

Specification for

Unplasticized PVC soil and ventilating pipes, fittings and accessories

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	Water Companies Association
	Water Research Centre

This British Standard, having been prepared under the direction of the Plastics Standards Committee, was published under the authority of the Board of BSI and comes into effect on 29 April 1983

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Contents

	Page
Cooperating organizations	Inside front cover
Foreword	ii
1 Scope	1
2 Materials	1
3 Appearance	1
4 Dimensions	1
5 Physical properties	6
6 Marking	7
7 Testing requirements	7
Appendix A Corrosion resistance test	9
Appendix B Impact resistance test	9
Appendix C Proof pressure test for fabricated fittings	9
Appendix D Temperature cycling test	10
Figure 1 — Pipe lengths	2
Figure 2 — Location of dimensions for sockets and spigots	3
Figure 3 — Wall thickness of boss configuration	4
Figure 4 — Positions for measurement of snap cap wall thicknesses	4
Figure 5 — Typical reducer	5
Figure 6 — Typical socket plug	5
Figure 7 — Typical groove designs	5
Figure 8 — Fittings dimensions for design purposes	6
Figure 9 — Dimensions of plastics connectors	8
Figure 10 — Suitable type of impact testing apparatus	11
Figure 11 — Typical test assembly for the temperature cycling test	12
Table 1 — Dimensions of pipes	2
Table 2 — Configuration of fittings	2
Table 3 — Dimensions of fittings	2
Table 4 — Access dimensions	4
Table 5 — Design dimensions of swept fittings	5
Table 6 — Standoff distances	6
Table 7 — Ball sizes	7
Publications referred to	Inside back cover

Foreword

This revision of this British Standard has been prepared under the direction of the Plastics Standards Committee. It supersedes the 1969 edition, amended in 1971, 1973, 1978 and 1981, which is now withdrawn.

The major changes between this revision and the previous edition as amended are as follows.

- a) The references to other standards have been updated.
- b) Where possible reference has been made to the methods described in BS 2782 “Methods of testing plastics” Part 11 “Thermoplastics pipes, fittings and valves”.
- c) The nominal size has not been dimensioned.
- d) The minimum wall thickness for pipes of nominal size 160 has been reduced.
- e) The dimensions and requirements for joint sockets including snap caps have been clarified.
- f) Additional examples of fittings have been given but other designs still complying with the physical properties of this standard have not been excluded.
- g) The standard has been generally rearranged in accordance with current practice.

Details of methods of jointing and fixing will differ, however, from one system to another, but generally guidance may be obtained from BS 5572.

Attention is drawn to the provisions of the Health and Safety at Work etc. Act 1974, and the need to ensure that appropriate precautions are taken to ensure the safety of personnel carrying out the methods of test required by this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 12, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies material, appearance, dimensions and physical requirements for unplasticized polyvinyl chloride soil and ventilating pipes, fittings and accessories, including coated metal fittings, and jointing materials for use in above ground drainage systems intended to convey normal domestic effluents and surface rainwater.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Materials

2.1 Pipes and fittings. The material from which the pipes and fittings are produced shall consist substantially of unplasticized PVC, together with the materials necessary to enable manufacture and to ensure compliance with this standard, except for snap caps which can be produced from thermoplastics other than unplasticized PVC.

The use of manufacturers' own clean re-work material from products complying with the requirements of this standard for physical properties shall be permitted; no other re-work material shall be allowed.

2.2 Coated metal fittings. Metal fittings, such as pipe brackets, shall be rendered corrosion resistant either by galvanization or plastics coating and shall show no visible rust marks when tested in accordance with the method described in Appendix A. The presence of rust marks on the material surface of screw holes shall not constitute a failure.

2.3 Elastomeric sealing rings. If elastomeric sealing rings are used in joints they shall comply with BS 2494 for drainage applications.

2.4 Solvent cements. If solvent cements are used in joints they shall comply with BS 6209 or BS 4346-3.

NOTE Cements complying with BS 6209 are preferred.

3 Appearance

3.1 Internal and external surfaces. The internal and external surfaces of pipes and fittings shall be smooth, clean and free from grooving and blistering.

NOTE This requirement does not apply to a surface deliberately roughened for jointing to other materials.

3.2 Colour. The colour of pipes and fittings including coated metal fittings shall be grey, black or white, or dark brown in the colour range of 06 C 39 and 06 C 40 specified in BS 4901 and when tested by the method described in BS 2782:Method 540A shall show no visible change in colour at stage 5/1.

4 Dimensions

4.1 General. Measurement of dimensions of pipes and fittings shall be carried out in accordance with the methods described in BS 2782:Method 1101A at 23 ± 2 °C.

4.2 Pipes. Pipe diameters and wall thicknesses shall comply with the dimensions given in Table 1. The length of a pipe shall be as defined in Figure 1.

NOTE The preferred lengths of pipe are 2.0 m, 3.0 m and 4.0 m.

4.3 Fittings

4.3.1 General. All fittings other than connectors for WC's (see 4.3.9) shall comply with the requirements given in Table 2.

4.3.2 Wall thickness. The wall thickness of fittings (see Figure 2) for sockets and spigots and in addition for bosses and boss insertion combinations (see Figure 3) shall comply with the appropriate requirements given in Table 3.

The value of e_2 in a coupling, when it relates to where the wall forms the transition between sockets and spigots of different nominal diameters, shall comply with the requirements related to the larger diameter.

The positions for measuring the wall thickness dimensions of a typical snap cap shall be as illustrated in Figure 4.

Fittings and those parts of fittings not intended to come into contact with the fluid being transported are not required to comply with the wall thicknesses given in Table 3.

4.3.3 Lengths. The lengths of designated parts of sockets and spigots (see Figure 2) shall comply with the appropriate requirements of Table 3, except that

- a) for joints fabricated or assembled in workshop conditions dimension L_2 can be reduced to 50 % of the values given in Table 3;
- b) for reducers, adaptors and plugs, the length E can be reduced from 55 mm, 66 mm and 82 mm min. to 20.0 mm, 26.0 mm or 32.0 mm min. respectively provided that there is a stop to prevent entry beyond the seal zone.

Table 1 — Dimensions of pipes

Nominal size	Mean outside diameter		Extreme outside diameter ^a		Minimum wall thickness
	min.	max.	min.	max.	
	mm	mm	mm	mm	mm
82	82.4	82.8	81.0	84.3	3.2
110	110.0	110.4	108.0	112.4	3.2
160	160.0	160.6	157.1	163.5	3.2

^a The extreme outside diameters are the minimum and maximum measured dimensions.

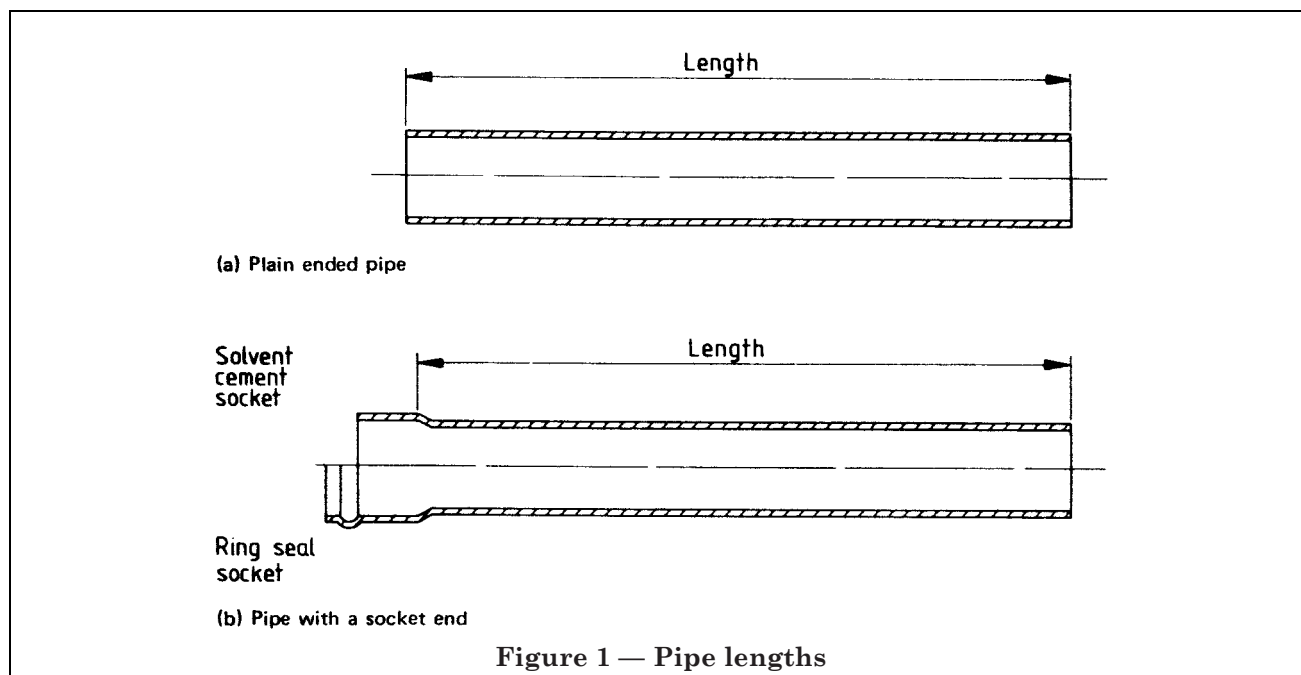


Table 2 — Configuration of fittings

Designated fitting angle θ^a	Bends excluding WC connectors	Equal junctions (single and double)	Unequal junctions (single and double)
Degrees > 45	Swept	Swept	Swept or unswept
≤ 45	Swept or unswept	Unswept	Swept or unswept

^a See Figure 8.

Table 3 — Dimensions of fittings

Nominal size	L_2 min.	A min.	B min.	C max.	e min.	e_2 min.	e_3 min.	E min.
	mm	mm	mm	mm	mm	mm	mm	mm
82	43	35	5	20.0	3.2	2.9	2.4	55
110	48	40	6	26.0	3.2	2.9	2.4	66
160	58	50	9	32.0	3.2	2.9	2.4	82

NOTE e_2 is based upon $0.9e$; e_3 is based upon $0.75e$.