IGEM GENERAL SERIES

AMENDMENTS AT DECEMBER 2025

These amendments apply to the following publication:

- **IGEM/G/5 Edition 3 Communication 1874 (April 2023)- Gas in multioccupancy buildings**

References in this edition have been updated in the following sections:

1. **TABLE 1**

   The following note added to the Notes to the Table

   Note 8: "Other Building Services" includes but is not limited to the building's lightning protection system, electrical cables, water pipes, sewerage pipes, IT and TV communication cables.

2. **TABLE 2**

   Note 3- The reference to Clause 10.7.7 has been updated to 10.7.8 following the addition of a new clause under Section 10.7.

   The following note added to the Notes to the Table.

   Note 9: "Other Building Services" includes but is not limited to the building's lightning protection system, electrical cables, water pipes, sewerage pipes, IT and TV communication cables.

3. **TABLE 3**

   The following note added to the Notes to the Table

   Note 8: "Other Building Services" includes but is not limited to the building's lightning protection system, electrical cables, water pipes, sewerage pipes, IT and TV communication cables.

4. **TABLE 4**

   Note 3- The reference to Clause 10.7.7 has been updated to 10.7.8 following the addition of a new clause under Section 10.7.

   The following note added to the Notes to the Table

   Note 8: "Other Building Services" includes but is not limited to the building's lightning protection system, electrical cables, water pipes, sewerage pipes, IT and TV communication cables.

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5. CLAUSE 5.1

The following Note under Clause 5.1, Key to Figures (page 36) has now been deleted based on the comment from the Chair of IGEM/G/1 Edition 3, that the terms SIV and DMIV used in the Note aren't use in the current edition, but only as referenced in the Appendix.

Note: IGEM/G/1 uses the terms "service isolation valve (SIV)" and "distribution main isolation valve (DMIV)". The term "pipeline isolation valve", embraces both SIV and DMIV.

6. CLAUSE 7.1.4

Replaced "BS EN 62305" with "BS EN IEC 62305: 2024".

7. NEW CLAUSE 7.1.5

New clause 7.1.5 added which reads as follows:

External metallic pipework which does not act as an extraneous-conductive-part shall not be cross bonded to the building's lightning protection system (See BS EN IEC 62305: 2024).

8. NEW CLAUSE 9.4.2.3.6

Existing clause 9.4.2.3.6 renumbered to become 9.4.2.3.7.

A new Clause 9.4.2.3.6 inserted which now reads as follows:

External metallic pipework which does not act as an extraneous-conductive-part shall not be cross bonded to the building's lightning protection system (See BS EN IEC 62305: 2004).

9. CLAUSE 10.7

New clause numbered 10.7.3 inserted after Clause 10.7.2 and existing clauses 10.7.3 – 10.7.9 renumbered accordingly.

New Clause 10.7.3

The new Clause 10.7.3 now reads as follows:

Any new or replacement ECV should include an insulation joint. See section 14.2. (This requirement is not retrospective).

10. CLAUSE 12.1.4

Bullet point inserted which reads as follows:

External metallic pipework which does not act as an extraneous-conductive-part shall not be cross bonded to the building's lightning protection system (See BS EN IEC 62305: 2004).

11. SECTION 14: ELECTRICAL SAFETY

Introductory paragraphs to Section 14 together with Clauses 14.1 - General and 14.2 – Insulating Fittings, deleted.

Following introductory paragraphs, figure and clauses added instead:

INTRODUCTION

This Section is intended to provide the Gas Engineer with an insight into the requirements for electrical safety of a gas installation. Requirements for electrical safety are specified in BS 7671 - Requirements for Electrical Installations, otherwise known as the IET Wiring Regulations. Authority for the design of the building's electrical system rests with a qualified electrical engineer or other Competent Person working in accordance with BS 7671

The Electricity Industry has recognised that there can be issues relating to the application of Protective Multiple Earthing (PME) within multi-occupancy buildings.

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In the case of an active fault on a PME service to a multi-occupancy building, a current will travel through the provided circuits within the installation and any parallel paths via the buildings earthing and bonding arrangements. This current will exit the buildings earthing system via the main earthing terminal of the building. This in turn connects to the external earthing provision which will carry a fault current back to the distribution transformer. This flow of current will be dictated by the overall resistance of the fault circuit. Therefore, if the fault circuit resistance is high, the resulting fault current will be low, and under these conditions upstream (distribution) protective devices will not operate.

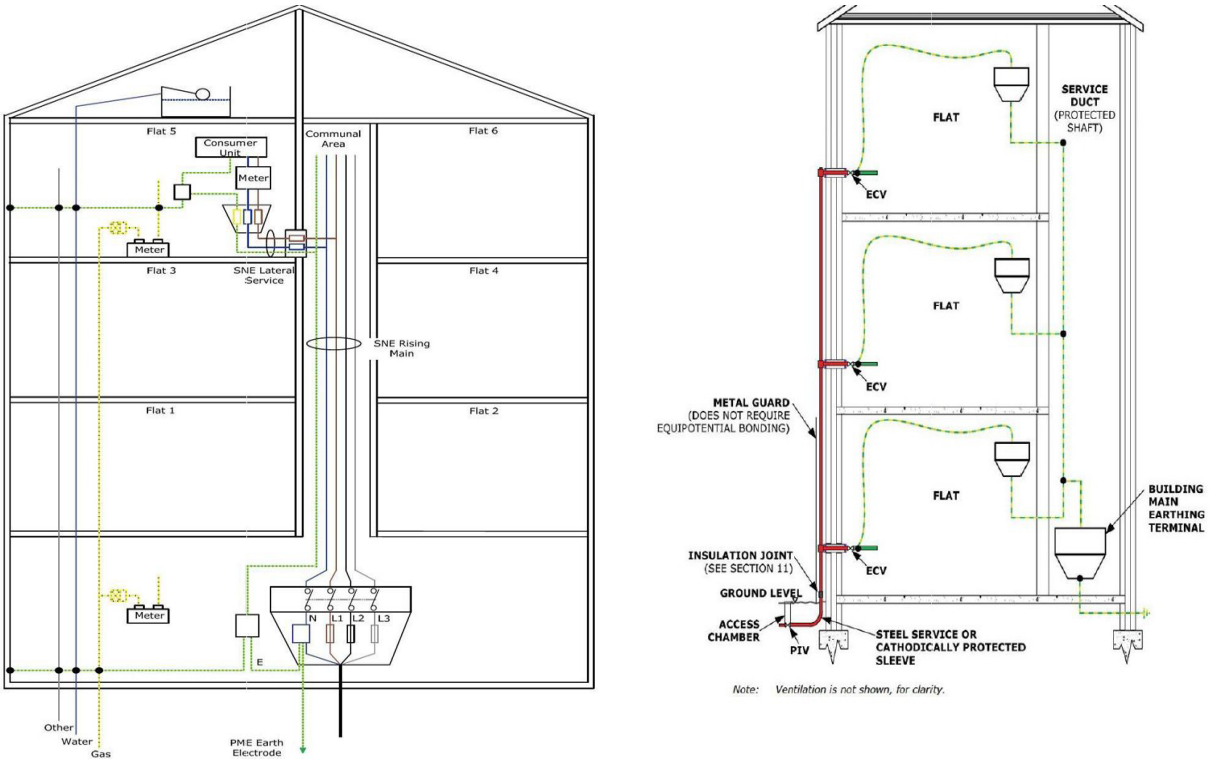

FIGURE 43A: PME SUPPLY WITHIN A MULTI-OCCUPATION BUILDING

A PME terminal provides an effective and reliable facility for most installations. However, under certain external to the installation supply system fault conditions, a potential difference can develop between any exposed and extraneous-conductive-parts such as metallic gas and water pipework connected to the PME earth terminal and true earth.

Note: An extraneous-conductive-part is defined in BS 7671 as being "a conductive part liable to introduce a potential, generally an Earth potential and not forming part of the electrical installation".

IET Wiring Matters Issue 75 dated May 2019 includes the following. It should be noted that the term extraneous-conductive-part is hyphenated, which means it is a single term which has a specific meaning. It can sometimes be difficult to determine if a part meets this requirement, therefore it is sometimes easier to break the definition down into three separate parts.

1. *A conductive part*
2. *Liable to introduce potential, generally earth potential, and*
3. *Not forming part of the electrical installation.*

The statement "Liable to introduce potential, generally Earth potential" is where it can sometimes be difficult to assess by visual inspection alone. Earth potential is generally assumed to be 0 volts introduced by the general mass of Earth more commonly known as the planet we stand on.

Contact with earth is always possible outside a building. If exposed and/or extraneous-conductive-parts connected to the PME earth terminal are accessible outside of the building, under certain fault conditions the public, consumers and operatives may be subjected to a potential difference appearing between these parts and true earth.

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The risk with a PME service is that if the neutral conductor in the service cable or associated joints were to fail, then the neutral return current would flow through any connected exposed or extraneous-conductive-parts. In the case of gas pipework, the resulting flow of neutral return current can cause heating of the pipework and could give rise to a dangerous condition.

The use of an insulating section and insulation joints (or IECV's) throughout the metallic gas pipework, will prevent an electrical fault current using the gas pipework as a route back to the electrical distribution system.

14.1 **GENERAL**

A gas pipe shall not be used as an earth electrode (see BS 7671).

14.2 **Insulating fittings**

14.2.1 Each new or replacement ECV within a gas supply to a multi-occupancy building consumer shall include an insulation fitting. Insulating fittings also shall be installed in metal gas pipes, whether gas-carrying or containing a PE liner, capable of providing electrical continuity between earth and the above-ground pipework.

Note 1: Earth in this context includes the ground and contiguous masonry such as a building wall and paving.

Note 2: Some common sized ECVs contain an integral insulation joint. One may be used in lieu of a separate ECV and insulation fitting.

Note 3: This is a requirement of IGEM/TD/4.

An insulating fitting should be fitted at the base of a riser or at the building entry, unless and as a result of a risk assessment carried out by a competent electrical person, an alternative, reliable means of preventing electrical continuity between the gas pipework and earth has been provided, for example, by a PE Riser or an above ground entry connected to a GRP sleeved PE network pipe. In which case an insulating fitting may not be required.

Note: A below ground building entry fitting cannot be guaranteed not provide a route to earth.

14.2.2 An insulating fitting shall be installed in an accessible location, as close as possible to the pipe's entry into the building or to the pipe's exit from the ground and upstream of or within any ECV or IIV, if fitted. The uninsulated section of the pipework shall be as short as practicable.

Note 1: Insulating fittings complying with GIS/E17-2:2018 are suitable for use inside buildings. Fittings complying with GIS/E17-2:2006 are not suitable for use inside buildings.

Note 2: In all circumstances, particularly where they are installed outside buildings, insulating fittings are required to be protected from the accumulation of debris and moisture which may compromise their insulation properties.

Note 3: Having regard to other features of the electrical and gas systems, the Competent Person may require the installation of additional insulation fittings within the gas network or installation piping.

14.2.3 All exposed metallic pipe between the ground and the insulation fitting (including, where necessary, the metal body of the fitting itself) shall be encapsulated in an approved insulating sleeve or otherwise protected to prevent physical contact with the surface of the pipe. The wrapping or other protection shall be marked: "Electric shock hazard, do not remove this sleeve/guard.".

12. APPENDIX 2.4

IGEM/G/1 Edition and title updated to;

IGEM/G/1 Edition 3- Defining the boundaries between the Network, primary meter installation and installation pipework

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13. APPENDIX 2.5

Replaced "BS EN 62305" with "BS EN IEC 62305: 2024" .

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