

***IGEM/GM/8 Part 4 Edition 2
Communication 1798***

***Non-domestic meter installations
Part 4 : Operation and Maintenance***



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



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Non-domestic meter installations

Part 4 : Operation and Maintenance



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SECTION 1 : INTRODUCTION

- 1.1 This Standard supersedes IGE/GM/8 Part 4, Communication 1709, which is obsolete.
- 1.2 This Standard has been drafted by an Institution of Gas Engineers and Managers (IGEM) Panel, appointed by IGEM's Gas Measurement Committee, subsequently approved by that Committee and has been approved by IGEM's Technical Co-ordinating Committee on behalf of the Council of IGEM.
- 1.3 IGEM/GM/8 is published in 5 parts:
- Part 1 covering design
 - Part 2 covering locations, housings and compounds
 - Part 3 covering installation and commissioning
 - Part 4 covering operation and maintenance
 - Part 5 covering notices and labels.
- 1.4 This Standard covers the operation and maintenance of gas supply meter installations (see Sub-Section 2.1) of capacity exceeding $6 \text{ m}^3 \text{ h}^{-1}$ and maximum operating pressure (upstream) (MOP_u) not exceeding 38 bar.

With the exception of the few installations of MOP_u exceeding 38 bar, the majority of industrial and commercial meter installations can be operated and maintained by following IGEM/GM/6 (for MOP_u not exceeding 100 mbar only) and/or IGEM/GM/8.

Note: IGEM Standards use pressure breaks as adopted in European standards. However, in the UK, the actual limit of pressure for IGEM/GM/6 designs is 75 mbar. In practice, it is rare for a meter installation to have MOP_u lying between 75 mbar and 100 mbar in the UK.

It is the intention that IGEM/GM/6 be used for the largest proportion of installations that can be covered by "standard designs" for MOP_u not exceeding 100 mbar.

For $100 \text{ mbar} < \text{MOP}_u \leq 38 \text{ bar}$ or where an installation is not a "standard design" as specified in IGEM/GM/6, IGEM/GM/8 applies (see also Note 4 to clause 2.1).

For a turbine meter installation of MOP_u not exceeding 100 mbar, there are no recognised standard designs i.e. IGEM/GM/6 does not apply. It is recommended that IGEM/GM/8 be used for all such installations.

For any meter installation of MOP_u exceeding 38 bar, IGE/GM/4 applies.

- 1.5 This Standard applies to onshore gas supply installations only. It is retrospective, in that the MAM is to operate and maintain existing equipment in accordance with this Standard wherever practical to do so.

For installations designed to previous standards that do not meet all the requirements of this document e.g. the performance tolerances (see Table 3) the pass/fail criteria used will need to reflect the original design requirements for the installation.

- 1.6 Over recent years ownership and responsibility for new installations covered by this Standard has been liberalised from gas transporters (GTs) to Meter Asset Managers (MAMs) and consumers. The Regulation Authority; the Office of Gas Supply (OFGAS), and later the Office of Gas and Electricity Markets (Ofgem), have required that MAMs and installers are separately accredited for the work they carry out. Approved MAMs have operational and management

responsibility, while Approved Meter Installers (currently OAMI) carry out meter work, installation, modification, repair, maintenance and removal activities. Both work to the relevant Ofgem Codes of Practice:

- Meter Asset Managers Code of Practice (MAMCoP)
- Codes of Practice for Meter Installations (CoP/1a, b and c).

At the same time, new licence conditions have made gas suppliers responsible for co-ordinating the provision of metering services and have placed responsibilities on GTs to underpin the overall safety of the gas supply system from the distribution main to the outlet of the meter installation.

Note: Under these arrangements, an Supply Point Administration Agreement (SPAA) approved MAM does not have to be an OAMI, but has an obligation to use an OAMI to carry out work on a meter installation.

Notwithstanding Sub-Section 1.11, total compliance with IGEM/GM/8 is necessary for installations and modules where the meter installation has to comply with the MAMCoP.

1.7 This Standard does not detail the management processes required for compliance with the Pressure Systems Safety Regulations (PSSR), such guidance is provided by IGEM/GL/5. It is intended that work carried out in accordance with this Standard and IGEM/GL/5 will conform to the requirements of PSSR.

1.8 Terms such as "maximum operating pressure" (MOP), "maximum incidental pressure" (MIP) and "operating pressure" (OP) are used to reflect gas pressure terminology used in European standards. These terms will arise in all relevant IGEM Standards and, possibly, in other standards. Other terms have been introduced to assist in recognition of design information to be transferred between interested parties.

Note: Appendix 10 of IGEM/GM/8 Part 1 shows an explanation of the terms used by setting out the definitions of the terms, explaining the suffixes, the relationship between the terms, and their significance.

1.9 This Standard makes use of the terms "must", "shall" and "should" when prescribing particular procedures. Notwithstanding Sub-Section 1.10:

- the term "must" identifies a requirement by law in Great Britain (GB) at the time of publication
- the term "shall" prescribes a procedure which, it is intended, will be complied with in full and without deviation
- the term "should" prescribes a procedure 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 Code of Practice (ACoPs) or guidance, and reference needs to be made to such statutory Legislation or official guidance for information on legal obligations.

1.10 Notwithstanding Sub-Section 1.9, 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 approved, 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 the Journal of the Institution and elsewhere, as appropriate.

- 1.11 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.
- 1.12 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 in a more appropriate manner 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 regard be paid to HSG48.
- 1.13 Requests for interpretation of this Standard in relation to matters within their scope, but not precisely covered by the current text, should be addressed in writing to Technical Services, The Institution of Gas Engineers and Managers, IGEM House, High Street, Kegworth, Derbyshire, DE74 2DA, or emailed 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.
- 1.14 This Standard was published in October 2016.

SECTION 2 : SCOPE

2.1 This Standard applies to all onshore, gas supply meter installations (hereafter referred to as "installations") (and defined in IGEM/G/1) of flow rate (capacity) exceeding $6 \text{ m}^3 \text{ h}^{-1}$ and MOP_u not exceeding 38 bar and complying with IGEM/GM/8 Part 1 (see also Note 7 below).

Installations with the following types of meter are covered:

- diaphragm
- rotary displacement (RD)
- turbine
- ultrasonic.

Note 1: For installations of capacity not exceeding $6 \text{ m}^3 \text{ h}^{-1}$, intended to carry Natural Gas (NG), BS 6400-1 or BS 6400-2 apply, as appropriate for MOP_u . For non-domestic premises there are additional legal requirements that may have to be met, e.g. Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).

The requirements of this document may be applied to installations of capacity not exceeding $6 \text{ m}^3 \text{ h}^{-1}$ and MOP_u exceeding 2 bar.

Note 2: For installations of MOP_u exceeding 38 bar, IGE/GM/4 applies and IGEM/TD/13 may be used for the regulation of pressure. However, where the metering pressure is not exceeding 38 bar, this Standard applies. Where IGEM/TD/13 is used, the control and fault pressure ranges have to be acceptable to the consumer and it may be necessary to apply tolerances required by IGEM/GM/8 to IGEM/TD/13 control philosophy.

Note 3: Primarily, IGEM/GM/8 has been produced for primary meters and other meters used for billing purposes. However, the principles may be applied for other meters, for example appliance check meters or departmental charging meters, when certain procedures may not apply.

Note 4: IGEM/GM/6 provides procedures for "standard" installations of MOP_u not exceeding 100 mbar. For other, "non-standard", installations of MOP_u not exceeding 100 mbar, IGEM/GM/8 applies. See also the note within Sub-Section 1.4.

Note 5: For turbine meters and ultrasonic meters (USMs), in addition to IGEM/GM/8, some of the principles of IGE/GM/4 may apply and further useful information is also included.

Note 6: IGEM/GM/8 does not address the Network pipeline (see IGEM/TD/1, IGEM/TD/3, IGE/TD/4 and IGEM/G/5, as appropriate). IGEM/GM/8 does not address requirements for a pressure regulating installation (PRI) installed in a Network pipeline that is not part of the meter installation, when IGEM/TD/13 applies.

Note 7: It is appropriate to apply this Standard for existing installations complying with IGEM/G/1.

2.2 This Standard covers installations that are wholly downstream of the outlet of the emergency control valve (ECV) as recommended in IGEM/G/1, in which case the installation is not part of the Network. The owner or user of the installation would not, therefore, be a conveyor of gas on the Network and would not be subject to the general duties of the Gas Safety (Management) Regulations (GS(M)R). Similarly, the owner or user of the installation would not be an operator of a pipeline and, therefore, would not be subject to the requirement of the Pipelines Safety Regulations (PSR). However, the installation may be subject to the requirements of PSSR.

2.3 This Standard applies to installations intended to carry NG (a 2nd family gas as defined by BS EN 437).

Note: The Gas Safety (Installation and Use) Regulations (GS(I&U)R) define "gas" to include 1st, 2nd and 3rd family gases as well as other gases. The principles of IGEM/GM/8 may be used for gases other than NG but suitable adjustments to parameters and requirements will need to be considered by a competent person.

2.4 This Part 4 of IGEM/GM/8 deals with the operation and maintenance of relevant installations.

- 2.5 All pressures are gauge pressures unless otherwise stated.
- 2.6 Italicised text is informative and does not represent formal requirements.
- 2.7 Appendices are informative and do not represent formal requirements unless specifically referenced in the main sections via the prescriptive terms "must", "shall" or "should".