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Gas in multi-occupancy buildings

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Communication 1762

Gas in multi-occupancy buildings

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© The Institution of Gas Engineers and Managers
IGEM House
High Street
Kegworth
Derbyshire, DE74 2DA
Tel: 0844 375 4436
Fax: 01509 678198
Email: general@igem.org.uk

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SECTION 1 : INTRODUCTION

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

1.2 This Standard summarises best practice for the design, installation, operation and maintenance of gas installations for multi-occupancy buildings (see Sub-Section 2.1). It combines well established practices with new advice on aspects of design and construction of such installations. The Standard consolidates best practice and guidance from legislation, and existing gas industry standards and procedures, with the aim of helping to achieve safe designs and installations for gas in the buildings concerned.

1.3 Significant amendments have been made compared to the first Edition. These include:

- reviewed hierarchy for timber and traditionally constructed buildings
- revision of all Figures and new additional Figures
- reviewed location of electrical insulation fittings/couplings
- updated requirements for equipotential bonding
- additional requirements for isolation valves
- further emphasis with respect to gaining access to network pipelines for future maintenance
- requirements for energy centres
- new procedure for testing existing network pipelines.

1.4 This Standard makes use of the terms "must", "shall" and "should", when prescribing particular procedures. 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.

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1.5 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 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 should 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 should refer the matter for higher review.

1.6 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.

1.7 Notwithstanding Sub-Section 1.4, 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 should 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.

1.8 Requests for interpretation of this Standard in relation to matters within its scope, but not precisely covered by the current text, should be addressed to Technical Services, IGEM, IGEM House, High Street, Kegworth, Derbyshire, DE74 2DA, 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.

1.9 This Standard was published in September 2012.

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SECTION 2 : SCOPE

2.1 This Standard covers gas installations to and within multi-occupancy buildings and the individual dwellings and commercial units within such buildings.

Note 1: The term "multi-occupancy building" means a building that contains multiple domestic dwellings or a building that contains both multiple domestic dwellings and commercial units.

Note 2: The term "dwelling(s)" means both "domestic dwelling(s)" and "commercial unit(s)" within a multi-occupancy building, unless otherwise stated.

Note 3: Properties deemed separate buildings, each comprising an individual single dwelling, such as detached, semi-detached or terraced houses/bungalows, are not covered.

Note 4: The principles of this Standard may be applied to buildings containing only commercial units.

2.2 This Standard covers new and replacement gas network pipelines, meter installations, installation pipework (including secondary meters), appliances and chimneys.

Note 1: In this context, "new and replacement" embraces:

- *any first time gas supply or replacement of any of the above mentioned sections of the gas supply system*
- *any new extension to an existing section of the gas supply system*
- *significant partial replacement of/alteration to any of the sections of the gas supply system. For example, the replacement of a riser system having one or more laterals connected would likely be deemed 'significant partial replacement'.*

  Regarding replacement/alteration, it is important to comply with legal obligations, for example, the checks required by Gas Safety (Installation & Use) Regulations (GS(I&U)R) following work on any part of a gas supply system.

Note 2: Requirements for maintenance are provided in Section 13.

Note 3: A network pipeline supplying a primary meter installation will be a "service" or a "distribution main". The difference, for the purposes of this Standard, is insignificant except when cross referring to other Standards, for example IGE/TD/3 and IGE/TD/4. This Standard uses either or both of the terms "network" or "pipeline" throughout.

Note 4: IGE/TD/3 does not address pipes in buildings. IGE/TD/4 references IGEM/G/5 with respect to gas in multi-occupancy buildings.

2.3 For the replacement of existing installations and like-for-like component replacement and where reasonably practicable, IGEM would expect adoption of this Standard. In any event IGEM would expect a risk assessment (see Sub-Section 4.2) to be carried out and appropriate mitigation actioned where indicated by the risk assessment.

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2.4 This Standard defines requirements covering the core areas of safety for gas in multi-occupancy buildings, such as:

- planning, risk assessment and minimising risk
- meter installations and location of gas meters with respect to escape routes and the GS(I&U)R and Building Regulations

  Note: This significantly affects many other aspects of the installation, for example ventilation, consumer access for meter reading and isolation, and escape routes.
- network pipelines, types of building entry, risers, laterals and isolation valves
- ventilation of network pipelines, meter installations and installation pipework
- access for inspection and maintenance to network pipelines, meters, installation pipework and appliance chimneys
- modifications, repairs, testing and re-commissioning of existing network pipelines
- energy centres and their risks in relation to domestic dwellings and their occupants
- installation pipework, gas appliances and chimneys
- materials
- location of valves
- electrical safety and equipotential bonding

  Note: The text on this subject has been drawn up with the assistance of the Institution of Engineering Technology (IET) and the Energy Networks Association (ENA).
- responsibilities and competence.

Note: This Standard includes requirements that are either additional to or vary existing requirements contained in other standards where the requirements of those other standards may not be sufficient for gas installations in multi-occupancy buildings. However, those existing Standards are referenced and the majority of their requirements will still apply where relevant. These standards include:

IGE/TD/3 and IGE/TD/4 for network pipelines; IGEM/TD/13 for pressure regulating installations (PRIs); BS 6400 for domestic-sized meter installations; IGEM/GM/6 and IGE/GM/8 for larger meter installations; IGEM/GM/7A and IGEM/GM/7B for electrical connections to, and hazardous area classification of, meter installations; BS 6891 for domestic-sized installation pipework; IGEM/UP/2 for larger installation pipework; IGE/UP/7 for timber and light steel framed buildings; BS 5440-1 and 2 for the supply of chimneys and ventilation; IGEM/UP/17 for dealing with shared chimney and flue systems.

2.5 This Standard addresses requirements for the risk assessment of gas installations within any multi-occupancy building and the individual dwelling(s)/unit(s) within such a building.

2.6 This Standard generally addresses appliances within domestic dwellings or commercial units having a heat input not exceeding 70 kW based on net calorific value (CV), which have been CE marked.

This Standard covers all types of open flue chimney or room sealed chimney systems (that comply with appropriate construction standards) for gas appliances, whether they are separate from, or integral with, the appliances.

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2.7 This Standard addresses gas installations intended to contain odorised Natural Gas at a network maximum operating pressure (MOP) not exceeding 75 mbar within an occupied building.

Note 1: Where the network MOP exceeds 75 mbar, a PRI has to be installed in the network pipeline in accordance with IGEM/TD/13 or the primary meter installation has to be in accordance with BS 6400-2 or IGE/GM/8, as appropriate. Any such PRI or meter installation has to be located outside the building or in a separate compound/enclosure sealed from the building and accessible only from the outside.

Note 2: This Standard assumes a gas supply layout as given in IGEM/G/1 for "Standard gas supply arrangements". Where a "bulk meter" serves secondary meters, via installation pipework, the principles of IGEM/UP/2 also may be applicable.

Note 3: For energy centre installations, see Section 8.

2.8 The term "meter" means "gas meter" unless otherwise stated.

2.9 The term "GT" is deemed to include a "Gas Conveyor" conveying gas in a network pipeline.

Note: The definition of "Gas Conveyor" is given in IGEM/G/1 and IGEM/G/4.

2.10 All pressures quoted are gauge pressures, unless otherwise stated.

2.11 Italicised text is informative and does not represent formal requirements.

2.12 Appendices are informative and do not represent formal requirements unless specifically referenced in the main sections via the prescriptive terms "must", "shall" or "should".

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