed on its location and advised to complete the required works with due care and attention.

## 4.7 Recommended Positioning of Utility Apparatus

In accordance with the Institution of Gas Engineers and Managers guidance and Health and Safety Executive expectations, gas mains and services must be laid at the depths specified in **Sections 6 and 7 of these guidelines**.

**The typical NJUG position of the gas main and other utilities apparatus in a footway is shown in Diagram 1 below.**

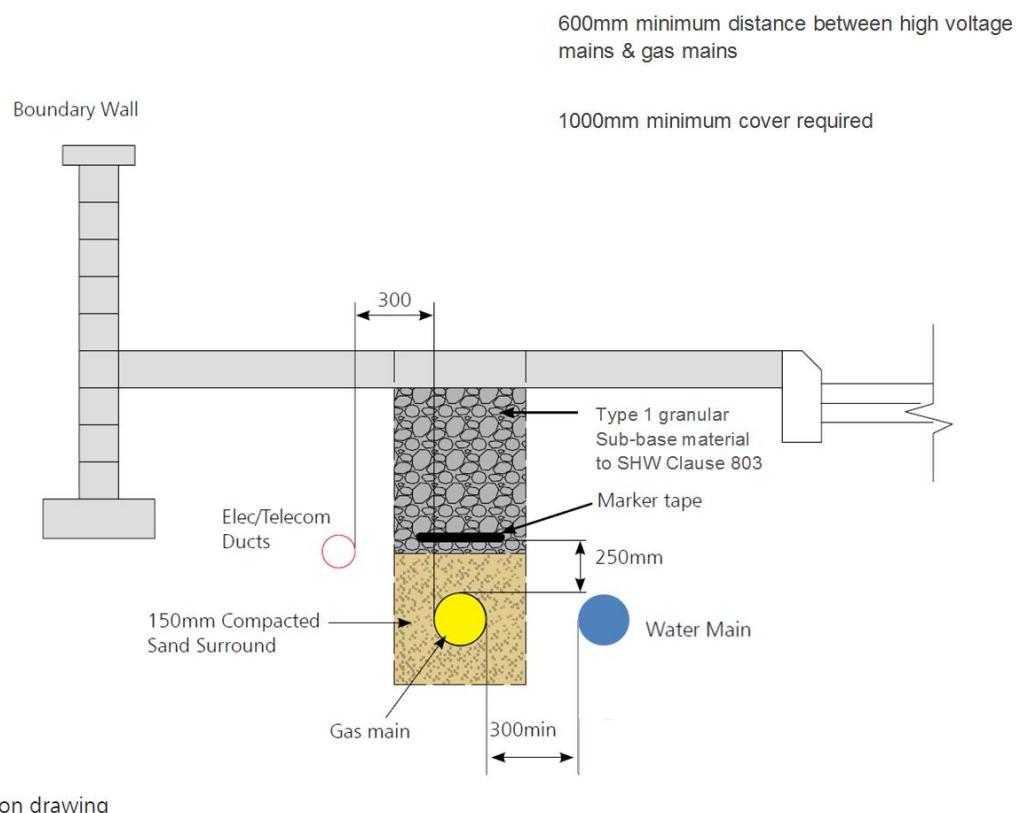


Diagram 1.

## 4.8 Gas Emergencies

It is imperative that any gas apparatus installed is not damaged and it is the responsibility of the Builder to ensure that ALL contractors working on their site are informed of the location of any gas apparatus that could be affected by their works.

The most up to date gas utility drawing showing the location of existing gas apparatus should always be on site and be readily available.

Damage to gas mains and services must be reported immediately to the Northern Ireland Gas Emergency Service on 0800 002 001 who will arrange for an Emergency Engineer to attend site and undertake any repairs.

Any damage to gas apparatus, no matter how slight, must be reported immediately to Phoenix Natural Gas Ltd.

For further information refer to HSE publication **HSG47 “Avoiding danger from underground services”** which gives detailed guidance on avoiding damage to underground utility apparatus such as gas mains and services, and includes information on detecting underground services and safe digging practices.

Free information is also available from the Phoenix Natural Gas website in the **Dial Before You Dig** section.

Any smells of gas should be reported to 0800 002 001 who will again arrange for an Emergency Response Engineer to attend site.

If there is an uncontrolled escape of gas onsite it is important that underground isolation valves are **NOT** operated, that all personnel are removed from the vicinity. It is also essential that no 3<sup>rd</sup> party workers enter into this confined space to attempt makeshift repairs and that all localised sources of ignition are controlled.

Please liaise with our Emergency Engineers once they arrive onsite to help establish the extent of the issue and provide as much information and assistance as possible.

## 5. Responsibilities

### 5.1 Architect's Responsibilities

It is the responsibility of Architects to ensure that all necessary provisions relating to gas installations as outlined within these guidelines are taken into consideration when designing the site layout and house types.

Phoenix Natural Gas advise that where natural gas is being considered as the fuel source for the proposed development that Architect's should agree gas meter locations on elevation and floor plan drawings at the design stage.



Please note that gas meters must be located in accordance with the requirements and legislation as outlined in this document.

## 5.2 Developer/Builders Responsibilities

The Builder is responsible for ensuring that the on-site requirements detailed below are met:

### 5.1 General

- That the agreement to permit the installation of a gas distribution pipeline on the property has been completed.
- Ensure where required that kerb lines have been installed prior to scheduling work with Phoenix Natural Gas.
- Carry out all necessary excavation, dusting and backfilling work for the installation of gas mains, services and associated equipment.
- Maintain an obstacle free route to allow installation work to be carried out in one visit wherever possible.
- Ensure no work is carried out beneath scaffolding.
- Ducting supplied and installed by the Builder, can only be used for perpendicular road crossings for service connections only.
- Ensure only groundworkers who are trained and competent to lay ducting in accordance with the design drawing and the requirements of these guidelines.
- Lay gas marker tape, supplied by PNG, 150mm above gas mains, service pipework or ducting for mains and services before backfilling the trench.
- Within service tracks/excavations, all gas mains and services must be 300mm away from other utility services.
- Install where applicable recessed meter boxes, supplied by PNG, in accordance with these guidelines.
- Where applicable provide a suitable safe access platform for installation of all gas riser works
- Ensure that the gas riser entry points into the building and through floors on flatted properties, have been suitably drilled and sleeved without the need for off-setting the pipe work



### 5.3 Phoenix Natural Gas Responsibilities:

Phoenix Natural Gas is responsible for ensuring that the gas network is designed and installed in accordance with legislation.

It is also responsible for ensuring that Builders are aware of their responsibilities as outlined in this document.

Builders / developers should receive the following information from Phoenix Natural Gas:

- A contract/agreement (to be signed and returned to Phoenix)
- A design drawing showing the route for mains and services
- Floor plans and elevation drawings showing approved meter locations
- A copy of this Phoenix Natural Gas New Build Installation Works Guidance
- A copy of construction and contact information (to be displayed in the site office)
- A digital information pack for new customers including:
  - New build handover card(s)
  - Notice to Foreman information
  - Welcome letter for new Customers
  - Pay As You Go Meter information (if applicable)
  - Information relating to work planning/programming

## 6. Installation of Gas Mains

### 6.1 General:

A pre-start site meeting will be arranged at the start of your development. At any stage of construction, you can contact PNG New Build Sales/PNG New Build Engineers for advice and guidance.

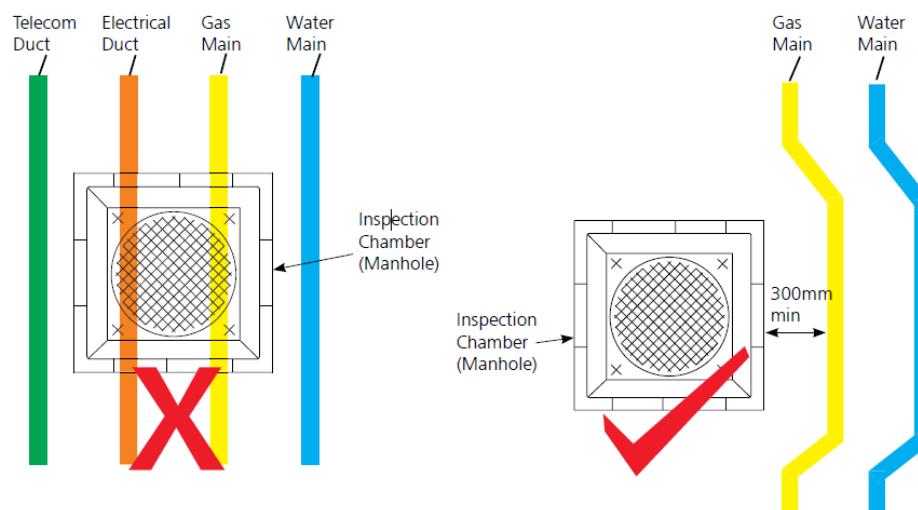
It is desirable that the Developer agrees a programme of construction which will enable Phoenix Natural Gas to co-ordinate main laying activities, within our set timescales.

Timescales are particularly important when off-site mains must be laid and approval is required from the Local Highways Authority to work in the public highway.

The Builder is responsible for all excavations, duct laying and backfill/dusting of installed gas apparatus on site, unless otherwise specified within the quotation.

All gas mains must be installed by PNGL or a PNGL appointed contractor in a pre-excavated trench provided by the builder. A full kerb line will be required in order for gas mains to be laid.

Under no circumstances may gas apparatus be included in an inspection chamber with other utilities/services or drainage/sewage systems. A distance of 300mm must be provided when a gas main is placed adjacent to an inspection chamber. See illustration below.



If there are any alterations to the agreed site layout, which may affect the route of the gas main, then Phoenix Natural Gas must be advised immediately.

Any engineering difficulties must be identified along the proposed route. Engineering difficulties include, but are not restricted to, river crossings, railway lines, contaminated land, retaining walls, steep gradients, attenuation tanks, sustainable drainage equipment etc.

Please advise PNGL of any difficulties that may be encountered onsite as this may affect the route selected and any external bodies who may need to be consulted.

***Please note:*** If PNGL are not advised of any difficulties that will affect the quoted works, additional costs incurred may be passed on.

## 6.2 Mains Excavation depths and proximities

The minimum depth of cover for mains and ducts should be as per the table below in footways roadways/verges from the finished ground level.

The trench should be approximately the pipe diameter plus 300mm wide and minimum cover plus the pipe diameter deep.

Phoenix Natural Gas have the right to refuse to complete connections to gas mains laid at the incorrect depths. In such instances, the developer may be liable for the cost to re-lay the mains at the correct depth.

Type of Gas Main	Pipe Location		
	Road	Footway	Grass Verge
Medium Pressure (4 bar) gas main	1000	1000	1000
Low Pressure (75mbar) gas main	750	750	750

### 6.2(a) Proximity distances

Proximity distances from buildings are required for the open trench provided by the builder and must be maintained at all times. These distances are outlined below:

Operating Pressure of gas main	Required proximity from buildings
Medium Pressure (4 bar)	3 metres
Low Pressure (75 mbar)	1 metre

### 6.3 Storage and Handling of PE pipes:

In preparation of Phoenix Natural Gas completing work on-site, there is a requirement for the developer to responsibly store any pipe and fittings delivered to the site.

The following guidelines identify best practice; however further guidance and advice can be provided by the PNG New Build Engineer or by making reference to the Institution of Gas Engineers and Managers publication IGEM/G/8, "Handling, Transport and Storage of PE Pipes and Fittings".



- Gas Pipe and associated equipment will be delivered directly to site and must be visually inspected on delivery and any damage immediately reported to PNG.
- Any loss or damage occurring after delivery will be chargeable to the Builder.

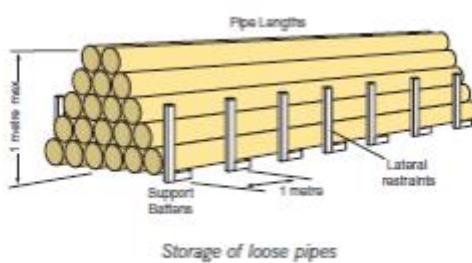
### **Storage:**

Careful consideration should be given to the following aspects:

- Security of all materials and equipment from theft, vandalism, accidental damage or contamination. Precautions should be taken to prevent debris and water from entering pipe and fittings. (Pipe end caps on coils, intended to prevent ingress of contamination, should be kept in place during storage).
- Safety of the site workers and any members of the public, especially children and blind persons.
- The movement of traffic and construction equipment.
- All pipe store locations should be on a suitably firm hard standing, level ground, free from ground water, mud and other damaging material with adequate access for construction vehicles and/or lifting equipment.
- Badly stacked pallets, coils or bundles may slip or collapse, causing injury to personnel and/or damage to the pipe.
- Pipe and fittings are not to be stored on the ground, suitable pallets or wooden battens should be the interface between the ground and material.
- Care should be taken to prevent damage to, and distortion of, pipe ends and fittings

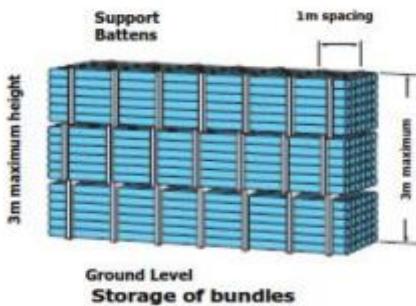
### **Individual Pipe Lengths**

Pipe lengths stored individually should be stacked on clear level ground in a pyramid not more than one metre high, with the bottom layer fully restrained by wedges. The bottom layer of pipes should be laid on timber battens at one-metre centres.



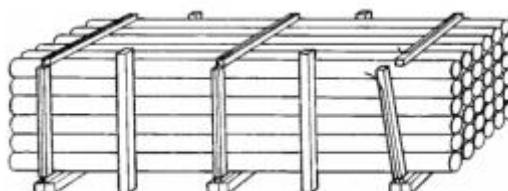
### **Bundled Pipe Lengths:**

Bundled packs of pipe should be stored on clear, level ground, with the battens supported from the outside by timbers or concrete blocks. For safety, bundled packs should not be stacked more than three metres high.



### **Broken bundles**

Where pipe lengths are to be removed from a bundle, it should be from a single bundle with no unbroken bundles underneath; stakes should be securely fixed to retain the bundle shape whilst stock is drawn from the bundle.



### **Large Coils (diameter ≥63mm)**

Coiled pipe should be stored flat, especially during periods of warm weather, and on firm level ground which has suitable protection for the bottom coil. Where space is limited, and coils are to be stacked, the height of stacked coils should be such that the stack is stable, and the uppermost coil can be safely handled.

Under no circumstances should the stack exceed 2.0 metres in height.

Wooden battens placed below the bottom coil and used as spacers between each layer will facilitate easy access for slinging.

When the need for transportation is required, it should only be carried out by trained operatives. Batches of coils delivered on pallets must remain secured to the pallet and only be broken at the time of use.

**WARNING: Due to the amount of stored energy present within such coiled pipes and the possible risk of serious personal injury, under no circumstances shall a person not competently gas trained cut the bands on coiled PE pipe.**

## **7. Installation of Valves and Pressure Points**

Phoenix Natural Gas are required to install valves and pressure/purge points to allow for the isolation and maintenance of gas mains.

Once installed it is the responsibility of the Builder to construct the street furniture chambers vertically above this apparatus and ensure that they are left accessible to operate at all times.

Builders are to ensure that only the correct sections/risers/street furniture lids are used (as supplied by PNG) when constructing these chambers.

Valves and purge points should be centred in the middle of the chamber and must be accessible at all times. If any valve or purge points are covered over, it will be the responsibility of the new build contractor to excavate and make good any reinstatement at their own cost.

In the event of a gas emergency on a new build development, it is imperative that underground valves are not operated by 3<sup>rd</sup> party personnel.

NOTE: Detailed guidance relating to the procedure to be followed when constructing these chambers is provided in Section 12 of this guidance document.

### Purge Points.

These are normally installed at the end of the mains and are used to purge the gas main.

Purge points are installed onto gas pipes and used either for purging out any excess air, or pressure monitoring of the network. They can be commonly found the end of legs of mains, and either side of valves, they can also be found in other locations.

On a construction site where the mains are being laid in stages/phases it is now our policy to lay these “temporary” purge points horizontally to reduce the potential for damage when completing excavation works to extend mains or other services within the development.

It is important that when preparing excavations for extensions to mains or service connections from existing mains that only hand digging takes place as per the requirements of HS(G) 47 to reduce the potential for damage, and that those completing the works have been briefed on the location of existing apparatus and issued with up to date as laid drawing information.





Permanent purge points are constructed as per the image shown.

#### Valves:

Valves are installed on gas main systems to facilitate isolation of sections of mains. Valves can be laid in both the footway and carriageway and access must be maintained at all times.

It is the responsibility of the Builder to construct these chambers as soon as practicable after installation. Phoenix Operations are to ensure that the necessary materials are delivered to the site. Should the necessary materials not be delivered, contact the Phoenix New Build Department (Sales or Engineering). Only materials supplied by Phoenix are to be used.

Should there be an uncontrolled release of gas on the site at any stage, contact the Northern Ireland Gas Emergency service (0800 002 001). **Do NOT operate any underground isolation valves.**



Both permanent purge points and valves require a chamber to be built around them. Types of street furniture used in chamber construction are detailed within Section 12 of this guidance document.

## 8. Installation of Gas Services

A service pipe is the pipe that runs from the gas main to the customer meter control valve. All gas services must be installed by PNGL or a PNGL appointed contractor in a pre-excavated trench provided by the Builder.

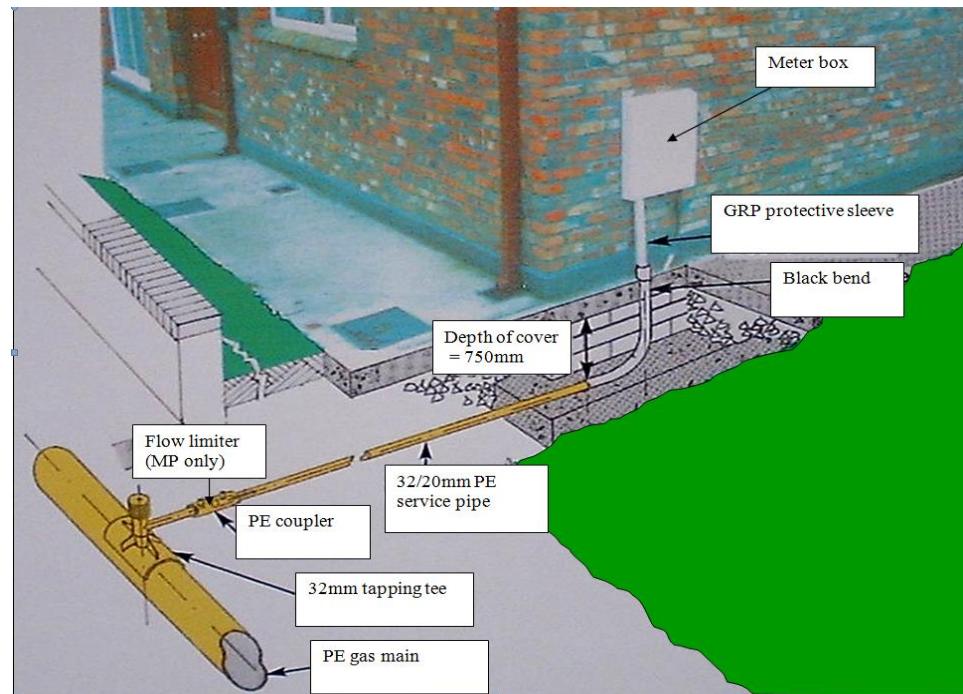
The Builder is required to undertake all excavation works on-site to enable the service pipe or service ducting to be laid, allowing the connection to the main and the service termination at the building to be completed.

All gas services must be laid in a straight line along the route shown on the agreed gas design drawing provided by Phoenix Natural Gas. The route must be perpendicular to the gas main and take the shortest possible route to the meter location. A gas service must not run parallel to the gas main.

The service pipe shall be inserted through a preformed PVC black bend and GRP sleeve as it rises to the chosen meter box. The preformed bend ensures the service pipe does not exceed its maximum bending radius and indicates the depth of the service pipe. The preformed bend should not extend above ground level by more than 25 mm. GRP sleeves should be vertically straight from bend to box and secured to the wall using an appropriate clip.

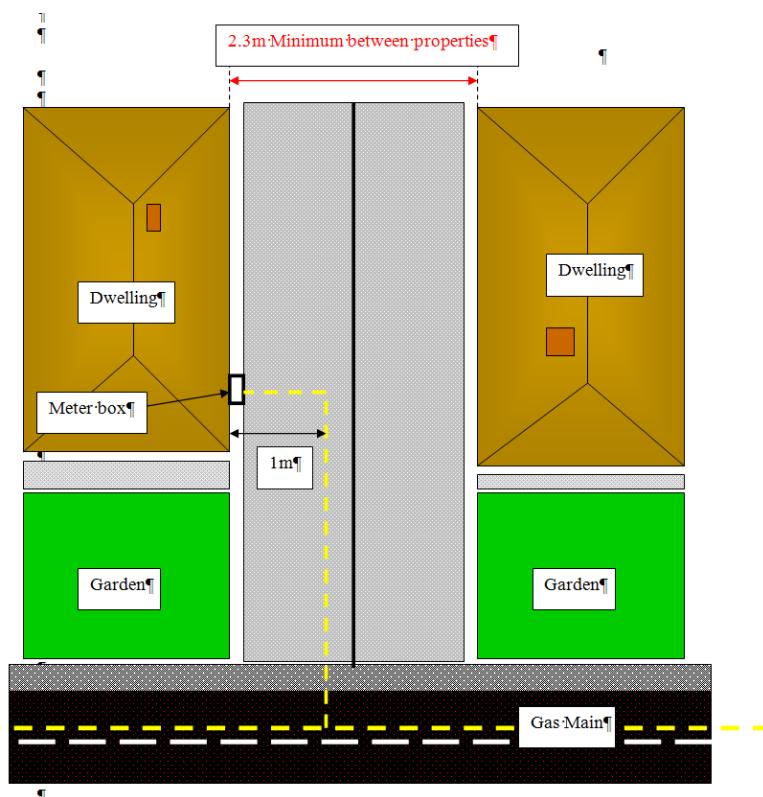
If the service is to be laid down the gable of a property, the service pipe must have a minimum of 1m clearance with the property wall for both Low pressure and Medium pressure services.

The trench for the gas service to each meter location shall be excavated to a depth to allow a minimum cover of 750mm to the top of the PE pipe for each service.



A 1m clearance must also be kept with neighbouring properties. The width of the trench must also be taken into account. Hence there MUST be a 2.3m clearance between gable wall and gable wall when laying a service down the gable wall of a property.

If there is not the required clearance please contact PNGL engineering to advise.



For reasons of safety the complete service must be laid to the meter box location on the first visit. 150mm minimum of dust shall surround the gas service PE pipework.

PNGL will lay the PE service pipework to the meter box. It is the responsibility of the Developer to dust these services before they are placed under test or commissioned. The service trench width shall be a minimum of 300mm plus the diameter of the pipe.

Gas marker tape (provided by PNG) is to be laid over this PE service pipework.

### Service Ducting & Excavation.

Where ducts are being used, the ducting must terminate at a minimum of 500mm from the service entry point to allow for the assembly and installation of entry fittings. Ducting must be used solely for the insertion of gas pipe and laid in straight lines perpendicular to the mains pipe.

A 1m square excavation is required at the gas main and below the meter box or service entry position to enable the service pipe to be connected to the gas main and terminated at the meter location.

The gas ducting must be to British Standard BS 4962 "Specification for plastic pipes and fittings for use as sub soil drains". This ducting can be supplied by Phoenix Natural Gas. The ducting must maintain a 1m proximity from the property when being laid down a gable wall.



The ducting should be a minimum of 60mm diameter, must be yellow and perforated along its entire length. It should be installed in a straight line between the meter position and the mains connection.

Under no circumstances should PE gas or water pipe or any other pipes be used as a duct. The ends of the duct must always be capped or plugged to prevent ingress of debris prior to service installation.

Gas marker tape (provided by PNG) must be placed 75mm above the entire length of the service ducts, irrespective of the service pipe being in a duct.

The duct must not be kinked, squashed or damaged and should be backfilled with fine material e.g., dust, sand or pea shingle to a depth surround of 75mm to prevent any damage occurring during final reinstatement and should have a rope inside to facilitate installation of the PE service pipework.

Service ducts must be laid with a minimum depth of 750mm (private and public) from the finished ground level.

Suggested good practice would be to take a photo image of the installed duct with a depth indicating board, prior to backfilling the excavation.

**IF THE INSTALLED DUCT HAS INSUFFICIENT DEPTH OF COVER OR NO MARKER TAPE HAS BEEN LAID ABOVE THE DUCT THEN THE SERVICE WILL NOT BE INSTALLED/COMMISSIONED, AND THE DEVELOPER WILL BE NOTIFIED.**

## 8.1 Siting of Gas Meters

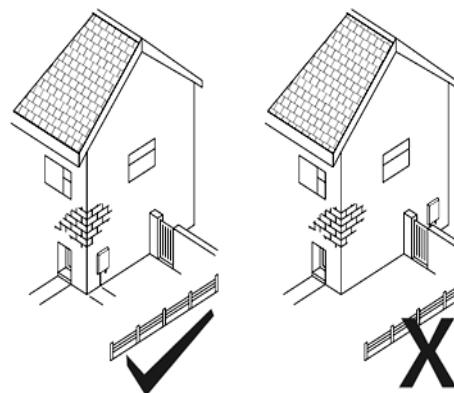
It is the Developer/Builder's responsibility to identify and consult with Phoenix Natural Gas to ensure that adequate provision is made for siting, installing and housing the meter installations.

The Developer should provide a site plan showing the required meter positions before the final design of the gas services can be approved. Once the design is approved, any variations required shall be submitted to Phoenix Natural Gas for approval.

Phoenix Natural Gas shall be the sole arbiter of meter positions.

The meter should be sited where it will not be subject to mechanical damage or vandalism. The meter should be in a location that is easily accessible to read the meter or carry out work on it and not be sited behind walls/fences etc. (see illustration opposite).

The 2m rule relates to the maximum distance that a meter box may be positioned down the gable wall of a property. If the customer requires the meter to be sited further down the gable, the extra length beyond the 2m is charged to the Customer as per the Phoenix Connection Policy rates.



Any alteration to a design must be discussed with and agreed by PNG in advance.

### **Meter installations shall be sited so that:**

- The installation is compliant with BS6400-1.
- The meter and or the regulator can be installed, adjusted, serviced and exchanged as necessary;
- The meter is easily accessible for inspection and meter reading;
- All functions of the installation can be easily operated e.g., ECV at an acceptable height.
- Does not create a trip hazard along access and egress routes.

### **A meter installation shall not be sited:**

- Where it might be exposed to extreme temperatures, excessive humidity, vibration, or ignition sources outside the operating range of the meter as specified by the manufacturer;
- Where it might be exposed to accidental damage, e.g. vehicular;
- Where it might cause an obstruction;
- Where it might be affected by a damp or a corrosive atmosphere e.g. under sinks or in bathrooms;
- Where it will constitute a danger to any person;
- At such a low level that there is a significant risk of it being submerged in the event of flooding;
- On the sole means of escape from the premises in the event of a fire unless the site where it is to be installed is such as to ensure, so far as is reasonably practicable, that the means of escape from those premises in the event of fire is not adversely affected; or
- In an unventilated space.

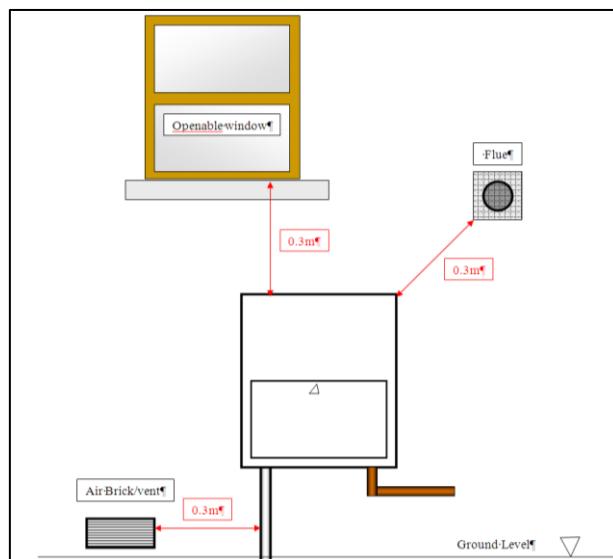
## 8.2 Meters located outside a property

All meter housings shall be designed and installed such that:

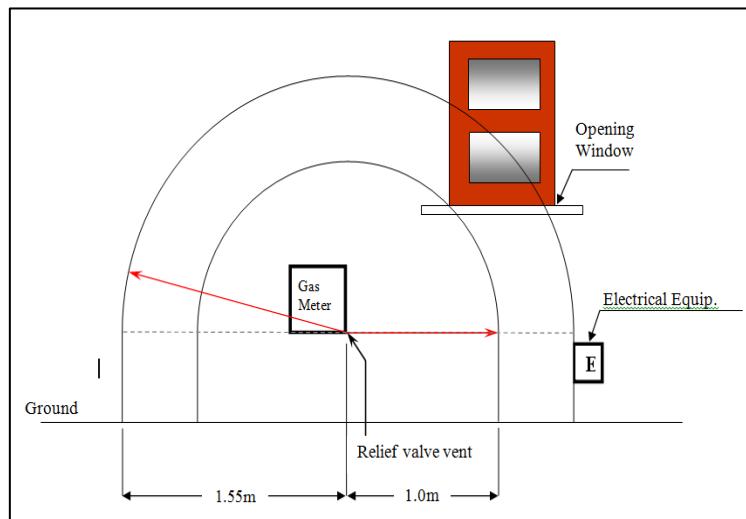
- They are impermeable to gas and do not allow escaping gas to enter the wall cavity or property;
- They give protection against the weather and acts of vandalism;
- They are positioned to be protected from impact e.g., vehicular or additional protective measures may need to be considered e.g., bollards;
- They are resistant to the surface spread of flame in accordance with BS 476-7:1997, Class 2;
- They do not bridge the damp proof course;
- Consumer access is gained only by a special key, and it is the Builder's responsibility to provide this key to the householder;
- The Consumer has ready access to the ECV;

No meter box should be sited in a location which will obstruct an opening such as windows, doors, air bricks, balanced flues etc.

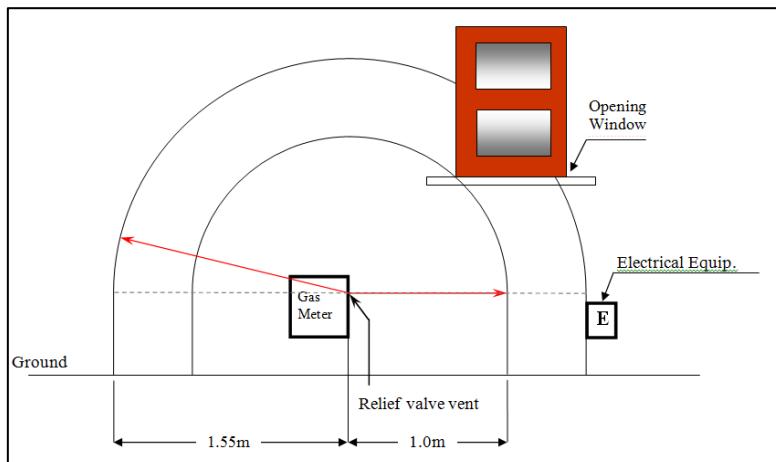
All meter installations shall be sited a minimum of 0.3m from such openings in Low Pressure areas and 1.0m from such openings in Medium Pressure areas. Refer to figures below and overleaf.



**Siting LP meters externally, clearances required**



**Clearances required for siting MP recessed/surface mounted boxes externally shown above**



**Clearances required for siting Medium Pressure multibox meterboxes externally shown above**

Further requirements:

- The meter shall not be located where it will adversely affect a means of escape in the event of a fire. It shall not be fitted under fire escapes or on stairs that form the only means of escape in the event of a fire.
- The chosen location shall not in any way constitute a danger to any persons.

- The meter control valve shall be easily accessible, so that customers can easily and quickly turn off the supply in an emergency. Consideration needs to be given to individual customers with disabilities. Information on all customer requirements should be forwarded to PNGL at the design stage in order to make allowances.
- It shall allow easy access for inspection, maintenance, adjustment and replacement of the meter and associated equipment.
- It shall allow for easy reading of the meter index.
- Meter locations inside a building are only acceptable where the meter will be installed immediately adjacent to where the service pipe enters.
- All meters should be located in well ventilated areas.

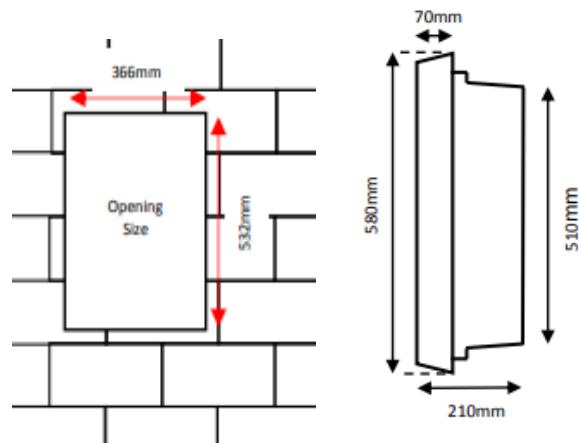
## 8.3 External Meter Box Types

- **Recessed Meter Boxes**

These boxes have been designed for insertion into the external leaf of a cavity wall.

The meter box is supplied by Phoenix Natural Gas but it is the responsibility of the Developer to cut the outer wall and fit the meter box. Recessed boxes should be installed between 500mm and 1000mm above finished ground level and above the DPC.

**The outer wall aperture required for fitment is  
532mm x 366mm wide.**



The box must be installed and sealed from water ingress by the Developer prior to the service installation.

It must be securely held in place to prevent any movement in the cavity and is not permitted to be installed in single skin buildings. The box must be installed and secured using cement or adhesive filler.

**The box must not be punctured (nailed or drilled) in any way. It must not be secured using screws or nails as this could allow any leaking gas to enter the cavity.**

**Service installations will NOT be completed to damaged fitted recessed boxes.**

Any electrical bonding equipment must not enter or be attached to any pipes or components within the meter box.

Downstream pipework installed by a Gas Safe registered installer, must pass through the prefabricated hole in the bottom right-hand corner of the box before entering the property.

All meter boxes shall conform to BS 8499. The fitting of meter boxes and the installation pipe is the responsibility of the developer and must comply with the current version of the Gas Safety (Installation and Use) Regulations.

Meters will not be installed in damaged, un-secured or incorrectly located boxes. A damaged meter box is in contravention of the Gas Safety (Installation and Use) Regulations and must not be installed.

If a box is damaged after being installed, then it must be replaced, before the gas service and meter are connected.

A meter will not be installed unless the door on a built-in box or surface mounted box is fitted or if the box is not installed to the correct level or adequately fixed to the wall.

### **• Surface-mounted meter boxes**

The base of the box should be located between 500mm and 1000mm above ground level and above the damp proof course (DPC).

It is essential that the installer's outlet pipework through the preformed hole in the bottom of the box before entering the dwelling.

The backplate is simply screwed to the wall, the meter assembly hung on it, and the cover and door added.

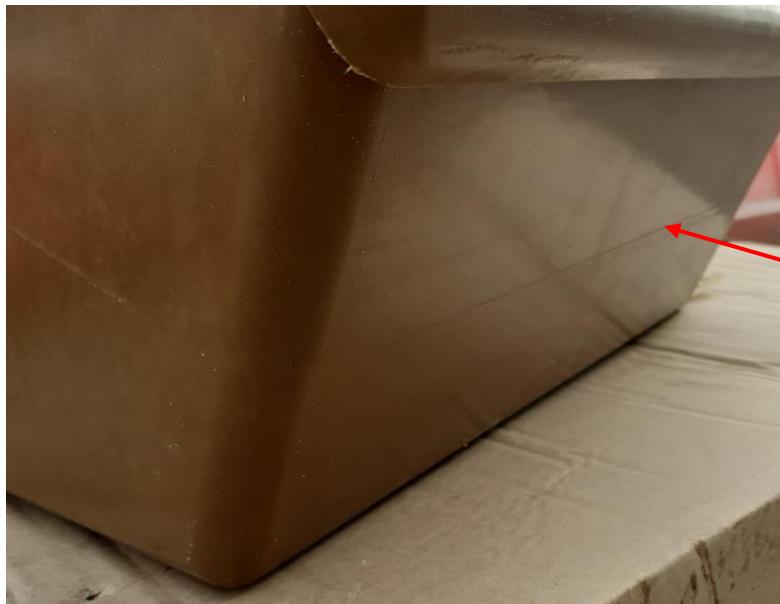
Meter Box Dimensions:

506 mm high (20 inches)  
450 mm wide (18 inches)  
203 mm deep (8 inches)



## Multi Box Meter Box

These meter boxes are designed to be mounted at ground level, with the base typically being buried up to 60mm below ground.



Line denotes  
finished ground level

**NOTE:** When multi boxes are to be used it is important that finished ground levels are marked and communicated to the installation team.

The weight of the box and the meter are supported by the ground; however, the box is anchored into position by screwing it to the external wall.

**NOTE:** These boxes are not meant to hang unsupported if finished ground levels have not been made up. It is the Builders responsibility to support the box/make up the ground level under the box to prevent damage to the box or the supply PE pipework as soon as possible after installation.

Downstream pipework installed by a Gas Safe registered installer, should exit the box from the prefabricated hole at the top right-hand side of the box.

The route that the downstream pipework takes is at the discretion of the customer and their downstream installer.

Types of Multi- Box available include:



Images above show LOW Pressure Multi Box



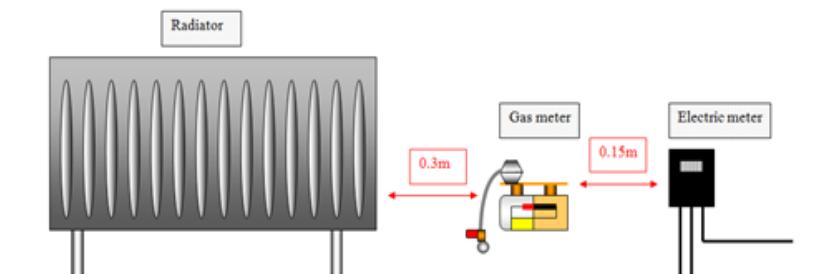
Images above show a MEDIUM Pressure multi box

## 8.4 Internal Meters

### 8.4(a) Meters located inside a property

- When an individual meter is installed internally within a domestic property a minimum clearance for a **low-pressure** internal meter of 150mm is required from an electricity meter or sockets

(see diagram below.)



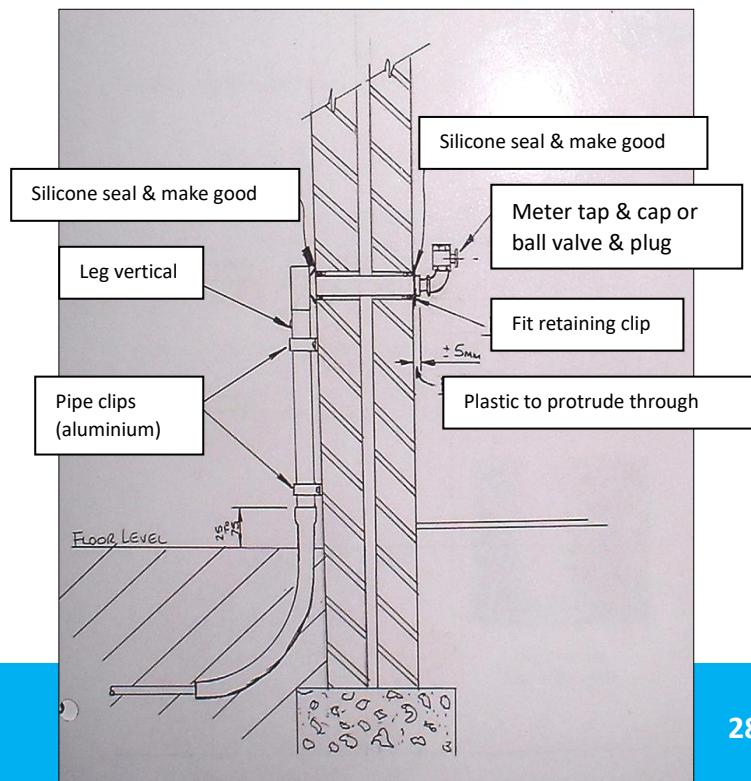
### 8.4(b) Above ground entry tee

Where the use of a meter box is deemed inappropriate, an above ground entry tee may be used.

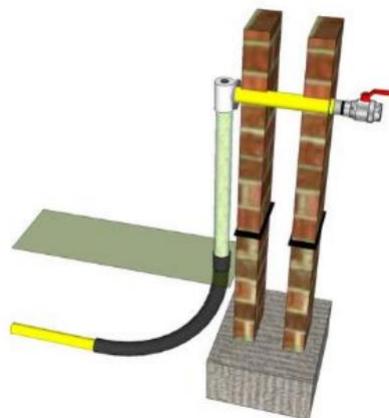
This is an option in **LOW PRESSURE ONLY** areas as medium pressure meters cannot be placed internally. Such entries are used where the dwelling is a terrace house or shop front and no garden is available to site a meter box.

The service pipe runs within a Glass Reinforced Plastic sleeve up the outside of the property to an entry tee fitting. The fitting allows the gas to pass through a continuous plastic-coated sleeve into the property.

The height of entry into the dwelling is variable, but it should be remembered that the meter and meter control valve are fitted as close as possible to the point of



entry and thus must be located at a comfortable height so that the customer does not have to overstretch to turn off the gas supply at the meter control valve if required.



## 9.0 Internal meters fed via external steel risers

Within multi-occupancy properties there is the option to install external gas service risers to supply multiple floors of a building.

An external riser supplies gas to elevated levels of a property via an external wall. If more than one meter is fed off the riser, it can be considered a gas main elevated into a vertical position.

A riser must contain an external fire valve located adjacent to the riser but at least 1m away from the building. This valve will be fitted within the PE pipe supplying the riser and the valve will require a chamber to be constructed to maintain access.

A typical steel riser is constructed of galvanised pipe jointed together using threaded sockets. Diameters range from  $\frac{3}{4}$ " to 6", the size being dependent on the number of meters being supplied and proposed calculated gas usage.

Not all risers can be of threaded design, those above 20m in height or greater than 2" diameter must be of welded construction or joined using end load compression fittings.



The riser should be positioned suitably such that it rises vertically, can be readily supported and avoids flues, vents and openable windows by at least 300mm.

Individual premises at each level are fed by lateral pipes. These laterals shall contain isolation valves and enter the property through a continuous sleeve. The concentric space between the sleeve and the pipe should be sealed with fire resistant mastic at both ends. As the steel enters the premises it must terminate with the standard Meter Control Valve (MCV) and meter arrangement.

Pipe clips restraining risers should not restrict movement caused by expansion or contraction, and should not be fitted within 500mm of a lateral tee.

For steel entries, cavity wall sleeving to be a minimum of 10mm greater in diameter i.e. 1" pipe, sleeve minimum 35mm (25mm + 10mm) with mastic fill. Builder screeding should not overlap sleeve ends. The steel lateral pipe is to be positioned centrally within this sleeve.

Riser systems should not be used in locations where they may be vandalised, unless suitably protected.

Phoenix Natural Gas and its appointed contractor(s) will be responsible for the construction of steel risers.

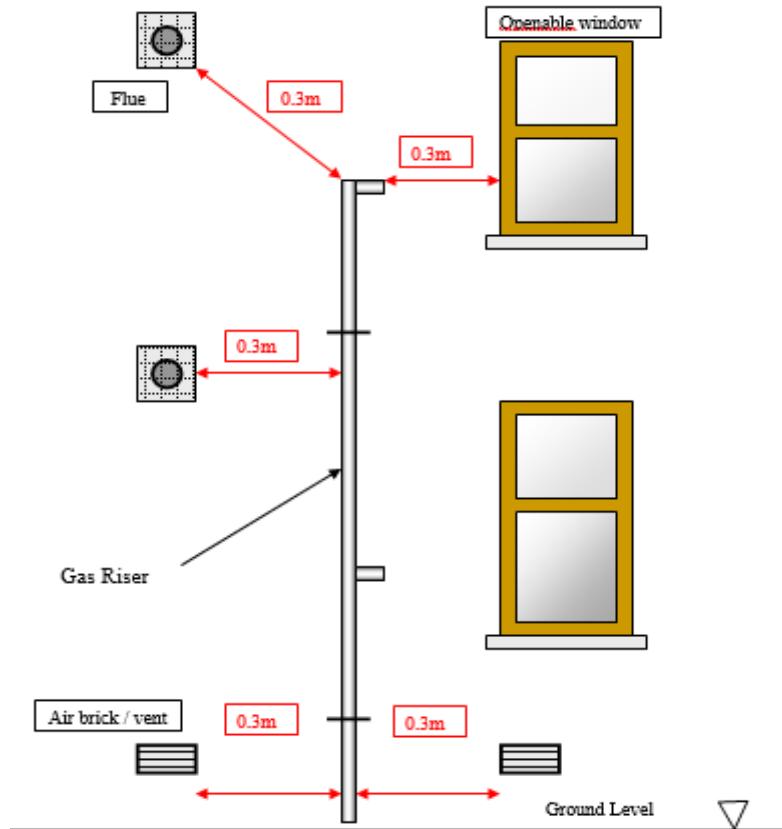
Phoenix Natural Gas will:

- Install gas service risers/laterals, valves and metering equipment.
- Test, and commission the gas service riser/laterals.

Guidance to facilitate gas service riser installations:

- The meter positions for each apartment must be agreed in advance between the Builder and PNG representative and marked up on a plan provided by the Builder. **See diagrams within this section for details of acceptable internal meter positions.**
- The riser and lateral positions must be agreed in advance between the Builder and PNG representative and marked up on a plan provided by the Builder.
- A clear distance of 300mm must be maintained from all risers/laterals to all flues, vents and openable windows.





- All laterals shall contain an isolation valve and enter the property through a continuous sleeve, sealed with a fire-resistant mastic both inside and outside the entry to the building.
- Riser restraining clips should not restrict movement caused by expansion or contraction of the steelwork and shall not be fitted within 500mm of a lateral tee.
- If installation works are to be completed using scaffolding provider by the Builder, this scaffolding must have a current/up to date safety inspection certificate/record to ensure that it has been erected, inspected and maintained by a suitably Competent Person. ("The Provision and use of Work Equipment Regulations 1998"). Details are to be provided to the installation team prior to starting any works. Where no scaffolding is provided a suitable certified MEWP will be provided along with certified "man basket".
- No excavations work will be undertaken to connect risers whilst scaffolding is in place.
- No meter will be fitted until the downstream pipe work has been installed.
- Boiler flues and condensate pipes are to be built to avoid condensate water dripping onto and corroding installed gas steelwork.
- All holes are to be drilled ready for the service entries to be installed by PNG Operations following prior consultation and agreement.
- The route of the proposed works must be reasonably clear of all obstructions and materials.
- Live gas service risers/laterals and meters are not to be moved, damaged or tampered with in any way once installed.
- Ensure that other Contractors carrying out excavation works on site are aware of the location of the live gas service risers/laterals.

- Any modifications that are required to facilitate the installation of steelwork (e.g., cutting plinths) are to be agreed and carried out prior to the commencement of installation works.

The Builders representative must ensure:

- Prior to commencement the Builder will confirm that all doors and windows have been fitted and that all necessary rendering/plastering has been completed before works commence.
- Prior to commencement on site a PNG Engineer will, with the Builder, confirm and agree finished ground levels where external steel risers are to be constructed. The PNG dispensation form will be signed by both parties following agreement.
- After completion of works the reinstatement is completed to the pre-agreed finished ground levels.

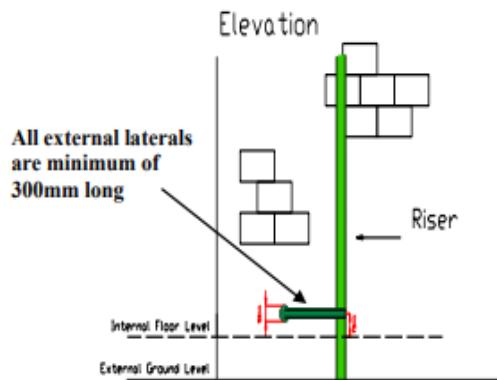
**NOTE: Raising pre agreed ground levels can lead to corrosion of steelwork from being buried. Lowering ground levels can result in PE pipework being exposed. Where PNG discover through post construction snagging that ground levels have been altered, PNG will write to the builder and properties affected by the defective works to inform of a 28day period for the defect to be rectified.**

**Where the integrity of PNGs network has been compromised by defective works, all resultant costs incurred by PNG will be passed to the person deemed liable.**

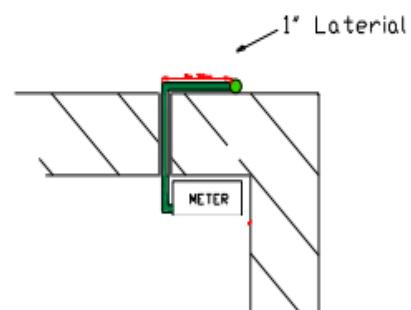
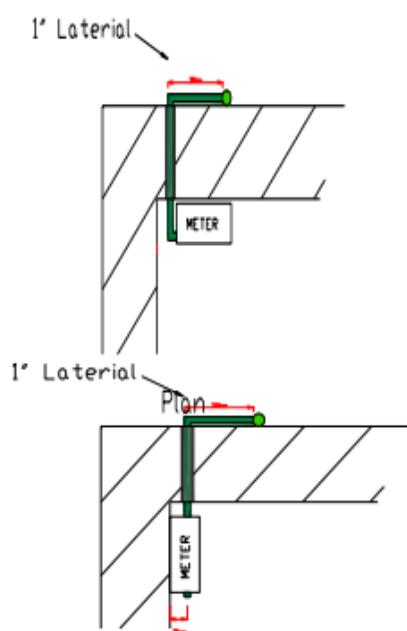
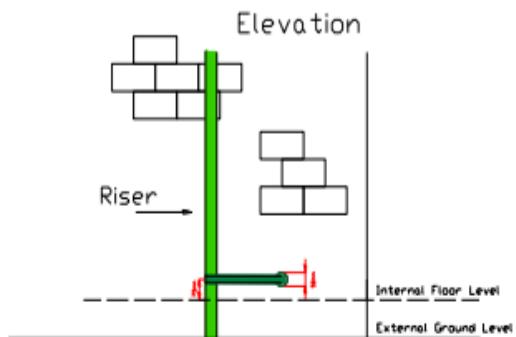


## Approved Internal meter position guidance diagrams (steelwork)

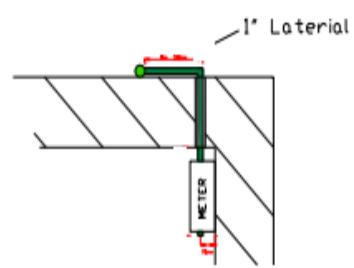
**Meter in Lounge  
Front Left**



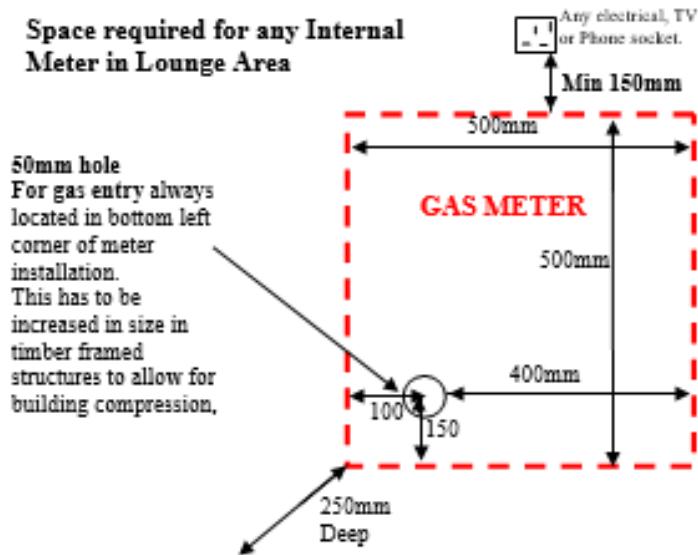
**Meter in Lounge  
Front Right**



Plan

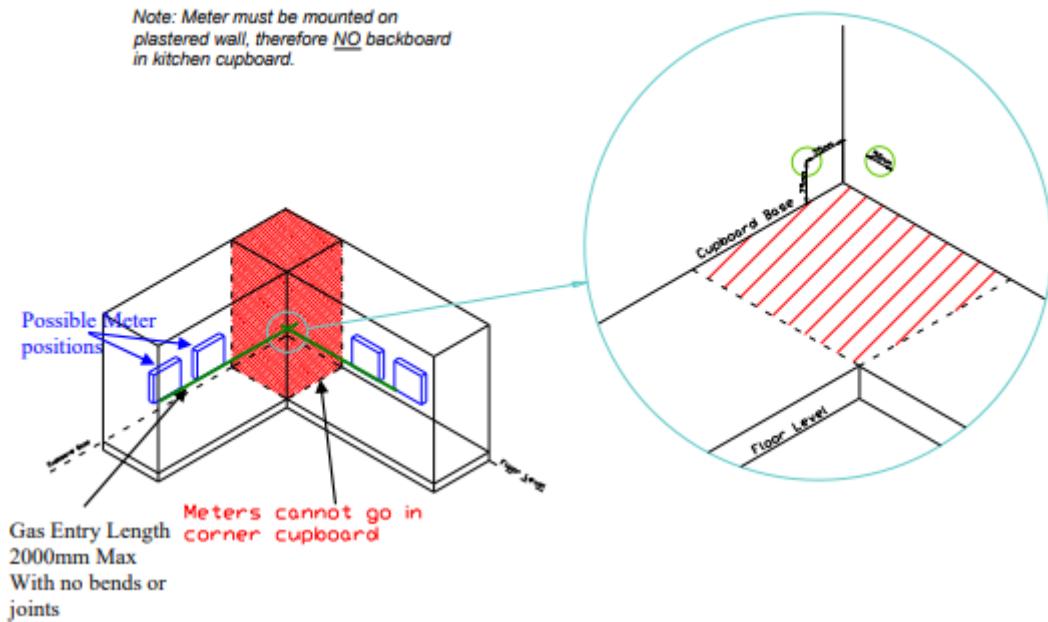


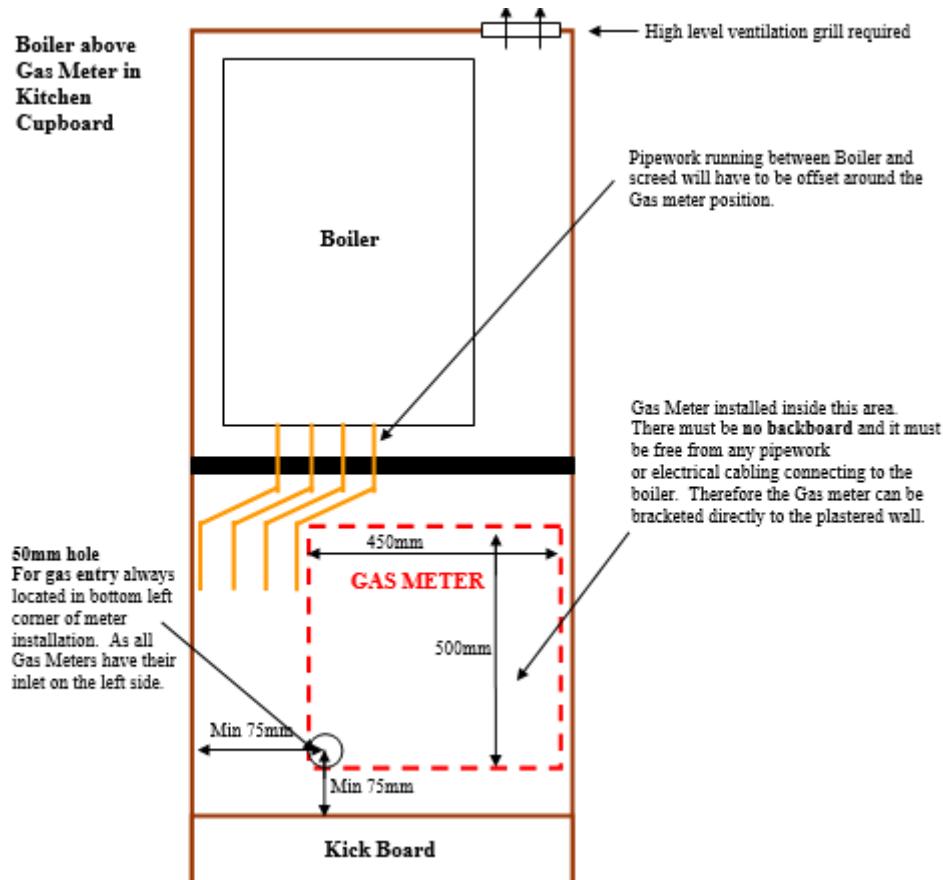
**Space required for any Internal Meter in Lounge Area**



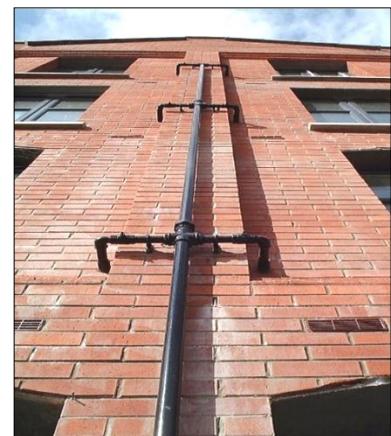
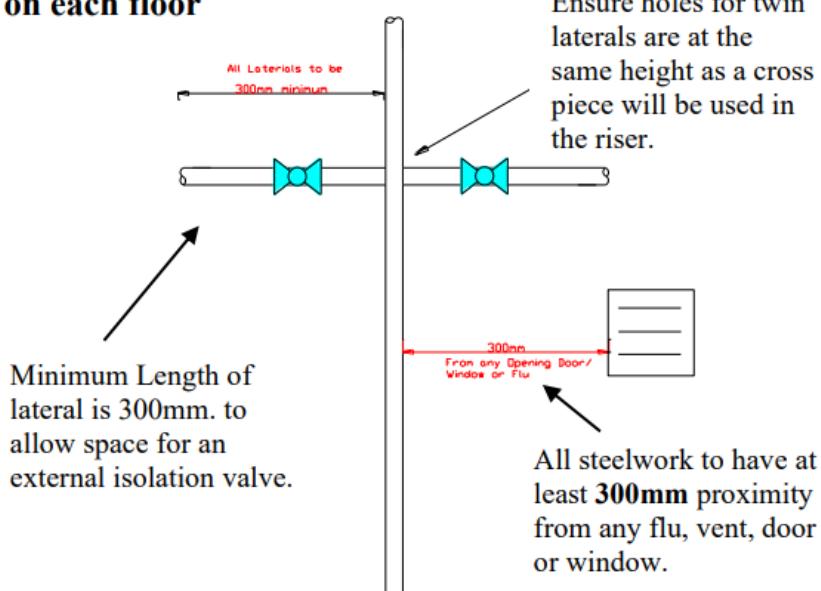
**Gas Meter Positions, either side of a corner cupboard**

Note: Meter must be mounted on plastered wall, therefore NO backboard in kitchen cupboard.





### Twin lateral riser feeding 2 apts on each floor



## 10. Pressure Reduction Installations

When a governor bin(s) is required, it is important that its specification and position must be agreed with Phoenix Natural Gas at the design stage.

An agreement to permit the installation is required to be accepted and completed by the property owner. These must be completed before the governor bin is installed and commissioned by Phoenix Natural Gas.

Phoenix Natural Gas contractors will install the governor bin(s) and associated apparatus; however, it is the responsibility of the Builder to backfill around the governor bins and place the manhole chambers/street furniture.

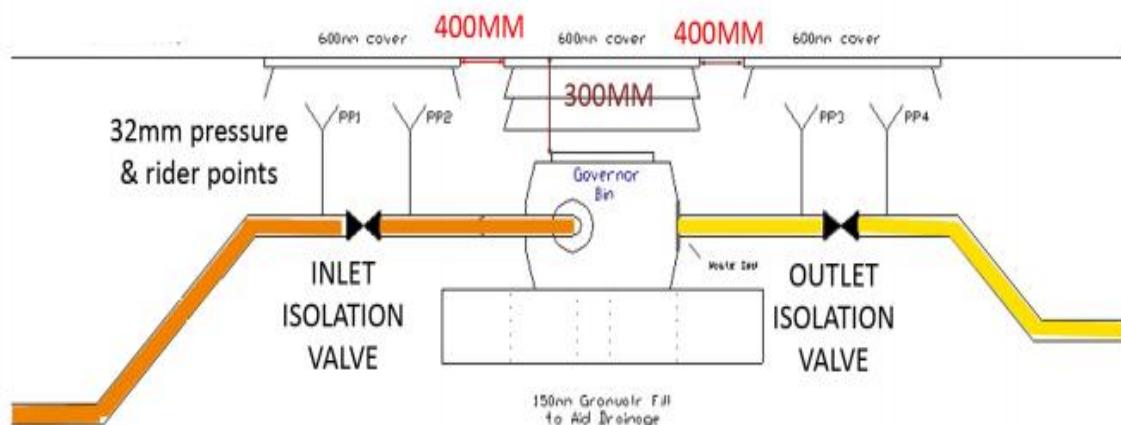
**NOTE: All necessary gas apparatus is to be left accessible following final reinstatement.**

### 10.1 Location

- The governor bin(s) must be sited to avoid the possibility of vehicular impact and the weight of vehicles parking or running over the street furniture covers. Where this risk is identified at the design stage and no other alternative location can be found, traffic protection measures such as bollards or barriers must be installed by the Builder.
- The governor bin(s) must be located in areas away from where the water table is high or the potential of flooding exists e.g. at the bottom of a hill.
- The proximity of the installation to buildings must be considered. Medium to low pressure installations must be sited at least 3 metres from the nearest property or ignition source.
- There must be constant access for future maintenance or any potential emergency works including a dedicated access space allocated for a maintenance vehicle. Should there be access codes to enter an area, the Builder is to ensure that this information is communicated to Phoenix New Build Sales/Engineering to facilitate future access .

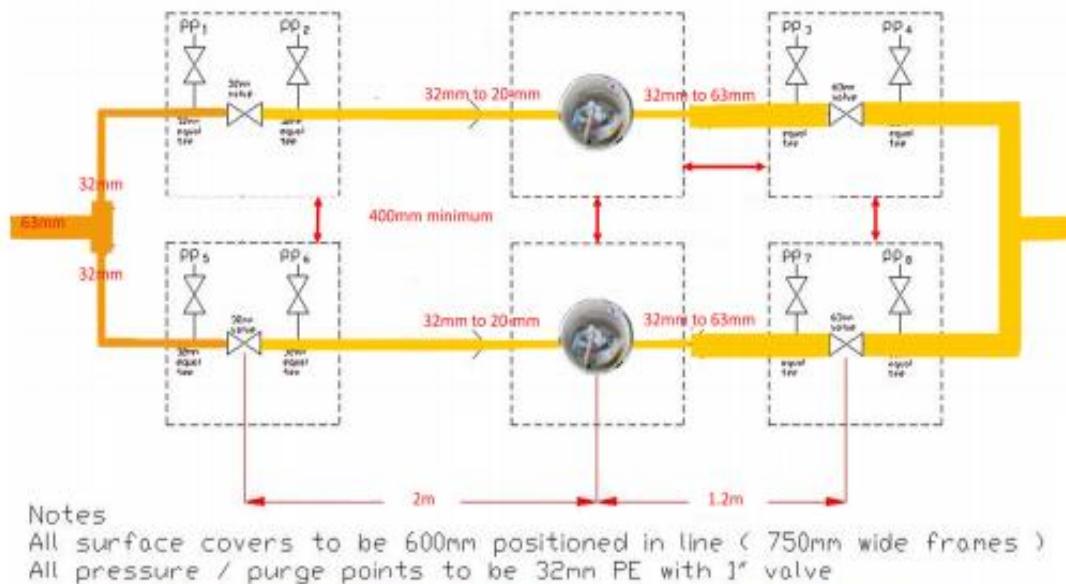
### Installation Specifications:

#### 40 SCMH Installation



Note: PP refers to Purge/Pressure Point

The schematic above details the layout of apparatus contained within a 40scmh installation.

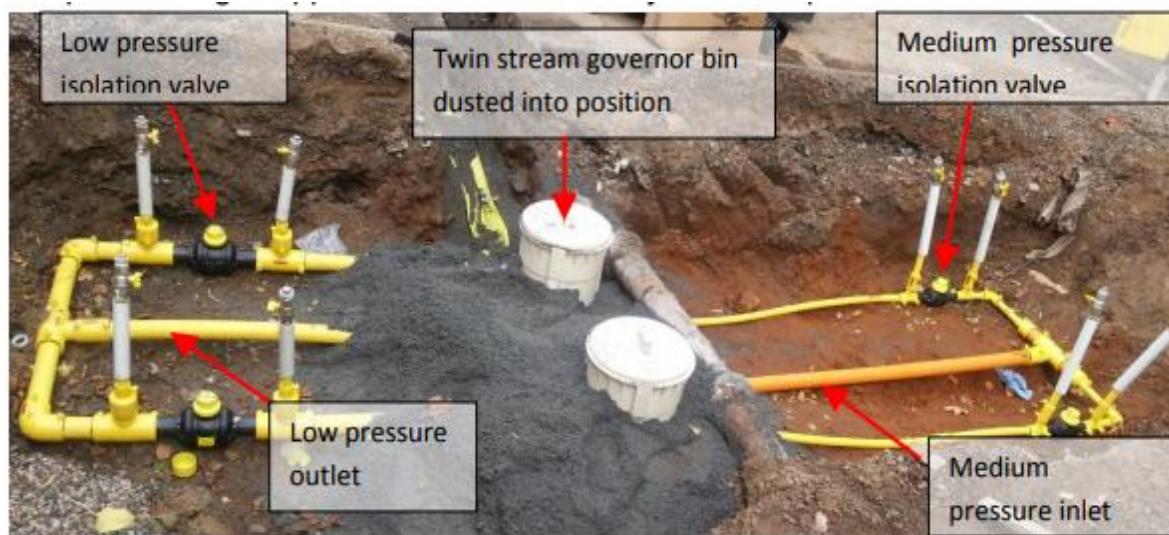


The schematic above details the layout of a twin stream governor installation.

The Builder is to provide an excavation to the required width, depth and breadth suitable for the installation.

It is important that final ground level is “pegged out” before installation commences, as when the Phoenix contractor installs the governor bin(s), legs fitted to the side of the apparatus are to be adjusted to ensure the internal governor bin lid is 300mm below finished ground level.

This requirement is to aid access and future ongoing annual maintenance activities.



The illustration above details a twin stream governor bin once installed. The same principles apply in the instance when a single stream governor is installed.

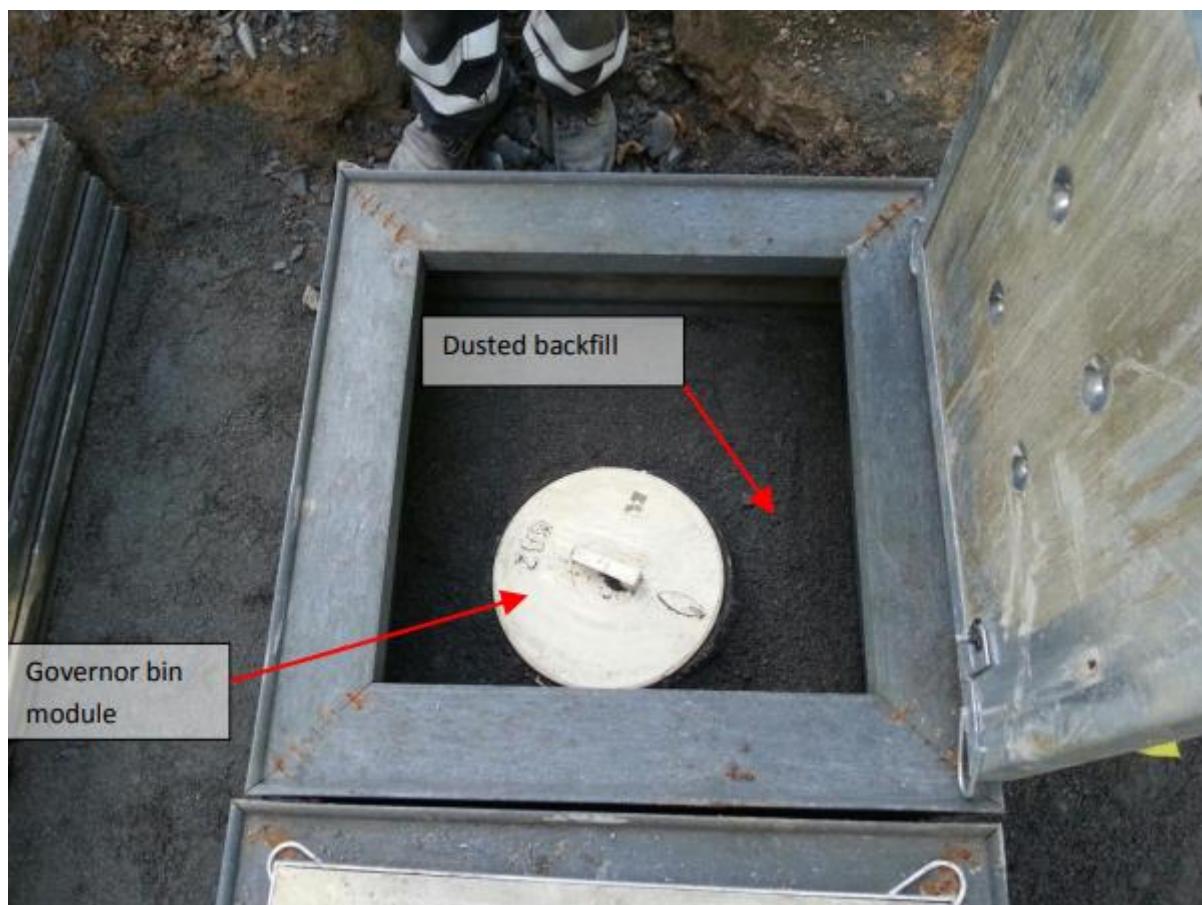
Once installed the gas apparatus is backfilled with dust and marker tape is laid over inlet and outlet pipework.

Backfill is completed by the Developer to ensure 600 x 600mm locked concrete gas lids are left at finished ground level.

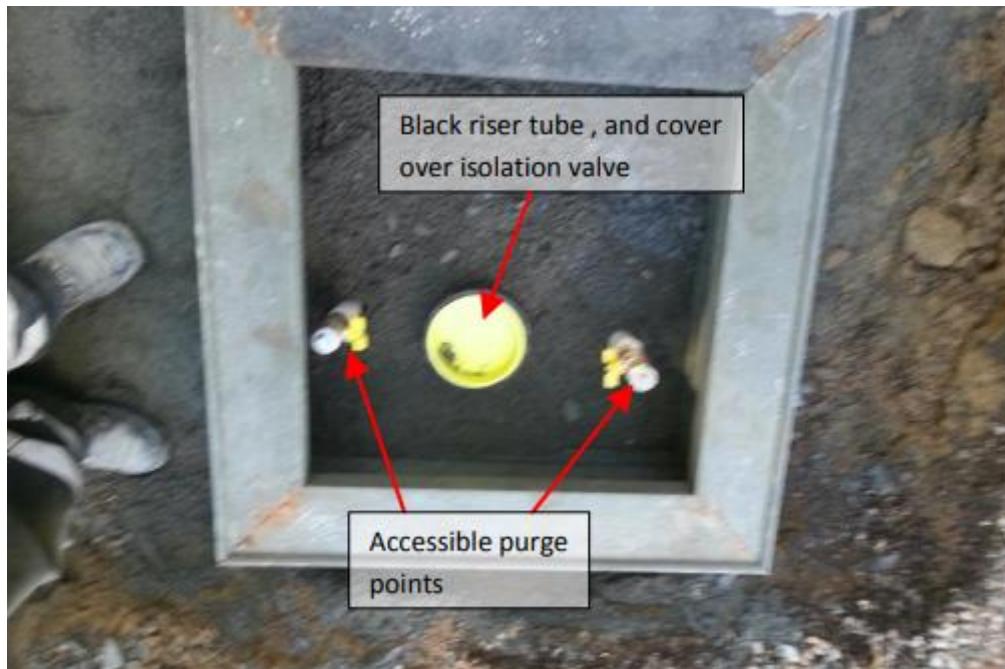
**Note:** 3 x 610 x 610 x150mm STAKKAbbox Fortress sections are used immediately under the concrete or cast gas lid. (Prior to using these sections, the Builder is to make up the ground around the apparatus.)

Place cover on sections

Reinstate around cover.



**Illustration above and below details the backfilled governor installation.**



Dependent on the location of the governor bins final reinstatement around the street furniture can include tarmac around the surface street furniture or other modular substrates e.g. flagstones/setts.



If the final surface is to be made of unmade ground or grassed, a concrete surround is to be placed around the street furniture.

## 11.0 Approved Street Furniture Types

**NOTE: Only street furniture supplied by Phoenix Natural Gas is to be used to complete final reinstatement.**

Valves and purge points should be centred in the middle of concrete section(s) and must be accessible at all times by Phoenix Natural Gas.

If any valve or purge points are covered over, it will be the responsibility of the Builder to make good any remedial works at their own cost.

LOCATION : FOOTWAY OR VERGE		
Lid Type	Image(s)	
150 mm steel lid toby		
300mm Concrete lid in steel frame		
600mm Concrete lid in steel frame		

LOCATION - ROAD			
Lid Type	Image(s)		
225mm Steel or Ductile iron			
600mm steel lid Steel or Ductile iron			



**NOTE: The use of the style of manhole lids shown (left) is not permitted on top of Phoenix Natural Gas apparatus as this poses a manual handling risk as well as an apparatus identification issue.**

## 12.0 Construction of street furniture chambers

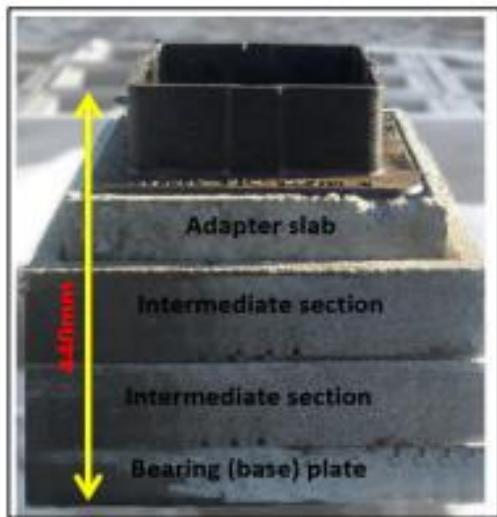
Once gas apparatus has been installed, it is the Builder's responsibility to construct all street furniture chambers and leave gas apparatus accessible at all times.

Materials to facilitate chamber construction will be delivered to site by Phoenix contractors and must be signed for by Site Management.

NOTE: A check of delivered materials is to be completed at this time to ensure all required materials are available.

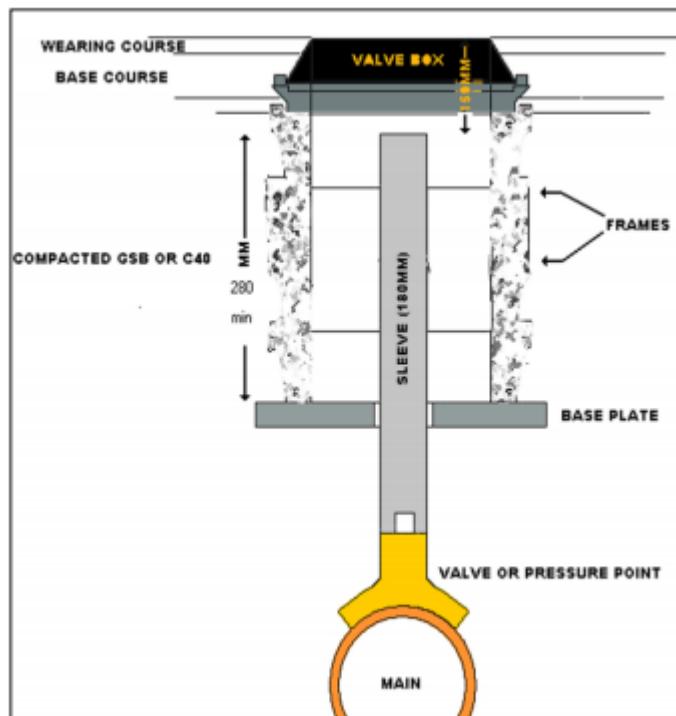
Loc <sup>n</sup>	Circumstances	Size mm	Type
Footway or verge	Valves on I/C services, flats	150	Toby
	Single 32mm pressure point	300	Concrete lid in steel frame
	Valve spindle		
	Single 63mm pressure point	600	
	Combined 32 or 63mm PPs & valve		
Road	Valves on I/C services, flats		Steel or Ductile Iron
	Single 32mm pressure point	225	
	Valve spindle		
	Single 63mm pressure point		
	Combined 32 or 63mm PPs & valve	600	

The table illustrates the type of street furniture required for the relevant apparatus installed.



Concrete sections for relevant cover positioned in carriageway (225mm cover)

- 1 x 70mm thick adapter slab with inset for cover – 370x370mm for 225mm cover
- 2 x 100mm thick chambers intermediate sections) – 430x430mm for 225mm cover
- 1 x 70mm thick bearing plate (base) - 430x430mm for 225mm cover



Ensure the level being worked from is correct for the manhole cover to be level with the finished surface when complete; new jobs, backfill to within 450mm\* of surface in roads (\*deeper if concreting)

#### **For 150mm (metal) toby lids in the footway (service connections/fire valves)**

1. Place base plate over 180mm black convoluted tube on top of well compacted backfill.
2. Place cover on top hat
5. Reinstate round cover (0.3m x 0.3m concrete – grass verge only)

#### **For jobs requiring concrete sections (concrete lid in footway 300mm)**

1. Place base plate over 180mm black convoluted tube on top of well compacted backfill; black tube to protruded 30-50mm above section
2. Place the two 100mm sections on top of base plate
3. Place cover on top section
4. Reinstate around cover

#### **For 600mm concrete and cast lids in the footway or carriageway**

3 x 610 x 610 x 150mm STAKKAbox Fortress sections are used immediately under the concrete or cast gas lid. (Prior to using these sections, the Builder is to make up the ground around the apparatus.)

Place cover on sections

Reinstate around cover.

### 13.0 Snagging of Completed Works

A Phoenix Natural Gas Engineer will complete snagging of all new build sites on an ongoing basis and following completion of the project.

Phoenix Natural Gas requests that this is completed along with the site foreman to ensure that all issues are rectified to Phoenix Natural Gas specifications and within an agreed time period.

Failure to do so may result in Phoenix Natural Gas or its approved contractor undertaking any remedial work. This will result in all costs being charged to the Builder/Developer responsible.