

Installation of low pressure gas pipework of up to 35 mm (R1¼) in domestic premises (2nd family gas) — Specification

ICS 91.140.40

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee GSE/30, Gas installations (1st, 2nd and 3rd family gases), upon which the following bodies were represented:

Boiler and Radiator Manufacturers' Association Ltd
British Flue and Chimney Manufacturers Association
BSI Consumer Policy Committee
Catering Equipment Suppliers' Association
Centrica plc
Council for Registered Gas Installers
Department of Trade and Industry
Health and Safety Executive
Heating and Ventilating Contractors' Association
ICOM Energy Association
Institute of Domestic Heating and Environmental Engineers
Institution of Gas Engineers and Managers
L P Gas Association
Society of British Gas Industries
Co-opted members

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 18 November 2005

© BSI 2008

First published February 1988
Second edition April 1998

The following BSI references relate to the work on this British Standard:
Committee reference GSE/30
Draft for Development
05/30116741 DC

ISBN 978 0 580 63203 7

Amendments issued since publication

Amd. No.	Date	Comments
16143 Corrigendum No. 1	30 December 2005	Corrections to Table 1, title of BS 7838 in Normative references, footnote 3) on p. 36 and bibliographical reference [10].
16665	29 September 2006	See foreword
Amendment No. 2	June 2008	See foreword

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms and definitions	3
4 Competence	5
5 Design and planning	6
6 Materials	7
7 Fittings	8
8 Installation	9
9 Prevention of corrosion and degradation	31
10 Gas tightness testing and purging	32
Annex A (informative) Guide for sizing gas supplies	33
Annex B (informative) Summary and principal conclusions of the Advantica Research Project, “ <i>Gas in intermediate floors</i> ”, Report Number 6699	36
Bibliography	38
Figure 1 — Typical installation	5
Figure 2 — Thread wrapping method	9
Figure 3 — Use of temporary continuity bond	11
Figure 4 — Limits for notching and drilling of solid timber floor joists	13
Figure 5 — Typical examples of buried pipe	16
Figure 6 — Typical examples of pipes in masonry and timber frame walls	19
Figure 7 — Typical installation pipework in multi-storey buildings containing flats or maisonettes	25
Figure 8 — Typical exterior pipework	28
Figure 9 — Position of main equipotential bonding connection	30
Figure 10 — Typical notification where main equipotential bonding is found not to be present	30
Figure A.1 — Example of a pipe-sizing calculation	34
Table 1 — Discharge in a straight horizontal pipe with a 1.0 mbar differential pressure between the ends for the gas of relative density 0.6 (air = 1)	7
Table 2 — Maximum interval between pipe supports	12
Table 3 — Free area of ventilation openings	23
Table 4 — Buried external pipework	27
Table A.1 — Sizing results	35

Foreword

This British Standard has been prepared by Technical Committee GSE/30. BS 6891:2005+A2:2008 supersedes BS 6891:2005+A1:2006, which is withdrawn.

The start and finish of text introduced or altered by Amendment No. 2 is indicated in the text by tags **[A₂]** **<A₂>**.

In this revision, the layout has been modified to follow the systematic approach adopted in other gas installation standards. The revision provides an update of the previous version and has been updated to reflect changes in installation practice and legislation and also to cover pipework up to 35 mm (R1¼).

Amendment No. 2 clarifies the situation when installing gas pipework in intermediate floors (see 8.7).

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Attention is drawn to the following statutory regulations.

The Gas Safety (Installation and Use) Regulations 1998 [1]

The Gas Safety (Installation and Use) (Northern Ireland) Regulations 1998 [2]

The Building Regulations 2000 [3]

Building Regulations (Northern Ireland) 2000 [4]

The Building (Scotland) Regulations 2004 [5]

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 39 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

1 Scope

This British Standard specifies design parameters, materials and methods of installing pipe, in sizes not exceeding R1¼ (32 mm) for steel and DN 32 for corrugated stainless steel or DN 35 for copper, gas pipework, for the supply of 2nd family gas from the meter to appliances in domestic dwellings. The standard is also applicable to polyethylene pipe up to DN 32 that is exterior to a dwelling.

This standard applies to gas installation pipework where the nominal operating pressure is 21 mbar¹⁾.

COMMENTARY AND RECOMMENDATIONS ON CLAUSE 1

Annex A shows a typical domestic gas installation (figures from the Gas Safety (Installation and Use) Regulations 1998 [1]).

Steel pipework to BS 1387 of nominal size DN 32 is that size which is threaded to R1¼ (32 mm) in accordance with BS 21.

The provision of service pipes to the consumer's gas meter is covered by the Institution of Gas Engineers and Managers publication IGE/TD/4 [6].

The installation of gas meters is covered by BS 6400.

3rd family gas (liquefied petroleum gas) installations in permanent dwellings are covered in BS 5482-1.

Gas installation pipework in larger sizes or at higher gas pressures is detailed in the Institution of Gas Engineers and Managers publication IGE/UP/2 [7].

Gas, as classified in BS EN 437:2003, Table 1, is normally supplied to the public in accordance with statutory requirements. The provisions of this standard apply to installations supplied with 2nd family gases including natural gas and mixtures of liquefied petroleum gases (LPG) and air.

NOTE 1 For the purposes of this standard, installation includes design, inspection and commissioning. It is recognized that each of these tasks can be performed by the same person.

NOTE 2 As well as normally constructed dwellings, domestic premises include any permanently sited caravans, holiday homes, residential park homes and permanently moored boats. Additional requirements exist for these categories of premises and can be found in IGE/UP/8 [8]. Neither this standard nor IGE/UP/8 [8] applies to gas installations in towed or motorized caravans.

NOTE 3 Additional information on gas installations in timber frame dwellings is given in IGE/UP/7 [9].

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 143 and 1256:2000, *Threaded pipe fittings in malleable cast iron and cast copper alloy*.

BS 669-1:1989, *Flexible hoses, end fittings and sockets for gas burning appliances — Part 1: Specification for strip-wound metallic flexible hoses, covers, end fittings and sockets for domestic appliances burning 1st and 2nd family gases*.

BS 864-2:1983, *Capillary and compression tube fittings of copper and copper alloy — Part 2: Specification for capillary and compression fittings for copper tubes* (obsolescent).

BS 1387:1985, *Specification for screwed and socketed steel tubes and tubulars and for plain end steel tubes suitable for welding or for screwing to BS 21 pipe threads*.

BS 1552:1995, *Specification for open bottomed taper plug valves for 1st, 2nd and 3rd family gases up to 200 mbar*.

BS 3604-2:1991, *Steel pipes and tubes for pressure purposes: ferritic alloy steel with specified elevated temperature properties — Part 2: Specification for longitudinally arc welded tubes*.

BS 3605-2:1992, *Austenitic stainless steel pipes and tubes for pressure purposes — Part 2: Specification for longitudinal welded tubes*.

BS 5114:1975, *Specification for performance requirements for joints and compression fittings for use with polyethylene pipes* (obsolescent).

¹⁾ 1 mbar = 100 N/m² = 100 Pa.

BS 6172:2004, *Installation and maintenance of domestic gas cooking appliances (2nd and 3rd family gases) — Specification.*

BS 6956-5:1992, *Jointing materials and compounds — Part 5: Specification for jointing compounds for use with water, low pressure saturated steam, 1st family gases (excluding coal gas) and 2nd family gases.*

BS 7624:2004, *Installation and maintenance of domestic direct gas-fired tumble dryers of up to 6 kW heat input (2nd and 3rd family gases) — Specification.*

BS 7671:2001, *Requirements for electrical installations — IEE wiring regulations — Sixteenth edition.*

BS 7838:1996, *Specification for corrugated stainless steel semi-rigid pipe and associated fittings for low-pressure gas pipework of up to DN 50.*

BS EN 331, *Manually operated ball valves and closed bottom taper plug valves for gas installations in buildings.*

BS EN 751-1:1997, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 1: Anaerobic jointing compounds.*

BS EN 751-2:1997, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 2: Non-hardening jointing compounds.*

BS EN 751-3:1997, *Sealing materials for metallic threaded joints in contact with 1st, 2nd and 3rd family gases and hot water — Part 3: Unsintered PTFE tapes.*

BS EN 1057:1996, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications.*

BS EN 1254-1:1998, *Copper and copper alloys — Plumbing fittings — Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes.*

BS EN 1254-2:1998, *Copper and copper alloys — Plumbing fittings — Part 2: Fittings with compression ends for use with copper tubes.*

BS EN 1254-3:1998, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes.*

BS EN 1254-4:1998, *Copper and copper alloys — Plumbing fittings — Part 4: Fittings combining other end connections with capillary or compression ends.*

BS EN 1254-5:1998, *Copper and copper alloys — Plumbing fittings — Part 5: Fittings with short ends for capillary brazing to copper tubes.*

[A1] Text deleted **[A1]**

BS EN 1555-1, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 1: General.*

BS EN 1555-2, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 2: Pipes.*

BS EN 1555-3, *Plastics piping systems for the supply of gaseous fuels — Polyethylene (PE) — Part 3: Fittings.*

BS EN 10216-1, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Non-alloy steel tubes with specified room temperature properties.*

BS EN 10216-2, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 2: Non-alloy and alloy steel tubes with specified elevated temperature properties.*

BS EN 10216-5:2004, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 5: Stainless steel tubes.*

BS EN 10217-2:2002, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Electric welded non-alloy and alloy steel tubes with specified elevated temperature properties.*

BS EN 10226-1, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation (BS EN 10226-2 and BS EN 10226-3 are in preparation).*

BS EN 10312, *Welded stainless steel tubes for the conveyance of aqueous liquids including water for human consumption — Technical delivery conditions.*

BS EN 15226, *Stainless steel pliable corrugated tubing kits in buildings for gas with an operating pressure up to 0,5 bar.*

BS EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation.*

BS EN ISO 228-2, *Pipe threads where pressure-tight joints are not made on the threads — Part 2: Verification by means of limit gauges.*

IGE/UP/1B, 2002, *Tightness testing and purging of domestic sized Natural Gas installations*²⁾.

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1 control valves

3.1.1

emergency control valve (ECV)

valve, not being an additional emergency control valve (AECV), 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

NOTE The ECV is not part of the installation pipework system.

3.1.2

additional emergency control valve (AECV)

valve, not being the emergency control valve (ECV), for shutting off the supply of gas in an emergency, intended for use by a consumer of gas

NOTE An AECV may be located within either the meter installation or installation pipework and, as such, may not isolate all the consumer's pipework or meter installation.

3.2 ducts and voids

3.2.1

duct

purpose-designed enclosure to contain gas pipes

NOTE This definition is in accordance with BS 8313. See 3.2.2.

3.2.2

void

enclosed space through which an installation pipe may be run

NOTE The joist space between the ceiling of one room and the floor of another is an example of a void.

3.3 installation pipework, meters and fittings

3.3.1

installation pipework

pipework or fitting from the outlet of the meter installation to points at which appliances/equipment are to be connected

NOTE This definition varies from that given in the Gas Safety (Installation and Use) Regulations 1998 [1]. This term does not refer to:

- a) a service (pipe) or distribution main or other pipeline;
- b) a pipe or fitting forming part of a gas appliance;
- c) a pipe or fitting within a meter installation; or
- d) any valve attached to a storage container or cylinder.

A2) 3.3.1a

intermediate joisted floor

floor that separates one living space from another living space in the same dwelling

NOTE This is not a compartment floor that separates one dwelling from another part of the building. **A2)**

²⁾ Published and available from the Institution of Gas Engineers and Managers, Holywell Park, Ashby Road, Loughborough.

3.3.2

meter installation

installation comprising a primary meter and any associated volume conversion system, valve, filter, meter, regulator or pressure regulating installation, pliable meter connector, meter by-pass, interconnecting pipework, fitting and support

NOTE A typical installation with pipework is shown in Figure 1.

3.3.3

meter installation inlet valve

valve fitted upstream of all components of a meter

NOTE In most cases the meter installation inlet valve may act as an emergency control as required by the Gas Safety (Installation and Use) Regulations 1998 [1].

3.3.4

primary meter

gas meter nearest to and downstream of the ECV, the index reading of which constitutes the basis of charge for all gas supplied through the meter

3.3.5

sleeve

tubular case inserted in a prepared hole in a structure for the reception of an installation pipe

3.3.6

termination point

last fitting on the installation pipework

3.4

protected shaft

shaft which enables persons, air or objects to pass from one compartment to another, and which is enclosed with fire-resisting construction

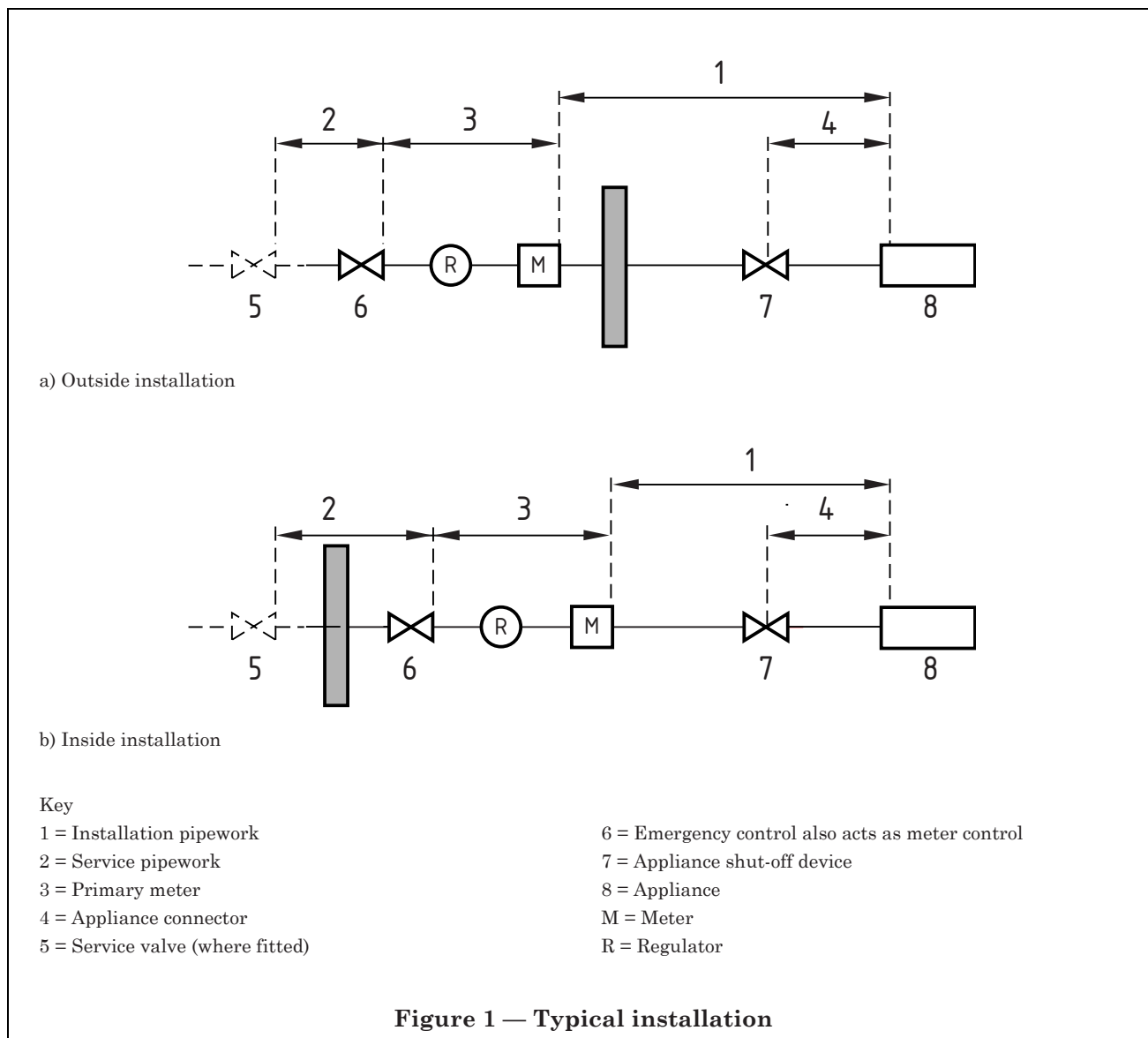
NOTE For the purposes of this standard the following apply.

- a) A compartment is a building or part of a building comprising one or more rooms, spaces or storeys, constructed to prevent the spread of fire to or from another part of the same building. A roof space above the top storey of a compartment is included in that compartment.
- b) Fire-resisting is the ability of a component or construction of a building to satisfy for a stated period of time, some or all of the appropriate criteria specified in the relevant Part of BS 476.

3.5

service (pipe)

pipe for conveying gas to premises from a distribution main, being any pipe between a distribution main and the outlet of the ECV



4 Competence

4.1 Persons carrying out the installation shall be competent.

4.2 The installation work shall be carried out by a business or self-employed person who is a “member of a class of persons approved for the time being by the Health and Safety Executive” (HSE).

COMMENTARY AND RECOMMENDATIONS ON 4.1 AND 4.2

At the time of publication, the body with HSE approval to operate and maintain a register of businesses who are “members of a class of persons” is the Council for Registered Gas Installers (CORGI). Therefore it is essential that all businesses or self-employed gas installers are registered with CORGI.

Persons deemed competent to carry out gas work are those who hold a current certificate of gas safety competence acceptable to CORGI, which includes (without limitation) the Accredited Certification Scheme (ACS) and the Gas Services S/NVQ that has been aligned to ACS.

4.3 Persons who design the system or installation shall have a knowledge and understanding of the standards and regulations that apply to ensure that the completed work will produce a safe and satisfactory installation.

5 Design and planning

5.1 Exchange of information and time schedule

5.1.1 At the initial stages of building design and planning the designer/installer shall verify that the installation pipes will be adequate for both immediate and probable future requirements. A time schedule for fixing the installation pipes shall be agreed as early as possible and any subsequent changes notified to interested parties at the earliest opportunity.

5.1.2 All necessary information regarding the routing of installation pipes and positions of valves and termination points to serve the appliances shall be made available to those concerned as early as possible by means of drawings, specifications and consultations, as appropriate.

COMMENTARY AND RECOMMENDATIONS ON **5.1.2**

Any drawings should also include:

- a) the position of voids, shafts, ducts, and channels when installation pipes are to be concealed;*
- b) special requirements of a precautionary nature, e.g. limitations on proximity to other services;*
- c) sizes, and materials and position of all installation pipes and fittings.*

5.1.3 Any installation pipe fitted as construction of a building progresses, and which will subsequently be inaccessible, shall be tested for gas tightness in accordance with Clause **10** before being buried, covered or wrapped.

5.1.4 Any work to be done by the gas installer and which could be damaged or impaired by other trades shall be clearly identified.

5.2 Pipe sizing

5.2.1 When designing an installation, the sizes of all installation pipes shall be determined from the maximum gas rate of the appliances to be connected.

COMMENTARY AND RECOMMENDATIONS ON **5.2.1**

Allowance should also be made for any future extensions which might be anticipated, especially if the pipes are to be buried. Annex A gives a method of calculating pipe sizes in a system.

5.2.2 The pressure drop between the outlet of the meter and the points to be connected shall not exceed 1 mbar at maximum flow conditions (see Table 1).

Table 1 — Discharge in a straight horizontal pipe with a 1.0 mbar differential pressure between the ends for the gas of relative density 0.6 (air = 1)

Nominal pipe size				Length of pipe							
Steel medium	Copper	Corrugated Stainless Steel ^{a)}	PE	Discharge (m ³ /h)							
BS 1387	BS EN 1057	BS 7838	BS 7281	3	6	9	12	15	20	25	30
6	8	—	—	0.29	0.14	0.09	0.07	0.05	—	—	—
8	—	—	—	0.8	0.53	0.49	0.36	0.29	0.22	0.17	0.14
—	10	10	—	0.86	0.57	0.50	0.37	0.30	0.22	0.18	0.15
10	—	—	—	2.1	1.4	1.1	0.93	0.81	0.70	0.69	0.57
—	12	12	—	1.5	1.0	0.85	0.82	0.69	0.52	0.41	0.34
—	15	15	—	2.9	1.9	1.5	1.3	1.1	0.95	0.92	0.88
15	—	—	—	4.3	2.9	2.3	2.0	1.7	1.5	1.4	1.3
—	—	—	20	4.0	2.7	2.1	1.8	1.6	1.3	1.2	1.05
20	—	—	25	9.7	6.6	5.3	4.5	3.9	3.3	2.9	2.6
—	22	22	—	8.7	5.8	4.6	3.9	3.4	2.9	2.5	2.3
25	—	—	32	18	12	10	8.5	7.5	6.3	5.6	5.0
—	28	28	—	18	12	9.4	8.0	7.0	5.9	5.2	4.7
—	—	32	—	29	20	15	13	12	10	8.5	7.6
32	35	—	—	32	22	17	15	13	11	9.5	8.5

^{a)} Flow details for corrugated stainless steel conforming to BS 7838 are given in this table. For flow details of corrugated stainless steel conforming to BS EN 15266, the manufacturer should be contacted. BS 7838 is due to be withdrawn in February 2009.

NOTE When using this Table to estimate gas flow rate in pipework of known length, this length should be increased by 0.5 m for each elbow and 0.3 m for each 90° bend fitted.

6 Materials

6.1 General

Materials used for gas installation pipes and fittings shall conform to the British Standards listed in **6.2**, **6.3**, **6.4**, **6.5** and/or **6.6**, as appropriate.

COMMENTARY AND RECOMMENDATIONS ON 6.1

When selecting materials for use as installation pipes, consideration should be given to strength, appearance, cost and the need for protection against corrosion (see Clause 9). The Gas Safety (Installation and Use) Regulations 1998 [1] state that lead or lead alloy pipes supplying gas are not to be installed. However, historically, lead pipes were used to install gas meters and lead alloy pipes (known as lead composition pipes) were installed as installation pipes and can still be found in old housing stock. Providing this material is in good condition, sound, well supported and is of adequate size, connection may be made to steel or copper pipework using appropriate fittings (see Clause 7).

6.2 Steel

Steel pipes and fittings shall conform to BS 1387 (medium or heavy grade), BS EN 10216-1:2002 and BS EN 10217-2:2002 and/or BS EN 10216-2:2002, BS EN 10217-2:2002 and BS 3604-2.

Rigid stainless steel pipes shall conform to BS EN 10216-5, BS 3605-2 or BS EN 10312.

Corrugated stainless steel pipes ^{A1} and fittings ^{A1} shall conform to BS 7838 ^{A2} or BS EN 15266 ^{A2}.

COMMENTARY AND RECOMMENDATIONS ON 6.2

Medium grade tubes conforming to BS 1387 will normally suffice but for special applications and for external below ground pipework the use of the heavy grade should be considered.

6.3 Malleable iron

Malleable iron fittings shall conform to BS 143 and 1256.

6.4 Copper

Copper tube shall conform to BS EN 1057.

Capillary and compression fittings shall conform to BS EN 1254-1 to BS EN 1254-5 ^[A1] text deleted ^[A1] or BS 864-2.

COMMENTARY AND RECOMMENDATIONS ON 6.4

Brazed joints should be made in accordance with BS EN 14324 using BS EN 1044 filler metals.

Soft solder should conform to BS EN 29453.

6.5 Polyethylene

Polyethylene pipes shall conform to BS EN 1555-1 and BS EN 1555-2. Polyethylene fittings shall conform to BS 5114 or BS EN 1555-3, as appropriate. Pipework and fittings shall be yellow in colour.

6.6 Thread sealing

Sealing materials shall conform to the applicable part of BS EN 751 or to BS 6956-5, as appropriate.

7 Fittings

7.1 Valves

Ball valves shall conform to BS EN 331 or PRS 1/E [10]. Plug valves shall conform to BS 1552.

7.2 Capillary fittings

Capillary fittings for copper tube shall conform to BS EN 1254-1, BS EN 1254-4, BS EN 1254-5 ^[A1] text deleted ^[A1] or BS 864-2, as appropriate. Pipe ends shall be square cut and deburred. Finished joints shall be visually examined to confirm that the solder has run.

Any flux selected for use shall only remain active during the heating process.

^[A1] COMMENTARY AND RECOMMENDATIONS ON 7.2

Copper pipes may be jointed without conventional fittings by the use of purpose-made tools that form the pipe ends in accordance with BS 864-2 or BS EN 1254-2. ^[A1]

7.3 Compression fittings

Compression fittings shall conform to BS EN 1254-2 or/and BS EN 1254-4 (copper) or BS EN 1254-3 (polyethylene), as appropriate, and BS 864-2, and shall only be used where they will be readily accessible and allow the nut to be tightened to make a gas tight joint.

COMMENTARY AND RECOMMENDATIONS ON 7.3

The ends of any pipe to be joined by a compression fitting should be square cut and deburred. Pipes under floor or in shafts, channels, ducts or voids without removable covers are not considered to be readily accessible.

7.4 Push-fit fittings

Only quick-release fittings conforming to BS 669-1 and installed in accordance with BS 6172 or BS 7624, shall be used for gas installations.

Only push type fittings conforming to BS 7838 for use with corrugated stainless steel semi-rigid pipe, shall be used for gas installations.

7.5 Union joints

Union joints shall be located in readily accessible positions and shall be of the ground faced or compression type.

COMMENTARY AND RECOMMENDATIONS ON 7.5

Pipes under floor and in shafts, channels, ducts or voids without removable covers are not considered to be readily accessible.

7.6 Screwed joints

All malleable cast iron and cast copper alloy fittings used in screwed joints shall conform to BS 143 and 1256.

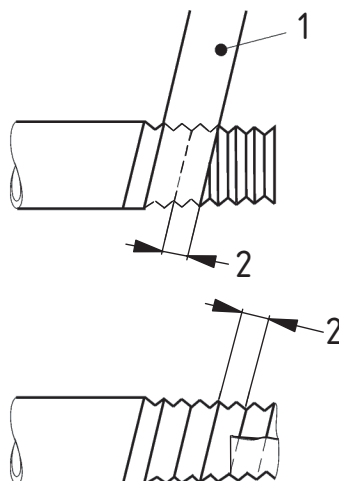
Threads on long screws shall be parallel conforming to BS EN 10226-1. Threads on other fittings, except those conforming to BS EN 1254-4, BS 864-2 or BS EN ISO 228-1 and BS EN ISO 228-2, shall be in accordance with BS EN 10226-1.

COMMENTARY AND RECOMMENDATIONS ON 7.6

When jointing paste is used it should only be applied to the external threads and any excess paste should be removed on completion of the joint. Jointing compound should not be used in conjunction with PTFE tape.

PTFE tape should be wound with a 50 % overlap starting from the thread runout in a direction counter to the thread form (see Figure 2).

It is important that any cutting oil residue is removed from the inside of the pipe.



Key

1 = Tape

2 = 50 % overlap to give double layer covering

Figure 2 — Thread wrapping method

8 Installation

8.1 General

Installation pipework shall be physically protected or located where it is not liable to mechanical damage. The bore of an installation pipe shall not be restricted by kinks, burrs, foreign matter or in any other way.

8.2 Connection to the meter installation

Unless the meter is securely restrained (e.g. by a meter bracket), the connection to the meter installation shall be in securely fixed rigid pipe for at least the first 600 mm.

8.3 Jointing

8.3.1 Capillary fittings

Flux and flux residues shall not be allowed to come into contact with stainless steel.

COMMENTARY AND RECOMMENDATIONS ON **8.3.1**

Attention is drawn to the need to remove any remaining flux after the joint is made. If any flux comes into contact with stainless steel (e.g. pliable stainless steel pipework) it should be removed and the pipework thoroughly cleaned.

8.3.2 Screwed joints

All threads shall be clean prior to the application of any thread sealing material.

Hemp shall not be used on any threaded joint except in conjunction with thread sealing compounds for long screw back-nut seals.

A1 Text deleted **A1**

8.3.3 Connecting lead composition pipes

When lead composition pipes are encountered and any connection joint has to be made, then only a soldered cup joint onto copper pipe or a suitable brass union fitting shall be made. Compression fittings designed for jointing water weight lead pipework shall not be used.

COMMENTARY AND RECOMMENDATIONS ON **8.3.3**

It is essential that care be taken when soldering a joint onto lead composition pipework as blow lamps might provide too much heat at the joint.

Lead solder should be used for this purpose. It is essential that joints be mechanically strong and gas tight.

8.4 Safety precautions

8.4.1 While installation work is in progress, care shall be taken to prevent the ingress of dirt, water, etc., into installation pipes.

8.4.2 Where work is in progress on pipes already connected to a meter, either:

- a) the meter shall be temporarily disconnected, the open ends of the pipework sealed and dust caps fitted to the meter; or
- b) all open ends of the pipework shall be plugged, capped or terminated with a self sealing appliance connector conforming to BS 669-1 before any work is left unattended.

COMMENTARY AND RECOMMENDATIONS ON **8.4.2b)**

Installers need to consider the risk of third parties restoring the gas supply at the primary meter should they leave the general location where the work is in progress.

8.4.3 When work has been completed, open ends of pipe shall be plugged, capped or terminated with a self-sealing appliance connector conforming to BS 669-1.

8.4.4 Before any work is commenced with a naked flame, e.g. a blow lamp, on pipework that contains or has contained gas, the gas supply to that part of the pipework shall be isolated and disconnected. The open ends of pipework connected to the gas supply and of any gas meter shall be sealed with an appropriate fitting, e.g. a plug or cap.

Naked flames shall be kept away from the open ends of pipework.

In no case shall oxy-gas flame cutting equipment be applied to any pipe or fitting containing gas.

8.5 Installation of PE pipework

8.5.1 Polyethylene installation pipework and fittings shall only be used for exterior installation pipework.

COMMENTARY AND RECOMMENDATIONS ON **8.5.1**

It is preferable to use metal gas pipe entries into domestic buildings. The GSIUR [1] require that where polyethylene pipe is used to enter the building, that part of it within the building is placed within a metal sheath which is constructed and installed so as to prevent, as far as practicable, gas escaping into the building if the pipe should fail.