

***IGEM/G/1 Edition 2
Communication 1765***

***Defining the end of the Network, a meter
installation and installation pipework***



*Founded 1863
Royal Charter 1929
Patron: Her Majesty the Queen*

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CONTENTS

SECTION		PAGE
1	Introduction	1
2	Scope	4
3	Legislation, Codes of Practice and official guidance	5
	• 3.1 General	5
	• 3.2 Selected extracts from the regulations	5
	• 3.2.1 GS(M)R	5
	• 3.2.2 GS(I&U)R	6
	• 3.2.3 Guidance to GS(I&U)R (HSL56)	7
	• 3.2.4 PSR	8
4	Primary definitions	9
	• 4.1 Introduction	9
	• 4.1.1 Network	9
	• 4.1.2 End of the Network	9
	• 4.1.3 Emergency control valve (ECV)	9
	• 4.1.4 Additional emergency control valve (AECV)	9
	• 4.1.5 Meter installation	9
	• 4.1.6 Installation pipework	10
5	Secondary definitions	11
6	Standard and legacy gas supply arrangements	14
	• 6.1 General	14
	• 6.2 Standard gas supply arrangements	14
	• 6.3 Legacy gas supply arrangements	14

APPENDIX

1	Acronyms and abbreviations	16
2	References	17
3	Standard gas supply arrangements	19
4	Legacy gas supply arrangements	36

FIGURES

1	Key to Figures 2 to 27	19
2	Normative documents applicable to standard gas supply arrangements	20
3	Standard arrangement. Supply MOP ≤ 75 mbar. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	21
4	Standard arrangement. Supply MOP ≤ 75 mbar. Semi-concealed installation. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	21

5	Standard arrangement. Supply MOP $\leq$ 75 mbar. Located in high rise buildings (banked meters)	22
6	Standard arrangement. Supply MOP $\leq$ 75 mbar. Located in high rise buildings (single service riser to individual meters)	23
7	Standard arrangement. Typical remote bulk meter. AECVs and secondary meters within individual dwellings	24
8	Standard arrangement. 75 mbar < supply MOP $\leq$ 2 bar. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	25
9	Standard arrangement. 75 mbar < supply MOP $\leq$ 2 bar. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	25
10	Standard arrangement. Supply MOP $\leq$ 75 mbar. Meter re-positioned inside the premises. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	26
11	Standard arrangement. 75 mbar < supply MOP $\leq$ 2 bar. Meter re-positioned inside the premises. Capacity $\leq 6 \text{ m}^3 \text{ h}^{-1}$	26
12	Standard arrangement. Supply MOP $\leq$ 75 mbar. Diaphragm meter. $6 \text{ m}^3 \text{ h}^{-1} < \text{Capacity} \leq 16 \text{ m}^3 \text{ h}^{-1}$	27
13	Standard arrangement. Supply MOP $\leq$ 75 mbar. Diaphragm meter. Capacity $> 16 \text{ m}^3 \text{ h}^{-1}$	27
14	Standard arrangement. Supply MOP $\leq$ 75 mbar. Diaphragm meter with by-pass. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	28
15	Standard arrangement. Supply MOP $\leq$ 75 mbar. RD or turbine meter. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	28
16	Standard arrangement. Supply MOP $\leq$ 75 mbar. RD or turbine meter with by-pass. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	29
17	Standard arrangement. 75 mbar < supply MOP $\leq$ 2 bar. Single stream. Diaphragm, RD or turbine meter. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	29
18	Standard arrangement. 75 mbar < supply MOP $\leq$ 2 bar. Twin stream. Diaphragm, RD or turbine meter. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	30
19	Standard arrangement. 2 bar < supply MOP $\leq$ 38 bar. Twin stream. Diaphragm, RD, turbine or ultrasonic meter. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	30
20	Standard arrangement. 75 mbar < supply MOP $\leq$ 38 bar. Remote regulators separated by above ground pipework. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	31
21	Standard arrangement. Any supply MOP. Unregulated single stream. Non-domestic. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	31
22	Standard arrangement. Any supply MOP. Unregulated twin filter stream. Non-domestic. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	32
23	Standard arrangement. Any supply MOP. Unregulated twin filter and twin meter stream. Non-domestic. Capacity $> 6 \text{ m}^3 \text{ h}^{-1}$	32
24	Standard arrangement. Typical high pressure meter installation	33

25	Standard arrangement. 75 mbar < supply MOP ≤ 2 bar. Remote service regulator, ECV and local low pressure regulator. Capacity ≤ 6 m ³ h ⁻¹	34
26	Standard arrangement. Large installation. Above and below ground pipework	34
27	Standard arrangement. Supply MOP ≤ 75 mbar. Capacity > 6 m ³ h ⁻¹	35
28	Key to Figures 29 to 52	36
29	Legacy arrangement. 75 mbar < supply MOP ≤ 2 bar. Meter re-positioned inside the premises. Capacity ≤ 6 m ³ h ⁻¹	38
30	Legacy arrangement. 75 mbar < supply MOP ≤ 2 bar. Remote regulator	38
31	Legacy arrangement. 75 mbar < supply MOP ≤ 2 bar. Remote regulator and AECV	38
32	Legacy arrangement. Meters located in high rise buildings	39
33	Legacy arrangement. 75 mbar < supply MOP ≤ 2 bar. Twin stream. RD or turbine meter. Capacity > 6 m ³ h ⁻¹	40
34	Legacy arrangement. 2 bar ≤ supply MOP ≤ 100 bar. Twin stream with separate filter set. RD, turbine or ultrasonic meter. Capacity > 6 m ³ h ⁻¹	40
35	Legacy arrangement. 75 mbar < supply MOP ≤ 7 bar. Remote regulator and AECV. Capacity > 6 m ³ h ⁻¹	41
36	Legacy arrangement. 75 mbar ≤ supply MOP ≤ 7 bar. Remote regulator, AECV and local low pressure regulator. Capacity > 6 m ³ h ⁻¹	41
37	Legacy arrangement. 75 mbar < supply MOP ≤ 7 bar. Remote service regulator and no meter regulator. Capacity > 6 m ³ h ⁻¹	41
38	Legacy arrangement. Any supply MOP. Unregulated with twin stream filter set. Capacity > 6 m ³ h ⁻¹	42
39	Legacy arrangement. Large installation. Above and below ground pipework	42
40	Legacy arrangement. Typical high pressure meter installation	43
41	Legacy arrangement. Typical large meter installation incorporating above and below ground pipework	44
42	Legacy arrangement. A gas conveyor's network downstream of a GT's network	44
43	Legacy arrangement. Larger sites. Large installation with remote ECV. Above and below ground pipework	45
44	Legacy arrangement. Supply MOP > 75 mbar. Twin stream underground regulator set with only short lengths of buried pipework	46
45	Legacy arrangement. Supply MOP > 75 mbar. Twin stream underground regulator set with only short lengths of buried pipework	46
46	Legacy arrangement. Supply MOP ≤ 7 bar. Installation without MIV. Capacity ≤ 6 m ³ h ⁻¹	47

47	Legacy arrangement. 75 mbar < supply MOP ≤ 7 bar. Remote regulator with ECV on its inlet supplying multiple meter installations	47
48	Legacy arrangement. 75 mbar < MOP ≤ 7 bar. Remote regulator supplying multiple meter installations each with local ECV	48
49	Legacy arrangement. Supply MOP ≤ 75 bar. Capacity ≤ 6 m ³ h ⁻¹ Domestic diaphragm meter installation installed with two flexibles	48
50	Legacy arrangement. 75 mbar < supply MOP ≤ 7 bar. Typical UNC sub deduct arrangement. ECV located within the primary meter installation	49
51	Legacy arrangement. Typical UNC sub deduct arrangement. ECV on inlet to primary meter installation	49
52	Legacy arrangement. Supply MOP ≤ 75 mbar. ECV located downstream of regulator	50

SECTION 1 : INTRODUCTION

- 1.1 This Standard provides a framework and a consistent approach for the arrangement of Natural Gas distribution mains, services, primary meter installations and installation pipework.

IGEM/G/1 Edition 2 supersedes the 1st, 2nd, and 3rd Impressions (Communication 1733), of IGEM/G/1 which are obsolete.

- 1.2 For the purposes of this Standard, definitions have been agreed between parties involved in the introduction of competition into metering activities in Great Britain. The Institution of Gas Engineers and Managers (IGEM) consulted appropriate regulatory bodies (HSE, Ofgem and Gas Safe Register), associations of gas transporters (GTs), suppliers and shippers, meter asset managers (MAMs), installation pipework owners and installers and manufacturers of pipe, meters, regulators and other equipment associated with gas systems at the end of networks.

- 1.3 Arising from the provision in the Gas Act 1986 (as amended) (see clause 3.1.2), metering services and, in particular, the provision of gas supply meters at gas consumers' premises are provided by competitive service providers under the revision of gas metering arrangements (RGMA).

In order to facilitate the operation of the market and to provide necessary controls, a number of industry documents have been published which include:

- OFGAS Gas Metering Definitions
- OFGAS Codes of Practice, CoP1/a, 1/b and 1/c, which specify standards and processes applicable to meter installations
- MAM Code of Practice (MAMCoP)
- OFGAS Meter Competition Focus Group – Definitions Expert Group Final Report, June 2000, which defines the competitive area for meter installations.

Work dataflows across the industry need to conform to the relevant parts of the Review of Gas Metering Arrangements (RGMA) processes managed by Supply Point Administration Agreement (SPAA Ltd).

IGEM/G/1 Edition 2 builds on the above documents to provide additional and supplementary detail to assist parties who have statutory duties under legislation in the development of arrangements and to assist in the provision of a safe and secure supply of gas to consumers.

- 1.4 In defining the end of the network, there are repercussions with respect to the boundaries of responsibility between a GT/gas conveyor with network management responsibilities, the meter installation owner/MAM and the installation pipework owner/operator. Notwithstanding the Notes (below), the document is, to IGEM's best knowledge, consistent with the current editions of:

- Gas Safety (Management) Regulations (GS(M)R)
- Gas Safety (Installation and Use) Regulations (GS(I&U)R)
- Pipeline Safety Regulations (PSR)
- Pressure Systems Safety Regulations (PSSR).

Note 1: This Standard contains specific terminology which may differ from the legal meaning.

Note 2: This Standard does not include all possible configurations, and the law may allow deviation from the common practices shown. For example, the designation of an "emergency control" in a particular situation will, ultimately, rest on the facts of the case, that is primarily on intended use by a consumer of gas.

1.5 This Standard recognises inconsistency between relevant official CoPs, guidance to legislation, and national and industry standards. They attempt to consolidate the varied use of different terms across such publications, to provide a base for their future amendment and to represent current best practice. These publications include:

- HSL56
- HSL80
- HSL81
- HSL82
- HSL122
- HSL144
- OFGAS Gas Metering Definitions
- OFGAS CoPs: 1/a, 1/b and 1/c (see Sub-Section 1.3)
- SPAA MAMCoP
- IGE/GM/5
- IGE/GM/6
- IGE/GM/7A
- IGE/GM/7B
- IGE/GM/8
- IGE/UP/1
- IGE/UP/1A
- IGE/UP/1B
- IGE/UP/1C
- IGE/UP/2
- IGE/TD/1
- IGE/TD/3
- IGE/TD/4
- IGE/TD/13
- IGE/G/5
- BS 6400-1
- BS 6400-2
- BS 6891.

Appendix 2 provides detail of these publications.

Any definitions relating to this Standard but not contained within it are given in IGE/G/4, which is free to access and download from www.igem.org.uk.

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1.6

This Standard makes use of the terms “must”, “shall” and “should” when prescribing particular requirements. Notwithstanding Sub-Section 1.7:

- the term “must” identifies a requirement by law in Great Britain (GB) at the time of publication
- the term “shall” prescribes a requirement which, it is intended, will be complied with in full and without deviation
- the term “should” prescribes a requirement which, it is intended, will be complied with unless, after prior consideration, deviation is considered to be acceptable.

Such terms may have different meanings when used in legislation, or Health and Safety Executive (HSE) Approved Codes of Practice (ACoPs) or guidance, and reference needs to be made to such statutory legislation or official guidance for information on legal obligations.

1.7

The primary responsibility for compliance with legal duties rests with the employer. The fact that certain employees, for example “responsible engineers”, are allowed to exercise their professional judgement does not allow employers to abrogate their primary responsibilities. Employers must:

- have done everything to ensure, so far as it is reasonably practicable, that “responsible engineers” have the skills, training, experience and personal qualities necessary for the proper exercise of professional judgement
- have systems and procedures in place to ensure that the exercise of professional judgement by “responsible engineers” is subject to appropriate monitoring and review
- not require “responsible engineers” to undertake tasks which would necessitate the exercise of professional judgement that is not within their competence. There should be written procedures defining the extent to which “responsible engineers” can exercise their professional judgement. When “responsible engineers” are asked to undertake tasks which deviate from this, they should refer the matter for higher review.

1.8

This Standard was published in August 2013.

SECTION 2 : SCOPE

- 2.1 This Standard is applicable to all Natural Gas systems and provides a framework for the arrangement of gas distribution mains, services, primary meter installations, installation pipework and includes:
- definitions for the end of the gas network, the primary meter installation (including any associated regulator) and installation pipework
 - illustrations of a range of standard arrangements which are deemed appropriate for the gas industry as it currently operates and which will simplify any new arrangements that are required, to ensure a safe and secure supply of gas to a consumer
 - illustrations of a range of legacy arrangements, which are not recommended with respect to their design or layout
 - identification of boundaries and interfaces.
- Note: The definition of these boundaries and interfaces is essential so that relevant information can be exchanged between organisations and persons who have a duty to ensure a safe and secure supply of gas to premises.*
- 2.2 The term “regulator” is intended to mean “meter regulator” unless otherwise stated.
- 2.3 All pressures are gauge pressures unless otherwise stated.
- 2.4 Italicised text is informative and does not represent formal requirements.
- 2.5 Appendices are informative and do not represent formal requirements unless specifically referenced in the main sections by the terms “must”, “shall” or “should”.

SECTION 3 : LEGISLATION, CODES OF PRACTICE AND OFFICIAL GUIDANCE

3.1 GENERAL

3.1.1 This Standard assumes that organisations and persons are aware of relevant legislation. It does not change, replace or supersede the requirements of legislation nor any arrangements that are in place to manage the supply of gas, nor does it detail any duties or requirements that may arise as a conveyor of gas on the Network; the operator of a pipeline; the user of a pressure system; the owner of a primary meter; an installer or a gas consumer.

3.1.2 Relevant to this Standard are:

- Gas Act 1986 which has been amended by:
 - Competition and Service (Utilities) Act 1992 (clause 43)
 - Gas Act 1995
 - Competition Act (1998 (c.41)
 - Utilities Act 2000 (c.27)
 - Gas (Exemptions) Order 2011.
- Gas Safety (Installation and Use) Regulations 1998 (GS(I&U)R), as amended
- Gas Safety (Management) Regulations 1996 (GS(M)R)
- Health and Safety at Work etc. Act 1974 (HSWA)
- Management of Health and Safety at Work Regulations 1999 (MHSWR)
- Pipeline Safety Regulations 1996 (PSR)
- Pressure Systems Safety Regulations 2000 (PSSR)
- HSL56
- HSL80
- HSL81
- HSL82
- HSL122.

3.2 SELECTED EXTRACTS FROM THE REGULATIONS

Note: This Standard does not always use precisely the definitions given below (see Sub-Section 1.4). Where definitions for terms within this Sub-Section are not given in Section 4 or 5, the definition as given in the appropriate Regulations, AcoP or Guidance applies.

3.2.1 GS(M)R

3.2.1.1 Regulation 6 (8)

“A person who conveys gas in a network shall, where he is requested to do so by a person proposing to carry out work in relation to a gas fitting, provide him with information about the operating pressures of the gas at the outlet of a service pipe.”

3.2.1.2 *Guidance 2 (1)*

"An emergency control is a valve intended for use by a consumer for turning off the gas supply in an emergency. An emergency control will always be found at the end of a service pipe but additional controls may be found in premises, for example, if the primary meter is moved to assist a disabled person."

"A service pipe connects the distribution main to individual premises, terminating at the outlet of the emergency control valve immediately upstream of the installation pipework and other gas fittings."

3.2.1.3 *Guidance 2 (2)*

"A network starts from a processing facility, storage facility or interconnector importing gas into Great Britain but does not include it. However, where a pipeline, for the time being, is used to convey gas from Great Britain, it will be necessary for the gas transporter on that pipeline to prepare a safety case in accordance with these Regulations. The end of the network is the outlet of the emergency control at the end of the service pipe."

3.2.2 **GS(I&U)R**

3.2.2.1 *Part A Regulation 2 (1)*

"'Service pipe' means a pipe for distributing gas to a premises from a distribution main, being a pipe between the distribution main and the outlet of the first emergency control downstream from the distribution main."

3.2.2.2 *Part B Regulation 9 (1)*

"No person shall for the first time enable gas to be supplied for use in any premises unless there is provided an appropriately sited emergency control to which there is adequate access."

3.2.2.3 *Part B Regulation 9 (2)*

"Any person installing an emergency control shall ensure that:

- a) any key, lever or hand-wheel of the control is securely attached to the operating spindle of the control;
- b) any such key or lever is attached so that –
 - 1) the key or lever is parallel to the axis of the pipe in which the control is installed when the control is in the open position; and
 - 2) where the key or lever is not attached so as to move only horizontally, gas cannot pass beyond the control when the key or lever has been moved as far as possible downwards;
- c) either the means of operating the key or lever is clearly and permanently marked or a notice in permanent form is prominently displayed near such means as to indicate when the control is open and when the control is shut; and
- d) any handwheel indicates the direction of opening or closing of the control."

3.2.2.4 *Part B Regulation 9 (3)*

"Where a person installs an emergency control which is not adjacent to a primary meter, he shall immediately thereafter prominently display on or near the means of operating the control a suitably worded notice in permanent form indicating the procedure to be followed in the event of an escape of gas."

3.2.2.5 *Part B Regulation 14 (1)*

"No person shall install a primary meter or meter bypass used in connection with a primary meter unless –

- 1) there is a regulator controlling the pressure of gas supplied through the meter or the bypass, as the case may be, which provides adequate automatic means for preventing the gas fittings connected downstream side of the regulator from being subjected to a pressure greater than that for which they were designed;
- 2) where the normal pressure of the gas supply is 75 mbar or more at the inlet to the regulator, there are also adequate automatic means for preventing, in case the regulator should fail, those gas fittings from being subjected to such a greater pressure; and
- 3) where the regulator contains a relief valve or liquid seal, such valve or seal is connected to a vent pipe of adequate size and so installed that it is capable of venting safely."

3.2.3 **Guidance to GS(I&U)R (HSL56)**

3.2.3.1 *Guidance 2 (Paragraph 3)*

"The emergency control is a valve intended, and readily accessible, for use by the consumer, i.e. end-user, of gas. For example, a valve located in a meter room which is locked for security, and accessible only to a landlord, gas supplier, gas transporter and/or emergency services, cannot be regarded as an 'emergency control'. Where a meter is fitted, the meter control valve may be used as the emergency control, subject to certain conditions – see Regulation 9 (1) and paragraph 92."

3.2.3.2 *Guidance 2 (Paragraph 4)*

"Although there may be more than one emergency control serving a particular premises, it is the outlet of the first emergency control downstream of the distribution main which marks the interface between a 'service pipe' and 'installation pipework'. There is a similar interface in other related legislation, e.g., the Pipeline Safety Regulations 1996."

3.2.3.3 *Guidance 9 (1) (Paragraph 92)*

"Whenever a new supply of gas is made available for use in premises, an emergency control should also be provided; where there is a gas meter, the meter control may serve as the emergency control as long as the conditions (as follows) are met. Each individual premises (e.g. each house, flat, maisonette, or caravan) using a supply of gas should be provided with an emergency control, whether or not that premises contains a gas meter. The emergency control should be situated as near as is reasonably practicable to the point where the pipe supplying gas enters the premises. It should be readily accessible to all consumers, i.e. gas users, in the premises concerned (e.g. not located in a basement or cellar); therefore, a valve located in a meter-room which is normally locked, and accessible only to a landlord, gas supplier, gas transporter and/or emergency services, for example, cannot act as an 'emergency control'. An emergency control should be protected against unauthorised operation (i.e. tamper-proof) but if situated in a locked compartment, the occupier(s) of the premises should be provided with keys (see also Regulation 13(3)–(4)). In such cases, the emergency service provider should also hold keys where access cannot be ensured for them at all times, e.g. through keys held by the responsible person for premises."

3.2.3.4 *Guidance 9 (2) (Paragraph 96)*

"The emergency control can operate by a key, lever or a handwheel which should be securely attached to the operating spindle of the control. Where a key or lever is used, the 'open' position should be when the key or lever is parallel with the axis of the pipe. The 'off' position should be approximately one quarter turn of the key or lever to the right or left, where the key or lever moves in the vertical plane, the move to the 'off' position should be in the downwards direction. Either the key or lever itself, or a nearby permanent notice, should indicate how the control operates and when the gas is 'off' and 'on'."

"Controls operated by handwheels need to indicate the opening and/or closing directions for the control."

3.2.4 **PSR**

Regulation 3

"A pipeline for supplying gas to premises shall be deemed not to include anything downstream of an emergency control."

"Emergency control means a valve for shutting off the supply of gas in an emergency, being a valve intended for use by a consumer of gas."

SECTION 4 : PRIMARY DEFINITIONS

4.1 INTRODUCTION

The definitions in this section represent IGEN's interpretation of legislation in Great Britain and the Ofgas Gas Metering Definitions. In general, all the definitions accommodate all "standard gas supply arrangements" (see Sub-Section 6.2 and Appendix 3). However, some also accommodate "legacy gas supply arrangements" (see Sub-Section 6.3 and Appendix 4).

For this Standard, the following definitions shall be adopted.

4.1.1 NETWORK

The Network comprises interconnecting pipes which are downstream of a gas reception terminal, processing facility, storage facility or importing interconnector, and used for the conveyance of gas to consumers as defined in GS(M)R.

Note: A "network" is part of the "Network".

4.1.2 END OF THE NETWORK

The end of the Network is the outlet of the emergency control valve (ECV) as defined by relevant legislation and explained further in clause 4.1.3.

4.1.3 EMERGENCY CONTROL VALVE (ECV)

The ECV is a valve (see GS(I&U)R Regulation 2), not being an "additional emergency control valve" (AECV) (see clause 4.1.4) for shutting off the supply of gas in an emergency, intended for use by a consumer of gas and being installed at the end of a service or distribution main. The outlet of the ECV terminates, and thus defines the end of, the Network.

Note 1: The gas conveyor (which is, normally, a GT) has to agree the designation of the ECV which defines the end of the Network. For all "standard gas supply arrangements", the ECV will be upstream of all components of the meter installation.

Note 2: For further information, see HSL56.

Note 3: Advice on installation and labelling of ECVs is given in IGEN/GM/6, IGE/GM/8, IGEN/UP/2 and IGE/TD/4, as appropriate.

4.1.4 ADDITIONAL EMERGENCY CONTROL VALVE (AECV)

The AECV is a valve, not being the ECV, for shutting off the supply of gas in an emergency, intended for use by a consumer of gas. AECV(s) may be located within either the meter installation or installation pipework and, as such, may not isolate all of the consumer's pipework or meter installation.

Note 1: An AECV does not denote the end of the Network and is always fitted downstream of the ECV. The existence of an AECV does not affect the existence of an ECV (which is always required).

Note 2: Advice on installation and labelling AECVs is given in IGEN/GM/6, IGE/GM/8, BS 6891, IGEN/G/5, IGEN/UP/2 and IGE/TD/4, as appropriate.

4.1.5 METER INSTALLATION

4.1.5.1

A meter installation includes a primary meter and any associated volume conversion system, valve, filter, meter regulator or pressure regulating installation (PRI), flexible connection, meter by-pass, interconnecting pipework, fitting and support.

4.1.5.2 A meter installation commences at either:

- the outlet of the first common valve through which all the gas entering the meter installation will pass and which is upstream of the first meter regulator/PRI (including any filtration) upstream of the meter or,
- in the case of a meter upstream of a regulator/PRI, or of an unregulated supply, the outlet of the first common valve upstream of the primary filter(s) for the meter installation.

4.1.5.3 A meter installation terminates at:

- the outlet connection of the meter (if a meter outlet valve (MOV) is not fitted) or,
- the outlet of the meter outlet adaptor if fitted or,
- the outlet of the MOV (or outlet spool) if fitted or,
- the outlet of the tee fitted downstream of the meter where a meter by-pass rejoins the pipework on the outlet of the meter or,
- in the case of a meter upstream of a regulator/PRI, the outlet of the regulator/PRI outlet valve (PRIOV) or spool piece for a regulator by-pass or, where a twin stream regulator/PRI is installed, the outlet of the tee where the two streams join or,
- the outlet of the meter installation outlet valve (MIOV) if fitted or,
- in the case of a semi-concealed domestic meter with a flexible connection downstream of the meter, the outlet of the meter box outlet adaptor,

whichever is appropriate for the system.

Note: Legacy gas supply meter installations will not necessarily comply with these arrangements (see Appendix 4).

4.1.6 **INSTALLATION PIPEWORK**

Installation pipework is any pipework for conveying gas for a particular consumer and any associated valve or other gas fitting, including any pipework used to connect a gas appliance to other installation pipework and any shut off device at the inlet to the appliance, but it does not mean:

- a service pipe
- a pipe comprised in a gas appliance
- any valve attached to a storage container or cylinder
- service pipework.

Note: For the purposes of this Standard:

- installation pipework also does not mean pipework within a meter installation
- for 'standard gas supply arrangements' (see Appendix 3) installation pipework also does not mean pipework upstream of a meter installation.

SECTION 5 : SECONDARY DEFINITIONS

This Standard should be read alongside IGE/G/4 "Definitions for the gas industry", which is freely available to download from www.igem.org.uk.

arrangements	Processes, practices and contracts that an organisation or person has in place to manage their undertaking.
consumer	End-user of gas.
duty holder	Person or organisation having responsibility in law.
gas conveyor	Person who conveys gas through pipes and the Network and having duties under GS(M)R and PSR and who may also hold a Gas Transportation Licence.

Note 1: There cannot be a gas conveyor on pipe designated as installation pipework.

Note 2: The Gas Act 1986 Schedule 2a, paragraph 1a permits a landlord to be a gas conveyor without a gas transporter's licence. However they would still be required to comply with GS(M)R(unless that pipework is adopted formally by an upstream conveyor); PSR and GS(I&U)R.

gas fitting	Gas pipework, valves (other than the ECV), regulators, meters, fittings, apparatus and appliances designed for use by consumers of gas for heating, lighting, cooking or other purposes for which gas can be used, but it does not mean: • any part of a distribution main or service (pipe) • any part of a pipeline upstream of a distribution main or service (pipe) • a gas storage vessel • a gas cylinder or cartridge designed to be disposed of when empty.
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gas meter	Instrument designed to measure, memorise and display the quantity of fuel gas (volume or mass) that has passed through it.
------------------	--

Note: A "smart meter" is defined as a meter with additional functionalities, for example two way data communication.

gas transporter (GT)	Company, licensed by Ofgem, which transports gas through its network on behalf of a gas shipper.
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inlet isolation valve (IIV)	Valve, not being an ECV and always installed upstream of an ECV, to enable isolation of gas to all parts of a building, by an authorised party.
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legacy gas supply arrangements	Configurations that are not consistent with the installations defined as being standard gas supply arrangements.
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Note: Such legacy arrangements were usually installed prior to the publication of IGE/G/1 Edition 1.

legacy meter owner	GT which provided a meter under licence conditions in a configuration not consistent with "standard gas supply arrangements". Usually, this would have been prior to the publication of IGE/G/1 Edition 1.
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