Institution of Gas Engineers & Managers

# DOMESTIC SUPPLY CAPACITY AND OPERATING PRESSURE AT THE OUTLET OF THE METER

**IGEM/G/13 with amendments August 2023**
Communication 1875

ASSIDUE EXQUIRENDO SERVIRE

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# *Domestic supply capacity and operating pressure at the outlet of the meter*

*Founded 1863*
*Royal Charter 1929*

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## SECTION 1 : INTRODUCTION

1.1 This Standard supersedes Edition 1 published in 2022 Communication 1868.

1.2 This Standard has been drafted by a Working Group appointed by the Institution of Gas Engineers and Managers' (IGEM's) Technical Co-ordinating Committee, subsequently approved by that Committee; the Gas Utilisation Committee, the Gas Measurement Committee and the Gas Transmission and Distribution Committee and published by the authority of the Council of IGEM.

1.3 During 2016, following complaints raised by installers to the Standards Consultation Forum (SCF) (part of the Standards Setting Body), work was carried out by the Gas Distribution Network (GDN) companies to produce an Energy Networks Association (ENA) document entitled "Gas industry bulletin – Response to poor pressure reports". This document, that was provided to the SCF, was not seen by this industry group as satisfying their concerns resulting from incidents of low pressure experienced by installers. As a result, SCF made a request that IGEM facilitate a working group to consider the matter more fully.

1.4 IGEM sought agreement from the Technical Coordinating Committee (TCC) to undertake the work on behalf of the industry, which was tabled at a TCC meeting on 6th June 2016. The request was accepted and the first meeting was convened on 8th June 2017 and chaired by the Chair of IGEM's Gas Measurement Committee (GMC). The chair of the Working Group was passed onto the Chair of the SCF and Large Business Forum (LBF) in 2021.

1.5 The working group was entitled LP Supply Pressure Working Group and IGEM had written to all its consultees seeking their involvement with the work. There was across industry engagement with the working group and there were twenty four representatives at the first meeting from amongst the GDNs, meter equipment managers (MEMs), large businesses, installer groups, sole-traders, gas appliance manufacturers, independent consultants, British Standards Institution (BSI), Health and Safety Executive (HSE) and Gas Safe Register.

1.6 The format for the working group was a workshop with background information prepared for each meeting and a number of questions for the members to debate in small groups. Each group was made up of representatives across industry to stimulate conversation between the parties to arrive at a consensus to answer the questions.

1.7 The initial meetings were intended to cover the following aspects of the work:

- legal requirements and guidance for the Natural Gas (NG) low pressure supply Network
- published Standards by BSI and IGEM
- appliance manufacturers' instructions
- organisations' internal guidance
- issues raised by the industry.

1.8 The outcome of the work was intended to inform industry of the root cause of the issues that originally had been raised by the installers at SCF and propose solutions.

There was consensus that:
The current arrangements in place, including the legal framework were fit for purpose but there was a need for cooperation across the industry to improve the communication and increase the level of understanding of all aspects of the gas system.

1.9 The Working Group agreed a set of recommendations to address the concerns of the industry, which cover:

- limit on the normal capacity in kW of a domestic gas supply service
- harmonise procedures for installing appliances covering:
  - pre-commissioning
  - commissioning
  - post commissioning.
- conditions for reporting low pressure supply
- method of testing for low pressure on the installation
- response from the emergency service providers.

1.10 The Recommendation for changes to working practice, Communication 1830 was published in July 2022 and is freely available on IGEM's website www.igem.org.uk.

1.11 Compliance with this Standard cannot confer immunity from statutory legal obligations.

1.12 This Standard makes use of the terms "must", "shall" and "should", when prescribing particular procedures. Notwithstanding Sub-Section 1.15:

- the term "must" identifies a requirement by law in the United Kingdom (UK) 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.

*Note: The phrase "prior consideration" means that a suitable and sufficient risk assessment will be completed and documented to show that the alternative method delivers the same, or better level of protection.*

1.13 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 are required to:

- have done everything to ensure, so far as is reasonably practicable, that there are no better protective measures that can be taken other than relying on the exercise of professional judgement by "responsible engineers"
- have done everything to ensure, so far as 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 beyond their competence. There need to be written procedures defining the extent to which "responsible engineers" can exercise their judgement. When "responsible engineers" are asked to undertake tasks that deviate from this, they are to refer the matter for higher review.

1.14 It is now widely accepted that the majority of accidents in industry generally are in some measure attributable to human as well as technical factors in the sense that actions by people initiated or contributed to the accidents, or people might have acted better to avert them.

It is, therefore, necessary to give proper consideration to the management of these human factors and the control of risk. To assist in this, it is recommended that due cognisance be taken of the HSG48 and HSG65.

1.15 Notwithstanding Sub-Section 1.12, this Standard does not attempt to make the use of any method or specification obligatory against the judgement of the responsible engineer. Where new and better techniques are developed and proved, they are to be adopted without waiting for modification to this Standard. Amendments to this Standard will be issued when necessary and their publication will be announced in IGEM's Journal and other publications as appropriate.

1.16 Requests for interpretation of this Standard in relation to matters within its scope, but not precisely covered by the current text, are to be addressed to:

- Technical Services, IGEM, IGEM House, 26 & 28 High Street, Kegworth, Derbyshire, DE74 2DA, or
- by e-mail to technical@igem.org.uk

and will be submitted to the relevant Committee for consideration and advice, but in the context that the final responsibility is that of the engineer concerned. If any advice is given by or on behalf of IGEM, this does not relieve the "responsible engineer" of any of his or her obligations.

1.17 Amendments are shown throughout the document by ➤➤.

1.18 This Standard was published in August 2023.

## SECTION 2 : SCOPE

2.1 This Standard covers industry agreed changes to working practice set out in IGEM Communication 1830 and covers the:

- limit on the nominal gas load for domestic premises in kW
- harmonise procedures for installing appliances covering:
  - pre-commissioning
  - commissioning
  - post commissioning.
- ➢ servicing and maintenance of domestic appliances ➢
- conditions for reporting low pressure supply
- method of testing for low pressure on the installation
- response from the emergency service providers.

2.2 ➢ This Standard essentially covers domestic supply capacity and the operating pressure at the outlet of the meter. These changes in some of the details conflict with current published BSI standards and established company procedures. The industry is arranging to have such information considered as a part of the review of related Standards in due course, in the meanwhile for application of this Standard or BS 6400-1; BS 6400-2 see Figure 1. ➢

2.3 All pressures quoted 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 via the prescriptive terms "must", "shall" or "should".

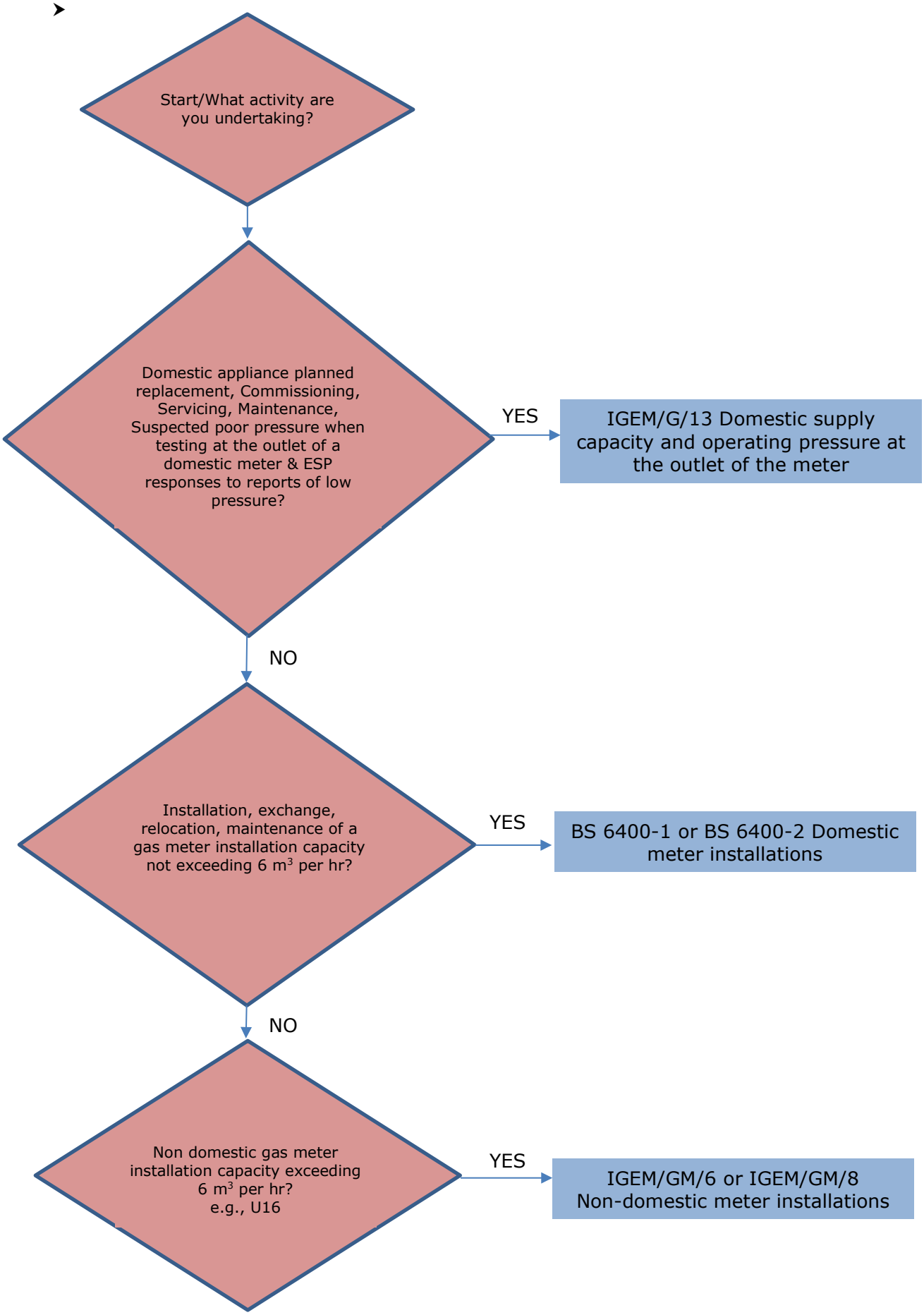


**FIGURE 1- SELECTION OF DOWNSTREAM GAS STANDARDS WHEN CHECKING WORKING PRESSURES**

# SECTION 3 : DOMESTIC LOW PRESSURE (LP) SUPPLY CAPACITY

3.1 A domestic gas load on a LP supply is capped at gross heat input of 65 kW.

*Note 1: 65 kW equates to the capacity of a U6 meter, which can deliver up to 6 $m^3$ $h^{-1}$.*

*Note 2: See T/SP/NP/14/E referenced in Appendix 2.*

However, any existing gas service is likely to have been designed for demand appropriate to the property type and appliances at the time it was constructed. It cannot be assumed that the existing service has been designed for 6 $m^3$ $h^{-1}$.

Where an emergency control valve (ECV) label has been fitted by the Gas Transporter (GT), reference should be made to service capacity as recorded on the label. This would inform the designer and/or Registered Gas Engineer (RGE) to consider the load requirements and suitability of the total load of appliances within the premises before advising the gas user and pricing the new work request. It may be necessary to approach the GT for a service of increased capacity prior to installation. If a load of more than the original design of the service or exceeding 65 kW is required, the upgrade may be chargeable.

There will be occasions when the gas supply to a domestic premises will be temporarily unable to deliver the load. On these occasions, contact is to be made with the relevant GT. An Emergency Service Provider (ESP) will attend the premises and resolve the issue in conjunction with the RGE, Approved Meter Installer (AMI) and the customer, as appropriate. This might involve agreeing a timely resolution with an end date, if an immediate resolution is not possible (see Sections 4, 5, 6 and Table 1).

*Note: Establishing the gas supply capacity of a domestic premises*

*In order to confirm the supply capacity an application can be made to the gas supply company (Gas Transporter), who will usually be Cadent, Northern Gas Networks (NGN), SGN or Wales and West Utilities (WWU), but there are independent gas transporters. The customer can identified the GT through their gas supplier.*

*Refer to GDN/PM/GT/1 Management procedure for requesting gas service pipe pressures and capacity information and the relevant forms can be accessed with the following link: http://www.energynetworks.org/gas/regulation/gtp-documents.html*

*This link takes you to the ENA website - find the Resource Library and search for GT1 Application, which will offer a download of a document entitled: ENA GT1 form "Standard form for requesting information on pressure and capacity".*

*Complete the form and then apply to the relevant GT, which will be Cadent, WWU, NGN or SGN. If the property is served by an Independent GT, such as GTC then the application needs to be made to them.*

# SECTION 4: PROCEDURES FOR INSTALLING APPLIANCES

The following procedures relate to the gas supply to the premises for installing appliances.

## 4.1 PRE-INSTALLATION

To consider if a domestic premises has the gas supply capacity suitable for the intended new appliance(s) the following procedure should be adopted to ensure the existing installation is working at correct pressures.

As soon as possible, and if practicable, the RGE should operate all the appliances within the premises at a high operating load* and take a reading to confirm that the outlet pressure of the meter after a one-minute stabilisation period is not less than 18.5 mbar and not exceeding 23 mbar.

** Refer to Appendix A1.1 for definition of high operating load.*

## 4.2 COMMISSIONING

Commissioning must be undertaken in accordance with the Manufacturers' instructions. This confirms the appliance is operating as specified by the manufacturer.

Verify appliance inlet gas pressure as per the Manufacturer's instructions – operate the installed appliance at maximum appliance load**. The value shall be as specified by the Manufacturer.

*** **maximum appliance load**: This is as specified by the Manufacturer in the commissioning instructions e.g., commissioning/chimney sweep mode, or where not specified the appliance is operating at its maximum appliance load e.g., hot water mode on a combination boiler.*

*Note: Be aware of any pressure loss between the inlet test point and the inlet to the appliance isolation valve.*

## 4.3 POST COMMISSIONING

On completion of the commissioning process **all** of the appliances shall be operated within the premises at a high operating load* and reading taken to confirm that the outlet pressure of the meter after a one-minute stabilisation period is not less than 18.5 mbar and not exceeding 23 mbar. This confirms that the newly commissioned appliance is not adversely affecting the gas installation.

**Refer to Appendix A1.1 for definition of high operating load.*

# SECTION 5: CONDITIONS FOR REPORTING LOW PRESSURE SUPPLY

## 5.1 FOLLOWING REPORTS OF POOR PRESSURE/FAILURE TO ACHIEVE OPERATING PRESSURE AND/OR HEAT INPUT

The RGE may encounter reports of poor pressure or during their work be unable to achieve the appliance's required inlet pressure and/or heat input. In such instances, the RGE should operate all the appliances within the premises at a high operating load* and take a reading to confirm that the outlet pressure of the meter after a one-minute stabilisation period is not less than 18.5 mbar and not exceeding 23 mbar.

** Refer to Appendix A1.1 for definition of high operating load.*

If the outlet pressure of the meter after a one-minute stabilisation period is below 18.5 mbar, report to the National Gas Emergency Service on 0800 111 999 using the "Reporting of Low Pressure" process (see Sub Section 5.2).

If it is known that these pressures are affecting the safe performance of an appliance, or the appliance is deemed to be unsafe then IGEM/G/11 Gas Industry Unsafe Situations Procedure (GIUSP) shall be followed.

*Note: IGEM/G/11 is freely available from IGEM's website www.igem.org.uk.*

## 5.2 REPORTING OF LOW PRESSURE PROCESS

The reporting procedure is:

1) Should the working pressure be outside the range of not less than 18.5 mbar and not exceeding 23 mbar at the outlet of the meter, telephone the National Gas Emergency Service on 0800 111 999 or for Northern Ireland Gas Emergency Service on 0800 002 001.

2) RGE should:
   a) obtain a "Reference Number" for the telephone call
   b) provide their Gas Safe registration number, if requested
   c) provide their contact telephone number.

3) The ESP should attend site within 2 hours.

4) If possible, the RGE should wait for the ESP to attend (if the appliance is new, the RGE shall wait for the ESP or arrange to attend site with the ESP to enable a joint investigation (see Sub Section 6.1).

   Where it is not possible for the RGE to wait, their job report should contain:
   a) confirmation that the internal installation pipework is correctly sized
   b) working pressure measurements taken
   c) any recent changes e.g., new appliances, meter position moved
   d) internal installation's total load.

   And, the following actions are required, as appropriate:
   i. for an existing appliance, which affects the safe operation of any appliance e.g., combustion and/or flame stability, the appliance shall be made safe in accordance with IGEM/G/11 GIUSP.

ii. where the installation is new, the appliance must be disconnected from the supply and sealed with appropriate fitting(s) in accordance with Reg 26(5) of the Gas Safety (Installation and Use) Regulations GS(I&U)R as an uncommissioned appliance.

*Note: If this action is taken the RGE will need to be available to enable the ESP engineer to undertake a joint investigation.*

5) The ESP takes overall responsibility for investigating the pressure issues, but where possible, the initial testing should be a joint investigation. The ESP shall share the outcome of the investigation with the customer and RGE, as appropriate.

*Note 1: The customer may be required to contact their gas supplier. The details of the supplier and the means of contacting them can be found on their bill/invoice or energy statement.*

*Note 2: GTs need to be aware of incidents of low pressure on the Network, which may not be confined to one premises and action is required to maintain the supply to a number of premises.*

*Note 3: The ESP cannot work on or set up appliances, therefore, ESP's will need the RGE to work with them to undertake all necessary checks and tests for a satisfactory agreed outcome for the Gas User (customer). It is also very important to complete the job reports in full as they are a critical part of this process.*

# SECTION 6: ESP RESPONSE AND JOINT INVESTIGATION PROCEDURE

The following is a typical emergency service provider procedure.

## 6.1 ESP – RESPONDING TO REPORTED PRESSURE PROBLEMS

**Initial actions**
Should attend within 2 hours.

Ask questions such as:
a) What pressure measurements have already been taken?
b) Have there been any recent changes e.g., new appliances, meter position moved, service relayed / inserted?
c) Has internal installation pipework size been checked?
d) Has the RGE carried out a gas rate check of the appliances?
e) What is the total load? Does it exceed the meter capacity?

Then carry out the following tasks:
1) If the appliance(s) are new and uncommissioned, providing the RGE, with the appropriate competence is present on site, allow the new appliance(s) to be set up to operate in their commissioning mode. Then check the working pressure at the outlet of the meter installation and ECV by taking readings to confirm that the outlet pressure of the meter after a one-minute stabilisation period is not less than 18.5 mbar and not exceeding 23 mbar.

   *Note: If the outlet pressure of the meter installation falls outside of this range, and if necessary, in order to assist in finding the root cause of the problem, then check the working pressure with appliances operating at normal and/or high operating load*.*

   *Normal load for the new uncommissioned appliance would be set to working on hot water demand to taps and/or heat demand.*

   ** Refer to Appendix A1.1 for definition of high operating load.*

2) If the appliance(s) has been commissioned, check the working pressure at the outlet of the meter installation and ECV by operating all the appliances within the premises at a high operating load* and then take readings to confirm that the outlet pressure of the meter after a one minute stabilisation period is not less than 18.5 mbar and not exceeding 23 mbar.

   ** Refer to Appendix A1.1 for definition of high operating load.*

   *Note: This may be at the time of an appliance service or maintenance visit.*

In the case where pressures are found to be operating within the range of not less than 18.5 mbar and not exceeding 23 mbar on the outlet of the meter, arrangements are deemed to be fully satisfactory with any possible issue associated with downstream pipework or the boiler/appliance.

Table 1 below summarises a range of scenarios, indicating where further investigation is required and, in certain cases, the areas in which any investigation may focus.

| Reference | Working Pressure at the outlet of the ECV mbar | Working Pressure at the outlet of the meter mbar | Status or action |
|---|---|---|---|
| 1 | ≥ 25 | ≥ 18.5 - ≤ 23 | Supply and meter installation Okay<br>If any issues at appliance, downstream pipework requires investigation. |
| 2<br>(see Note 2) | ≥21.5 - ≤25 | ≥15 - < 18.5 | Supply Okay. Meter installation/downstream pipework requires investigation.<br>The GT will recommend the best course of action working in conjunction with the RGE to pragmatically address the situation and explain this to the customer/RGE with associated timescale. |
| 3<br>(see Notes 3 and 4) | ≥ 25 | ≥ 15 - < 18.5 | Supply Okay. Meter installation requires further investigation.<br>The GT will make a decision as to the best course of action to address the situation and explain this to the customer/RGE with associated timescale. |
| 4 | ≥21.5 - ≤25 | ≥ 18.5- ≤ 23 | Supply and meter installation Okay.<br>If any issues at appliance, downstream pipework requires investigation. |
| 5<br>(see Note 5) | ≥19 – ≤21.5 | ≥15 | Supply-requires further investigation.<br>The GT will recommend the best course of action working in conjunction with the RGE to pragmatically address the situation and explain this to the customer/RGE with associated timescale. |
| 6<br>(see Note 5) | ≥19 – ≤21.5 | < 15 | Supply and meter installation require further investigation. Pressures suggest an issue with the meter installation.<br>The GT will recommend the best course of action working in conjunction with the RGE to pragmatically address the situation and explain this to the customer/RGE with associated timescale. |
| 7<br>(see Note 6) | < 19 | < 15 | Supply requires further investigation. Pressures suggest an issue upstream of ECV.<br>The GT will recommend the best course of action working in conjunction with the RGE to pragmatically address the situation and explain this to the customer/RGE with associated timescale. |

**TABLE 1 - PERFORMANCE PARAMETERS PUBLISHED BY THE GTs**

*There are Notes to this Table, which are on the next page.*

➤ *Note 1: The pressure loss across the meter installation is not to exceed 4 mbar, nor pipework between meter outlet and appliance exceed 1 mbar.* ➤

*Note 2: If the working pressure at the outlet of the meter is below 18.5 mbar check the working pressure at the outlet of the ECV to determine that it is within the performance parameters published by the GTs (see Table 1).*

*On Domestic installations and small Industrial and Commercial installations it may be necessary to insert a fitting incorporating a test nipple between the ECV and the semi rigid connection on the meter installation.*

*Note 3: If the working pressure at the ECV is above 25 mbar and the meter installation outlet pressure is less than 18.5 mbar, attempt to adjust the meter regulator.*

➤ *For installations covered by Post Emergency Metering Services (PEMS) attempt is to be made to adjust the meter regulator.* ➤

*If the inlet pressure is below 25 mbar, adjusting the meter regulator could result in the consumer being subjected to an excessive pressure in the future.*

*Note 4: If the working pressure at the ECV is above 25 mbar, and the outlet to the meter installation is below 18.5 mbar (following appropriate adjustment) then the meter installation is at fault.*

*For installations covered by PEMS, the meter installation components are to be replaced as appropriate, for other installations the MEM is to be contacted.*

*Note 5: Where the pressure at the ECV outlet is between 19 mbar and 21.5 mbar, further investigation may be required by the GT. This would be dealt with on a case-by-case basis.*

*Contact may be necessary with the Network operator, which is not always the same company that employs the ESP, e.g., Independent Gas Transporters (IGTs).*

*Note 6: Where the pressure at the ECV outlet is less than 19 mbar, further investigation may be required by the GT. This would be dealt with on a case-by-case basis.*

## 6.2 FOLLOW UP ACTIONS

The ESP may carry out further investigations including the standard service six minute average pressure test under high operating load* conditions.

*Note: If necessary, in order to assist in finding the root cause of the problem, then check the working pressure with appliances operating at normal and/or high operating load*.*

*Normal load for the new uncommissioned appliance would be set to working on hot water demand to taps and/or heat demand.*

** Refer to Appendix A1.1 for definition of high operating load.*

If the average working pressure over a six minute period at the outlet of the ECV is unsatisfactory, and problem limited to a single property, the investigation should focus on the service pipe. Where problems are experienced at adjoining premises, or where there is any history of problems at adjacent properties, the possibility of a wider underlying issue shall be considered.

## 6.3 CHECKING FOR INCIDENT CONDITIONS

Where poor pressure in wider vicinity is confirmed, request support and start an investigation to determine the extent of the affected area by:

a) Checking opposite and adjacent premises
b) Checking pressures at strategic locations in the surrounding area and extremities of the mains, as appropriate.

Pressure problems are escalated to a manager in the following circumstances;

c) Where the pressure problem is affecting more than 2 domestic premises or a critical load
d) If the supply pressure is fluctuating due to water ingress
e) A district governor is suspected to be causing the problem
f) If higher pressures than expected are encountered (e.g., above 75 mbar on a LP network).

If this is due to temporary Network conditions, this shall be explained to the customer/AMI/RGE with a likely timescale for the Network to return to normal operating conditions.

## 6.4 ACTIONS TO RESOLVE SERVICE FAULT

If the investigation leads to the conclusion that the service is at fault:

a) Check the condition of the service – clear of rust and water?
b) Check the size of the service
c) Check the pressure drop across the service
d) Replace the service if required.

On establishing the necessary course of action, this shall be explained to the customer/AMI/RGE with a likely timescale for resolution.

If the consumer is not satisfied, after the Network Operator has concluded the investigation, the comprehensive GDN complaint procedure should be invoked by the customer, whereby, the ESP should leave contact information with the customer.

# APPENDIX 1 : GLOSSARY, ACRONYMS, ABBREVIATIONS, UNITS, SYMBOLS AND SUBSCRIPTS

## A1.1 GLOSSARY

Standard and legacy gas meter arrangements are given in IGEM/G/1 which is freely available by downloading a printable version from IGEM's website.

Standard definitions are given in IGEM/G/4 which is freely available by downloading a printable version from IGEM's website www.igem.org.uk.

Definitions in this document not included in IGEM/G/4 are:

**high operating load**

This is the maximum operating load for the entire gas installation in the premises for a period of high demand. To replicate this, operate:

- the highest output appliance (typically the boiler) operating at its maximum load
  (For combination boilers, this will be hot water demand to taps, in which case operate all hot taps at full flow)
- and any other appliances at 50% load e.g., hob with 4 burners only 2 are lit.

*Note 1* *Providing the RGE, with the appropriate competence is present on site, allow the appliance(s) to be set up to operate in their commissioning mode.*

*Note 2:* *Modulating gas boilers will operate periodically at maximum output, in normal use, e.g., when heating the house from cold, or combis drawing large hot water flow rates, such as multiple showers/baths being used simultaneously.*

*Note 3:* *For appliances with variable rating, they are only to be operated at the agreed or set load for the installation.*

*Note 4:* *Lower pressures may be experienced under winter or maintenance conditions.*

*Note 5:* *Where poor pressure has been reported by the RGE and the ESP attends site then this procedure is to be undertaken in cooperation with the ESP (see Sub-Section 5.2).*

**maximum appliance load**

This is as specified by the Manufacturer in the commissioning instructions e.g., commissioning/chimney sweep mode, or where not specified the appliance is operating at its maximum appliance load e.g., hot water mode on a combination boiler.

**operating pressure (OP)**

Pressure which occurs within the system under normal operating conditions.

*Note:* *Operating Pressure can be referred to as Working Pressure.*

## A1.2 ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AMI | Approved Meter Installer |
| BSI | British Standards Institution |
| ECV | emergency control valve |
| ENA | Energy Networks Association |
| ESP | emergency service provider |
| EU | European Union |

| | |
|---|---|
| GB | Great Britain |
| GDN | Gas Distribution Network |
| GIUSP | Gas Industry Unsafe Situations Procedures |
| GMC | Gas Measurement Committee |
| GS(M)R | Gas Safety (Management) Regulations |
| GS(I&U)R | Gas Safety (Installation and Use) Regulations |
| GT | gas transporter |
| GTC | GTC Infrastructure Ltd |
| HSE | Health and Safety Executive |
| IGEM | Institution of Gas Engineers and Managers |
| IGT | independent gas transporter |
| LBF | Large Business Forum |
| LP | low pressure |
| MEM | Meter Equipment Manager |
| NGN | Northern Gas Networks |
| OP | operating pressure |
| PEMS | post emergency metering services |
| RGE | Gas Safe registered Engineer |
| SCF | Standards Consultation Forum |
| SGN | Scotia Gas Networks |
| TCC | Technical Coordinating Committee |
| UK | United Kingdom |
| WWU | Wales and West Utilities. |

A1.3 **UNITS**

| | |
|---|---|
| mm | millimetre |
| $m^3\ h^{-1}$ | cubic metre per hour |
| mbar | millibar |
| bar | bar |
| kW | kilowatt. |

A1.4 **SYMBOLS**

| | |
|---|---|
| % | percentage. |

# APPENDIX 2 : REFERENCES

This document is set out against a background of Legislation in force in Great Britain (GB) at the time of publication. The devolution of power to the Scottish, Welsh and Northern Ireland Assemblies means that there may be variations to the Legislation described below for each of them and consideration of their particular requirements is to be made. Similar considerations are likely to apply in other countries where reference to appropriate national Legislation is necessary. The following list is not exhaustive.

Where British Standards etc. are quoted, equivalent national or international Standards etc. equally may be appropriate.

## A2.1 SECONDARY LEGISLATION

The principal Regulations, which reference the legal requirements relating to supply pressure in the NG Network are shown below:

- Gas Safety (Management) Regulations (GS(M)R) 1996
- Gas Safety (Installation and Use) Regulations (GS(I&U)R) 1998 (as amended)
- Gas Appliance Directive (GAD) 1990 superseded
- Gas Appliance (Safety) Regulations (GA(S)R) 1992 and 1995
- The Gas Appliances (Enforcement) and Miscellaneous Amendments Regulations 2018
- The Gas (Calculation of Thermal Energy) Regulations 1996 (as amended).

## A2.2 EUROPEAN LEGISLATION

- Regulation (EU) 2016/426 on appliances burning gaseous fuels.

## A2.3 HSE

- HSG48 Reducing error and influencing behaviour
- HSG65 Successful health and safety management.

## A2.4 BRITISH STANDARDS

| | |
|---|---|
| BS 6400-1 | Specification for installation, exchange, relocation, maintenance and removal of gas meters with a maximum capacity not exceeding 6 $m^3 h^{-1}$. Low pressure (2nd family gases) |
| BS 6891 | Specification for the installation and maintenance of low pressure gas installation pipework of up to 35 mm (R1¼) on premises |
| BS EN 437 | Test gases - Test pressures - Appliance categories. |

## A2.5 IGEM

| | |
|---|---|
| Communication 1830 | Recommendation for changes to working practice |
| IGEM/G/1 Edition 2 | Defining the end of the Network, a meter installation and installation pipework |
| IGEM/G/4 Edition 2 | Definitions for the gas industry |

| | |
|---|---|
| ➤ IGEM/TD/4 Edition 5 ➤ | PE and steel gas services and service pipework |
| IGEM/GM/6 Edition 3 | Non-domestic meter installations. Standard designs |
| IGEM/GM/8 Parts 1-5 Edition 2 | Meter installations with flow rate exceeding 6 $m^3h^{-1}$ and inlet pressure not exceeding 38 bar |
| IGEM/GM/PRS/3 | Meter regulators for gas flow rates not exceeding 6 $m^3$ $h^{-1}$ and inlet pressures not exceeding 75 mbar |
| IGEM/UP/2 Edition 3 | Installation pipework on industrial and commercial premises. |

A2.6 **ORGANISATION GUIDANCE**

| | |
|---|---|
| GDN/PM/GT/1 | Management procedure for requesting gas service pipe pressures and capacity |
| T/SP/NP/14/E | Specification for service pipes. |

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Communication 1875
Price Code: CO

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