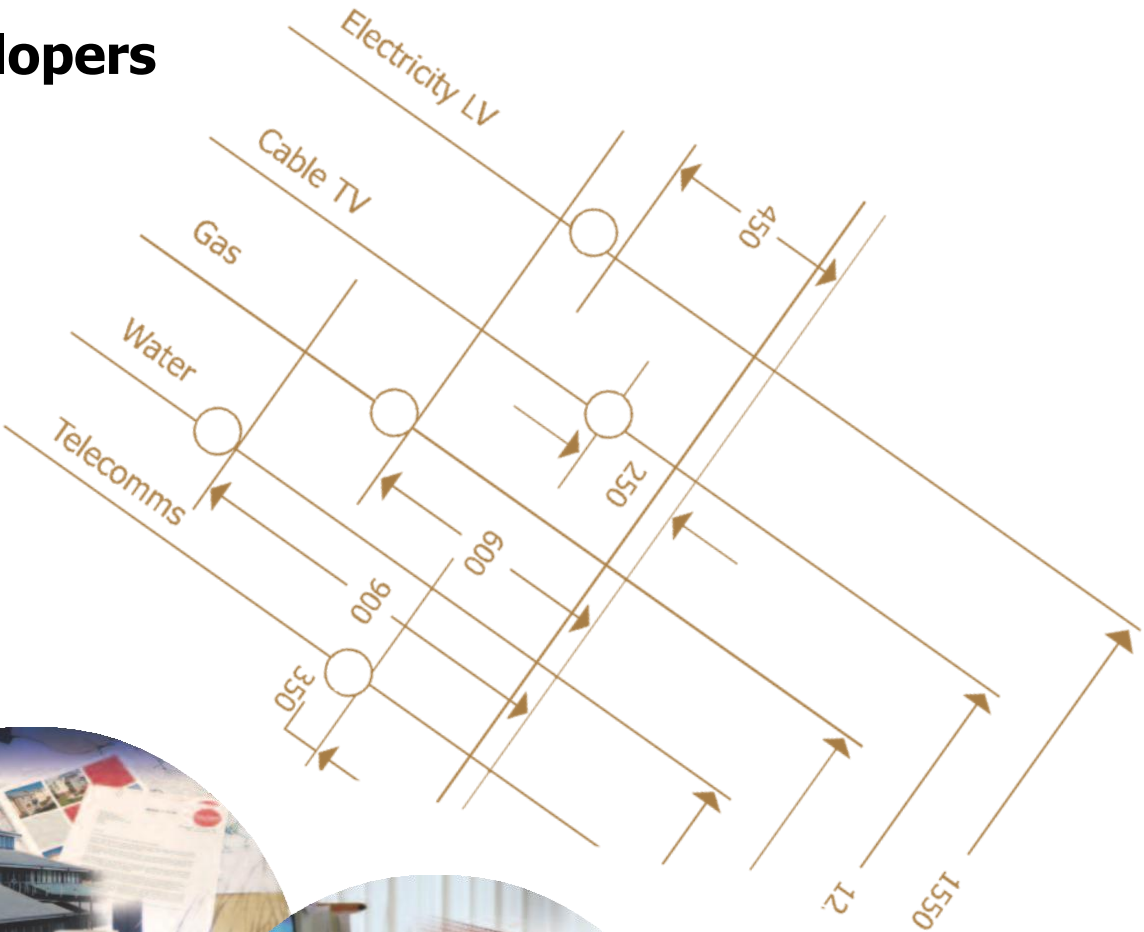


# GTC Technical Gas Guidelines and Safety Information for Property Developers



**Disclaimer**

Although the greatest of care has been taken in the compilation and preparation of this document, GTC 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.

## CONTENTS

	<b>Page</b>
<b>1 WELCOME</b>	<b>4</b>
<b>2 COMMUNICATIONS</b>	<b>4</b>
<b>3 SAFETY</b>	<b>5</b>
<b>4 DEFINITIONS</b>	<b>7</b>
<b>5 DEVELOPER RESPONSIBILITIES</b>	<b>8</b>
General Requirements	8
Material Delivery and Handling	8
Ground Workers	9
<b>6 METER LOCATIONS</b>	<b>9</b>
General Requirements	9
Single Domestic Properties	9
Flatted Properties	10
Non-Domestic Properties	10
Medium Pressure Supplies	10
<b>7 METER HOUSINGS</b>	<b>12</b>
General Requirements	12
Built-In Box	12
Semi-Concealed Box	13
Flatted Properties – Multi Meter Compartments	14
Non-Domestic Properties – Meter Compartment	17
Meter Compartment Ventilation	18
<b>8 INSTALLING GAS MAINS</b>	<b>20</b>
Excavations	20
Road Crossing Ducts	20
Backfill Materials	21
<b>9 INSTALLING GAS SERVICES</b>	<b>21</b>
Below Ground	22
Flatted Properties	24
• External Riser Options	24
• Internal Riser Options	25
• Timber Framed Flats	28
• Preventing Spread of Fire	29
<b>10 INSTALLING GAS METERS</b>	<b>30</b>
Domestic	30
Non-Domestic	31
Electrical Cross Bonding	31
<b>11 PRESSURE REDUCTION INSTALLATIONS</b>	<b>31</b>
<b>12 CDM REGULATIONS 2007</b>	<b>32</b>

## 1. WELCOME

Welcome from GTC.

This brochure will provide you with information and guidance on the installation of gas mains, services and meters to new developments. At the end of the brochure you will find details relevant to the safety file required under the CDM Regulations.

Our Sales Team will assist you with any enquiries you may have and will deal with technical enquiries through our Engineering Planning and Operations departments at our Head Office at Woolpit Business Park in Suffolk.

**Should you wish to contact us, the telephone number is 01359 240363.**

## 2. COMMUNICATIONS

Our opening hours are from 8.00am every weekday. In order to book in work on your development, please contact our construction team on:

**Tel: 0845 602 2498**

**Fax: 0845 602 2499**

**Email: [gtcworks@gtc-uk.co.uk](mailto:gtcworks@gtc-uk.co.uk)**

Every effort will be made to meet the developer's requirements but we would ask for:

5 working days to deliver meter boxes

15 working days notice to lay mains

10 working days notice to lay services

10 working days notice to lay services and fit meter

40 working days notice for works in the Public Highway

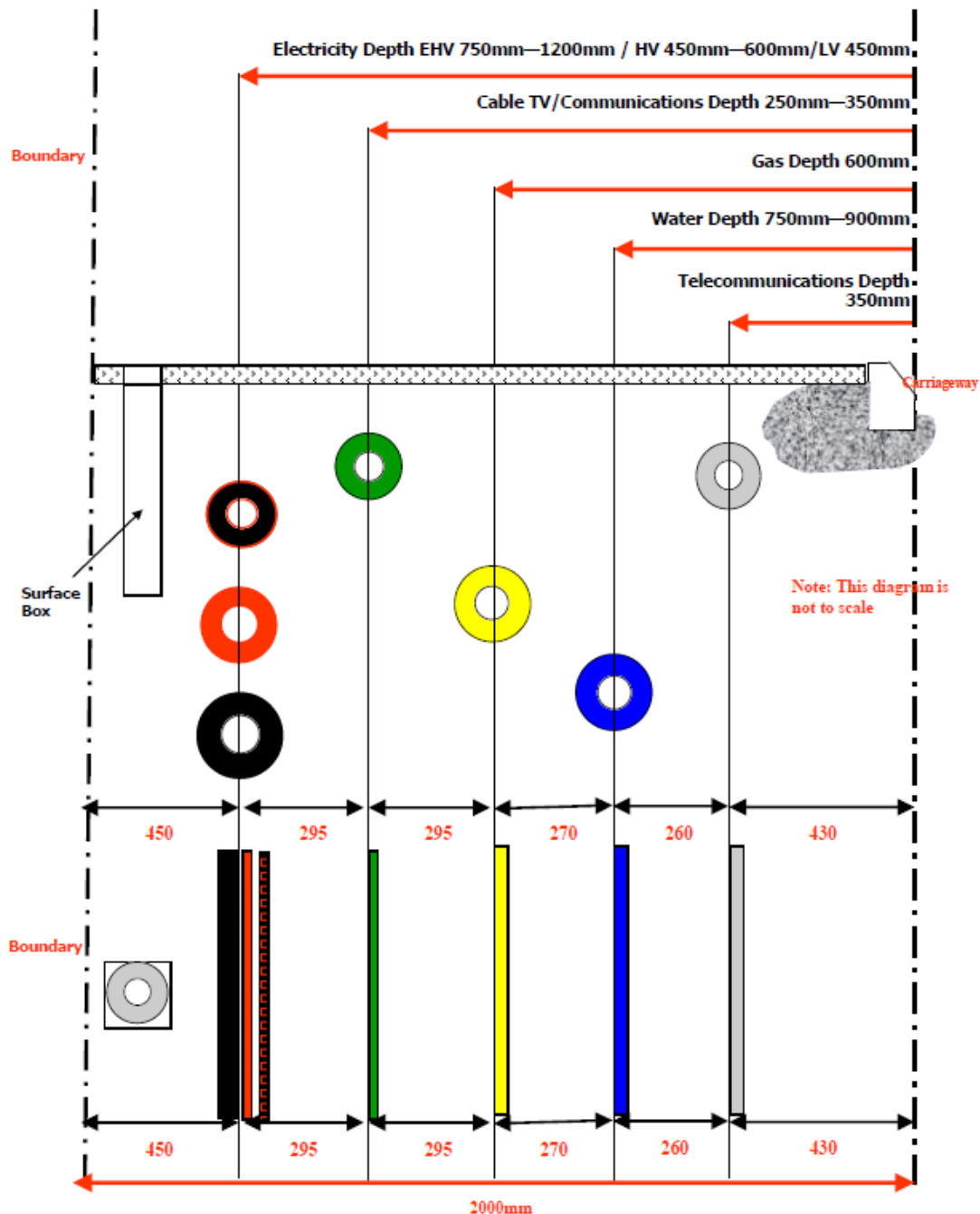
5 working days notice to supply and fit meters

### 3. SAFETY

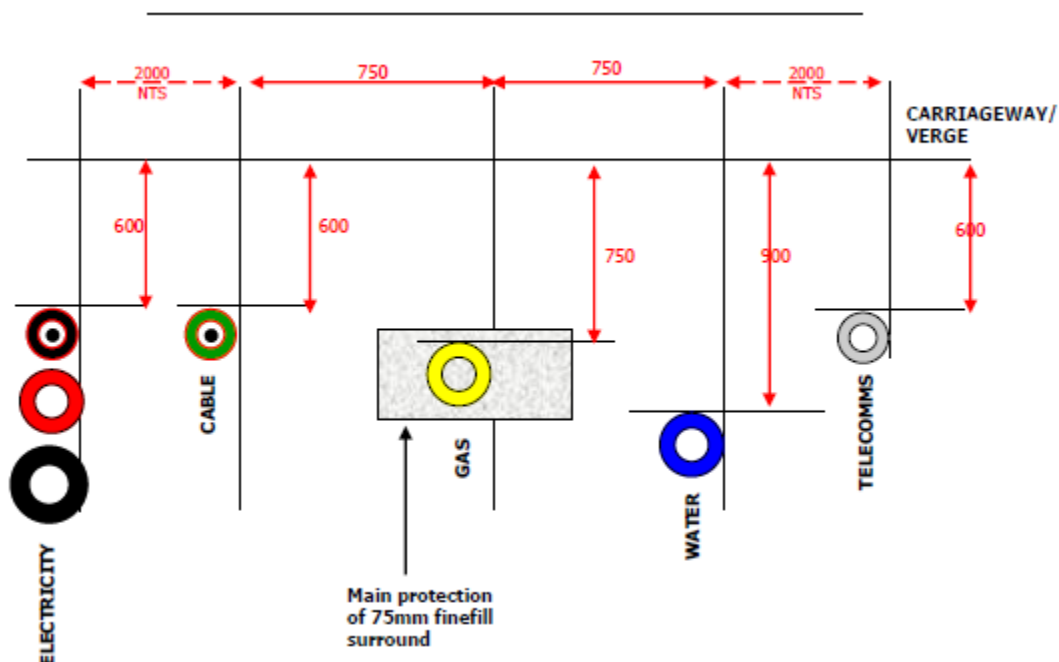
In accordance with the Institution of Gas Engineers guidance and Health & Safety Executive expectations, gas mains and services must be laid at the depths specified in sections 8 and 9 of this brochure.

The typical position of the gas main and other utilities apparatus in a footway and road/verge is shown in the diagrams below (mm), this complies with N.J.U.G recommendations. Minimum depths of cover are also shown:

**RECOMMENDED POSITIONING OF UTILITY APPARATUS IN A 2 METRE FOOTWAY  
(from NJUG Guidelines on the Positioning of Underground Apparatus for New Development Sites)  
THIS DIAGRAM IS NOT TO SCALE**



**TYPICAL ROAD/VERGE SECTION TO SHOW RELATIVE POSITIONS OF UTILITY APPARATUS  
THIS DIAGRAM IS NOT TO SCALE**



It is imperative that the gas mains are not damaged following installation and it is the responsibility of the developer to ensure that ALL contractors working on site are informed of the location of the gas mains. The mains and services drawing should be on site at all times and updated to clearly show the installation progress.

Please note that other Gas Transporters may have gas mains in the vicinity of the site. They should be contacted by the developer at an early stage in order to establish the location of any non GTC mains that may be affected.

Damage to live gas mains must be reported immediately to the **National Gas Emergency number 0800 111 999** who will arrange for the Emergency Service provider to attend site and undertake any repairs.

Any damage to un-gassed pipes, no matter how slight, must be reported immediately to GTC.

For further information refer to HSE publication HSG47 "Avoiding danger from underground services" which gives detailed guidance on avoiding damage to gas mains and services, including information on detecting underground services and safe digging practices. Free information is available from the **HSE Infoline on 0845 345 0055** or the **HSE website [www.hse.gov.uk](http://www.hse.gov.uk)**.

## 4. DEFINITIONS

**External Service Riser** A riser attached to the outside of a building or concealed in an external reveal

---

**Gas Main** Underground pipe network for distributing gas throughout the property development

---

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

---

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

---

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

---

**Internal Service Riser** A riser installed within the structure of a building

---

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

---

**Medium Pressure** The operating pressure in the Gas Main and Service when it exceeds 75mbar. In these circumstances additional safety features apply to the design of the meter installation. See section 6

---

**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

---

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

---

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

---

**Ventilation** The movement of air and its replacement with fresh air due to the effects of wind and temperature gradients

---

## 5. DEVELOPER RESPONSIBILITIES

The developer is responsible for the on-site requirements detailed below:

### General Requirements

- Ensure kerb braces have been installed prior to requesting work
- Carry out all necessary excavation 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 by the developer, can only be used for perpendicular road crossings
- Lay 'gas pipe' marker tape, supplied by GTC, above the gas main before backfilling the trench
- Install the service pipe, supplied by GTC, from the mains position to the gas meter location and ensure the pipe ends are adequately sealed to prevent ingress of water or dirt etc.
- Install meter boxes, supplied by GTC, and ensure doors or lids are fitted
- 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
- Where necessary, ensure that the gas riser and sleeve which pass through each floor on flatted properties, are fire stopped in accordance with building regulations

### Materials Delivery and Handling

- Pipe, meter boxes and associated equipment will be delivered directly to site and must be visually inspected on delivery and any damage immediately reported to GTC.
- Materials must be carefully stored in a safe and secure area on dry, firm and level ground.
- Individual straight pipe, up to and including 125mm diameter, should not be stacked more than 8 layers high and larger pipe not more than 4 layers high.
- Coils of pipe should only be stored flat and stacked not more than 2 coils high
- Any loss or damage occurring after delivery will be chargeable to the developer

## Ground Workers

- Ensure ground workers have sufficient knowledge about safe working practices on site and that work is carried out safely
- Ground workers are only permitted to lay dead 25mm or 32mm service pipe
- Ground workers undertaking the laying of service pipe must be properly instructed and competent to understand the requirements detailed in this document
- Ensure ground workers are aware of the large amount of stored energy in coils of pipe. Coils of pipe should be carefully restrained and unwound slowly. If they are not unwound slowly they can cause injury by suddenly uncoiling.

## 6. METER LOCATIONS

### General Requirements

All meters should be located in well-ventilated areas and be easily accessible to allow them to be read, maintained and isolated when necessary.

Meters must not be exposed to extreme temperatures, excessive humidity, vibration, corrosive substances, accidental damage, or ignition sources (e.g. switchgear).

For low pressure installations the minimum distance from a cable should be 25mm, and 150mm from an electricity box or any switchgear. Refer to the section below for medium pressure supplies.

Electricity service cables must not be installed directly behind a gas meter box.

If an internal meter is required for properties with 2 or more floors, it should not be sited on or under the stairway or in any other part of the premises which forms the sole means of escape in case of fire.

Any meter box, cupboard or compartment must be sealed to avoid any potential escape of gas entering other parts of the building.

It is the developer's responsibility to identify and show the required meter positions on the site plans.

### Single Domestic Properties

Ideally meters should be located in an approved built-in or semi-concealed meter box, on the wall closest to the gas main. Meters can be installed in garages or inside the building. The service entry will be above the damp proof course using an above ground entry tee and will continue in steel pipe terminating at the meter control valve.

Where a meter is to be located inside the building then it must be located in a well ventilated cupboard, as close as practicable to an external, above ground service entry point.

## **Flatted Properties**

Early consultation with GTC should take place to agree meter locations to flatted properties.

The preferred location for meters supplying flatted properties is in standard meter boxes or a bank of meters in a purpose built compartment external to the building.

When meters cannot be located externally, then the preferred location is inside individual flats in a ventilated cupboard, as close as possible to an external wall to allow for a service entry via an external riser. Alternatively, where they are located in an area that is the sole means of escape i.e. the entrance hall, the meter must be enclosed in a box, cupboard or compartment which will be at least 30 minutes fire resistant to BS 476 and which has self closing doors.

In situations where meters cannot be located inside individual flats, then a bank of meters on each floor level can be considered. The room, cupboard or compartment door shall not open onto any sole means of escape and shall be self-closing and lockable.

A meter bank shall be located in a room, cupboard or compartment, designed for the purpose and ventilated in accordance with the details in section 7.

If the building is of timber frame construction, then an internal riser or bank of meters located on the ground floor is required, refer to section 9 for more detail.

## **Non-Domestic Properties**

The preferred location is external to the building and as close as possible to the gas main.

When the meter has to be inside the building it should be located adjacent to an outside wall, with adequate ventilation and protected against accidental damage but not in close proximity to electrical switchgear, heating or process equipment.

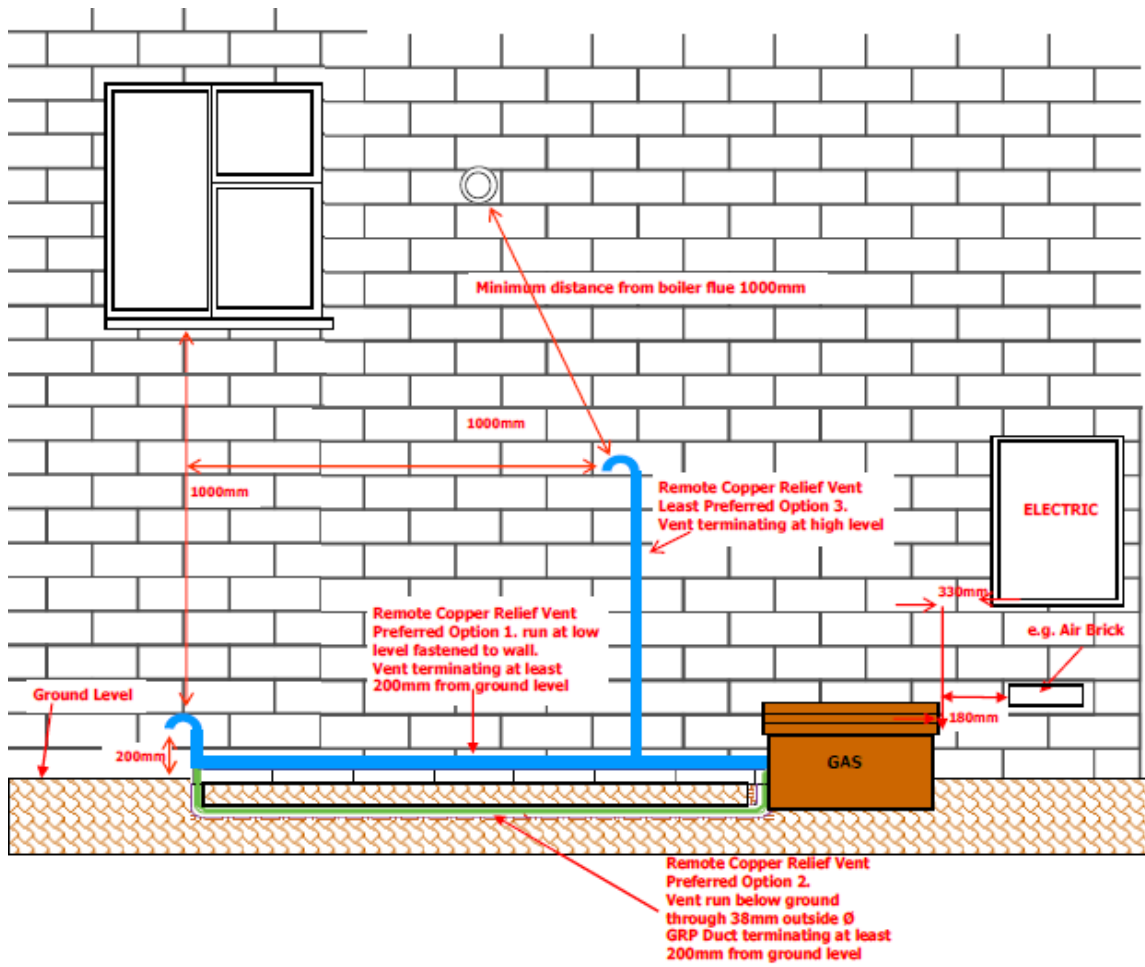
The meter should not be located in the immediate vicinity of hazardous installations e.g. fuel, paint or chemical stores.

## **Medium Pressure Supplies**

Meters supplied from a medium pressure service must be housed externally to the building in a semi-concealed meter box or purpose built compartment.

The location of the meter box or compartment must be a minimum distance of 180mm from any window, air brick or other opening and minimum 330mm from any electrical equipment.

The proposed location for the meter and regulator installation and the design of any purpose built compartment must be agreed with GTC at the initial design stage.



## 7. METER HOUSINGS

### General Requirements

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.

Each meter box is supplied with a key that must be passed onto the householder.

A damaged meter box is in contravention of the 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.

Meter boxes should not bridge a damp proof course.

A meter will not be installed unless the door on a built-in box or the lid on a semi-concealed box is fitted.

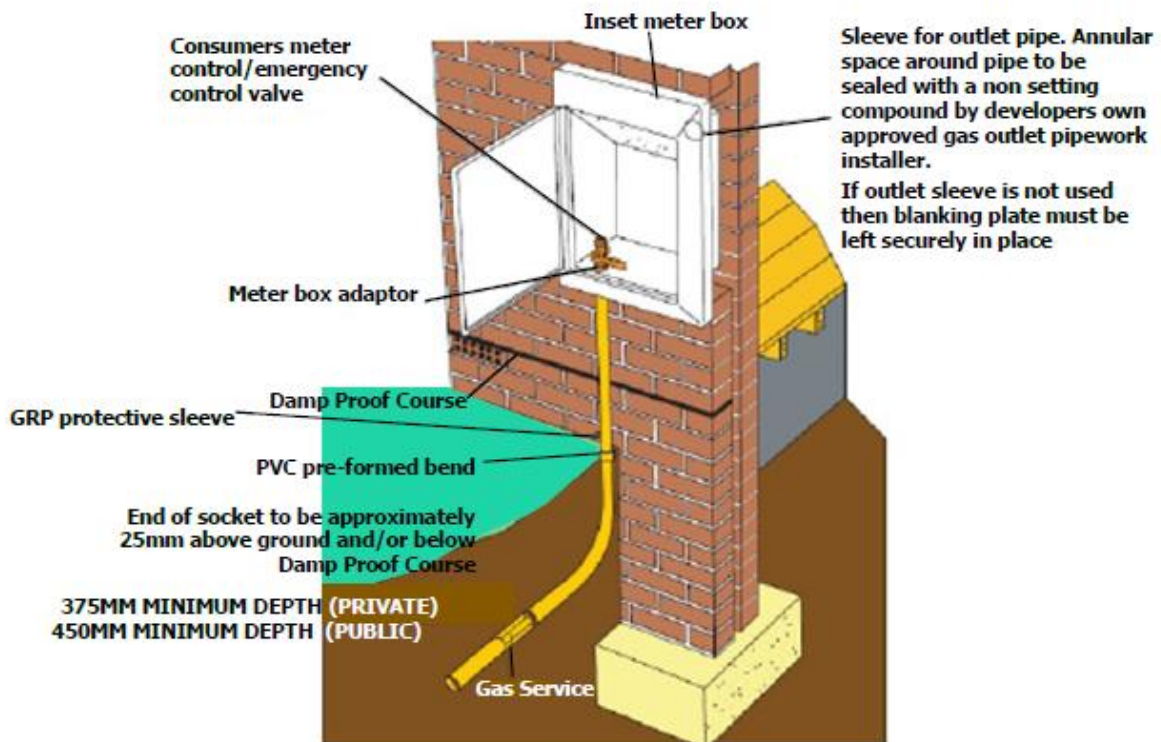
### Built-In Box

This type of meter box cannot be used for medium pressure gas supplies.

The base of the box should be located between 500mm and 1000mm above the finished ground level.

The box must be installed and secured using cement or adhesive filler. It **must not** be secured using screws or nails as this could allow any leaking gas to enter the cavity.

The outlet spigot must fully bridge the cavity.



## Semi-Concealed Box

The box is partly buried at the foot of the house wall at a depth shown by the level indicator marked on the box. This will ensure that the installation protrudes approximately 250mm above ground level at the wall, sloping to 160mm at the front of the box, thereby preventing the ingress of water.

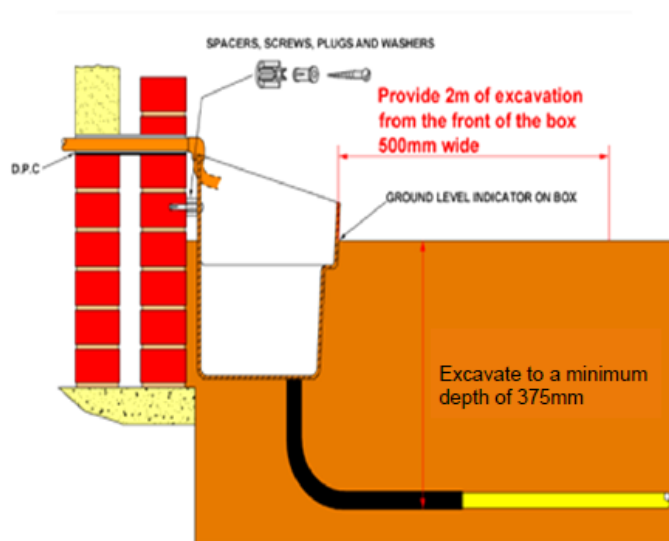
To avoid any restriction of air flow, it must not obstruct air bricks and should be sited at least 150mm from any other box.

It must be secured to the wall using the spacers supplied with the meter box, wall plugs and screws.

The lid should be installed at the same time as fitting the box.

The installation pipe must be connected to the outlet adaptor fixed to the right hand side of the box (when viewed from the front). The pipe entering the building must pass through the wall via a continuous sleeve that must be sealed with non-setting mastic.

### Semi-Concealed Meter Box Installations



#### EXCAVATION REQUIREMENTS

The diagram indicates the recommended area of excavation to be left around the box to allow for the service pipe to be connected.

This is an important requirement as the service pipe must be fed through a black bend to ensure the integrity of the pipe prior to purging to gas.

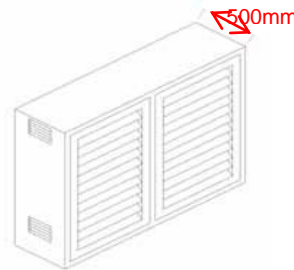
PLEASE NOTE: Dimensions may vary due to slight differences between the meter box manufacturers. Please cross check installation dimensions with those supplied with each meter box.

## Flatted Properties – Multi-meter Compartments

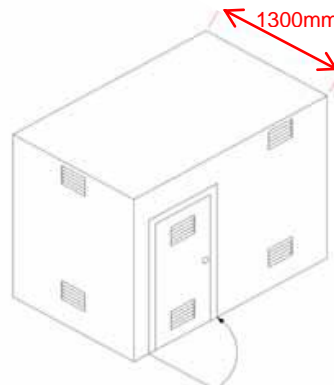
A meter bank installation shall be located in a room, cupboard or compartment, designed for the purpose and ventilated in accordance with the ventilation criteria detailed below.

An enclosure door must be self closing and lockable. Enclosures which are large enough for persons to enter must be able to be opened from inside without the use of a key.

If the meter enclosure is accessible for the purposes of meter reading and maintenance from the front through fully openable doors (full width of compartment) the minimum depth must be 500mm.



If the meter enclosure is accessible through a single door then the minimum depth of the enclosure must be 1300mm providing sufficient access for meter reading and maintenance purposes. The door must be fully operable from the inside for safe escape purposes.



A standard electrical switch and light fitting may be used in a properly ventilated meter bank enclosure providing that it is a distance of at least 1 metre away from the meter bank installation and outside any dead zone.

Any electrical equipment that is closer than a distance of 1 metre away from the meter bank installation or within any 'dead zone' must be suitable for use in a Zone 2 hazardous area.

Some extra precautions are needed for light fittings installed at ceiling level in an unventilated 'dead zone' above a ventilator.

Please consult your Electrical Engineer for further guidance about DSEAR (Dangerous Substances and Explosive Atmospheres Regulations).

## External Compartment

A purpose built compartment may be located away from the building or set into the building structure.

If set into the structure of the building the compartment must be completely sealed with the exception of an external access door and have suitable ventilation direct to outside.

The free area of ventilation required, is a minimum of 2% or 3% of the floor area depending on the construction of the compartment. This can be in the form of a fully louvered door or vents evenly distributed at high and low levels. For more detail refer to the Ventilation section below.

## Internal Compartment

The compartment and access doors, must meet the structural and fire resistant requirements applicable to the building.

Solid access doors must be self-closing and lockable.

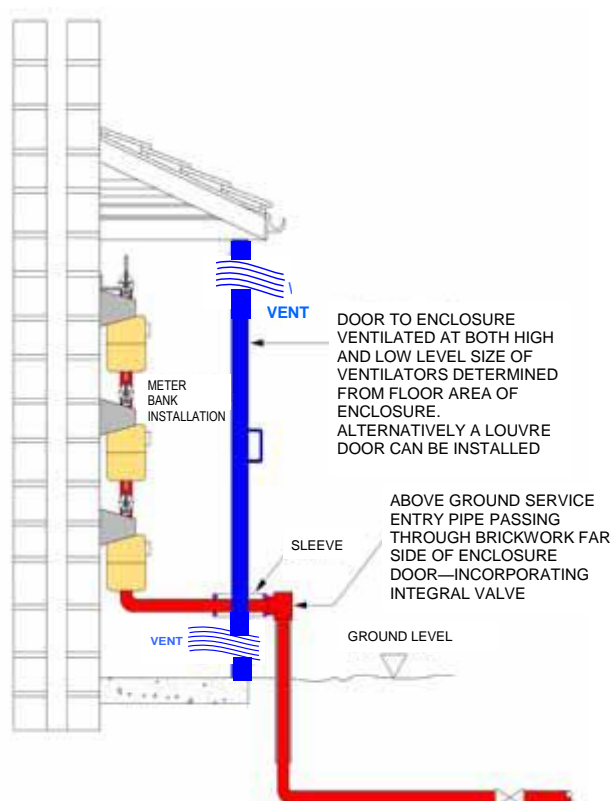
The ventilation to the outside atmosphere must be provided through suitably sized and constructed ducts, provided at high and low level. Ducts should be protected and constructed to prevent fire damage.

Refer to BS 8313 for duct sizing and further detail.

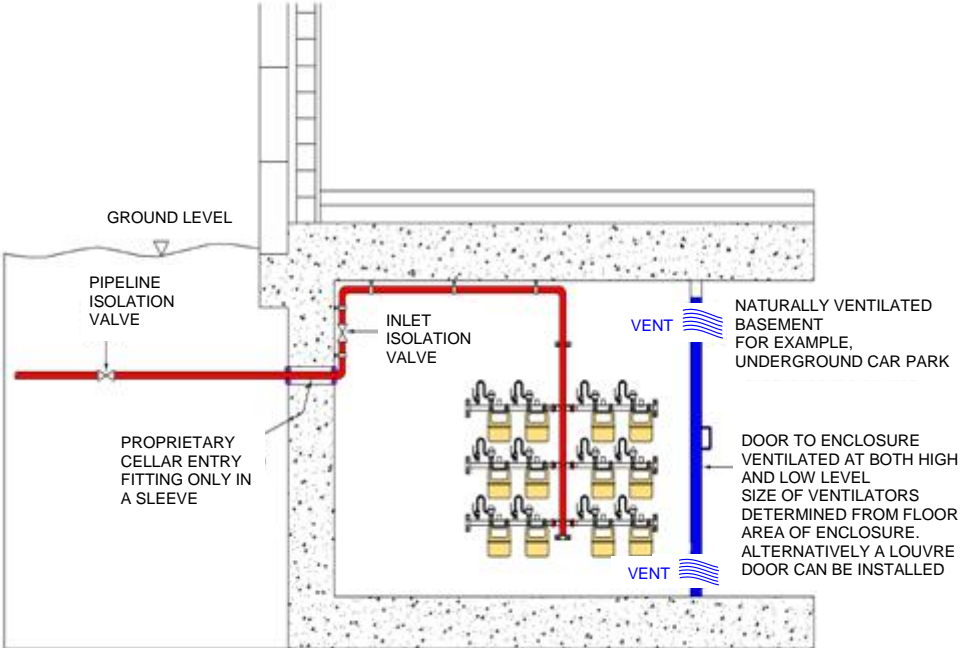
## Examples of acceptable multi-meter installations

The following drawings show examples of acceptable multi-meter installations:

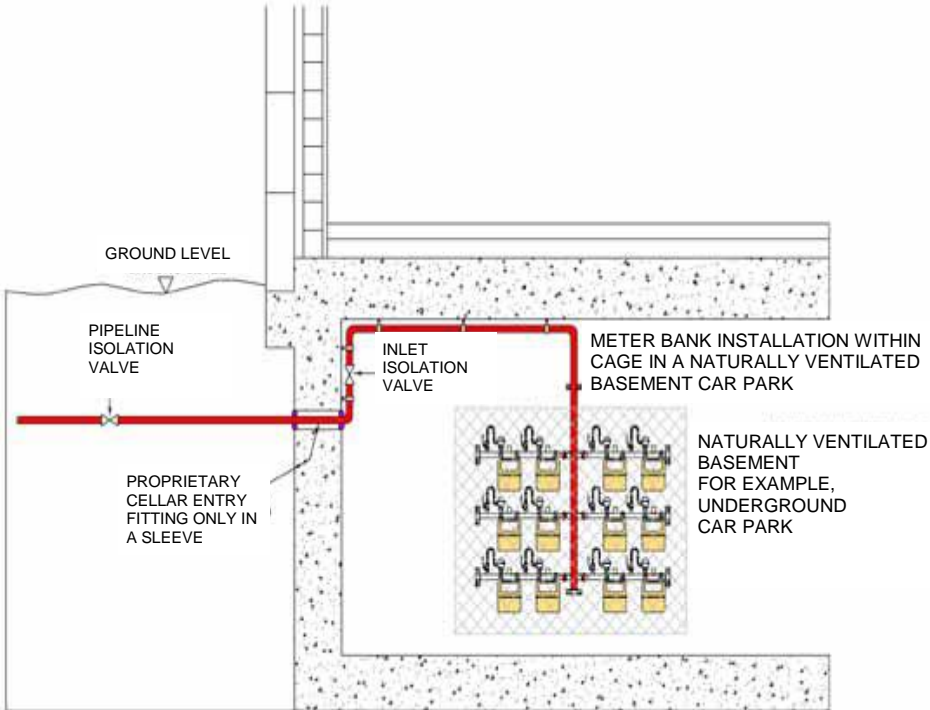
### 1: Purpose built enclosure external to the structure of the building



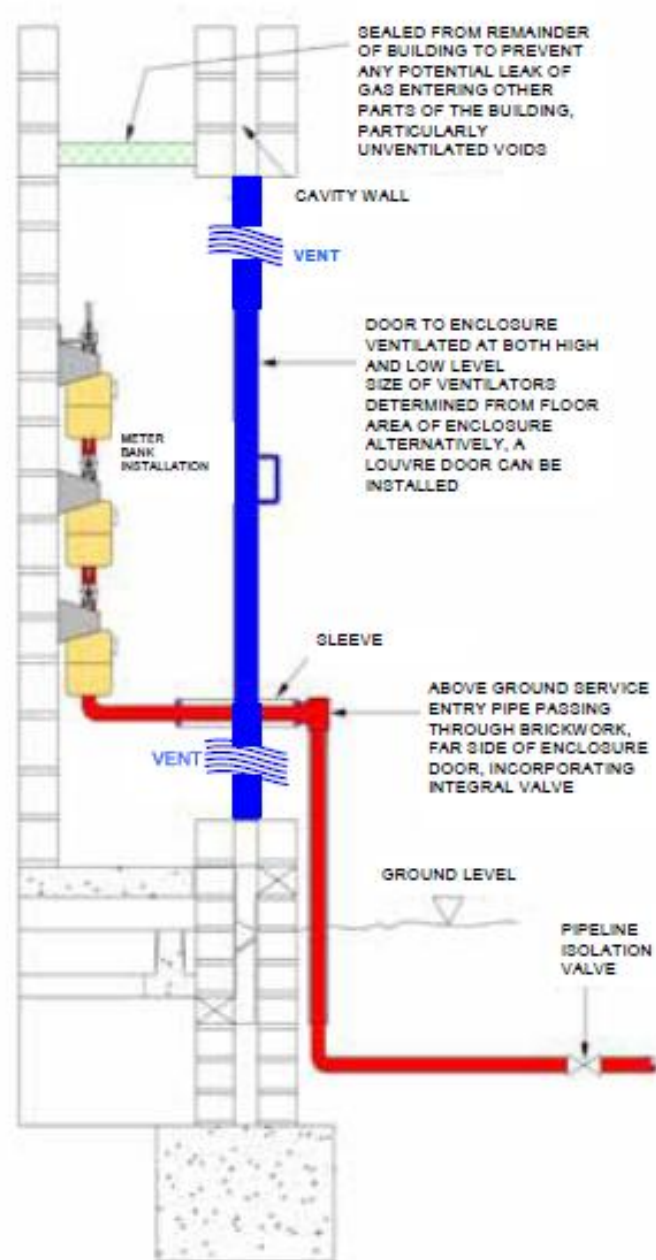
2: Purpose built meter room/enclosure opening onto a naturally ventilated basement car park



3: Purpose built cage compartment in a naturally ventilated basement car park



#### 4: Purpose built internal enclosure

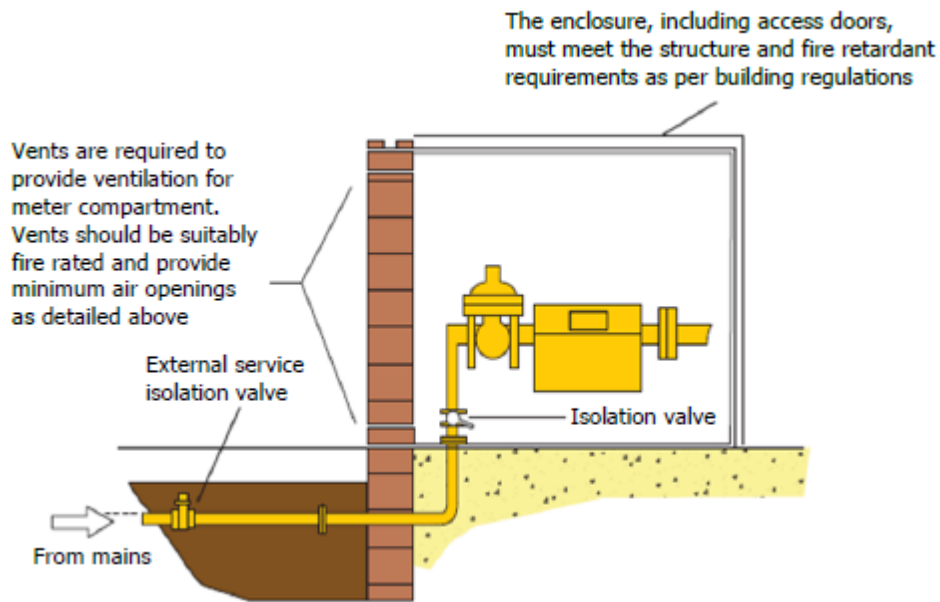


#### Non-domestic Properties – Meter Compartment

The walls of a purpose built compartment must be of solid construction without a cavity and must not include openings other than those required for access, ventilation, pipe work or other ancillary services.

The compartment should not be used for purposes other than regulating and metering the gas supply.

The total effective ventilation area of the compartment must be at least 2% of the floor area distributed equally at high and low levels over two or more walls. If ventilation is only available on one wall e.g. through louvered doors, it must be at least 3% of the floor area. For more detail refer to the Ventilation section below.



### Meter Compartment Ventilation

No gas pipes should be routed in any shaft, duct or void, which is not adequately ventilated. If a riser or lateral is to be enclosed in a duct or an enclosure, the duct or enclosure must comply with the building regulations and shall be at least half hour fire resistant and naturally ventilated to outside air at high and low levels to BS 8313 and must have removable access/inspection panels.

It is possible to consider installing louvre doors which would provide sufficient free area as an alternative to fitting ventilators at high and low level. However, unventilated "dead zones" above louvre doors should be avoided by fitting a further vent at high level.

For risers and laterals routed within an individual flatted property not enclosed in a duct or enclosure, and ventilated indirectly to outside air via a safe area, the ventilation area of a normally occupied room is considered sufficient.

Meter enclosures/cupboards shall have a minimum ventilation of 2% of the nominal floor area when the ventilation is on two or more walls and 3% when the ventilation is on one wall only.

The ventilation shall be natural to outside air and be evenly distributed at high and low levels. Guidance is given in BS6400 part 1. The nominal floor area is 0.5m<sup>2</sup> per gas meter:

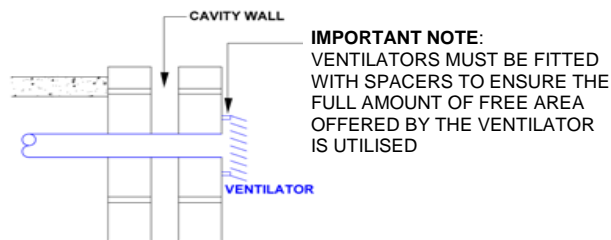
- For example a room housing 6 gas meters will have a nominal floor area of 3m<sup>2</sup>, and therefore vents having free area of 0.03m<sup>2</sup> are required at both top and bottom if the 2% option is chosen.

The following table indicates the ventilation requirements:

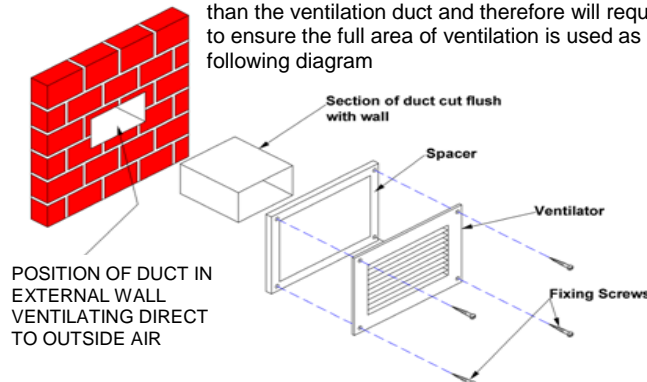
Number of external walls	Minimum area of free ventilation required as a percentage of the compartment floor area	Type of natural ventilation required to the outside	Position of low level vents	Position of high level vents
1	3%	Louvered door or high and low level indicators	150mm above the floor	As close as possible below, but no more than 10% of the total compartment height below, the roof or ceiling level
2	2%	High and low level ventilators	150mm above the floor	
3	2%	High and low level ventilators	150mm above the floor	
4	2%	High and low level ventilators	150mm above the floor	

Ventilators fitted through an external wall to outside air must be sleeved and sized accordingly based on the free area required. Mechanical ventilation, closable vents or vents fitted with insect mesh are not acceptable and must not be installed.

Spacers must be used to ensure the full free area offered by the vent is utilised as detailed below:



**NOTE:**  
The overall dimensions of the ventilation are typically much larger than the ventilation duct and therefore will require spacers to be fitted to ensure the full area of ventilation is used as demonstrated by the following diagram



## 8. INSTALLING GAS MAINS

It is essential that the developer agrees a programme of construction which will enable GTC to co-ordinate main laying activities, within our set timescales.

A site visit will be arranged at the start of your development. At any stage of construction you can contact a GTC Field Engineer for advice and guidance.

Timescales are particularly important when off site mains have to be laid and connected to another upstream Gas Transporters network and approval is required from the Street Authority to work in the public highway.

The developer is responsible for all excavations, duct laying and backfill work on site, unless otherwise requested at the quotation stage.

On request, GTC will normally arrange for the on-site mains to be laid within 15 working days, in trenches and/or ducts provided by the developer.

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

### Excavations

The minimum depth of cover for mains and ducts should be 600mm in footways and 750mm in 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.

The bottom of the trench should be trimmed to enable the main to be bedded evenly and consistently throughout the trench, at the correct cover. Sharp stones should be excluded from the base of the trench. Where the base of the trench is unsuitable e.g. rocks and stones, the trench should be excavated a further 75mm and a bed of suitable fine material laid and compacted.

No other utility should be installed over, below, or within 250mm to the side of the gas main.

### Road Crossing Ducts

The laying of mains across roads can be in an open trench excavated by the developer, however, rigid plastic ducting can be used, but for perpendicular road crossings only. The developer is responsible for the supply and installations of ducting. A suitable standard for plastic ducting is BS 4692.

Corrugated ducting must not be used for road crossings.

The diameter of duct required for each size of main is shown below:

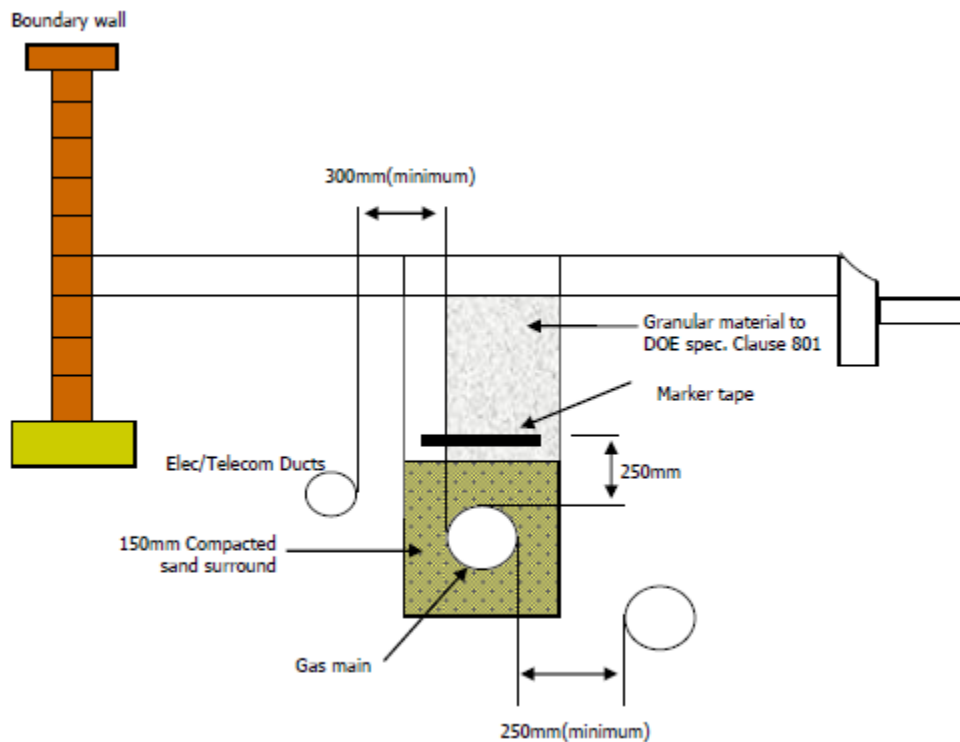
Diameter of main	Internal diameter of duct
63 mm	100 mm
90 mm	150 mm
125 mm	200 mm
180 mm and 250 mm	300 mm
315 mm	400 mm

## Backfill Materials

The developer must arrange for their ground workers to be on site at the time when mains are being laid to ensure that the mains are surrounded by sand or other suitable soft material to a depth of 150mm above the main as soon as possible to avoid damage. Mains will not be tested and commissioned until this partial backfilling is complete.

Backfill and sub-base materials must be free from any organic, perishable or hazardous material.

A 'gas pipe' marker tape, supplied by GTC, must be incorporated within the backfill for all mains and road crossing ducts and be positioned 250mm above the main or duct as shown below:



## 9. INSTALLING GAS SERVICES

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

The gas service must be laid in a straight line along a route as shown on the agreed network drawings, any deviations must be agreed with GTC, prior to laying the service pipe. The route should be perpendicular to the property and take the shortest route possible to the gas main.

A gas service must not run parallel to the gas main.

The following diagrams outline what is considered acceptable practice and what is not:

✓ - Acceptable

✓ - Acceptable but must be accurately recorded

X – Not acceptable



## Below Ground

Service pipes up to 32mm diameter will be provided by GTC and can be laid in a suitable pre-excavated trench by the developer. When required, the developer is responsible for the supply and installation of ducting for service pipes. The ducting should be 60mm diameter, must be yellow and perforated along its entire length, a suitable standard is BS 4692.

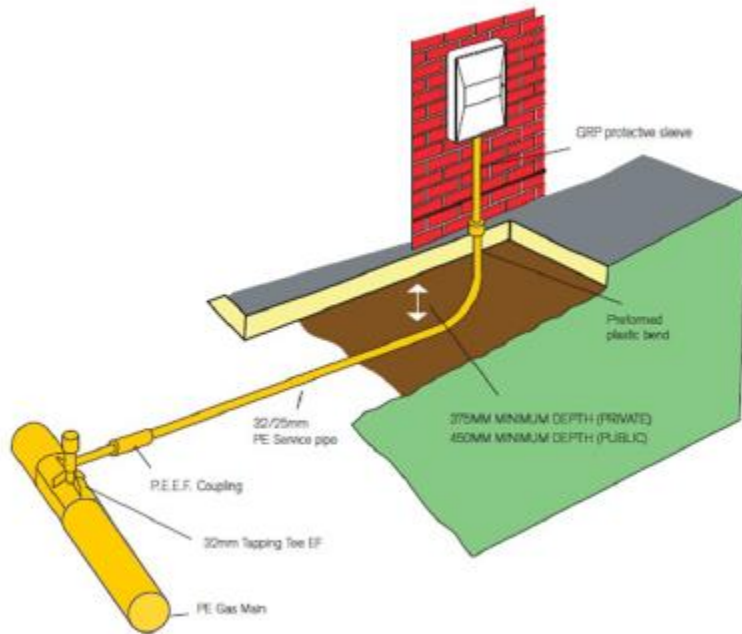
The ends of the pipe or duct must be capped or plugged at all times to prevent ingress of water or debris.

Services over 32mm shall be laid by GTC, in trenches provided by the developer.

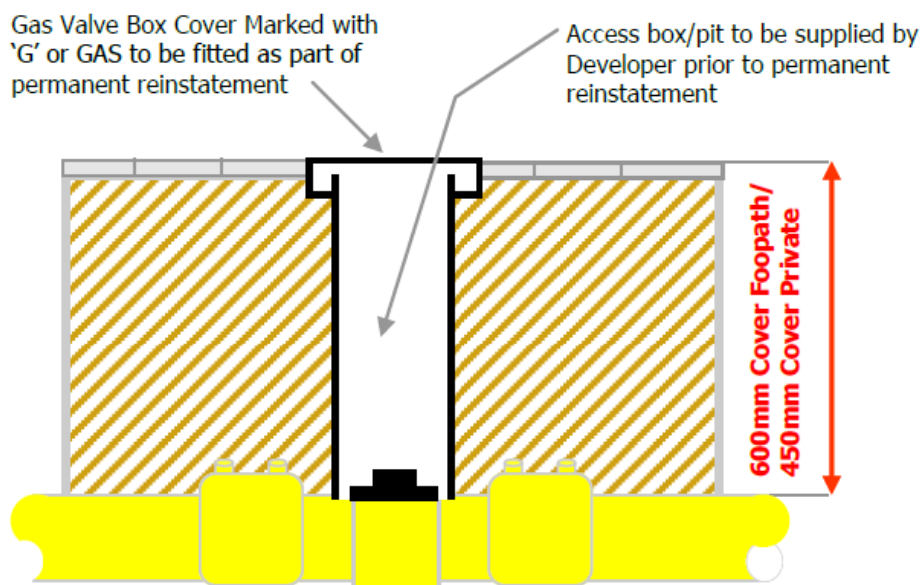
Service pipes must be laid with a minimum depth of cover of 375mm (private) and 450mm (public) from the finished ground level. The pipe must not be kinked, squashed or damaged and should be backfilled with a sand/fine fill surround of 75mm to prevent any damage occurring during final reinstatement. Services over 63mm diameter must be laid to gas mains depths as specified in section 8.

**IF THERE IS INSUFFICIENT COVER THE SERVICE WILL NOT BE COMPLETED AND THE DEVELOPER WILL BE NOTIFIED**

A 700mm 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.



A gas service pipe that incorporates an external isolation valve will require a gas surface box which must remain accessible at all times. This will be supplied by GTC, but the developer is responsible for installing the box as part of the permanent reinstatement as shown below:



## Flatted Properties

Risers more than 20 metres high shall be constructed with welded steel.

Risers and laterals must not be installed in the ceiling space e.g. false ceiling, unless it welded and contained within an independent sealed duct.

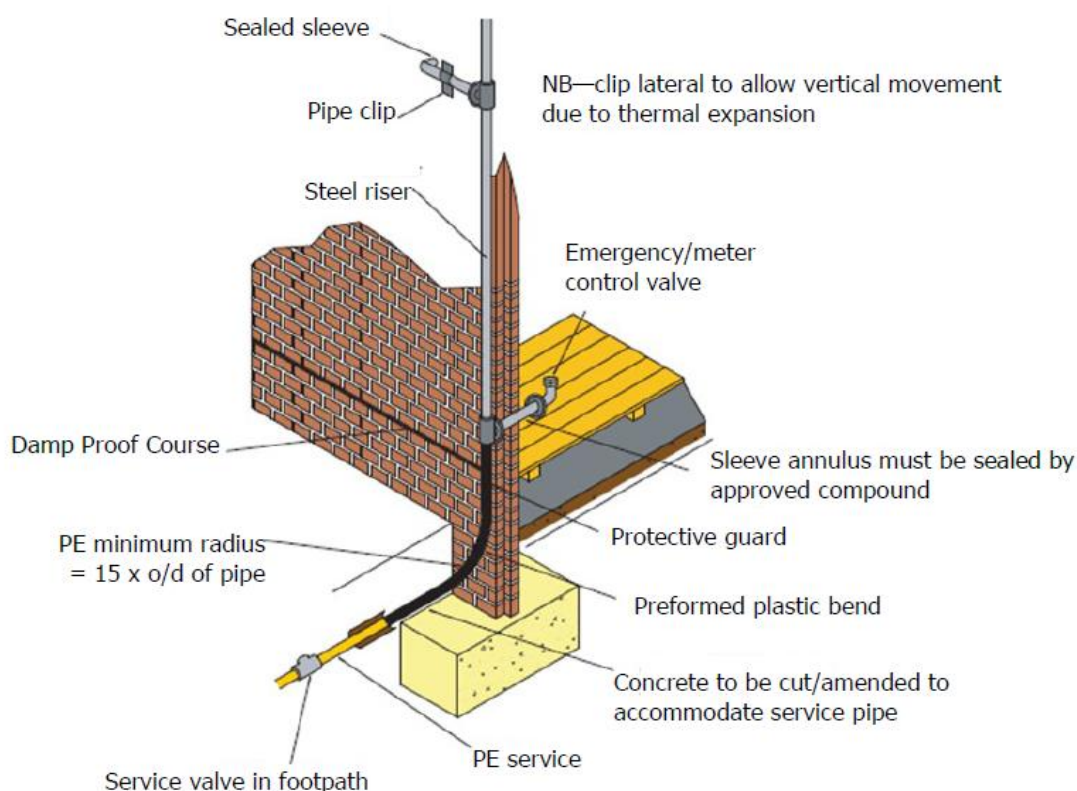
Risers may run in the same duct as other services, however, consideration should be given to the proximity of electrical apparatus so that it does not obstruct the route of the riser. The minimum distance from a riser to electrical cables must be 25mm. The riser must not be installed in a duct if it contains other apparatus that operates in vacuum conditions or contains oxidising or corrosive materials. Guidance is given in BS 8313:1997 Code of practice for accommodation of building services in ducts.

To allow for thermal expansion of the riser a sleeve is required through any boxing/plasterboard for each lateral pipe passing through from the riser to the meter positions on each floor. The sleeve shall be filled with either fire retardant non-setting mastic or alternatively a fire retardant silicone sealant so as to allow for movement of the lateral pipe installed. It is not acceptable for any plasterboard to be in direct contact with the lateral pipe resulting in restraining the lateral and preventing movement.

Riser and laterals shall be sleeved where they pass through any floor or wall.

## External Riser Options

External risers will be secured to the outside of the building and can be left exposed or hidden behind a purpose designed cover or enclosure. The cover or enclosure must be sealed from entry to the building and open to the outside air with suitable ventilation at the top and bottom of the riser.



## Internal Riser Options

A riser can only be installed in a shaft, duct or void, which has adequate ventilation. If the riser is to be enclosed in a continuous duct or an enclosure, the duct or enclosure must be constructed so that it has at least half an hour fire resistance and naturally ventilated at high and low levels.

Where the duct is not continuous, it should be ventilated at the top and bottom of each isolated section as shown below.

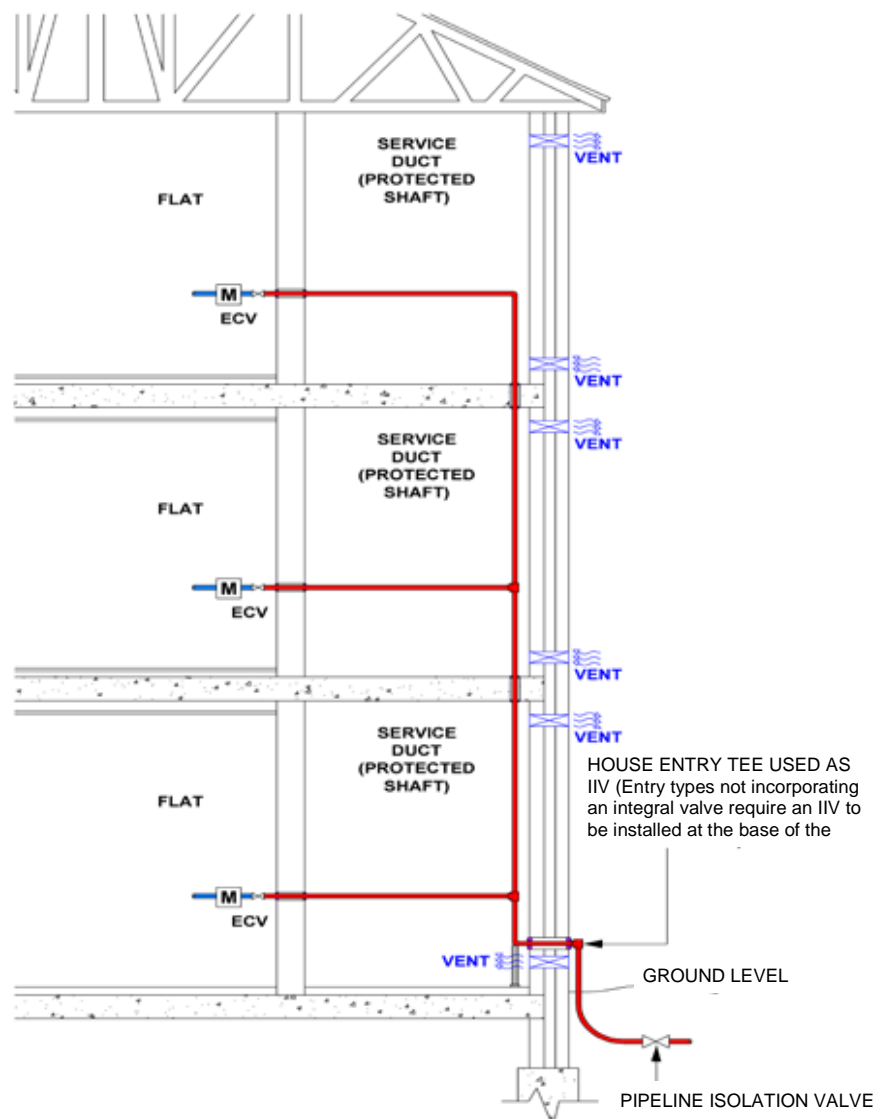
When a riser is installed in a ventilated duct or enclosure, fully removable panels must be provided to allow for access to carry out any future maintenance work.

When risers are not installed in a duct or enclosure, they shall be ventilated indirectly to outside air via an area that is normally occupied and is itself ventilated to outside air, in accordance with Building Regulation requirements.

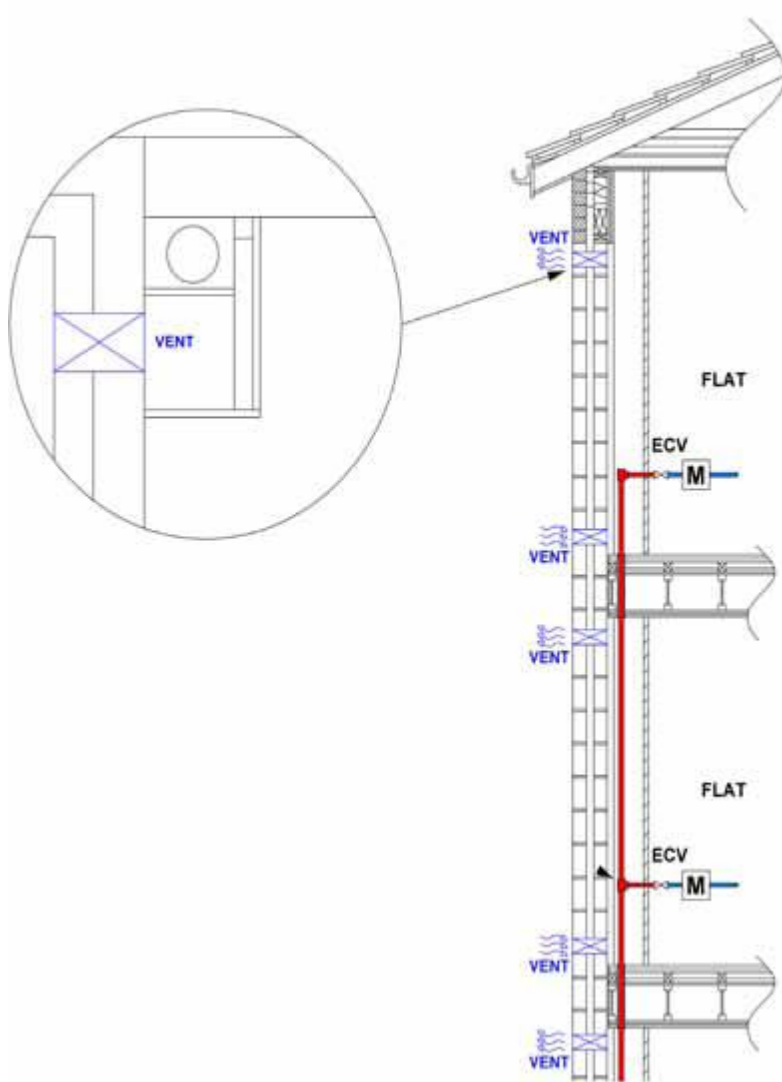
Further detailed guidance can be found in the Institution of Gas Engineers and Managers document IGE G/5. Visit website [www.igem.org.uk](http://www.igem.org.uk)

The following drawings show examples of acceptable internal riser design:

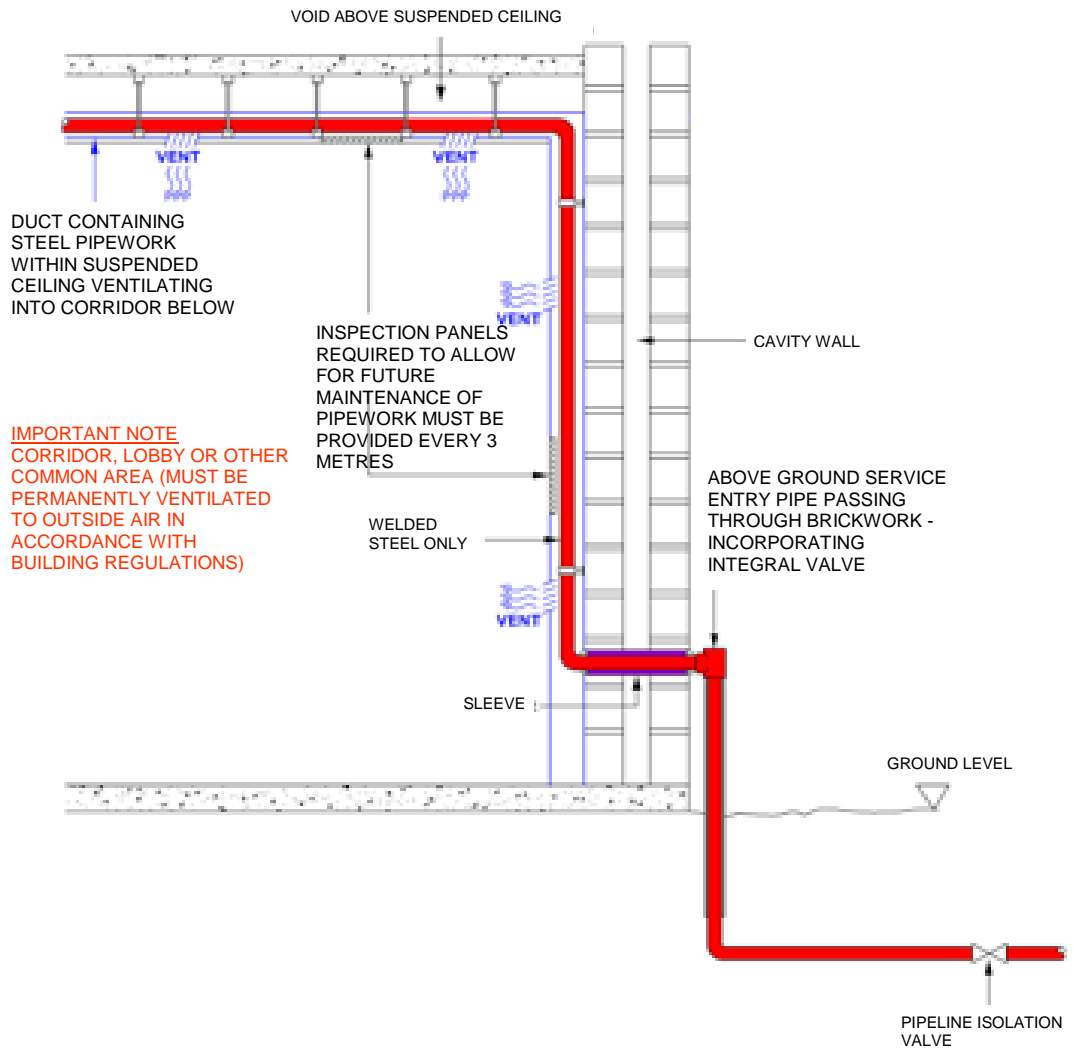
- 1: Internal screwed riser passing through a protective shaft on an outside wall ventilated direct to outside air at each level



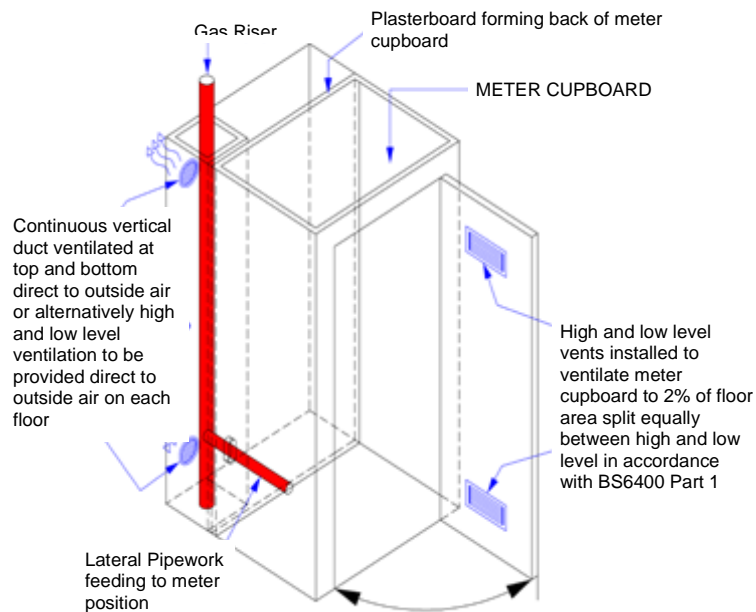
2: Internal Screwed Riser in a duct ventilating direct to outside air via an external wall



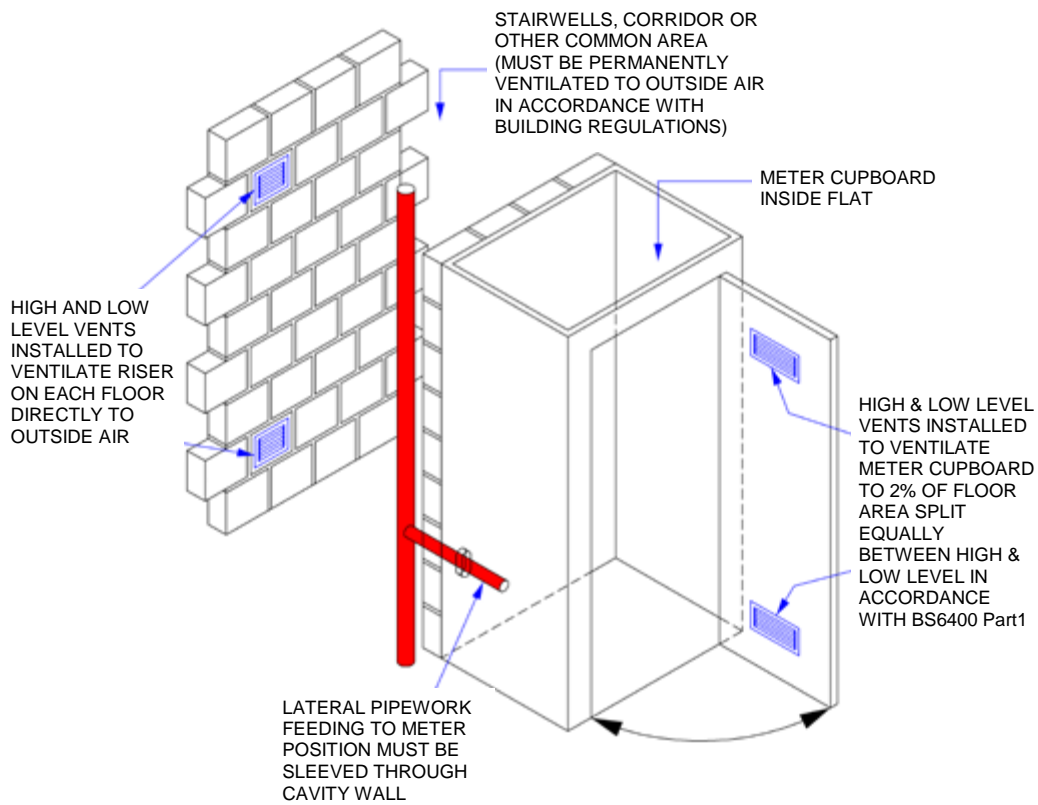
3: Internal welded riser with duct indirectly ventilated to outside air via the corridor, lobby or other common area



4: Riser contained within a duct or boxed in within a meter cupboard ventilated to outside air



5: Riser contained within a stairwell, corridor or other common area ventilated at high and low level directly to outside air



### Timber Framed Flats

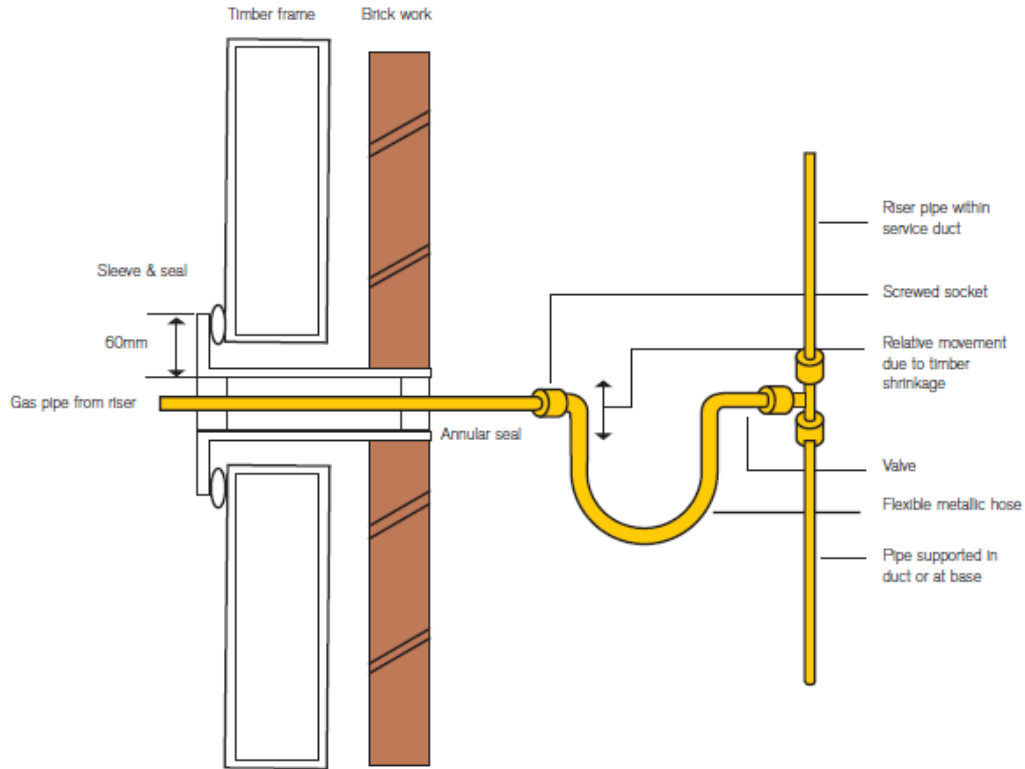
External risers are not permitted on multi-storey timber framed buildings.

Internal risers and laterals must be designed to accommodate relative movement. The inner leaf wall can shrink with respect to the outer leaf by as much as 12.5mm per floor.

To accommodate the relative timber movement, cored holes for the lateral sleeves have to be oversized to ensure that no excessive stress is applied to the sleeve during the 'shrinkage'.

The diagram below shows the type of flanged sleeve that will be installed by GTC to prevent any possibility of gas entering the cavity.

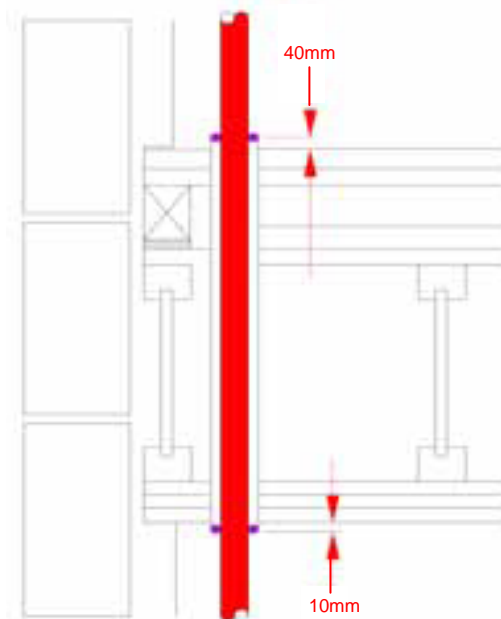
Discussion must take place with GTC at the initial design stage to agree the gas service arrangements.



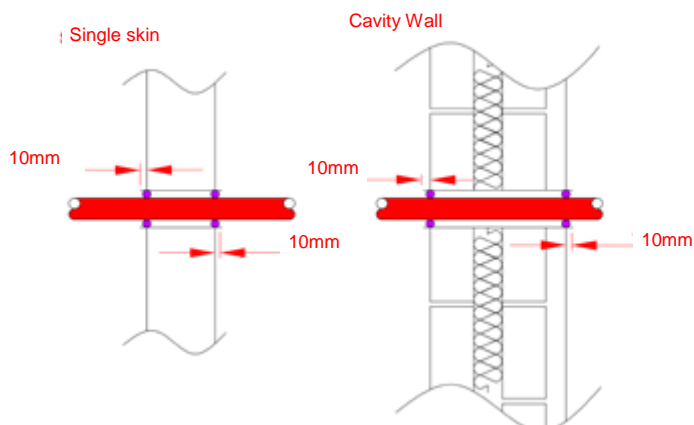
### Preventing Spread of Fire

Risers and laterals shall be fire stopped between fire compartments in accordance with Building Regulations.

The following diagrams provide details of fire stopping and sleeving requirements for risers and laterals passing between floors or fire compartments. Sleeves are required to terminate 40mm above floor level and 10mm below so that it is visible for inspection:



Fire stopping and sleeving requirements for risers and laterals passing through walls or between fire compartments:



Provision shall be made for the installation and access of a gas tamperproof emergency valve by GTC in a location that is close to the point of entry of the gas service from the outside, and is accessible to the fire brigade and GTC for maintenance purposes. The valve should not be accessible to the general public.

Access must be provided to meter enclosures/cupboards and such access shall be restricted to gas consumers and authorised persons. Doors locks should be type FB2 or equivalent.

Emergency control valves must not be boxed in and must remain visible and accessible at all times.

## 10. INSTALLING GAS METERS

Gas meters can only be installed or moved by an Ofgem approved meter installer on the instructions of GTC.

### Domestic

As part of the quotation acceptance the developer should have notified GTC of their chosen Gas Shipper. Meters will be installed in substantially completed properties normally within 5 working days of a request or if requested at the same time that the service is laid. When booking meter fits the developer is required to confirm the GTC network number, plot number and meter box type. It is preferred that a minimum of three meters are booked and connected on each visit.

Meters will not be installed in damaged, un-secured or incorrectly located boxes.

On multi-meter installations, each meter and its associated installation pipe work must be clearly and permanently labelled to identify the particular property that it serves before the meter installation is commissioned. The installation pipe work from each meter will require an additional emergency control valve (AECV) within each property as close as possible to the point where the pipe work enters, consult your GAS SAFE registered installer for further guidance.

## Non-Domestic

To arrange for the meter to be installed the developer should contact their chosen Gas Shipper.

A meter will only be fitted once the Shipper has been confirmed and GTC receives the appropriate instruction from the Shipper.

The meter will then be fitted after the GTC installer has checked and confirmed that the ventilation requirement for the type of meter is adequate.

## Electrical Cross Bonding

An electrical cross bonding wire (where required) should be connected to the gas meter outlet in accordance with IEE Regulations. When the bonding wire enters a built-in box from the rear it must pass through the outlet installation pipe spigot and be contained within the seal. The box must not be broken to accommodate the bonding wire.

## 11. PRESSURE REDUCTION INSTALLATIONS

When a Pressure Reduction installation (PRI) is required to be installed on site, its position must be agreed with GTC at the planning stage.

The PRI must be sited to avoid the possibility of vehicular impact and weight of vehicles parking or running over pit covers. The site must be located away from where the water table is high or the potential of flooding exists. There must be constant access for future maintenance or any potential emergency works.

The proximity to buildings must be taken into account, the PRI must be sited at least 3 metres from any building or ignition source.

An on-site meeting with a GTC representative must take place to confirm the exact location of the PRI and the excavation and reinstatement requirements.

Above ground PRI kiosks shall be permanently attached to a 200mm thick reinforced concrete base. The concrete base shall finish above ground level and its dimensions shall extend at least 200mm beyond the perimeter of the kiosk.

Below ground PRI modules lids will have a 600mm surround of reinforced concrete to a thickness of 100mm. The site surface shall be finished to ensure any water run-off is not onto the lid.

Associated surface covers shall have a minimum 200mm concrete surround to a thickness of 100mm and marker posts fitted.



## **12. C.D.M. REGULATIONS 2007**

GTC Pipelines Limited (GPL) is a licensed Gas Transporter. GTC operates under the GPL Safety Case, which is accepted by the Health and Safety Executive.

The Safety Case details how GTC complies with all relevant Health and Safety legislation affecting the design, installation and operation of gas networks.

GTC 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 GTC Pipelines Limited. GTC will be responsible for the operation and maintenance of the network on behalf of GPL.

Should you require any further information please contact the GTC Technical Manager.